

Pandemische Paraatheid-FIP (PP-FIP)

zie laatste versie ook

Inhoudsopgave

Pandemische Paraatheid -FIP (PP-FIP).....	1
I. About.....	1
II. Declare your FAIR Implementation Community.....	3
III. Declarations for Findability.....	6
IV. Declarations for Accessibility.....	25
V. Declarations for Interoperability.....	38
VI. Declarations for Reusability.....	54
VII. Register a new resource as a nanopublication.....	61

I. About

A FAIR Implementation Profile (FIP) is a list of declared technology choices intended to implement each of the FAIR Guiding Principles, made as a collective decision by the members of a particular community of practice. As can be seen herein, the FIP Wizard captures FIPs by means of a questionnaire that prompts a representative of the community (the Community Data Steward) to provide answers that explicitly profile the FAIR implementation approach of that community. FIPs are published by the FIP Wizard as FAIR (machine-readable) and Open data, which can then serve as a reference for practical FAIR data stewardship activities conducted by members of that community. FIP publication also encourages FIP reuse and repurposing by other communities, which saves time ‘reinventing the wheel’ and simultaneously drives convergence on FAIR implementation choices. Over time, FIPs will need to be revised to reflect the evolving needs of the community and the ongoing development of FAIR technologies. In short, the FIP Wizard helps to make FAIRification efforts more structured, better informed and overall more efficient.

The FIP Wizard has a number of features specifically supporting FIP creation:

Questionnaire: The FIP questionnaire is augmented with explanations, per question, based on Jacobsen et al. FAIR Principles: Interpretations and Implementation Considerations. Data Intelligence 2020; 2 (1-2): 10–29, [DOI](#) and referencable at the [GO FAIR Foundation website](#)

Navigation: While creating the FIP, the questionnaire can be navigated using the navigation tool on the left side of the page.

Versioning: The FIP Wizard has versioning that allows systematic revisions of completed FIPs over time which in turn can provide insight into FAIR-related technology trends.

Nanopublications: The FIP Wizard makes use of a data format called nanopublications to capture FIPs as FAIR data (in this case, as FAIR Digital Objects). In some cases, it may be necessary to author original nanopublications to complete your FIP. The FIP Wizard supports the creation of original nanopublications in Chapter VII, "Register a new resource as a nanopublication".

Detailed instructions for completing the FIP Wizard questionnaire can be found [here](#).

FIP Wizard team is composed of Barbara Magagna, Marek Suchanek, Tobias Kuhn, and Erik Schultes. We would like to acknowledge the generous support of CODATA and ENVRI-FAIR. We wish you success in composing your FIP. If you have any comments, questions or suggestions on how to improve the FIP Wizard experience, [contact us](#).

The FIP Wizard has its origin in the [GO FAIR FAIR Convergence Matrix \(& FIP\) Working Group](#) and development has been supported by the Center for Digital Scholarship at the Leiden University Libraries, CODATA, the ENVRI-FAIR project, the enthusiastic participation of numerous FAIR Implementation Communities, [see](#).

For further reading: Reusable FAIR Implementation Profiles as Accelerators of FAIR Convergence. In: Grossmann G., Ram S. (eds) Advances in Conceptual Modeling. ER 2020. Lecture Notes in Computer Science, vol 12584. Springer, Cham, [DOI](#).

Supporting links:

- [GO FAIR Community interpretation of FAIR](#)
- Summary of [type definitions of FAIR Enabling Resources](#)
- [How to GO FAIR](#)
- [Request a FIP Workshop](#)

II. Declare your FAIR Implementation Community

Implementing the FAIR Principles requires numerous choices concerning the use of FAIR-Enabling Resources, be they commitments to domain-relevant standards or to infrastructure technologies. These collective decisions compose the FAIR Implementation Profile (FIP), and are made on behalf of that community of practice.

A FAIR Implementation Community (FIC) is defined as a voluntary association of people and organisations that agree to adhere to the same FIP. Note, the FAIR Implementation Community can be large or small, formal or informal. It is anticipated that FIPs will likely evolve (merge, split) over time as they are designed, tested and repurposed by other FICs. In any case, the FIC is fundamentally important to FAIR and defining the FIC is the beginning of any FAIRification effort.

In this section of the FIP Wizard, you, the Community Data Steward, are requested to answer questions that will declare, in a machine-readable way, the FAIR Implementation Community.

II.1 Select your FAIR Implementation Community

In the drop-down list, select your FAIR Implementation Community. If your community is not yet listed, you will need to first create a nanopublication referencing your FAIR Implementation Community. Once you create this nanopublication, you will then see it in the drop-down list. A Wizard for creating nanopublications referencing a FAIR Implementation Community can be accessed below (in Chapter VII. Register a new resource as a nanopublication).

Desirable: Defining FAIR Implementation Profile

GloPID-R | Global Research Collaboration for Infectious Disease Preparedness

GloPID-R brings together funders investing in research related to new or re-emerging infectious diseases. Our aim is to increase preparedness and speed up the research response to outbreaks with pandemic potential. GloPID-R facilitates coordination and information sharing among major global funding organizations through our working groups, guidance, tools, and multiple resources. Through our worldwide network of research funders, we facilitate coordinated investment to improve preparedness and a rapid research response to epidemics and pandemics. The overriding aim of our work is to impact global health by saving lives.

- [See more here](#)



<http://purl.org/np/RAIzxpFphUQFmZ4WE7MHy5s0IVUBtZdfO2mqJT-Q4gWw#GloPID->

R

Clear answer

Answered 3 months ago by Cornelis Bouter.

II.2 Who is the Community Data Steward?

As the Community Data Steward, you take the responsibility to represent your FAIR Implementation Community, and for reporting the collective decisions your community has made

on how to implement the FAIR Principles. Provide your ORCID here (like this: 0000-0003-2195-3997, without <https://orcid.org/>).

Desirable: *Defining FAIR Implementation Profile*

Clear answer

Answered 4 months ago by Cornelis Bouter.

II.3 Select the type of digital object you are focusing on in this FIP

This question is not necessarily required to be answered, as in some contexts the community of interest might be offering a service for others.

In any other case, please make sure the answers in this FIP are fitting to the specific choice of digital object type. If digital objects from multiple types are created by the community we ask you to make a clone of this FIP and change the FAIR Enabling Resources where needed.

If you can't find the right term in the drop-down list, please **mint a digital object type of your choice as a nanopublication template**. Once you create this nanopublication, you will then see it in the drop-down list.

Tabular data

A data structure that consists of rows and columns, forming a two-dimensional grid and is represented as a list of component types

- [See more here](#)



<https://w3id.org/gff/rao/terms/Tabular-data>

Clear answer

Answered 4 months ago by Cornelis Bouter.

II.4 If you have, please provide an accessible identifier of one of your digital objects of the chosen type.

Clear answer

Answered 4 months ago by Cornelis Bouter.

II.5 Link to a case study

You might find it useful to link this FIP to a specific case study which is a description of a data problem in a real-life situation. For the case study please create a document as PDF and upload it in [OSF](#) or in [Zenodo](#) to get a persistent identifier link) you can refer to. It should provide the context necessary to support recognition of gaps to be addressed; demonstrate the value of adoption; or to inform future developments. It should contain a brief description of the (research, societal, technical) goals that the case study wants to achieve, as well as user stories.

Clear answer

Answered 4 months ago by Cornelis Bouter.

II.6 Specify the start date for the validity of the FIP

Please declare the starting date of the period for which this FIP is representative for your community (e.g., January 1 of a specific year).

Desirable: Defining FAIR Implementation Profile

Clear answer

Answered 4 months ago by Cornelis Bouter.

II.7 Specify the end date for the validity of the FIP

Please declare the end date of the period for which this FIP is representative for your community (e.g., December 31 of a specific year). It may be the case that an explicit end date has yet to be specified by your community, in this case answer with "December 31 2050".

Desirable: Defining FAIR Implementation Profile

Clear answer

Answered 5 months ago by Cornelis Bouter.

III. Declarations for Findability

Digital resources should be easy to find for both humans and computers. Extensive machine-actionable metadata are essential for automatic discovery of relevant datasets and services, and are therefore an essential component of the FAIRification process.

*Answer the questions below using the drop-down lists to select the FAIR Enabling Resources your community uses to implement the FAIR Principles. You will see that many of the FAIR Enabling Resources in the drop-down list are associated with a GO FAIR Foundation Qualification badge. GFF Qualified Resources have been assessed for their compliance with the preliminary Qualification Criteria of the GO FAIR Foundation (referenced in Chapter 1: About). If you do not find the FAIR Enabling Resources you are looking for in the drop-down list, it will be necessary to register that Resource as a nanopublication. To do so, access the nanopublication Wizard in Chapter VII, "Register a new resource as a nanopublication". Once you create a nanopublication referencing your FAIR Enabling Resource, it will automatically become visible and selectable in the drop-down lists of the FIP Wizard. In addition to selecting FAIR Enabling Resources from the drop-down list, you are also asked to comment on status of the implementation (radio buttons) and to leave a free-text "consideration" that records the basis for these implementation choices (such as various requirements or constraints that impact your community). *

III.1 Declaration F1 Metadata: What globally unique, persistent, resolvable identifier service do you use for metadata records?

Principle F1 states that digital resources, i.e., data and metadata, must be assigned a globally unique and persistent identifier which serves as a permanent machine interpretable reference. The GO FAIR Foundation emphasizes the need for persistence and global uniqueness, as well the property of resolvability of the identifiers (see also A1). Globally unique means that the identifier is guaranteed to unambiguously refer to the intended resources (where 'global' is means 'universal' as there are described digital assets outside the 'world'). Therefore, it is insufficient for it to be unique only locally (e.g. unique within a single, local database). Persistence refers to the requirement that this globally unique identifier is never reused in another context, and continues to identify the same resource over time, even if that resource should no longer exist, or moves from one digital environment to another. While global uniqueness is a technical property (i.e., an algorithm that can guarantee with mathematical precision that the issued identifiers are unique), persistence is a social commitment made by the stakeholder responsible for issuing the identifiers, that these identifiers will continue to map to the objects they identify for a defined period of time. An additional property supported by the GO FAIR Foundation is that the identifier is also 'resolvable' by machines. An identifier is most useful in a large-scale automated environment only when it can be resolved into (i.e., linked to) the object it identifies. Furthermore, the GO FAIR Foundation also assumes predictable identifier resolution behavior, allowing identifier resolution to behave consistently across multiple requests. Taken together, the GO FAIR Foundation assumes FAIR implementations to have Globally Unique, Persistent and Resolvable Identifiers (GUPRIs).

To summarize, this question requests a FAIR Enabling Resource of type "identifier service" which is a service that provides for metadata (1) algorithms guaranteeing global uniqueness, (2) policy document that guarantees persistence and (3) resolution of the identifier to machine-actionable metadata describing the object and its location.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 3 months ago by Cornelis Bouter.

Collapse

III.1.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

Expand all Collapse all

III.1.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



URI | Uniform Resource Identifier

URI is a string that provides a unique address (either on the Internet or on another private network, such as a computer filesystem or an Intranet) representing a resource, and implicitly describes where a resource can be found. A resource identification need not suggest the retrieval of resource representations over the Internet, nor need they imply network-based resources at all.

- [See more here](#)



<http://purl.org/np/RA5-OsT0-sjRbcoFEGfOzkrcFtExipMRmoLErzg5QWL7c#URI>

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.1.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

a. Currently in use by the community

b. Currently in use, but is planned to be replaced in the future

c. Is planned to be used in the future

Clear answer

Answered 5 months ago by Cornelis Bouter.

III.1.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

III.1.b.1.b.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



DOI | Digital Object Identifier

The digital object identifier (DOI) system originated in a joint initiative of three trade associations in the publishing industry (International Publishers Association; International Association of Scientific, Technical and Medical Publishers; Association of American Publishers). The system was announced at the Frankfurt Book Fair 1997. The International DOI Foundation (IDF) was created to develop and manage the DOI system, also in 1997. The DOI system was adopted as International Standard ISO 26324 in 2012. The DOI system implements the Handle System and adds a number of new features. The DOI system provides an infrastructure for persistent unique identification of objects of any type. The DOI system is designed to work over the Internet. A DOI name is permanently assigned to an object to provide a resolvable persistent network link to current information about that object, including where the object, or information about it, can be found on the Internet. While information about an object can change over time, its DOI name will not change. A DOI name can be resolved within the DOI system to values of one or more types of data relating to the object identified by that DOI name, such as a URL, an e-mail address, other identifiers and descriptive metadata. The DOI system enables the construction of automated services and transactions. Applications of the DOI system include but are not limited to managing information and documentation location and access; managing metadata; facilitating electronic transactions; persistent unique identification of any form of any data; and commercial and non-commercial transactions. The content of an object associated with a DOI name is described unambiguously by DOI metadata, based on a structured extensible data model that enables the object to be associated with metadata of any desired degree of precision and granularity to support description and services. The data model supports interoperability between DOI applications. The scope of the DOI system is not defined by reference to the type of content (format, etc.) of the referent, but by reference to the functionalities it provides and the context of use. The DOI system provides, within networks of DOI applications, for unique identification, persistence, resolution, metadata and semantic interoperability.

- [See more here](#)



http://purl.org/np/RAnAWGdel_1GGmDAqv-vZjby5XqbL2ZujNz1vgwK_6cRI#DOI

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.1.b.1.b.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.1.b.1.b.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by Cornelis Bouter.

Add

III.2 Declaration F1 Data: What globally unique, persistent, resolvable identifier service do you use for datasets?

Principle F1 states that digital resources, i.e., data and metadata, must be assigned a globally unique and persistent identifier which serves as a permanent machine interpretable reference. The GO FAIR Foundation emphasizes the need for persistence and global uniqueness, as well the property of resolvability of the identifiers (see also A1). Globally unique means that the identifier is guaranteed to unambiguously refer to the intended resources (where 'global' is means 'universal' as there are described digital assets outside the 'world'). Therefore, it is insufficient for it to be unique only locally (e.g. unique within a single, local database). Persistence refers to the requirement that this globally unique identifier is never reused in another context, and continues to identify the same resource over time, even if that resource should no longer exist, or moves from one digital environment to another. While global uniqueness is a technical property (i.e., an algorithm that can guarantee with mathematical precision that the issued identifiers are unique), persistence is a social commitment made by the stakeholder responsible for issuing the identifiers, that these identifiers will continue to map to the objects they identify for a defined period of time. An additional property supported by the GO FAIR Foundation is that the identifier is also 'resolvable' by machines. An identifier is most useful in a large-scale automated environment only when it can be resolved into (i.e., linked to) the object it identifies. Furthermore,

the GO FAIR Foundation also assumes predictable identifier resolution behavior, allowing identifier resolution to behave consistently across multiple requests. Taken together, the GO FAIR Foundation assumes FAIR implementations to have Globally Unique, Persistent and Resolvable Identifiers (GUPRIs).

To summarize, this question requests a FAIR Enabling Resource of type "identifier service" which is a service that provides for data (1) algorithms guaranteeing global uniqueness, (2) policy document that guarantees persistence and (3) resolution of the identifier to machine-actionable metadata describing the object and its location.

Desirable: *Defining FAIR Implementation Profile*

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

III.2.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

Expand all Collapse all

III.2.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



URI | Uniform Resource Identifier

URI is a string that provides a unique address (either on the Internet or on another private network, such as a computer filesystem or an Intranet) representing a resource, and implicitly describes where a resource can be found. A resource identification need not suggest the retrieval of resource representations over the Internet, nor need they imply network-based resources at all.

- [See more here](#)



<http://purl.org/np/RA5-OsT0-sjRbcoFEGfOzkrcFtExpMRmoLErzg5QWL7c#URI>

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.2.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.2.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by Cornelis Bouter.

III.2.b.1.b.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



DOI | Digital Object Identifier

The digital object identifier (DOI) system originated in a joint initiative of three trade associations in the publishing industry (International Publishers Association; International Association of Scientific, Technical and Medical Publishers; Association of American Publishers). The system was announced at the Frankfurt Book Fair 1997. The International DOI Foundation (IDF) was created to develop and manage the DOI system, also in 1997. The DOI system was adopted as International Standard ISO 26324 in 2012. The DOI system implements the Handle System and adds a number of new features. The DOI system provides an infrastructure for persistent unique identification of objects of any type. The DOI system is designed to work over the Internet. A DOI name is permanently assigned to an object to provide a resolvable persistent network link to current information about that object, including where the object, or information about it, can be found on the Internet. While information about an object can change over time, its DOI name will not change. A DOI name can be resolved within the DOI system to values of one or more types of data relating to the object identified by that DOI name, such as a URL, an e-mail address, other identifiers and descriptive metadata. The DOI system enables the construction of automated

services and transactions. Applications of the DOI system include but are not limited to managing information and documentation location and access; managing metadata; facilitating electronic transactions; persistent unique identification of any form of any data; and commercial and non-commercial transactions. The content of an object associated with a DOI name is described unambiguously by DOI metadata, based on a structured extensible data model that enables the object to be associated with metadata of any desired degree of precision and granularity to support description and services. The data model supports interoperability between DOI applications. The scope of the DOI system is not defined by reference to the type of content (format, etc.) of the referent, but by reference to the functionalities it provides and the context of use. The DOI system provides, within networks of DOI applications, for unique identification, persistence, resolution, metadata and semantic interoperability.

- [See more here](#)



http://purl.org/np/RAnAWGdel_1GGmDAqv-vZjby5XqbL2ZujNz1vgwK_6cRI#DOI

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.2.b.1.b.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- Currently in use by the community
- Currently in use, but is planned to be replaced in the future
- Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.2.b.1.b.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by Cornelis Bouter.

III.2.b.1.c.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

UUID | Universally Unique



Identifier

A UUID is a 128-bit label used for information in computer systems.

- [See more here](#)



http://purl.org/np/RA5ikgqKq071dwzXFdiXlnM8hWZRdFKsQjC_e5YRkEw#UUID

Clear answer

Answered 3 months ago by Cornelis Bouter.

III.2.b.1.c.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 3 months ago by Cornelis Bouter.

Collapse

III.2.b.1.c.2.b.1 Select the replacement FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



URI | Uniform Resource Identifier

URI is a string that provides a unique address (either on the Internet or on another private network, such as a computer filesystem or an Intranet) representing a resource, and implicitly describes where a resource can be found. A resource identification need not suggest the retrieval

of resource representations over the Internet, nor need they imply network-based resources at all.

- [See more here](#)



<http://purl.org/np/RA5-OsT0-sjRbcoFEGfOzkrcFtExipMRmoLErzg5QWL7c#URI>

Clear answer

Answered 3 months ago by Cornelis Bouter.

III.2.b.1.c.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

Add

III.3 Declaration F2: What metadata schema do you use for findability?

Whereas principle F1 enables unambiguous identification of resources of interest, principle F2 speaks to the ability to discover a resource of interest through, for example, search or filtering. Digital resources must be described with rich metadata – including descriptors of the content of the resource referred to by that identifier. It is hard to generally define the minimally required “richness” of this metadata, except that the more generous and comprehensive it is, both for humans and computers, the more specifically findable (in a meaningful way) it becomes in refined searches. Descriptive metadata are, therefore, extremely important in cross-domain search and interdisciplinary use cases [see for example, OAIS, ISO 14721:2012; Lee, 2010]. For centuries, it has been common practice in the scholarly community to clearly reference research results through citations. To enable findability, the metadata required for citations is the minimum requirement and a number of works have defined the required properties (creator, title, publication date, publisher, and identifier) in a variety of documents [Data Citation Synthesis Group, 2014, Ball & Duke, 2015; Mooney & Newton, 2012 and Fenner et al., 2019]. Other works defined additional core metadata requirements for data discovery which may serve as a guideline [Asmi et al., 2017, DataCite Metadata Working Group, 2019, Loscio et al., 2017 and Albertoni et al., 2020]. Community specific metadata requirements, for examples those created in Metadata for Machine (M4M) workshops, may include additional metadata properties. While other principles specify metadata elements that must be present to support, for example, specific aspects of reusability (e.g. citation and license), principle F2 is primarily about discovery - that a digital resource that is well-described can be easily discovered even when the resource is unknown to the agent performing the search. Thus, this principle encourages data providers and domain experts to consider the various facets of search that might be employed by a user of their data, and to support those users in their discovery of the resource. To enable both global and local search engines to locate a resource, generic and domain-specific descriptors should be provided, that can be exposed to indexing by the relevant search facilities.

To summarize, this question requests a FAIR Enabling Resource of type “metadata schema” which is a specification (schema) that defines metadata fields describing attributes of data or other digital objects.

Desirable: *Defining FAIR Implementation Profile*

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

III.3.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

Expand all Collapse all

III.3.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

DCAT | Data Catalog Vocabulary Version



3

DCAT is an RDF vocabulary designed to facilitate interoperability between data catalogs published on the Web. This document defines the schema and provides examples for its use.

- [See more here](#)



http://purl.org/np/RAFvNzVIN_M4tXWryXeM_9mk88rdcQ0Ct3_L-5YVIMarc#DCAT3

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.3.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.3.b.1.a.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

III.3.b.1.b.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



DC | Dublin Core

The Dublin Metadata Element Set, which is often called Dublin Core (DC), is a standardized metadata scheme for description of any kind of resource such as documents in electronic and non-electronic form, digital materials (such as video, sound, images, etc) and composite media like web pages. Dublin Core Metadata may be used for multiple purposes, from simple resource description, to combining metadata vocabularies of different metadata standards, to providing interoperability for metadata vocabularies in the Linked Data cloud and Semantic Web implementations. Please note that this version of the specification for the Dublin Core Element Set 1.1 is somewhat out of date, although it is not officially deprecated. The DCMI Metadata Terms specification is linked to this record and is the current documentation that should be used for the Dublin Core Element Set 1.1.

- [See more here](#)



http://purl.org/np/RApwFvegOdPfNuKIF64wctAzaffAv3j_2kAU9y6kfBoy8#DCMI

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.3.b.1.b.2This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.3.b.1.b.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

III.3.b.1.c.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

FDP|FAIR Data Point

FDP is a metadata repository that provides access to metadata in a FAIR way.

- [See more here](#)



http://purl.org/np/RAhVNx-s-ySjdXAYCv16D489EN4Kdum_-jCJsMc1dpxQ4#FDP

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.3.b.1.c.2This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 3 months ago by Cornelis Bouter.

III.3.b.1.c.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

Add

III.4 Declaration F3: What is the schema that links the persistent identifiers of your data to the metadata description?

separated from the actual resource they describe, but are nonetheless persistently linked via a GUPRI (linking metadata explicitly to the resource and vice versa, as described in FDOF specifications). Here we explicitly emphasize that implementation choice as crucial for a FAIR by design approach. The F3 principle states that any description of a digital resource must contain clearly and explicitly the identifier of that resource being described. For instance, the description of a computational workflow, should explicitly contain the identifier for that workflow in a manner that is unambiguous (well qualified, see Principle I3). This is especially important where the resource and its metadata are stored independently, but are nonetheless persistently linked, which is assumed to be the case by the GO FAIR Foundation. The purpose of this principle is twofold. First, it is perhaps trivial to say that a descriptor should explicitly say what resources it is describing; however, there is a second, less-obvious reason for this principle. Many digital objects (such as workflows, as mentioned above) have well-defined structures that may disallow the addition of new fields, including fields that could point to the metadata about that resource. Therefore, the only consistent way for both humans and machines to discover the metadata of a resource is through a search for the identifier of that resource. Thus, by requiring that a metadata descriptor contains the identifier of the thing being described, that identifier may then successfully be used as the search term to discover its metadata record. However, it should be clear that in many cases the identifier itself is not a regular search term. In fact the GO FAIR Foundation considers it good practice in FAIR to avoid semantic meaning in GUPRIs as these are prone to change. That is why rich metadata are already defined in F2 of the guiding principles. When FAIR principle F3 mentions that the identifier of the object should be explicitly and clearly included in the object's metadata, our interpretation assumes "explicit" refers to the mere presence of the resource's identifier in the content of the metadata record while "clear" refers to having this identifier directly and unambiguously related to the metadata record by means of a known predicate. In previous experiments examining common usage, we have identified over 20 different ways that stakeholders sometimes use to declare which resource is being described by a given metadata record. This makes it very hard for humans and machines to, given a metadata record, identify which object this record describes.

To summarize, this question requests a FAIR Enabling Resource of type "metadata-data linking schema" which is a specification that provides a unique, persistent, (ideally) bi-directional, machine-actionable link between metadata and the data they describe.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

III.4.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

III.4.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



DOI | Digital Object Identifier

The digital object identifier (DOI) system originated in a joint initiative of three trade associations in the publishing industry (International Publishers Association; International Association of Scientific, Technical and Medical Publishers; Association of American Publishers). The system was announced at the Frankfurt Book Fair 1997. The International DOI Foundation (IDF) was created to develop and manage the DOI system, also in 1997. The DOI system was adopted as International Standard ISO 26324 in 2012. The DOI system implements the Handle System and adds a number of new features. The DOI system provides an infrastructure for persistent unique identification of objects of any type. The DOI system is designed to work over the Internet. A DOI name is permanently assigned to an object to provide a resolvable persistent network link to current information about that object, including where the object, or information about it, can be found on the Internet. While information about an object can change over time, its DOI name will not change. A DOI name can be resolved within the DOI system to values of one or more types of data relating to the object identified by that DOI name, such as a URL, an e-mail address, other identifiers and descriptive metadata. The DOI system enables the construction of automated services and transactions. Applications of the DOI system include but are not limited to managing information and documentation location and access; managing metadata; facilitating electronic transactions; persistent unique identification of any form of any data; and commercial and non-commercial transactions. The content of an object associated with a DOI name is described unambiguously by DOI metadata, based on a structured extensible data model that enables the object to be associated with metadata of any desired degree of precision and granularity to support description and services. The data model supports interoperability between DOI applications. The scope of the DOI system is not defined by reference to the type of content (format, etc.) of the referent, but by reference to the functionalities it provides and the context of use. The DOI system provides, within networks of DOI applications, for unique identification, persistence, resolution, metadata and semantic interoperability.

- [See more here](#)



http://purl.org/np/RAnAWGdel_1GGmDAqv-vZjby5XqbL2ZujNz1vgwK_6cRI#DOI

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.4.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.4.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

Add

III.5 Declaration F4 Metadata: Which service do you use to publish your metadata records?

Principle F4 states that digital resources must be registered or indexed in a searchable resource (e.g., a search engine). The searchable resource provides the infrastructure by which a metadata record (made accessible with a GUPRI, F1) can be discovered, using either the attributes in that metadata (F2) or via the identifier of the resource itself (F3) [T. Weigel , U. Schwardmann , J. Klump , S. Bendoukha & R. Quick . Making data and workflows findable for machines. Data Intelligence 2(2020), 40–46. 10.1162/dint_a_00026].

To summarize, this question requests a FAIR Enabling Resource of type “registry” which is a service that indexes metadata and data and provides search over that index.

Desirable: *Defining FAIR Implementation Profile*

- a. Declaration: No implementation choice has been made by this community
- b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 5 months ago by Cornelis Bouter.

Collapse

III.5.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

Expand all Collapse all

III.5.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

COVID-19 metadata and data portal

The COVID-19 metadata and data-portal exposes in a human-readable format the machine-actionable metadata that are produced with the M4M metadata forms for COVID-19 projects and their assets (data, services, etc). The portal is part of the Dutch COVID-19 Data Support Programme at Health-RI, which supports investigators and health care professionals with tools and services in their search for ways to overcome the pandemic and its health consequences.

- [See more here](#)



http://purl.org/np/RA06MWUasZj64aV6Q2IDRmW5NB-T1c6C_qnYPAqvpKM3Y#COVID19-data-portal

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.5.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- Currently in use by the community
- Currently in use, but is planned to be replaced in the future
- Is planned to be used in the future

Clear answer

Answered 5 months ago by Cornelis Bouter.

III.5.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

III.5.b.1.b.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



BioStudies

The BioStudies database holds descriptions of biological studies, links to data from these studies in other databases at EMBL-EBI or outside, as well as data that do not fit in the structured archives at EMBL-EBI. The database can accept a wide range of types of studies described via a simple format. It also enables manuscript authors to submit supplementary information and link to it from the publication.

- [See more here](#)



<https://doi.org/10.25504/FAIRsharing.mtjvme>

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.5.b.1.b.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- Currently in use by the community
- Currently in use, but is planned to be replaced in the future
- Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.5.b.1.b.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

Add

III.6 Declaration F4 Datasets: Which service do you use to publish your datasets?

Principle F4 states that digital resources must be registered or indexed in a searchable resource (e.g., a search engine). The searchable resource provides the infrastructure by which a metadata record (made accessible with a GUPRI, F1) can be discovered, using either the attributes in that metadata (F2) or via the identifier of the resource itself (F3) [T. Weigel , U. Schwardmann , J. Klump , S. Bendoukha & R. Quick . Making data and workflows findable for machines. Data Intelligence 2(2020), 40–46. 10.1162/dint_a_00026].

To summarize, this question requests a FAIR Enabling Resource of type “registry” which is a service that indexes metadata and data and provides search over that index.

Desirable: *Defining FAIR Implementation Profile*

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

III.6.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

III.6.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

COVID-19 metadata and data portal

The COVID-19 metadata and data-portal exposes in a human-readable format the machine-actionable metadata that are produced with the M4M metadata forms for COVID-19 projects and their assets (data, services, etc). The portal is part of the Dutch COVID-19 Data Support Programme at Health-RI, which supports investigators and health care professionals with tools and services in their search for ways to overcome the pandemic and its health consequences.

- [See more here](#)



http://purl.org/np/RA06MWUasZj64aV6Q2IDRmW5NB-T1c6C_qnYPAqvpKM3Y#COVID19-data-portal

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.6.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

III.6.b.1.a.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 3 months ago by David de Best.

IV. Declarations for Accessibility

Typically, the purpose of identifying a digital resource is to simultaneously provide the ability to retrieve the record of that resource, in some format, using some clearly-defined mechanism. Principle A1 asserts that there should be no additional barrier to the retrieval of the record by a computational agent when its access protocol (A1.1 & A1.2) results in permitted access to that record. Note that the agent may be a machine working behind a firewall, if that agent has been permitted access. For fully mechanized access, this requires that the identifier (F1) follows a globally-accepted schema that is tied to a standardized, high-level communication protocol. FAIR, however, does not necessarily preclude non-mechanized access, only that the mechanism is so well described that a machine can identify the appropriate next course of action even if it should include human agents. In the latter case, it is still necessary that the identifier (F1) be sufficient as a way of unambiguously indicating, to a non-automated agent, the record that is being requested. The "standardized communication protocol" is critical here. Its purpose is to provide a predictable way for an agent to access a resource, regardless of whether the access to the content of the resource is open or restricted, and regardless of whether that access is automated or aided by human action (e.g., "send your request for access by email or telephone"). Bottom line, protocols for retrieving digital resources should be made explicit, for both humans and machines, including well-defined mechanisms to obtain authorization for access to protected data.

IV.1 Declaration A1.1 Metadata: Which standardized communication protocol do you use for metadata records?

The protocol (schema) by which a digital resource is accessed (e.g. queried) should not pose any bottleneck. It describes an access process, hence does not directly pertain to restrictions that apply to using the resource. The protocols underlying the World-Wide Web, such as HTTP, are an archetype for an open, free, and universally implementable protocol. Such protocols reduce the cost of gaining access to digital resources, because they are well defined and open and allow any individual to create their own standards-compliant implementation. That the access to the protocols specifications is free ensures that those lacking monetary means can equitably access the specifications and can implement them without incurring in any monetary obligations. That it is universally implementable ensures that the technology is available to all (and not restricted, for instance, by country or a sub-community), thus encompassing both the 'gratis' and 'libre' meaning of 'free'.

To summarize, this question requests a FAIR Enabling Resource of type "communication protocol" which is a specification that defines how messages are structured and exchanged.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

IV.1.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

Expand allCollapse all

IV.1.b.1.a.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

HTTPS | Hypertext Transfer Protocol



Secure

Hypertext Transfer Protocol Secure (HTTPS) is an extension of the Hypertext Transfer Protocol (HTTP). It is used for secure communication over a computer network, and is widely used on the Internet. In HTTPS, the communication protocol is encrypted using Transport Layer Security (TLS) or, formerly, Secure Sockets Layer (SSL). The protocol is therefore also referred to as HTTP over TLS, or HTTP over SSL

- [See more here](#)



http://purl.org/np/RAF1ANn-BCFop0O0BMOC7S8NtG0y_xYhRX4tAu37XZVCo0#HTTPS

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.1.b.1.a.2This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

IV.1.b.1.a.2.b.1Select the replacement FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

SPARQL (open) endpoint

SPARQL (open) endpoint serving the SPARQL semantic query language to retrieve and manipulate data stored in Resource Description Framework (RDF) format

- [See more here](#)



http://purl.org/np/RAGAgZMETa6UkCriDtorwoxKXvusy3FaGs5y4udMOpvhg#SPARQL_endpoint

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.1.b.1.a.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

IV.1.b.1.b.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

SPARQL (open) endpoint

SPARQL (open) endpoint serving the SPARQL semantic query language to retrieve and manipulate data stored in Resource Description Framework (RDF) format

- [See more here](#)



http://purl.org/np/RAGAgZMETa6UkCriDtorwoxKXvusy3FaGs5y4udMOpvhg#SPARQL_endpoint

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.1.b.1.b.2This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

a. Currently in use by the community

b. Currently in use, but is planned to be replaced in the future

c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.1.b.1.b.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 4 months ago by Cornelis Bouter.

Add

IV.2Declaration A1.1 Datasets: Which standardized communication protocol do you use for datasets?

The protocol (schema) by which a digital resource is accessed (e.g. queried) should not pose any bottleneck. It describes an access process, hence does not directly pertain to restrictions that apply to using the resource. The protocols underlying the World-Wide Web, such as HTTP, are an archetype for an open, free, and universally implementable protocol. Such protocols reduce the cost of gaining access to digital resources, because they are well defined and open and allow any individual to create their own standards-compliant implementation. That the access to the protocols specifications is free ensures that those lacking monetary means can equitably access the specifications and can implement them without incurring in any monetary obligations. That it is universally implementable ensures that the technology is available to all (and not restricted, for instance, by country or a sub-community), thus encompassing both the 'gratis' and 'libre' meaning of 'free'.

To summarize, this question requests a FAIR Enabling Resource of type "communication protocol" which is a specification that defines how messages are structured and exchanged.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

IV.2.b.1List the FAIR Enabling Resource(s)

Desirable: Defining FAIR Implementation Profile

Expand allCollapse all

IV.2.b.1.a.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

HTTPS | Hypertext Transfer Protocol



Secure

Hypertext Transfer Protocol Secure (HTTPS) is an extension of the Hypertext Transfer Protocol (HTTP). It is used for secure communication over a computer network, and is widely used on the Internet. In HTTPS, the communication protocol is encrypted using Transport Layer Security (TLS) or, formerly, Secure Sockets Layer (SSL). The protocol is therefore also referred to as HTTP over TLS, or HTTP over SSL

- [See more here](#)



http://purl.org/np/RAF1ANn-BCFop0OBMOC7S8NtG0y_xYhRX4tAu37XZVCo0#HTTPS

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.2.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

IV.2.b.1.a.2.b.1 Select the replacement FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

REST | Representational state



transfer

REST defines a set of constraints for how the architecture of an Internet-scale distributed hypermedia system, such as the Web, should behave.

- [See more here](#)



<http://purl.org/np/RAszH6IU-Zc3UO7MHPKj1Lb0dmMmaTJrRvQ0jqpXMyFY4#REST>

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.2.b.1.a.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

IV.2.b.1.b.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

REST | Representational state



transfer

REST defines a set of constraints for how the architecture of an Internet-scale distributed hypermedia system, such as the Web, should behave.

- [See more here](#)



<http://purl.org/np/RAszH6IU-Zc3UO7MHPKj1Lb0dmMmaTJrRvQ0jqpXMyFY4#REST>

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.2.b.1.b.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.2.b.1.b.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

IV.2.b.1.c.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

SPARQL (open) endpoint

SPARQL (open) endpoint serving the SPARQL semantic query language to retrieve and manipulate data stored in Resource Description Framework (RDF) format

- [See more here](#)



http://purl.org/np/RAGAgZMETa6UkCriDtorwoxKXvusy3FaGs5y4udMOpvhg#SPARQL_endpoint

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.2.b.1.c.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future

c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.2.b.1.c.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

IV.2.b.1.d.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



FTP | File Transfer Protocol

The FTP is a standard communication protocol used for the transfer of computer files from a server to a client on a computer network.

- [See more here](#)



http://purl.org/np/RARv4EFw3iwjRn01xnpto4yzc15buTVcm2_q-8a3jLoZw#FTP

Clear answer

Answered 2 months ago by David de Best.

IV.2.b.1.d.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

a. Currently in use by the community

b. Currently in use, but is planned to be replaced in the future

c. Is planned to be used in the future

Clear answer

Answered 2 months ago by David de Best.

IV.2.b.1.d.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Add

IV.3 Declaration A1.2 Metadata: Which authentication & authorisation service do you use for metadata records?

This principle clearly demonstrates that following the FAIR guiding principles is not equal to making all data 'open'. Some digital resources, such as data that have access restrictions based on ethical, legal or contractual constraints, require additional conditions/steps to be accessed. This often pertains to assuring that the access requester is indeed that requester (authentication), that the requester's profile and credentials match the access conditions of the resource (authorization), and that the intended use matches permitted use cases (e.g. for a particular purpose only) (see also R1.1, where there are requirements to provide explicit documentation about who may use the data, and for what purposes). At the level of technical implementation, an additional authentication and authorization procedure must be specified, if it is not already defined by the protocol (see A1.1). A requester can be a human or a machine agent. In the latter case it is probably a proxy for a human or an organization to which the authentication and authorization protocol should be applied, in which case, the machine should be expected to present the appropriate credentials. The principle requires that a FAIR resource must provide such a protocol, but the protocol itself is not further specified. In practice, an Internet of FAIR Data and Services cannot function without implementing Authentication and Authorization Infrastructure, which includes AAI for machines and should thus be Ontology-based and machine actionable (see also Christopher Brewster, Barry Nouwt, Stephan Raaijmakers, Jack Verhoosel; Ontology-based Access Control for FAIR Data. *Data Intelligence* 2020; 2 (1-2): 66–77. [DOI](#)).

To summarize, this question requests a FAIR Enabling Resource of type "authentication and authorization service" which is a service that mediates access to digital objects according to specified conditions.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

IV.3.b.1 List the FAIR Enabling Resource(s)

Desirable: Defining FAIR Implementation Profile

IV.3.b.1.a.1 Select the FAIR Enabling Resource

Desirable: Defining FAIR Implementation Profile



OpenID Connect

OpenID Connect 1.0 is an identity layer on top of the OAuth 2.0 protocol. It is supported by several major companies and allows for a REST-like communication between client applications and IdPs.

- [See more here](#)



http://purl.org/np/RAESutxl_uSzDxudrQsj_IRPGbUyRUVB2M41F8gCEeR88#OpenID

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.3.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- Currently in use by the community
- Currently in use, but is planned to be replaced in the future
- Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.3.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

IV.4 Declaration A1.2 Datasets: Which authentication & authorisation service do you use for datasets?

This principle clearly demonstrates that following the FAIR guiding principles is not equal to making all data 'open'. Some digital resources, such as data that have access restrictions based on ethical, legal or contractual constraints, require additional conditions/steps to be accessed. This often pertains to assuring that the access requester is indeed that requester (authentication),

that the requester's profile and credentials match the access conditions of the resource (authorization), and that the intended use matches permitted use cases (e.g. for a particular purpose only) (see also R1.1, where there are requirements to provide explicit documentation about who may use the data, and for what purposes). At the level of technical implementation, an additional authentication and authorization procedure must be specified, if it is not already defined by the protocol (see A1.1). A requester can be a human or a machine agent. In the latter case it is probably a proxy for a human or an organization to which the authentication and authorization protocol should be applied, in which case, the machine should be expected to present the appropriate credentials. The principle requires that a FAIR resource must provide such a protocol, but the protocol itself is not further specified. In practice, an Internet of FAIR Data and Services cannot function without implementing Authentication and Authorization Infrastructure, which includes AAI for machines and should thus be Ontology-based and machine actionable (see also Christopher Brewster, Barry Nouwt, Stephan Raaijmakers, Jack Verhoosel; Ontology-based Access Control for FAIR Data. *Data Intelligence* 2020; 2 (1-2): 66–77. [DOI](#)).

To summarize, this question requests a FAIR Enabling Resource of type “authentication and authorization service” which is a service that mediates access to digital objects according to specified conditions.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

IV.4.b.1 List the FAIR Enabling Resource(s)

Desirable: Defining FAIR Implementation Profile

IV.4.b.1.a.1 Select the FAIR Enabling Resource

Desirable: Defining FAIR Implementation Profile



OpenID Connect

OpenID Connect 1.0 is an identity layer on top of the OAuth 2.0 protocol. It is supported by several major companies and allows for a REST-like communication between client applications and IdPs.

- [See more here](#)



http://purl.org/np/RAESutxl_uSzDxudrQsj_IRPGbUyRUVB2M41F8gCEeR88#OpenID

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.4.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

IV.4.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

IV.5 Declaration A2: What metadata preservation policy do you use?

There is a continued focus on keeping relevant digital resources available in the future. Data may no longer be accessible either by design (e.g. a defined lifespan within limited financial resources or legal requirements to destroy sensitive data) or by accident. However, given that those data may have been used and are referenced by others, it is important that consumers (including machines) have, at the very least, access to high quality and machine actionable metadata that describes those resources sufficiently to minimally understand their nature and their provenance, even when the relevant data are not available anymore. This principle relies heavily on the "second purpose" of principle F3 (the metadata record contains the identifier of the data), because in the case where the data record is no longer available, there must be a clear and precise way of discovering its historical metadata record. This aspect of accessibility is further elaborated in the Joint Declaration of Data Citation Principles [M. Martone . Data citation synthesis group: Joint Declaration of Data Citation Principles. San Diego CA FORCE11, no. principle 6, 2014. 10.25490/a97f-egy].

To summarize, this question requests a FAIR Enabling Resource of type "metadata preservation policy" which is a document that describes the conditions under which metadata are to be provisioned in the future (generally part of a data management plan).

Desirable: *Defining FAIR Implementation Profile*

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 2 months ago by Cornelis Bouter.

Collapse

IV.5.a.1 Considerations (optional)

Please describe the community requirements and constraints leading to this answer.

Clear answer

Answered 2 months ago by David de Best.

V. Declarations for Interoperability

When two or more digital resources are related to the same topic or entity, it should be possible for machines to automatically merge the information into a richer, unified view of that entity. Similarly, when a digital entity is capable of being processed by an online service, a machine should be capable of automatically detecting this compliance and facilitating the interaction between the data and that tool. This requires that the meaning (semantics) of each participating resource – be they data and/or services service – is clear.

*Answer the questions below using the drop-down lists to select the FAIR Enabling Resources your community uses to implement the FAIR Principles. You will see that many of the FAIR Enabling Resources in the drop-down list are associated with a GO FAIR Foundation Qualification badge. GFF Qualified Resources have been assessed for their compliance with the preliminary Qualification Criteria of the GO FAIR Foundation (referenced in Chapter 1: About). If you do not find the FAIR Enabling Resources you are looking for in the drop-down list, it will be necessary to register that Resource as a nanopublication. To do so, access the nanopublication Wizard in Chapter VII, "Register a new resource as a nanopublication". Once you create a nanopublication referencing your FAIR Enabling Resource, it will automatically become visible and selectable in the drop-down lists of the FIP Wizard. In addition to selecting FAIR Enabling Resources from the drop-down list, you are also asked to comment on status of the implementation (radio buttons) and to leave a free-text "consideration" that records the basis for these implementation choices (such as various requirements or constraints that impact your community). *

V.1 Declaration I1 Metadata: What knowledge representation language (allowing machine interoperation) do you use for metadata records?

Consumers spend a disproportionate amount of time trying to make sense of the digital resources they need and designing accurate ways to combine them. This is most often due to a lack of suitably unambiguous content descriptors, or a lack of such descriptors entirely with respect to non-machine-interpretable data formats such as tables or "generic" XML. Community-defined data exchange formats work reasonably well within their original scope of a few types of data and a relatively homogeneous community, but not well beyond that. This makes interoperation and integration an expensive, often impossible task (even for humans), but also means that machines cannot efficiently make use of digital resources, which is the primary goal of the FAIR guiding principles. For example, when a machine visits two data files in which a field "temperature" is present, then it will need more contextual descriptions to distinguish between weather data in one file and body temperature measurements in another. Achieving a "common understanding" of digital resources through a globally understood "language" for machines is the purpose of principle I1, with an emphasis on "knowledge" and "knowledge representation". This becomes critical when many differently formatted resources need to be visited or combined across organizations and countries and is especially challenging for interdisciplinary studies or for meta-analyses, where results from independent organizations, pertaining to the same topic, must be combined. In this context, the principle says that producers of digital resources are required to use a language (i.e., a representation of data/knowledge) that has a defined mechanism for mechanized interpretation – a machine-readable "grammar" – where, for example, the difference between an entity, as well as any relevant relationship between entities, is defined in the structure of the language itself. This allows machines to consume the information with at least a basic "understanding" of its content. It is a step towards a common understanding of digital resources by machines, which is a prerequisite for a functional Internet of FAIR Data and Services. Several technologies can be chosen for principle I1.

To summarize, this question requests a FAIR Enabling Resource of type “knowledge representation language” which is a language specification whereby knowledge can be made processable by machines.

Desirable: *Defining FAIR Implementation Profile*

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 5 months ago by Cornelis Bouter.

Collapse

V.1.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

Expand all Collapse all

V.1.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

RDF | Resource Description



Framework

The Resource Description Framework (RDF) is a framework for representing information in the Web.

- [See more here](#)



<http://purl.org/np/RAutRQwoS4d5eLq7eBV1xsnWZ2spDYH4xfhhRzOxSZdhs#RDF>

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.1.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.1.b.1.a.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

V.1.b.1.b.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

Turtle Format

Turtle is a common textual syntax for RDF that allows an RDF graph to be completely written in a compact and natural text form, with abbreviations for common usage patterns and datatypes.

- [See more here](#)



<http://purl.org/np/RAcAe-ljg14EaVYyTAMCtNltLR8DW8Bqr3W3Z6f3SmTvM#Turtle>

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.1.b.1.b.2This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.1.b.1.b.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

V.2Declaration I1 Datasets: What knowledge representation language (allowing machine interoperation) do you use for datasets?

Consumers spend a disproportionate amount of time trying to make sense of the digital resources they need and designing accurate ways to combine them. This is most often due to a lack of suitably unambiguous content descriptors, or a lack of such descriptors entirely with respect to non-machine-interpretable data formats such as tables or “generic” XML. Community-defined data exchange formats work reasonably well within their original scope of a few types of data and a relatively homogeneous community, but not well beyond that. This makes interoperation and integration an expensive, often impossible task (even for humans), but also means that machines cannot efficiently make use of digital resources, which is the primary goal of the FAIR guiding principles. For example, when a machine visits two data files in which a field “temperature” is present, then it will need more contextual descriptions to distinguish between weather data in one file and body temperature measurements in another. Achieving a “common understanding” of digital resources through a globally understood “language” for machines is the purpose of principle I1, with an emphasis on “knowledge” and “knowledge representation”. This becomes critical when many differently formatted resources need to be visited or combined across organizations and countries and is especially challenging for interdisciplinary studies or for meta-analyses, where results from independent organizations, pertaining to the same topic, must be combined. In this context, the principle says that producers of digital resources are required to use a language (i.e., a representation of data/knowledge) that has a defined mechanism for mechanized interpretation – a machine-readable “grammar” – where, for example, the difference between an entity, as well as any relevant relationship between entities, is defined in the structure of the language itself. This allows machines to consume the information with at least a basic “understanding” of its content. It is a step towards a common understanding of digital resources by machines, which is a prerequisite for a functional Internet of FAIR Data and Services. Several technologies can be chosen for principle I1.

To summarize, this question requests a FAIR Enabling Resource of type “knowledge representation language” which is a language specification whereby knowledge can be made processable by machines.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

V.2.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

Expand all Collapse all

V.2.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



JSON | JavaScript Object Notation

JavaScript Object Notation (JSON) is a lightweight, text-based, language-independent data interchange format. It was derived from the ECMAScript Programming Language Standard. JSON defines a small set of formatting rules for the portable representation of structured data. This RFC specification aims to remove inconsistencies with other specifications of JSON, repair specification errors, and offer experience-based interoperability guidance.

- [See more here](#)



http://purl.org/np/RAypIT9C-q0n_Y2tOPqCOM19ETJNWdvNI40rVF11AMoiw#JSON

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.2.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.2.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

V.2.b.1.b.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

****CSV File Format ****

Files with .csv (Comma Separated Values) extension represent plain text files that contain records of data with comma separated values. Each line in a CSV file is a new record from the set of records contained in the file. Such files are generated when data transfer is intended from one storage system to another. Since all applications can recognize records separated by comma, import of such data files to database is done very conveniently. Almost all spreadsheet applications such as Microsoft Excel or OpenOffice Calc can import CSV without much effort. Data imported from such files is arranged in cells of a spreadsheet for representation to user.

- [See more here](#)



http://purl.org/np/RAcNC9zQOEc9RPXD07R91aMNSIYmJR9G4kRT_Pm4FpzkE#CSV

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.2.b.1.b.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- Currently in use by the community
- Currently in use, but is planned to be replaced in the future
- Is planned to be used in the future

Clear answer

Answered 4 months ago by David de Best.

Collapse

V.2.b.1.b.2.b.1 Select the replacement FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

JSON-LD | JavaScript Object Notation for Linking



Data

JSON-LD is a JSON-based format to serialize Linked Data. The syntax is designed to easily integrate into deployed systems that already use JSON, and provides a smooth upgrade path from JSON to JSON-LD. It is primarily intended to be a way to use Linked Data in Web-based programming environments, to build interoperable Web services, and to store Linked Data in JSON-based storage engines. JSON-LD is a concrete RDF syntax. A JSON-LD document is both an RDF document and a JSON document and correspondingly represents an instance of an RDF data model. However, JSON-LD also extends the RDF data model to optionally allow JSON-LD to serialize generalized RDF Datasets.

- [See more here](#)



http://purl.org/np/RAQKjgd7Ug9xSo4J0REW_AHGOJyaF9-ydj60nunqQ0qVg#JSON-LD

Clear answer

Answered 4 months ago by David de Best.

V.2.b.1.b.3Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

V.2.b.1.c.1Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

RDF-XML | XML syntax for RDF

RDF-XML is a syntax, defined by the W3C, to express (i.e. serialize) an RDF graph as an XML document.

- [See more here](#)



http://purl.org/np/RAgKtCGtZ8tOxJJN9TCKN8PICSWkWXZvT_HDINQ6vuTbI#RDF-XML

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.2.b.1.c.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.2.b.1.c.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

V.2.b.1.d.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

JSON-LD | JavaScript Object Notation for Linking



Data

JSON-LD is a JSON-based format to serialize Linked Data. The syntax is designed to easily integrate into deployed systems that already use JSON, and provides a smooth upgrade path from JSON to JSON-LD. It is primarily intended to be a way to use Linked Data in Web-based programming environments, to build interoperable Web services, and to store Linked Data in JSON-based storage engines. JSON-LD is a concrete RDF syntax. A JSON-LD document is both an RDF document and a JSON document and correspondingly represents an instance of an RDF data model. However, JSON-LD also extends the RDF data model to optionally allow JSON-LD to serialize generalized RDF Datasets.

- [See more here](#)



http://purl.org/np/RAQKjgd7Ug9xSo4J0REW_AHGOJyaF9-ydj60nunqQ0qVg#JSON-LD

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.2.b.1.d.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.2.b.1.d.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

V.2.b.1.e.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

Turtle Format

Turtle is a common textual syntax for RDF that allows an RDF graph to be completely written in a compact and natural text form, with abbreviations for common usage patterns and datatypes.

- [See more here](#)



<http://purl.org/np/RAcAe-ljg14EaVYyTAMCtNltLR8DW8Bqr3W3Z6f3SmTvM#Turtle>

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.2.b.1.e.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

V.2.b.1.e.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

V.3 Declaration I2 Metadata: What structured vocabulary do you use to annotate your metadata records?

In Principle I2 we referred to “vocabularies” as the methods that unambiguously represent concepts that exist in a given domain. The use of shared, and formally structured (principle I1), sets of terms is an essential part of FAIR. Terminology systems, including flat “vocabularies”, hierarchical “thesauri” and more granular specifications of knowledge such as data models and consistently structured ontologies, play an important role in community standards. However, the vocabularies used for metadata or data also need to be findable, accessible, interoperable, and reusable in their own right so that users (including machines) can fully understand the meaning of the terms used in the metadata. This principle has been criticized as “circular” but as has been made clear earlier in the Digital Intelligence article, the simple use of a “label” (e.g. “temperature”) is insufficient to enable a machine to understand both the intent of that label (Body temperature? Melting temperature?) and the contexts within which it can be properly linked – same-with-same – to other similarly-labeled data. I2, therefore, requires that the vocabulary terms used in the knowledge representation language (principle I1) can be sufficiently distinguished, by a machine, to resolve to the intended defined meaning and thus ensure detection and prevention of “false agreements” as well as “false disagreements” on exact meaning of the identifier

To summarize, this question requests a FAIR Enabling Resource of type “structured vocabulary” which is a specification of uniquely identified and unambiguous concepts with their definitions represented using web standards.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 5 months ago by Cornelis Bouter.

Collapse

V.3.b.1 List the FAIR Enabling Resource(s)

Desirable: Defining FAIR Implementation Profile

V.3.b.1.a.1 Select the FAIR Enabling Resource

Desirable: Defining FAIR Implementation Profile

DCAT | Data Catalog Vocabulary Version



2

An RDF vocabulary designed to facilitate interoperability between data catalogs published on the Web. By using DCAT to describe datasets in data catalogs, publishers increase discoverability and enable applications easily to consume metadata from multiple catalogs. It further enables decentralized publishing of catalogs and facilitates federated dataset search across sites. Aggregated DCAT metadata can serve as a manifest file to facilitate digital preservation.

- [See more here](#)



<http://purl.org/np/RAi3pnoXjWoZ2RjEd6WVLDIyp0oJsHMUx5Au-mPsNEdyo#DCAT2>

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.3.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 2 months ago by David de Best.

V.3.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

V.4 Declaration I2 Datasets: What structured vocabulary do you use to encode your datasets

In Principle I2 we referred to “vocabularies” as the methods that unambiguously represent concepts that exist in a given domain. The use of shared, and formally structured (principle I1),

sets of terms is an essential part of FAIR. Terminology systems, including flat “vocabularies”, hierarchical “thesauri” and more granular specifications of knowledge such as data models and consistently structured ontologies, play an important role in community standards. However, the vocabularies used for metadata or data also need to be findable, accessible, interoperable, and reusable in their own right so that users (including machines) can fully understand the meaning of the terms used in the metadata. This principle has been criticized as “circular” but as has been made clear earlier in the Digital Intelligence article, the simple use of a “label” (e.g. “temperature”) is insufficient to enable a machine to understand both the intent of that label (Body temperature? Melting temperature?) and the contexts within which it can be properly linked – same-with-same – to other similarly-labeled data. I2, therefore, requires that the vocabulary terms used in the knowledge representation language (principle I1) can be sufficiently distinguished, by a machine, to resolve to the intended defined meaning and thus ensure detection and prevention of “false agreements” as well as “false disagreements” on exact meaning of the identifier

To summarize, this question requests a FAIR Enabling Resource of type “structured vocabulary” which is a specification of uniquely identified and unambiguous concepts with their definitions represented using web standards.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 5 months ago by Cornelis Bouter.

Collapse

V.4.b.1 List the FAIR Enabling Resource(s)

Desirable: Defining FAIR Implementation Profile

V.4.b.1.a.1 Select the FAIR Enabling Resource

Desirable: Defining FAIR Implementation Profile



Schema.org

Schema.org is a collaborative, community activity with a mission to create, maintain, and promote schemas for structured data on the Internet, on web pages, in email messages, and beyond.

- [See more here](#)



<https://w3id.org/np/RAXKj086gOTnOBnbQShZlh7Stz6ahqaWRKxf3dMq6M2oM#Schema.org>

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.4.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.4.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

V.5 Declaration I3 Metadata: What semantic model do you use for your metadata records?

An important aspect of the I in FAIR is that data or metadata, generally speaking, does not exist in a silo – we must do what is necessary to ensure that the knowledge representing a resource is connected to that of other resources to create a meaningfully interlinked network of data and services. A “qualified reference” is a reference to another resource (i.e., referencing that external resource’s persistent identifier), in which the nature of the relationship is also clearly specified. For instance, when multiple versions of a metadata file are available, it may be useful to provide links to prior or next versions using a named relation such as “prior version” or “next version” (using an appropriate community standard relationship that itself conforms to the FAIR principles). In the case of data, imagine a dataset that specifies the population of cities around the world. To be FAIR with respect to principle I3, the data could contain links to a resource containing city data (e.g., <https://www.wikidata.org/> D. Vrandečić . Wikidata: A new platform for collaborative data collection. In: Proceedings of the 21st International Conference on World Wide Web, 2012, pp. 1063–1064. 10.1145/2187980.2188242), geographical and geospatial data, or other related domain resources that are generated by that city, so long as they are properly qualified references using meaningful, clearly-interpretable relationships. It is also important to note that many different metadata files (containers) being FAIR digital resources in themselves, can be pointing to the same “target” object (a data set or a workflow for instance). For instance a FAIR Digital Object constructed as a nanopublication can have intrinsic metadata (“what is this”) and

how was it created (provenance type metadata) as well as “secondary” metadata that are for instance created (separately and later in time) by reusers of a particular digital resource. These could all be metadata containers essentially describing the same digital resource from different perspectives. This principle therefore also relates to the good practice to clearly distinguish between metadata (files/containers) and the resources they describe.

To summarize, this question requests a FAIR Enabling Resource of type “semantic model” which is a specification that defines qualified relations between entities describing data or other digital objects using structured vocabularies. A semantic model can be a conceptual model expressed as an ontology or as a metadata scheme that reuses terms from FAIR vocabularies.

Desirable: *Defining FAIR Implementation Profile*

- a. Declaration: No implementation choice has been made by this community
- b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 5 months ago by Cornelis Bouter.

Collapse

V.5.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

V.5.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

SNOMED CT ontology | SNOMED Clinical Terms Ontology

SNOMED Clinical Terms is a systematically organized computer-processable collection of medical terms providing codes, terms, synonyms and definitions used in clinical documentation and reporting.

- [See more here](#)



http://purl.org/np/RAW1zDE59ilcXR1Z3Nxpn1Md_RDfl_BDXUggAGvuiZthE#SNOMED-CT

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.5.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 5 months ago by Cornelis Bouter.

V.5.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Add

V.6 Declaration I3 Datasets: What semantic model do you use for your datasets?

An important aspect of the I in FAIR is that data or metadata, generally speaking, does not exist in a silo – we must do what is necessary to ensure that the knowledge representing a resource is connected to that of other resources to create a meaningfully interlinked network of data and services. A “qualified reference” is a reference to another resource (i.e., referencing that external resource’s persistent identifier), in which the nature of the relationship is also clearly specified. For instance, when multiple versions of a metadata file are available, it may be useful to provide links to prior or next versions using a named relation such as “prior version” or “next version” (using an appropriate community standard relationship that itself conforms to the FAIR principles). In the case of data, imagine a dataset that specifies the population of cities around the world. To be FAIR with respect to principle I3, the data could contain links to a resource containing city data (e.g., <https://www.wikidata.org/> D. Vrandečić . Wikidata: A new platform for collaborative data collection. In: Proceedings of the 21st International Conference on World Wide Web, 2012, pp. 1063–1064. 10.1145/2187980.2188242), geographical and geospatial data, or other related domain resources that are generated by that city, so long as they are properly qualified references using meaningful, clearly-interpretable relationships. It is also important to note that many different metadata files (containers) being FAIR digital resources in themselves, can be pointing to the same “target” object (a data set or a workflow for instance). For instance a FAIR Digital Object constructed as a nanopublication can have intrinsic metadata (“what is this”) and how was it created (provenance type metadata) as well as “secondary” metadata that are for instance created (separately and later in time) by reusers of a particular digital resource. These could all be metadata containers essentially describing the same digital resource from different perspectives. This principle therefore also relates to the good practice to clearly distinguish between metadata (files/containers) and the resources they describe.

To summarize, this question requests a FAIR Enabling Resource of type “semantic model” which is a specification that defines qualified relations between entities describing data or other digital objects using structured vocabularies. A semantic model can be a conceptual model expressed as an ontology or as a metadata scheme that reuses terms from FAIR vocabularies.

Desirable: Defining FAIR Implementation Profile

- a. Declaration: No implementation choice has been made by this community
- b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 5 months ago by Cornelis Bouter.

Collapse

V.6.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

V.6.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

SNOMED CT ontology | SNOMED Clinical Terms Ontology

SNOMED Clinical Terms is a systematically organized computer-processable collection of medical terms providing codes, terms, synonyms and definitions used in clinical documentation and reporting.

- [See more here](#)



http://purl.org/np/RAW1zDE59ilcXR1Z3Nxpn1Md_RDfl_BDXUggAGvuiZthE#SNOMED-CT

Clear answer

Answered 2 months ago by Cornelis Bouter.

V.6.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- Currently in use by the community
- Currently in use, but is planned to be replaced in the future
- Is planned to be used in the future

Clear answer

Answered 2 months ago by Cornelis Bouter.

V.6.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

VI. Declarations for Reusability

At first glance, principle R1 appears very similar to principle F2. However, the rationale behind principle F2 is to enable effective attribute-based search and query (findability), while the focus of R1 is to enable machines and humans to assess if the discovered resource is appropriate for intended reuse, given a specific task. For example, not all gene expression data for a given locus are relevant to a study of the effects of heat stress. While irrelevant data may be discovered by the agent's initial search (principle F2) for expression data about a given gene, here we address the ability to assess and filter the discovered data based on suitability-for-purpose. This reiterates the need for good data stewards to consider not only high-level metadata facets, that will assist in generic search, but also to consider more detailed metadata that will provide much more "operational" instructions for re-use. In this setting, a wide variety of factors may be needed to determine whether a resource is suitable for inclusion in an analysis, and how to adequately process it. The term "plurality" is used to indicate that the metadata author should be as generous as possible, not narrowly presuming who the secondary consumers might be, and therefore provide as much metadata as possible to support the widest variety of use-cases and agent needs. The sub-principles R1.1, R1.2 and R1.3 further define some critical types of attributes that contribute to R1.

VI.1 Declaration R1.1 Metadata: Which usage license do you use for your metadata records?

Digital resources and their metadata must always, without exception, include a license that describes under which conditions the resource can be used, even if that is "unconditional". By default, resources cannot be legally used without this clarity. Note also that a license that cannot be found by an agent, is effectively the same as no license at all. Furthermore, the license may be different for a data resource and the metadata that describes it, which has implications for the indexing of metadata v.v. findability. It also reiterates the need to separate and permalink data and metadata. This is a clear public domain statement, an equivalent such as terms of use or computer protocol to digitally facilitate an operation (for instance a smart contract). Thus, the absence of a license does not indicate "open", but rather creates legal uncertainty that will deter (in fact, in many cases legally prevent) reuse. Note also that the combination of resources with permissive as well as more restrictive license conditions may lead to adverse effects, and ultimately preclude the use of the combined resources for particular purposes. In order to facilitate reuse, the license chosen should be as open as possible. (see additional criteria GFF)

To summarize, this question requests a FAIR Enabling Resource of type "data usage license" which is a document that describes the conditions under which a digital object can be legally used.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 3 months ago by Cornelis Bouter.

Collapse

VI.1.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

VI.1.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*

CC BY-ND 4.0 | Attribution-NoDerivatives 4.0



International

Using this license you are free to share and adapt this resource but you must give appropriate credit.

- [See more here](#)



<http://purl.org/np/RALxHDLNgvWuWjhWu2sdrfQB-W-v2uaHFbqlwR-xB6Cg0#CC-BY-ND-4.0>

Clear answer

Answered 3 months ago by Cornelis Bouter.

VI.1.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- Currently in use by the community
- Currently in use, but is planned to be replaced in the future
- Is planned to be used in the future

Clear answer

Answered 3 months ago by Cornelis Bouter.

VI.1.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

VI.2 Declaration R1.1 Datasets: Which usage license do you use for your datasets?

Digital resources and their metadata must always, without exception, include a license that describes under which conditions the resource can be used, even if that is “unconditional”. By default, resources cannot be legally used without this clarity. Note also that a license that cannot be found by an agent, is effectively the same as no license at all. Furthermore, the license may be different for a data resource and the metadata that describes it, which has implications for the indexing of metadata v.v. findability. It also reiterates the need to separate and permalink data and metadata. This is a clear public domain statement, an equivalent such as terms of use or computer protocol to digitally facilitate an operation (for instance a smart contract). Thus, the absence of a license does not indicate “open”, but rather creates legal uncertainty that will deter (in fact, in many cases legally prevent) reuse. Note also that the combination of resources with permissive as well as more restrictive license conditions may lead to adverse effects, and ultimately preclude the use of the combined resources for particular purposes. In order to facilitate reuse, the license chosen should be as open as possible. (see additional criteria GFF)

To summarize, this question requests a FAIR Enabling Resource of type “data usage license” which is a document that describes the conditions under which a digital object can be legally used.

Desirable: Defining FAIR Implementation Profile

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 5 months ago by Cornelis Bouter.

Collapse

VI.2.a.1 Considerations (optional)

Please describe the community requirements and constraints leading to this answer.

Clear answer

Answered 2 months ago by David de Best.

VI.3 Declaration R1.2 Metadata: What metadata schema do you use for describing the provenance of your metadata records?

Detailed provenance includes facets such as how the resource was generated, why it was generated, by whom, under what conditions, using what starting-data or source-resource, using what funding/resources, who owns the data, who should be given credit, and any filters or cleansing processes that have been applied post-generation. Provenance information helps people and machines assess whether a resource meets their criteria for their intended reuse, and what data manipulation procedures may be necessary in order to reuse it appropriately.

To summarize, this question requests a FAIR Enabling Resource of type “provenance model” which is a specification (schema) that defines metadata fields describing the origin and lineage of

data or other digital objects. A prominent provenance model is PROV that can be used and implemented in metadata templates.

Desirable: *Defining FAIR Implementation Profile*

a. Declaration: No implementation choice has been made by this community

b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 4 months ago by Cornelis Bouter.

Collapse

VI.3.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

VI.3.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



PROV-O | W3C PROV Ontology

The PROV Ontology (PROV-O) expresses the PROV Data Model using the OWL2 Web Ontology Language (OWL2). It is intended for the Linked Data and Semantic Web community. It provides a set of classes, properties, and restrictions that can be used to represent and interchange provenance information generated in different systems and under different contexts. It can also be specialized to create new classes and properties to model provenance information for different applications and domains. PROV-O is one serialization of PROV-DM, the other two being PROV-N and PROV-XML. PROV-DM and PROV-O define how to represent provenance on the World Wide Web, and as such additional documentation has been included in this record for PROV-AQ (Access and Query), a note which describes how standard web protocols may be used to locate, retrieve and query provenance records. PROV-DC provides a mapping from Dublin Core to PROV-O, and is listed in this record. For the purpose of this specification, provenance is defined as a record that describes the people, institutions, entities, and activities involved in producing, influencing, or delivering a piece of data or a thing. In particular, the provenance of information is crucial in deciding whether information is to be trusted, how it should be integrated with other diverse information sources, and how to give credit to its originators when reusing it. In an open and inclusive environment such as the Web, where users find information that is often contradictory or questionable, provenance can help those users to make trust judgements.

- [See more here](#)



<http://purl.org/np/RAnkRRbkgifQpL2ERK1jVqwA9Brwu1GcORfTbfQMWHfC4#PROV-O>

Clear answer

Answered 4 months ago by Cornelis Bouter.

VI.3.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 4 months ago by Cornelis Bouter.

VI.3.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

VI.4 Declaration R1.2 Datasets: What metadata schema do you use for describing the provenance of your datasets?

Detailed provenance includes facets such as how the resource was generated, why it was generated, by whom, under what conditions, using what starting-data or source-resource, using what funding/resources, who owns the data, who should be given credit, and any filters or cleansing processes that have been applied post-generation. Provenance information helps people and machines assess whether a resource meets their criteria for their intended reuse, and what data manipulation procedures may be necessary in order to reuse it appropriately.

To summarize, this question requests a FAIR Enabling Resource of type "provenance model" which is a specification (schema) that defines metadata fields describing the origin and lineage of data or other digital objects. A prominent provenance model is PROV that can be used and implemented in metadata templates.

Desirable: *Defining FAIR Implementation Profile*

- a. Declaration: No implementation choice has been made by this community
- b. Declaration: FAIR Enabling Resource(s)

Clear answer

Answered 2 months ago by David de Best.

Collapse

VI.4.b.1 List the FAIR Enabling Resource(s)

Desirable: *Defining FAIR Implementation Profile*

VI.4.b.1.a.1 Select the FAIR Enabling Resource

Desirable: *Defining FAIR Implementation Profile*



PROV-O | W3C PROV Ontology

The PROV Ontology (PROV-O) expresses the PROV Data Model using the OWL2 Web Ontology Language (OWL2). It is intended for the Linked Data and Semantic Web community. It provides a set of classes, properties, and restrictions that can be used to represent and interchange provenance information generated in different systems and under different contexts. It can also be specialized to create new classes and properties to model provenance information for different applications and domains. PROV-O is one serialization of PROV-DM, the other two being PROV-N and PROV-XML. PROV-DM and PROV-O define how to represent provenance on the World Wide Web, and as such additional documentation has been included in this record for PROV-AQ (Access and Query), a note which describes how standard web protocols may be used to locate, retrieve and query provenance records. PROV-DC provides a mapping from Dublin Core to PROV-O, and is listed in this record. For the purpose of this specification, provenance is defined as a record that describes the people, institutions, entities, and activities involved in producing, influencing, or delivering a piece of data or a thing. In particular, the provenance of information is crucial in deciding whether information is to be trusted, how it should be integrated with other diverse information sources, and how to give credit to its originators when reusing it. In an open and inclusive environment such as the Web, where users find information that is often contradictory or questionable, provenance can help those users to make trust judgements.

- [See more here](#)



<http://purl.org/np/RAnkRRbkigfQpL2ERK1jVqwA9Brwu1GcORfTbfQMWHfC4#PROV-O>

Clear answer

Answered 2 months ago by David de Best.

VI.4.b.1.a.2 This implementation choice is:

Desirable: *Defining FAIR Implementation Profile*

- a. Currently in use by the community
- b. Currently in use, but is planned to be replaced in the future
- c. Is planned to be used in the future

Clear answer

Answered 2 months ago by David de Best.

VI.4.b.1.a.3 Implementation Consideration (optional)

Please describe the community requirements and constraints leading to this implementation choice.

Clear answer

Answered 2 months ago by David de Best.

Add

VI.5 Declaration R1.3: Your community uses this FAIR Implementation Profile to link to domain-relevant community standards. Please acknowledge this statement by clicking on 'Read and understood'.

Where community standards or best practices for data archiving and sharing exist, they should be followed. Several disciplinary communities have defined Minimal Information Standards describing the minimal set of metadata items required to assess the quality of the data acquisition and processing and to facilitate reproducibility. Such standards are a good start, noting that true (interdisciplinary) reusability will generally require richer metadata. For a list of such standards, consult for instance [FAIRsharing.org](https://www.fairsharing.org). The required richness of the provenance metadata will be strongly dependent on the norms generated and agreed upon in the most related research communities.

When the FIP questionnaire is completed, and the resulting machine-readable FIP is published, it is considered to be the FAIR Enabling Resource for FAIR principle R1.3 and for this reason, there is no explicit question addressing this principle in the questionnaire. Hence, your FIP will be taken as the definitive list of domain-relevant community standards for your community, and could be used, for example, to inform automated FAIR evaluation services.

Desirable: *Defining FAIR Implementation Profile*

- a. Read and understood.

Clear answer

Answered 4 months ago by Cornelis Bouter.

VII. Register a new resource as a nanopublication

Why nanopublications?

If your resource is not already referenceable as a nanopublication you can create it here in the Wizard environment. The new nanopublication you create will register your resource by giving your resource a GUPRI (in the form of a Persistent URL or PURL) and a minimal metadata description. The nanopublication will allow your resource to be retrievable by the FIP Wizard in the drop-down lists of the answer field of the related question. As a nanopublication, your resource will also be considered by the GO FAIR Foundation for qualification assessment with respect to its Qualification Criteria. This procedure will require a few days. Nevertheless you can already use your newly minted nanopublication in the FIP Wizard or elsewhere.

Create new nanopublications

To create a nanopublication referencing your **FAIR Implementation Community (FIC)** please use this [template](#)

To create a nanopublication referencing your **FAIR-Enabling Resource (FER)** with metadata from a FAIRsharing record please use this [template](#)

To create a nanopublication referencing your **FAIR-Enabling Resource (FER)** please use this [template](#)