

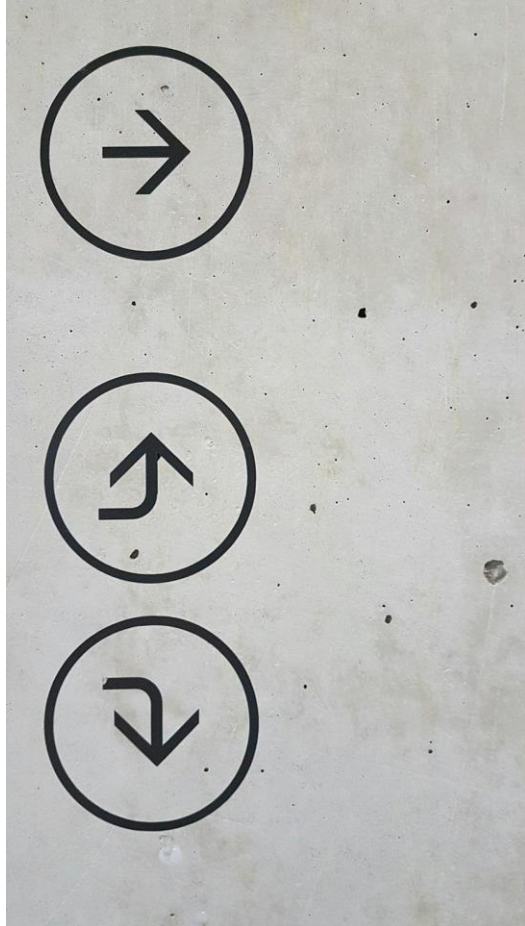
Exposing trustworthy
information from
thematic repositories:
FAIR-IMPACT
contribution to FAIR
assessment practices

18-06-2024

Robert Ulrich
(Robert Huber)

Guidelines for repositories and registries on exposing repository trustworthiness status and FAIR data assessments outcomes

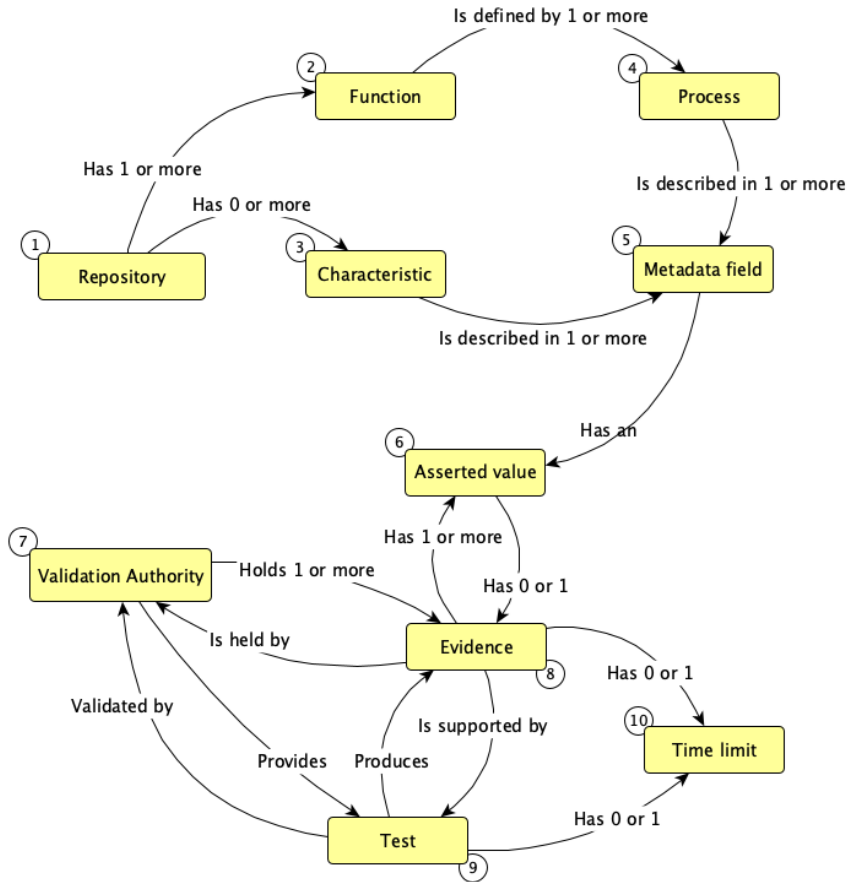
Development of guidelines and mechanisms improving connections between repository registries and discovery portals, repository trustworthiness mechanisms (e.g. CoreTrustSeal) and FAIR digital object assessments. The aim is to enable seamless discovery of repositories (including their trustworthiness) and datasets (including their FAIRness).



Transparency & Standards

Data regarding FAIRness shall be provided following open technical standards and community recommendations such as RDF (with a focus on DCAT) and RDA outputs as to digital objects, (meta)data services & registries to foster interoperability and harmonization.

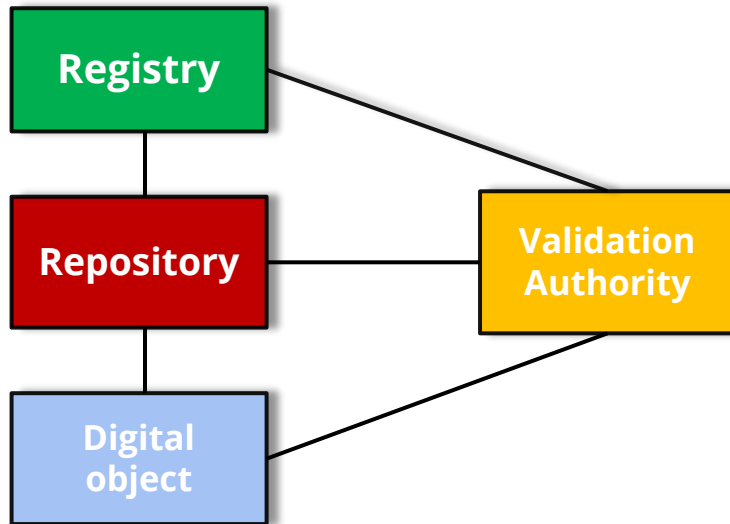




Evidence & Assessment

(Meta)data services providing information about their functions and activities should include evidence and links to authoritative third parties, such as CoreTrustSeal, enabling validation and assessment by human and automated processes.

Linking & Aggregation



As information varies in terms of level of detail, contexts, and time, it should be linked across different services and data providers to foster discovery and aggregation by registries, assessment tools etc. to provide additional value and insights to users.

Transparency of Trust: guidelines for the discovery of trustworthiness status for digital repositories

1. Relevant information should be exposed to achieve transparency.
2. Information about the functions and characteristics of repositories and objects should be expressed in line with defined standards and criteria.
3. Information should be exposed by, and/or provide references to, an originating source.
4. Clarity should be provided on how information should be expressed to support humans and machines.

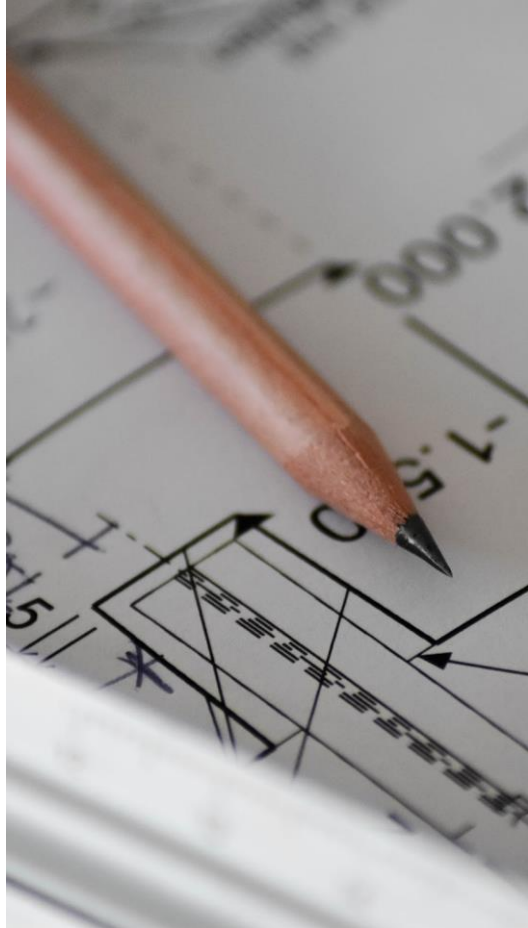
Transparency of Trust: guidelines for the discovery of trustworthiness status for digital repositories

5. When an assertion can be validated, the possible validation action(s) should be defined.

6. Appropriate standards should be used to expose dataset metadata, FAIR assessment results, and catalogue information towards harvesters and discovery services.

7. The levels of care offered by repositories and received by digital objects should be expressed.

8. Multiple calibrated FAIR assessment tools should be used, embedded in a holistic FAIR consultation process that supports contextual understanding.



Prototype

Its purpose is to transform the concepts into a tangible representation that allows to validate and understand limits and feasibility. Its goal is to collect feedback and ideas for added values from stakeholders and to revise and improve the initial concept . The envisioned demonstrator will start with the embedded organisations in FAIR Impact, but its scope is planned to be expanded later on. Maybe including you? Stay tuned!

Exposing data repository information

Google pizzeria

Images Places Places sites Nearby Open now Bremen Videos In der Nähe Top rated All filters Tools

About 214,000,000 results (0.44 seconds)

Results for **Ostliche Vorstadt, Bremen** Use precise location

Places sites

THE 10 BEST Pizza Places in Bremen (Updated 2024) ... Tripadvisor

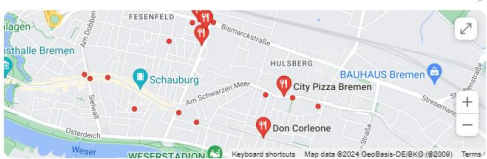
Die 10 besten Pizzerias in Bremen 2024 werkenntdenBES...

Pizzeria In deiner Nähe Lieferando


pizzeria.de | Pizza online bestellen | Lieferservice pizzeria.de

See more →

Places



Map showing locations in Bremen: Schauburg, City Pizza Bremen, Don Corleone, etc.



Pizza
Dish

Pizza is a dish of Italian origin consisting of a usually round, flat base of leavened wheat-based dough topped with tomatoes, cheese, and often various other ingredients, which is then baked at a high temperature, traditionally in a wood-fired oven.

Wikipedia

Origin: Italy

Nutrition Facts
Pizza, 14" regular crust
Sources include: USDA

Amount Per 100 grams

Google data

Images Videos Types In computer News In statistics In research Pronunciation Examples All filters Tools

About 17,250,000,000 results (0.32 seconds)

Dictionary
Definitions from Oxford Languages Learn more

data
/ˈdeɪ.tə/

noun

facts and statistics collected together for reference or analysis.
"there is very little data available"

Similar: facts figures statistics details particulars specifics features


- the quantities, characters, or symbols on which operations are performed by a computer, which may be stored and transmitted in the form of electrical signals and recorded on magnetic, optical, or mechanical recording media.
- PHILOSOPHY:** things known or assumed as facts, making the basis of reasoning or calculation.

See more → Feedback

People also ask

- What is your definition of data?
- Which is called a data?
- What is an example of data?

People also search for



Cloud computing Technology Artificial intelligence Security



Exposing repository identity and metadata

DCAT-AP Catalogue: „A catalogue or repository that hosts the Datasets or Data Services being described.”

Standards & Linking:

- Dublin Core

```
<meta name="DC.type" content="dcat:Catalog" />
```

- DCAT

- RDFa, Signposting

```
<link rel="describedby" href="https://doi.pangaea.de/dcat" type="application/ld+json" profile="http://www.w3.org/ns/dcat#">
```

- Schema.org

EXAMPLE 1

```
ex:catalog
  a dcat:Catalog ;
  dcterms:title "Imaginary Catalog"@en ;
  dcterms:title "Catálogo imaginario"@es ;
  rdfs:label "Imaginary Catalog"@en ;
  rdfs:label "Catálogo imaginario"@es ;
  foaf:homepage <http://dcat.example.org/catalog> ;
  dcterms:publisher ex:transparency-office ;
  dcterms:language <http://id.loc.gov/vocabulary/iso639-1/en> ;
  dcat:dataset ex:dataset-001 , ex:dataset-002 , ex:dataset-003 ;
  .
```

Exposing repository capabilities (services)

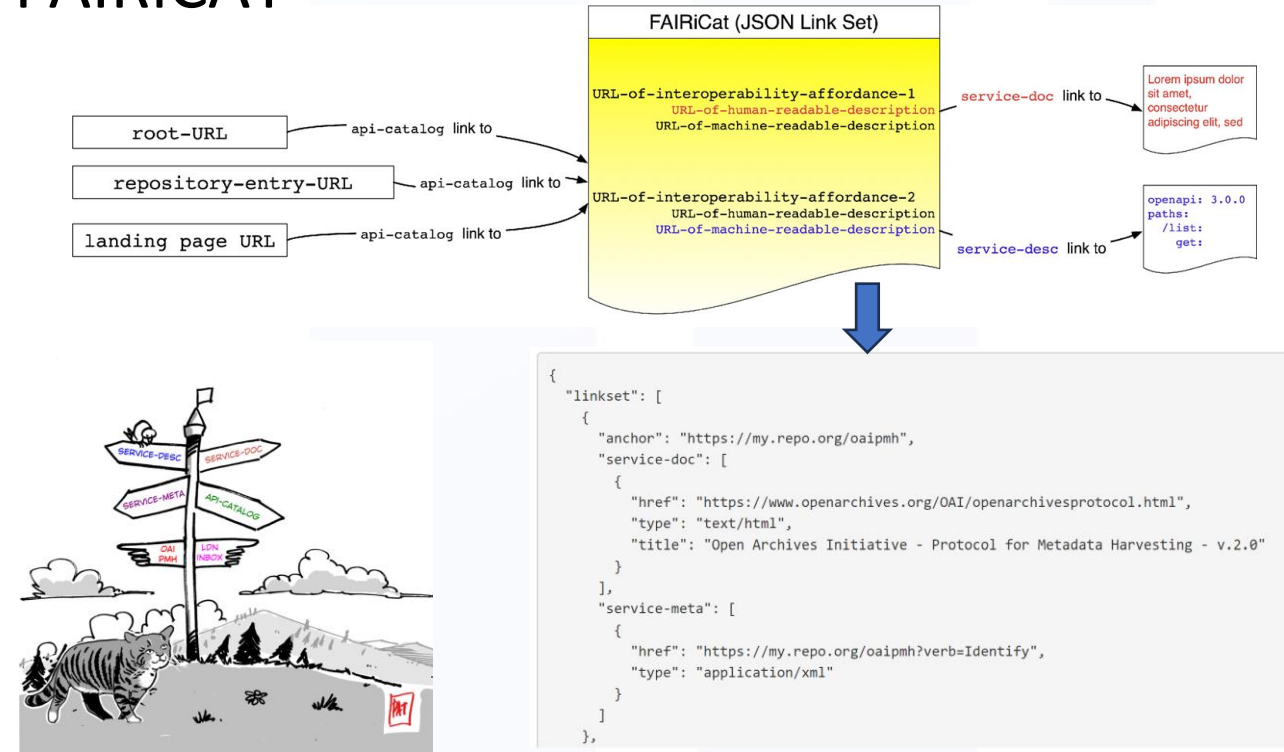
DCAT

EXAMPLE 60

```

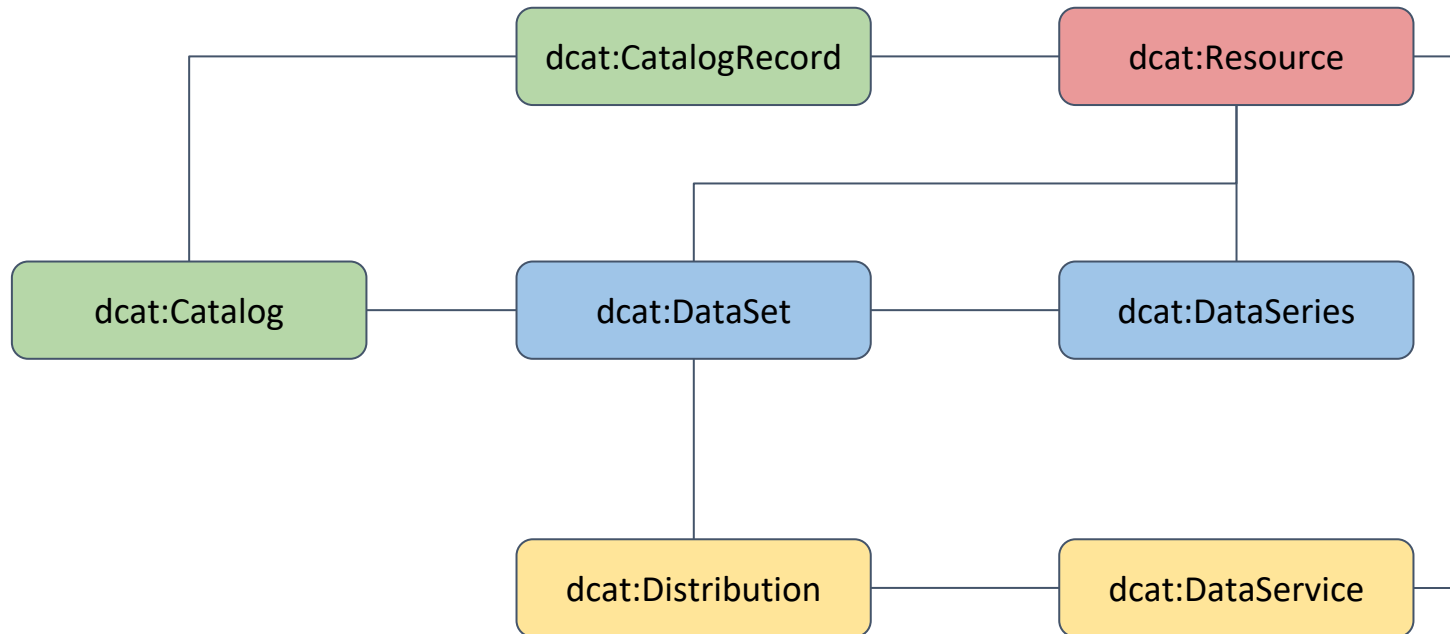
ex:EEA-CSW-Endpoint
  rdf:type dcat:DataService ;
  dcterms:type <http://inspire.ec.europa.eu/metadata-codelist/SpatialDataServiceCategory/infoCatalogue>;
  dcterms:accessRights <http://publications.europa.eu/resource/authority/access-right/PUBLIC>;
  dcterms:conformsTo <http://www.opengis.net/def/serviceType/ogc/csw>;
  dcterms:description "The EEA public catalogue of spatial datasets references the spatial datasets used by the European Environment Agency as well as the spatial datasets produced by or for the EEA. In the latter case, when datasets are publicly available, a link to the location from where they can be downloaded is included in the dataset's metadata. The catalogue has been initially populated with the most important spatial datasets already available on the data&maps section of the EEA website and is currently updated with any newly published spatial dataset."@en ;
  dcterms:identifier "eea-sdi-public-catalogue" ;
  dcterms:issued "2012-01-01"^^xsd:date ;
  dcterms:license <https://creativecommons.org/licenses/by/2.5/dk/>;
  dcterms:spatial [
    rdf:type dcterms:Location ;
    dcat:bbox "POLYGON((-180 90,180 90,180 -90,-180 -90,-180 90))"^^gsp:wktLiteral ;
  ] ;
  dcterms:title "European Environment Agency's public catalogue of spatial datasets."@en ;
  dcterms:type <http://inspire.ec.europa.eu/metadata-codelist/ResourceType/service>;
  dcterms:type <http://inspire.ec.europa.eu/metadata-codelist/SpatialDataServiceType/discovery>;
  dcat:contactPoint ex:EEA ;
  dcat:endpointDescription <https://sdi.eea.europa.eu/catalogue/srv/eng/csw?service=CSW&request=GetCapabilities>;
  dcat:endpointURL <http://sdi.eea.europa.eu/catalogue/srv/eng/csw>;
  
```

FAIRiCAT



<https://signposting.org/FAIRiCat/>

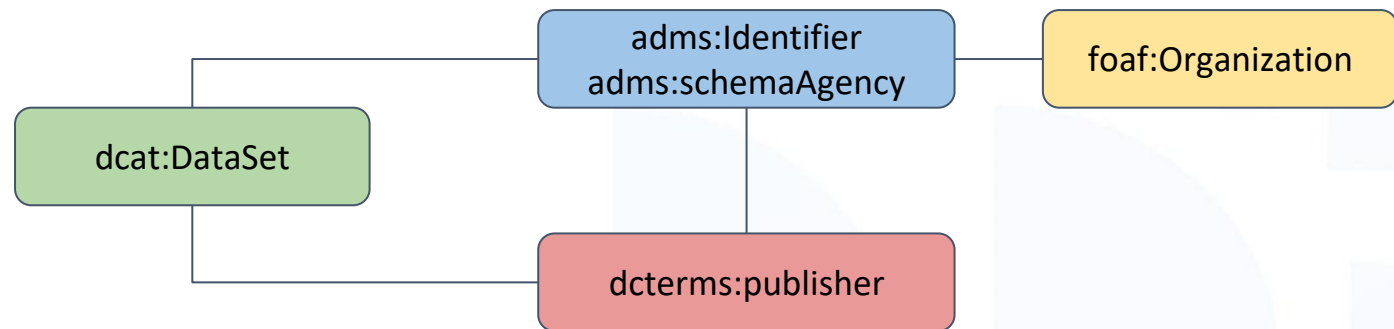
Exposing Repository information using RDF/DCAT



dcat:Catalog
dcat:catalog
dcat:dataset
dcat:record
dcat:resource
dcat:service
dcat:themeTaxonomy
foaf:homepage
::dcat:Dataset
dcat:distribution
dcat:inSeries
dcat:spatialResolutionInMeters
dcat:temporalResolution
dcterms:accrualPeriodicity
dcterms:spatial
dcterms:temporal
prov:wasGeneratedBy
::dcat:Resource
adms:status
adms:versionNotes
dcat:contactPoint
dcat:hasCurrentVersion
dcat:first
dcat:hasVersion
dcat:keyword
dcat:landingPage
dcat:last
dcat:prev
dcat:previousVersion
dcat:qualifiedRelation
dcat:theme
dcat:version
dcterms:accessRights
dcterms:conformsTo
dcterms:creator
dcterms:description
dcterms:hasPart
dcterms:identifiers
dcterms:isReferencedBy
dcterms:issued
dcterms:language
dcterms:license
dcterms:modified
dcterms:publisher
dcterms:relation
dcterms:replaces
dcterms:rights
dcterms:title
dcterms:type
odrl:hasPolicy
prov:qualifiedAttribution

Exposing PIDs

DCAT + DOI + ORCID



```

<https://dcat.example.org/id> a dcat:Dataset;
  adms:identifier <https://dcat.example.org/iddoi>;
  dcterms:publisher <https://dcat.example.org/PoelenJorritH>;
.
  
```

```

<https://dcat.example.org/iddoi> a adms:Identifier;
  skos:notation "https://doi.org/10.5281/zenodo.1486279"^^xsd:anyURI;
  adms:schemaAgency "International DOI Foundation";
  dcterms:creator ex:InternationalDOIFundation;
.
  
```

```

ex:InternationalDOIFundation a foaf:Organization;
  rdfs:label "International DOI Foundation";
  foaf:homepage <https://www.doi.org/>;
.
  
```

```

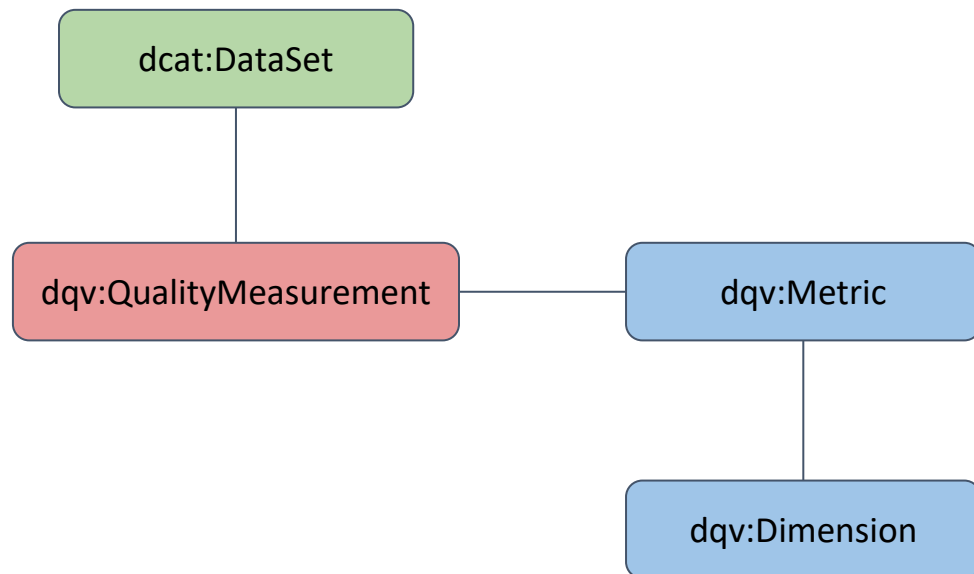
<https://dcat.example.org/PoelenJorritH> a foaf:Person;
  foaf:name "Jorrit H. Poelen";
  adms:identifier <https://dcat.example.org/PoelenJorritHID>;
.
  
```

```

<https://dcat.example.org/PoelenJorritHID> a adms:Identifier;
  skos:notation "https://orcid.org/0000-0003-3138-4118"^^xsd:anyURI;
  used if the agency has no IRI
  adms:schemaAgency "ORCID";
.
  
```

Exposing FAIR metrics & results

DCAT + DQV (Data Quality Vocabulary)



```

ex:genoaBusStopsDataset
  dqv:hasQualityMeasurement
ex:genoaBusStopsDatasetCompletenessMeasurement .
  
```

```

ex:genoaBusStopsDatasetCompletenessMeasurement a
  dqv:QualityMeasurement ;
  dqv:computedOn ex:genoaBusStopsDataset ;
  dqv:isMeasurementOf
ex:completenessWRTEExpectedNumberOfEntities ;
  dqv:value "0.683333"^^xsd:decimal ;
  prov:wasAttributedTo ex:myQualityChecker ;
  prov:generatedAtTime "2018-05-27T02:52:02Z"^^xsd:dateTime ;
  prov:wasGeneratedBy ex:myQualityChecking .
  
```

```

ex:completenessWRTEExpectedNumberOfEntities a dqv:Metric ;
  skos:definition "The degree of completeness as ratio between the
  actual number of entities included in the dataset and the declared
  expected number of entities."@en ;
  dqv:expectedDataType xsd:decimal ;
  dqv:inDimension ldqd:completeness .
  
```

Exposing FAIR metrics & results

- FAIR metrics
 - RDF (DQV)
 - Content negotiation / suffix / signposting

<https://f-uji.net/metrics/0.5.ttl>

- FAIR assessment results
 - RDF (DQV)

<https://f-uji.net/result/560.ttl>

```
<https://f-uji.net/>
  a prov:SoftwareAgent ;
  rdfs:label "F-UJI FAIR Assessment Tool" ;
  owl:versionInfo "2.2.5" .

<urn:f-uji:assessment_activity:560>
  a prov:Activity ;
  prov:wasAssociatedWith <https://f-uji.net/> ;
  prov:used "https://f-uji.net/result/560" .

<https://f-uji.net/result/560>
  a prov:QualityMetadata, dcat:Dataset ;
  prov:generatedBy <urn:f-uji:assessment_activity:560> ;
  dqv:hasQualityMeasurement "frsc:Fsf-A1-02M_score",
  frsc:Fsf-A1-02M-1_score .

frsc:Fsf-FAIR_score
  a dqv:QualityMeasurement ;
  dqv:isMeasurementOf fmet:Fsf-FAIR ;
  qb:dataSet <https://f-uji.net/result/560> ;
  dqv:computedOn <https://doi.org/10.17863/CAM.14473> ;
  dqv:value 8.125000e+1 .
```


eosc | FAIR-IMPACT
Expanding FAIR solutions across EOSC



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



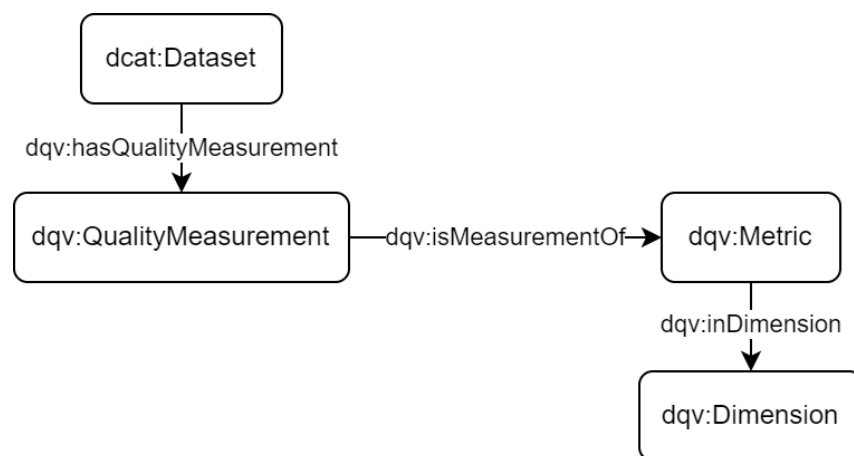
Funded by
the European Union

Backup

Exposing FAIR metrics & results

Standards & Linking:

DCAT + DQV (Data Quality Vocabulary)



EXAMPLE 42

```

ex:genoaBusStopsDataset
  dqv:hasQualityMeasurement ex:genoaBusStopsDatasetCompletenessMeasurement .

ex:genoaBusStopsDatasetCompletenessMeasurement a dqv:QualityMeasurement ;
  dqv:computedOn ex:genoaBusStopsDataset ;
  dqv:isMeasurementOf ex:completenessWRTExpectedNumberOfEntities ;
  dqv:value "0.6833333"^^xsd:decimal ;
  prov:wasAttributedTo ex:myQualityChecker ;
  prov:generatedAtTime "2018-05-27T02:52:02Z"^^xsd:dateTime ;
  prov:wasGeneratedBy ex:myQualityChecking
    
```