



Kartverket

2nd International Workshop on Spatial Data Quality

From quality on spatial data to data quality vocabulary (DQV) for the
Semantic Web - the Norwegian experience of aligning ISO 19157 Data
Quality to DQV.

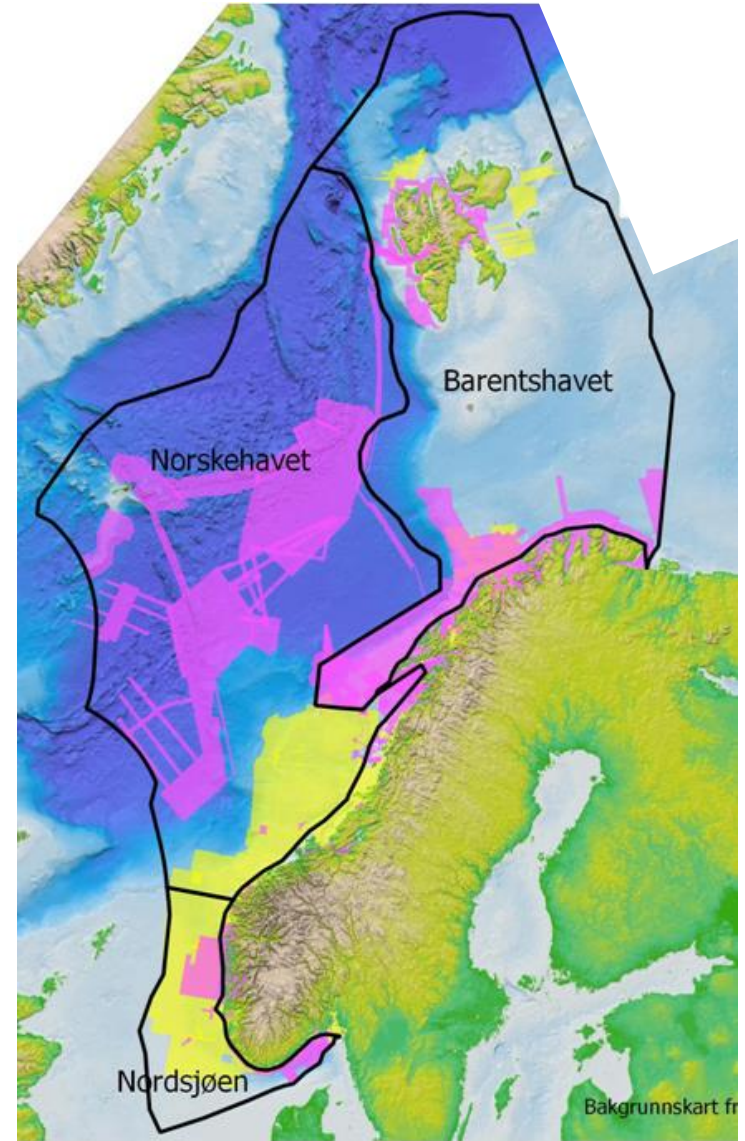
*Morten Borrebæk/Magni Busterud
Norwegian Mapping Authority*



Norway

- 5 million inhabitants
- 18 counties
- 422 municipalities
- 324 000 km² land territory
- 2 million km² sea territory
- 3275 datasets
- >200 INSPIRE datasets

What about quality??



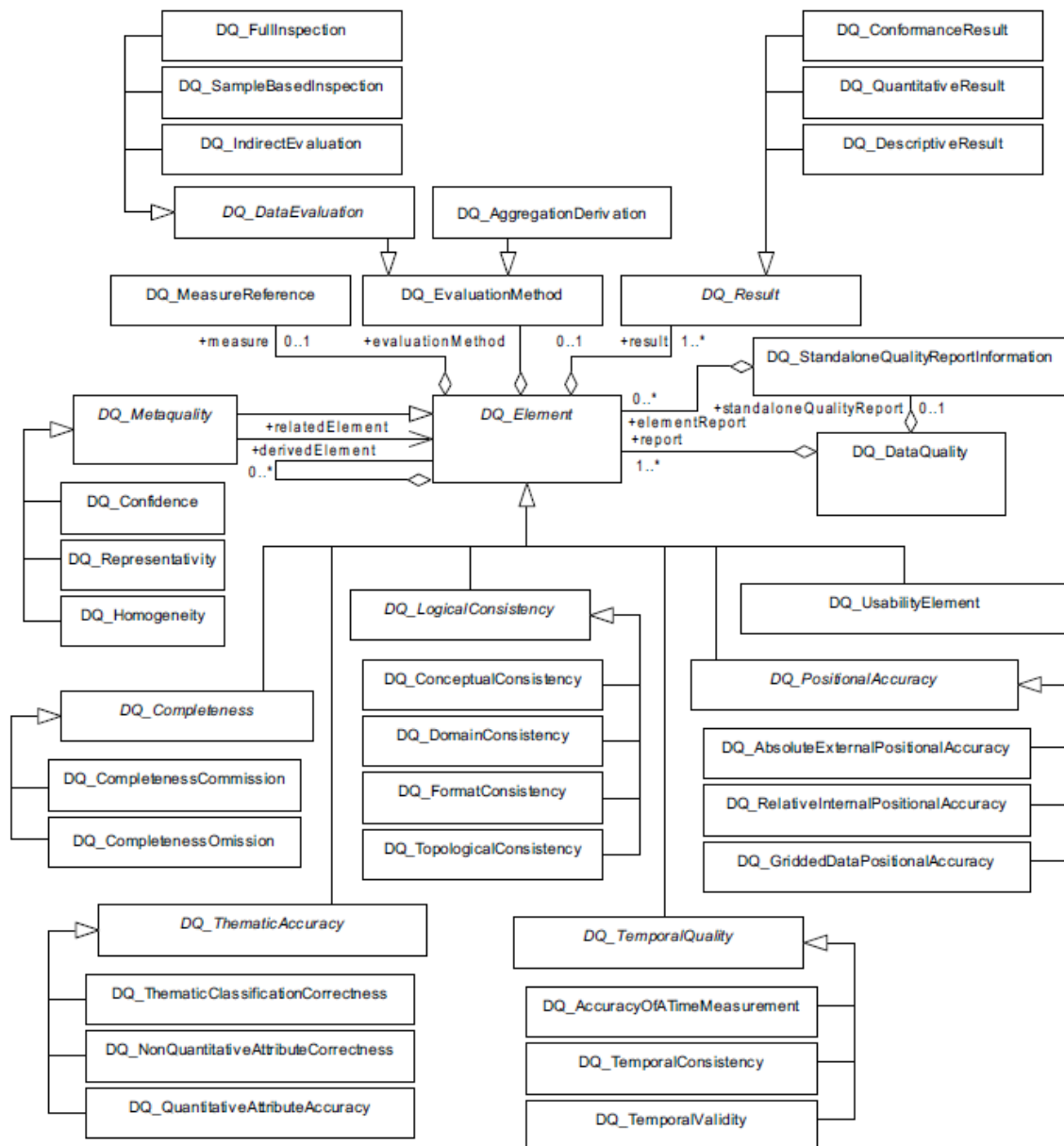
Background

Production of basis spatial data



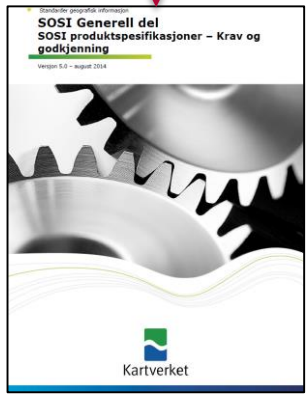
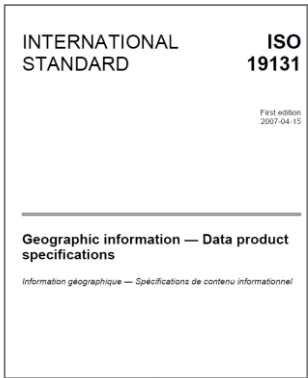
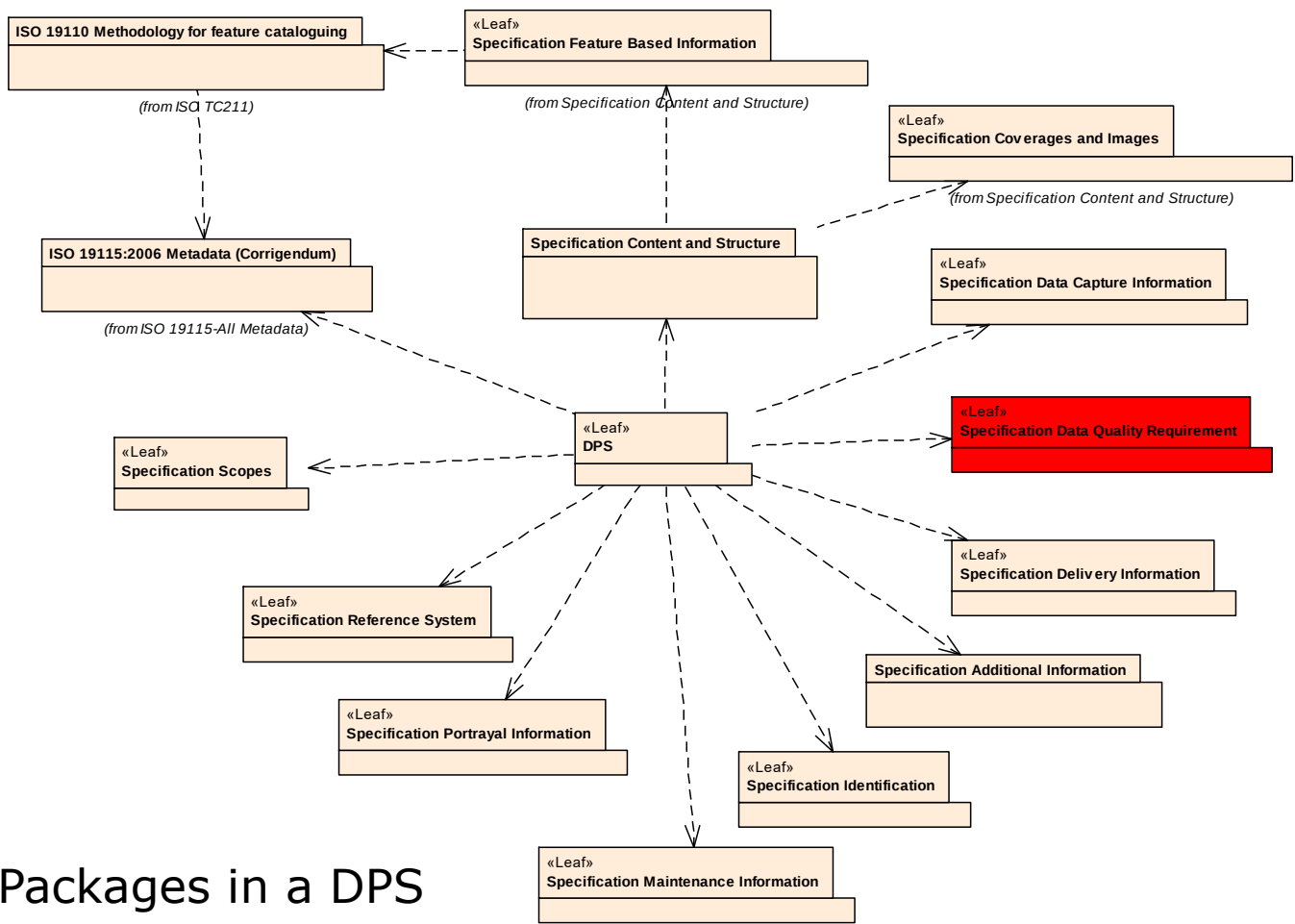
Spatial data quality

- Quality model
- Evaluation method
- Reporting
- Conformance tests
- National register of quality measures

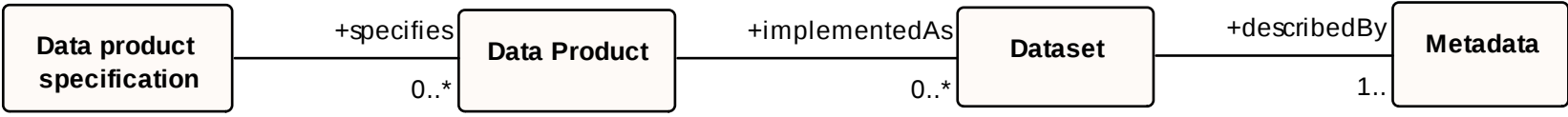


ISO 19157:2013 Data Quality

Background



Packages in a DPS



Status (Geonorge.no)

Viser 1 - 50 av 144 treff

Lagre som:

CSV

Lagre

Tittel	Eier	Temagruppe	          
Administrative enheter	Kartverket	Basis geodata	          
Akvakultur - lokaliteter	Fiskeridirektoratet	Kyst og fiskeri	          
Ankringsområder	Kystverket	Kyst og fiskeri	          
Anlegg med farlig stoff	Direktoratet for samfunnssikkerhet og beredskap	Samfunnssikkerhet	          
Arealbruk	Statistisk sentralbyrå	Befolkning	          
Arealressurskart - AR50 - Arealtyper	Norsk institutt for bioøkonomi	Landbruk	          
Arter av nasjonal forvaltningsinteresse	Miljødirektoratet	Natur	          
Barmarksløyper	Fylkesmannsembetene	Samferdsel	          
Barnetråkk	Kartverket	Befolkning	          
Befolkning på rutenett 1000 m	Statistisk sentralbyrå	Befolkning	          

Not all products have a product specification
Not all product specifications have quality requirements

Still a long way to go!

Spatial data and eGovernment in Norway

1st priority: Data Catalog

Other domain-specific catalogues

<https://kartkatalog.geonorge.no/search>



Spatial data

GEONORGE



**FELLES
DATAKATALOG**

<https://fellesdatakatalog.brreg.no/datasets/>

<https://www.europeandataportal.eu/>



**EUROPEAN
DATA PORTAL**



EU Open Data Portal

<https://data.europa.eu/euodp/en/data/>



INSPIRE GEOPORTAL

Enhancing access to European spatial data

<http://inspire-geoportal.ec.europa.eu/>

Spatial data and eGovernment in Norway

Information management



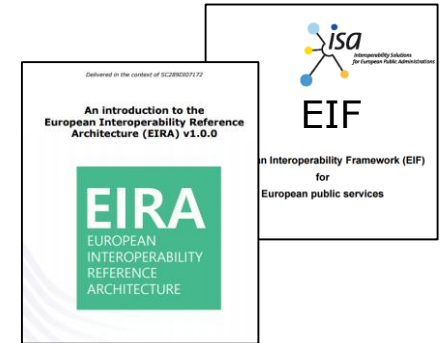
URI-pattern
(TOGAF/
ARCHIMATE)



ISA²

Interoperability solutions for public administrations, businesses and citizens

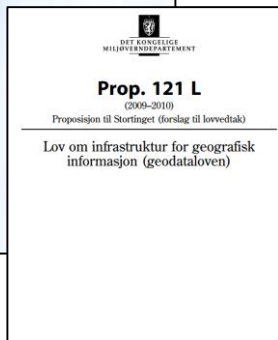
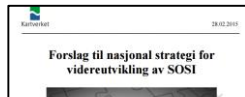
131 Million Euro
(2016-2020)



ICT policy

BC
(semantic web)

Geospatial solutions
(983K Euro)

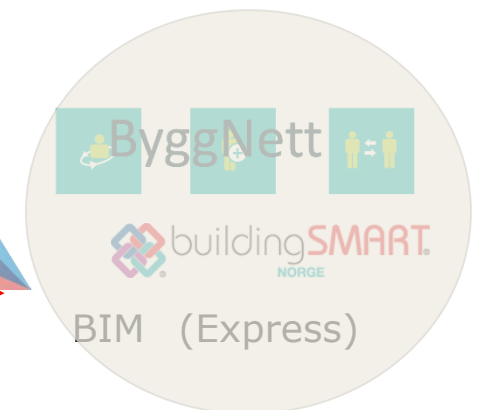


GIS

(UML)

ISO/TC
211 - OGC

ISO/TC 59/SC13
and CEN/TC 442





Quality in eGovernment

There is a «strong» national recommendation to describe quality of datasets in the catalogue of public sector datasets.

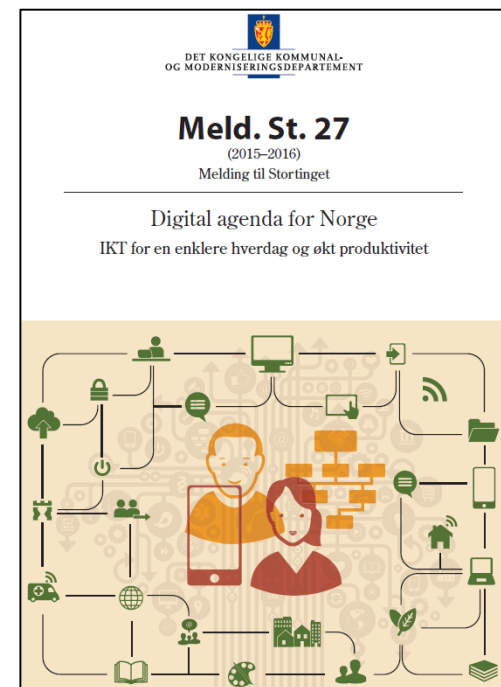
When the public sectors have described quality in their datasets, it shall be implemented in the catalogue.

The DCAT Application Profile for data portals (DCAT-AP) is a specification based on the [Data Catalogue vocabulary \(DCAT\)](#).

DCAT-AP provides a common specification for describing public sector datasets in Europe to enable the exchange of descriptions of datasets among data portals.

DCAT-AP has an extension [GeoDCAT-AP](#) for describing geospatial datasets, dataset series and services.

Quality will be implemented as an extension to the DCAT-AP-NO profile.



Digital agenda Norway

Automatic processing and digital services can be improved and made more efficient with good access to quality controlled data from public sector datasets.

International standard ontology

https://github.com/ISO-TC211/GOM/tree/master/isotc211_GOM_harmonizedOntology/19157/2013

ISO-TC211 / GOM

Watch 14 Star 8 Fork 5

<> Code ! Issues 4 Pull requests 0 Projects 0 Wiki Insights

Branch: master GOM / isotc211_GOM_harmonizedOntology / 19157 / 2013 / Create new file Upload files Find file History

BrodeurJS ISO 19157:2013 ontologies Latest commit 8fdefb3 on Nov 23 2017

..		
ISO19157_2013DataQuality.rdf	ISO 19157:2013 ontologies	2 months ago
catalog-v001.xml	ISO 19157:2013 ontologies	2 months ago
iso19157DataQuality.rdf	ISO 19157:2013 ontologies	2 months ago
iso19157DataQualityConcepts.rdf	ISO 19157:2013 ontologies	2 months ago
iso19157DataQualityEvaluation.rdf	ISO 19157:2013 ontologies	2 months ago
iso19157DataQualityMeasures.rdf	ISO 19157:2013 ontologies	2 months ago
iso19157DataQualityResult.rdf	ISO 19157:2013 ontologies	2 months ago
iso19157Metaquality.rdf	ISO 19157:2013 ontologies	2 months ago

Derived from the UML models in ISO 19157 Data Quality, applying the mapping rules in ISO 19150-2:2015, which defines the conversion of the UML static view modeling elements used in the ISO geographic information standards into OWL/RDF.

Data Quality vocabulary (DCAT)

Provided by W3C, draft document that may be updated, replaced or obsoleted by other documents at any time.

It provides a framework in which the quality of a dataset can be described, whether by the dataset publisher or by a broader community of users. It does not provide a formal, complete definition of quality, rather, it sets out a consistent means by which information can be provided such that a potential user of a dataset can make his/her own judgment about its fitness for purpose.

Mapping to ISO/IEC 25012:2008 Software engineering -- Software product Quality Requirements and Evaluation (SQuaRE) -- Data quality model. No mapping to ISO 19157 Data Quality

Data on the Web Best Practices: Data Quality Vocabulary

W3C Working Group Note 15 December 2016



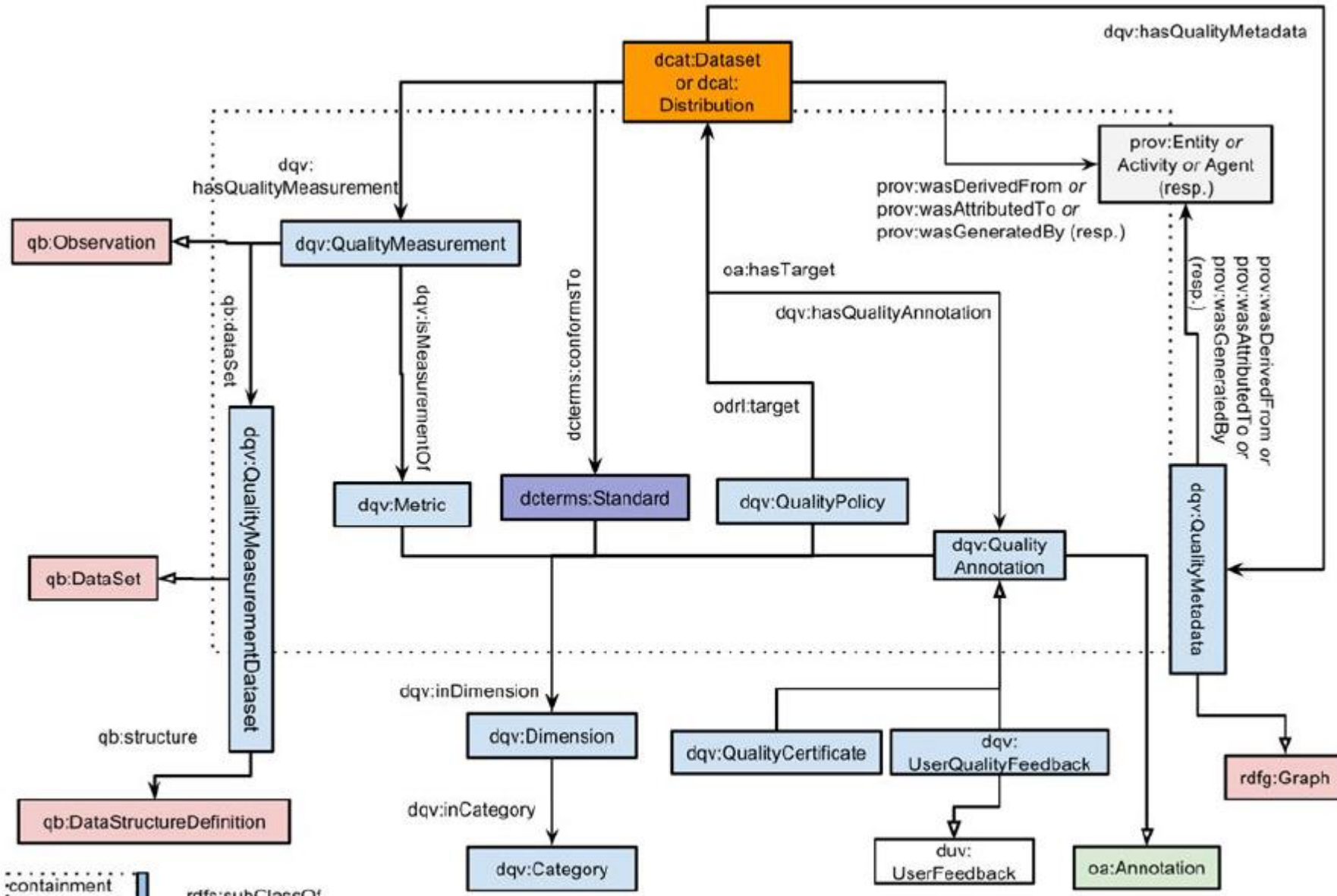
This version:

<https://www.w3.org/TR/2016/NOTE-vocab-dqv-20161215/>

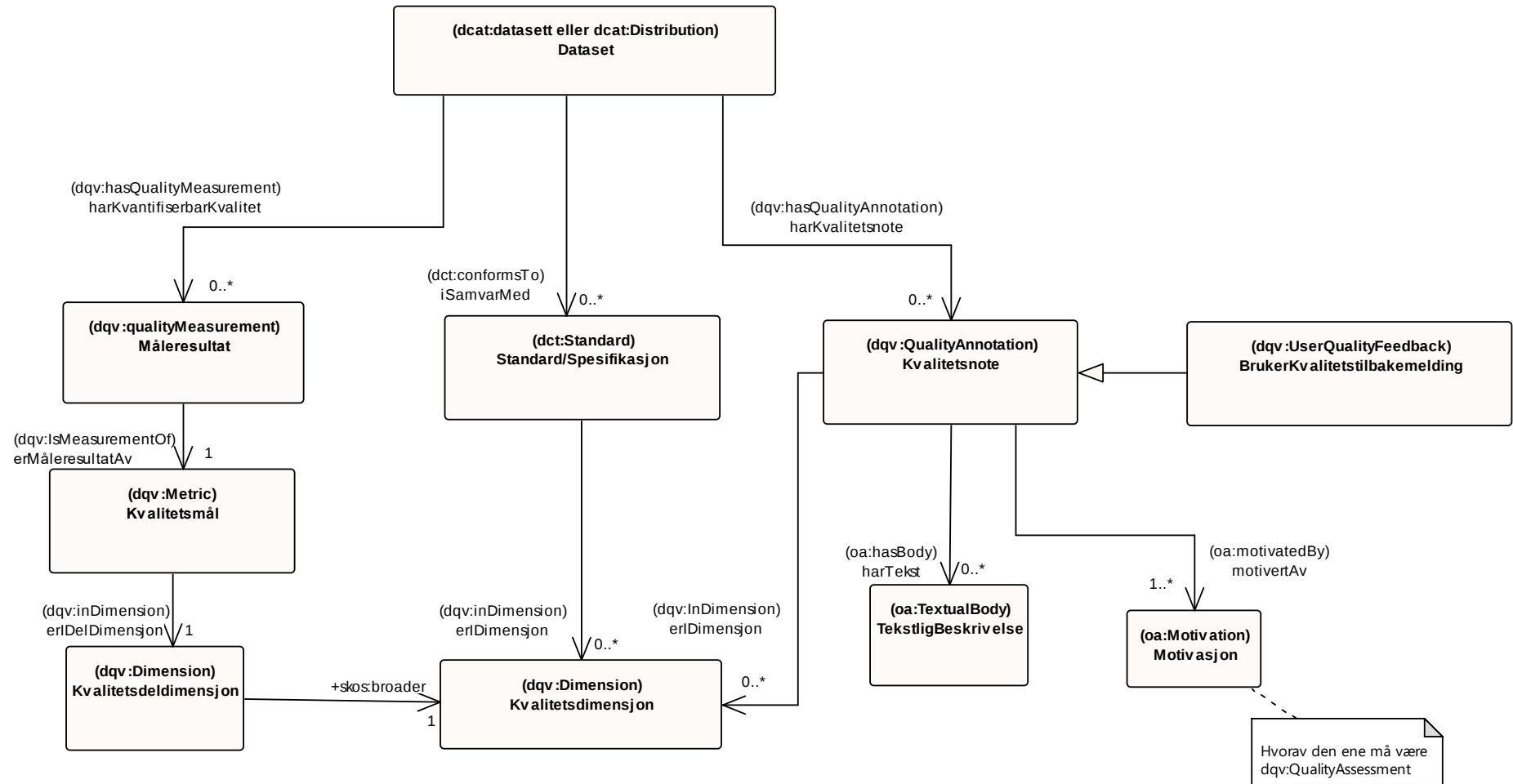
Latest published version:

<https://www.w3.org/TR/vocab-dqv/>

The model shows the most relevant classes in DQV (source: W3C DQV).



Quality in eGovernment



Examples:

Quality sub-dimension	RDF
Currenttness	<pre><> dqv:hasQualityAnnotation [a dqv:QualityAnnotation ; # kvalitetsnote dqv:inDimension iso:Currenttness ; oa:hasBody [rdf:value="Enhetsregisteret er kontinuerlig oppdatert, men egenskapen antall ansatte oppdateres månedlig fra Aa-registeret"@no;] .] .</pre>
Conformance	<pre><> dcat:conformsTo [skos:prefLabel "Produktspesifikasjon NVE flomsoner 1.0"@no rdfs:seeAlso http://sosi.geonorge.no/Produktspesifikasjoner/Produktspesifikasjon_NVE_Flomsoner_1%200.pdf] .</pre>

Examples:

Quality sub-dimension	RDF
Completeness	<pre><> dqv:hasQualityAnnotation [a dqv:QualityAnnotation ; dqv:inDimension iso:Completeness ; oa:hasBody [rdf:value="Enhetsregisteret inneholder ikke slettede selskaper før 1994."@no;] .] .</pre>