

# ASSESSMENT SUMMARY

Data Catalogue Vocabulary (DCAT)

## TABLE OF CONTENTS

Data Catalogue Vocabulary (DCAT) .....	1
<b>1. INTRODUCTION</b> .....	<b>3</b>
<b>2. ASSESSMENT SUMMARY</b> .....	<b>3</b>
<b>3. ASSESSMENT RESULTS</b> .....	<b>7</b>
<b>4. ASSESSMENT OBSERVATIONS</b> .....	¡ERROR! MARCADOR NO DEFINIDO.

## TABLE OF FIGURES

Figure 1 Assessment Results – Interoperability Principles .....	7
Figure 2 Assessment Results – Interoperability Layers .....	8

## 1. INTRODUCTION

The assessment of **Data Catalog Vocabulary (DCAT)** has been carried out by the CAMSS Team using the CAMSS EIF assessment scenario. The purpose of this scenario is assessing the compliance of a standard or technical specification with the European Interoperability Framework (EIF)<sup>1</sup>.

The present document is a summary of the assessment. Additionally, it includes the observations gathered throughout the assessment process and an interpretation of the results of the assessment

## 2. ASSESSMENT SUMMARY

The Data Catalogue Vocabulary (DCAT) is an RDF vocabulary that was designed to ease the interoperability between data catalogues published on the internet. The adoption of DCAT allows publishers to describe datasets and services included in a catalogue by using a standard model and vocabulary which eases data aggregation and consumption of metadata by other stakeholders.

DCAT was originally designed and developed under eGovernment Data Catalogues. However, it can be used in other contexts as DCAT has evolved. The vocabulary includes classes (expressed in RDF), that allow describing resources in order to include within a data catalogue.

The DCAT's use, meaning use a standard and vocabulary for dataset descriptions eases the consumption and aggregation of metadata. This fact works in order to increase the discoverability of datasets or services, and the federated research through different catalogues and sites.

The specification has been developed by World Wide Web Consortium (W3C), which is an international community concerned with evolving the World Wide Web by developing protocols and guidelines to ensure and enhance its growth.

The Technical Specification is compliant with the **principle setting the context for EU actions on interoperability**:

- **Subsidiarity and proportionality**

DCAT has been included within national catalogues of the Netherlands and Spain. In both cases, they are fully aligned with their NIFO and EIF.

The Technical Specification is compliant with the **core interoperability principles**:

- **Openness**

The adoption of DCAT eases the publication of open data according to its purpose, which increases the discoverability of datasets included in catalogues and enhances its research through different systems.

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<sup>1</sup> [https://ec.europa.eu/isa2/eif\\_en](https://ec.europa.eu/isa2/eif_en)

The development process has been developed for W3C<sup>2</sup> in order to make it accessible to the different stakeholders and as well it is including a public review. Moreover, W3C is the developer community through the maintenance and development is done.

It is worth to note that DCAT has strong support from interest groups and it is widely used for the data across borders. Additionally, DCAT has been extended in order to meet domain-specific or national requirements<sup>3</sup>. The specification is a relevant asset for the innovative solutions regarding the publication of Linked Open Data.

In terms of availability, DCAT is publically available for free at W3C's webpage<sup>4</sup>. It is licensed under the royalty-free basis for its implementation or study.

#### - **Transparency**

DCAT allows the exchange of datasets metadata, increasing the discoverability, searchability, and reuse of existing data. Moreover, CKAN is an existing European project that consists of a data management system for data publishers with the aim to make their data open and available. Additionally, an extension of DCAT has been developed to expose and consume metadata using DCAT interfaces<sup>5</sup>.

#### - **Reusability**

The DCAT is publically available for its use for free at W3C's website and Github<sup>6</sup>. Furthermore, DCAT is domain-agnostic which allows to use it for describing datasets independently from the business domain.

#### - **Technological neutrality and data portability**

DCAT can be used for large amounts of data without hampering the interoperability and scalability of systems using it. Moreover, DCAT supports the evolution of European Public Services by means of enhancing the searchability and discoverability of data across borders.

However, as most vocabularies, DCAT reuses existing ones (e.g. "foaf", "adms"). This poses a risk of hampering interoperability when new releases of involved vocabularies involved are not backward compatible.

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<sup>2</sup> <https://www.w3.org/2018/Process-20180201/#Policie>

<sup>3</sup> [https://www.w3.org/2011/gld/wiki/DCAT\\_Implementations](https://www.w3.org/2011/gld/wiki/DCAT_Implementations)

<sup>4</sup> <https://www.w3.org/TR/vocab-dcat-2/>

<sup>5</sup> <https://extensions.ckan.org/extension/dcat/>

<sup>6</sup> <https://github.com/w3c/dxwg/> ; <https://www.w3.org/TR/vocab-dcat-2/#introduction>

The Technical Specification is partially compliant with the **principles related to generic user needs and expectations**:

- **User-centricity**

DCAT as a cross-sector and cross-border vocabulary eases government reuse of data, therefore, it fosters the implementation of OOP<sup>7</sup>.

- **Inclusion and accessibility**

The purpose of DCAT is not related to fostering e-accessibility

- **Security and privacy**

DCAT is supporting the secure and trustworthy data exchange by providing metadata, such metadata improves the reliability of data exchange between administrations and its stakeholders.

- **Multilingualism**

The purpose of DCAT is not related to the delivery of multilingual European Public Services.

The Technical Specification is compliant with the **foundation principles for cooperation among public administrations**:

- **Administrative Simplification**

DCAT was developed to ease the reuse of resources among administrations, enhance the interoperability between them and beat the cross-border limitations. Furthermore, free availability to implement and use reduce the administrative burden.

- **Preservation of information**

DCAT's allowing the description of catalogues datasets, metadata aggregated with DCAT can serve as manifest file as part of the digital preservation process.

- **Assessment of effectiveness and efficiency**

There is an existing report<sup>8</sup> from the European Public Sector Information Platform assessing the impact of use of DCAT on European Open Data Catalogues.

The Technical Specification is partially compliant with **interoperability layers**:

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<sup>7</sup> <https://joinup.ec.europa.eu/solution/dcat-application-profile-data-portals-europe/release/11>

<https://www.difi.no/> ; [https://ec.europa.eu/isa2/dcat-ap-key-european-data-publishers-reach-data-consumers-and-create-european-open-data-ecosystem\\_en](https://ec.europa.eu/isa2/dcat-ap-key-european-data-publishers-reach-data-consumers-and-create-european-open-data-ecosystem_en)

<sup>8</sup> [https://www.europeandataportal.eu/sites/default/files/2013\\_impact\\_of\\_standards\\_in\\_european\\_data\\_catalogues.pdf](https://www.europeandataportal.eu/sites/default/files/2013_impact_of_standards_in_european_data_catalogues.pdf)

- **Interoperability governance**

DCAT can be mapped with the EIRA's "Data Publication Component" and "Data publication Service" ABBs included on EIRA Semantic View. Moreover, the specification is recommended and included in two Member States' Catalogues<sup>9</sup>. Despite having been included in MS's catalogues, it is not included in any catalogue at European Level.

In terms of implementation conformity, there are existing tools for the assessment and validation of DCAT implementations<sup>10</sup>. Additionally, DCAT can be considered as included in a cross-border initiative as is the basis for DCAT-AP.

- **Integrated public service governance**

There is no explicit and stated agreement between the different organisations involved in the European Public services provision.

- **Legal interoperability**

After checking assessments carried out in order to verify DCAT's compliance with European Standardisation regulation 1025/2012, no assessments have been found verifying DCAT's compliance.

- **Organisational interoperability**

The purpose of DCAT is not related to defining organisational interoperability aspects.

- **Semantic interoperability**

DCAT is available for its use and implementation on Joinup, the collaborative platform for created by the European Commission for its use and implementation<sup>11</sup>. Moreover, DCAT has been developed for the publication of Linked Open Data by the W3C Government Linked Data Working Group and it is defining a cross-sector and cross-border reusable vocabulary.

- **Technical interoperability**

This technical interoperability layer is covered by the core interoperability principle "Openness".

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<sup>9</sup> <https://www.forumstandaardisatie.nl/open-standaarden/lijt>

[https://administracionelectronica.gob.es/pae\\_Home/dam/jcr:9e2c2877-5103-4934-8440-c60ba2e10c48/Catalogue\\_of\\_Standards\\_NIF\\_Spain.pdf](https://administracionelectronica.gob.es/pae_Home/dam/jcr:9e2c2877-5103-4934-8440-c60ba2e10c48/Catalogue_of_Standards_NIF_Spain.pdf)

<sup>10</sup> <http://www.dcat.be/validator/> ; <https://www.npmjs.com/package/dcat-validator> ;  
<https://joinup.ec.europa.eu/solution/dcat-ap-validator>

<sup>11</sup> <https://github.com/w3c/dxwg>

### 3. ASSESSMENT RESULTS

This section presents an overview of the results of the CAMSS assessments of DCAT. The Assessment “Strength” indicator measures the reliability of the assessment by calculating the number of applicable criteria. On the other hand, the number of favourable answers and the number of unfavourable ones are used to calculate the “Automated Score” per categories.

Category	Automated Score	Assessment Strength	# Favourable	# Unfavourable	# Not Applicable
Principle setting the context for EU actions on interoperability	100%	100%	1	0	0
Core interoperability principles	94%	100%	15	1	0
Principles related to generic user needs and expectations	100%	50%	2	0	2
Foundation principles for cooperation among public administrations	100%	100%	3	0	0
Interoperability layers	85%	91%	17	3	2
<b>Overall Score</b>	<b>88%</b>	<b>89%</b>	<b>29</b>	<b>4</b>	<b>4</b>

The results of the CAMSS assessment, with an 89% Assessment Strength, can be considered as representative of the specification attributes. The Overall Automated Score is 88%; DCAT is compliant with the foundation principles for cooperation among public administrations, the principles related to generic user needs and expectations, and with the principle setting the context for EU action on interoperability. However, it is partially compliant with the core interoperability principles, and the interoperability layers.

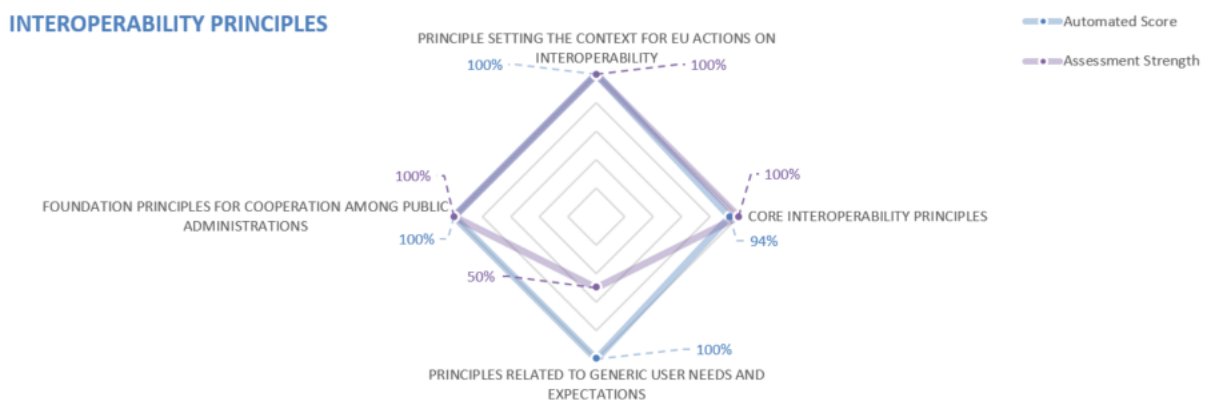


Figure 1 Assessment Results – Interoperability Principles

## INTEROPERABILITY LAYERS

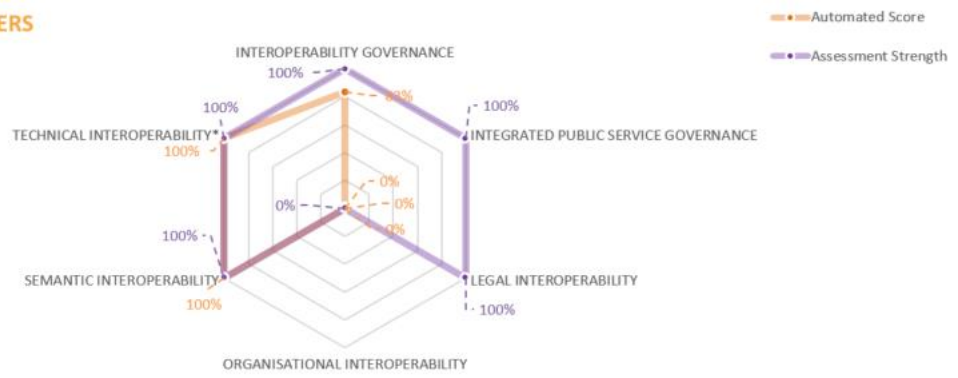


Figure 2 Assessment Results - Interoperability Layers