
## CAMSS - Solutions

# Core Standards and Specifications Vocabulary

(CSSV) v1.1.0

## Specification

*Directorate-General for Informatics*

ISA²

## CHANGE CONTROL

| Modification | Details |
|---|---|
| **Version 1.0.0** | The CSSV reuses the latest version of DCAT 3.0. |

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|---|---|---|---|

# TABLE OF CONTENTS

# TABLE OF FIGURES

# 1

# INTRODUCTION

# 1. INTRODUCTION

The CSSV is the vocabulary used for the information exchange related to standards and specifications amongst software solutions. Additionally it is the key element for the development of new release of the EIRA Library of Interoperability Specifications (ELIS).

## 1.1. Context

The ISA[2] Programme of the European Commission supports the development of solutions that enable the cross-border delivery of interoperable public services in Europe. In order to ensure the interoperability of those services, the EIA action works as an integrator between the Member States and other departments of the European Commission for the development of a joint interoperability architecture for public services. The main output of this action is the European Interoperability Reference Architecture (EIRA©[1]).

As an element of EIRA©, the EIRA Library of Interoperability Specifications (ELIS[2]) was created. The ELIS contains the specifications describing the interoperability requirements of the architecture building blocks (ABBs) that conform to EIRA©.

At the core of the ELIS, is another asset developed in the context of the CAMSS[3] action that will be referenced, and has been further developed: the **Core Standards and Specifications Vocabulary (CSSV).**

## 1.2. The Problem Statement

| | |
|---|---|
| **The problem statement** | At the present stage, there are no clear definitions of a specification, a standard, a family of specifications, and application profiles. Similarly, it is not clearly expressed how the standards and specifications are related, as well as their purposes and constraints. Moreover discovering and cataloguing interoperability assets – such as EIRA building blocks – with standards and specifications that support their development is currently a difficult and time-consuming task. |
| **This affects** | all European public administrations, citizens, among others, that need to use or reference specifications, for the description of specifications, in order to facilitate their identification, use, cataloguing, and exchange between systems (e.g. ELIS). |
| **The impact of which is** | that the building of electronic catalogues is hampered by problems occurring during the discovery and cataloguing of specifications. This impacts the research of specifications in the catalogue and the users researching specifications. Ultimately, the difficulty in identifying and information about the specifications hinders its reuse, the possibility of assessing the conformance of the specifications to regulated purposes and |

[1] EIRA: https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira/about
[2] ELIS: https://joinup.ec.europa.eu/release/eira-library-interoperability-specifications-elis/v100-beta
[3] CAMSS: https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/about

| | |
|---|---|
| | frameworks (scenarios), and therefore, to formally support other needs and developments. |
| **A successful solution would be** | to come up with a common vocabulary able to clearly define the main concepts related to standards and specifications. |

## 1.3. Scope

The objective of this document is to provide an interoperability oriented solution for the information exchange related to standards and specifications amongst software solutions, the Core Standards, and Specifications Vocabulary.

The CSSV specified in this document has been developed with inputs from different sources, namely, the works developed for the ISA2's CAMSS Action, interested MS, the Semantic Interoperability Community (SEMIC) action of the ISA$^2$ Programme, and IT consultants working for the European Commission.

## 1.4. Proposed solution

The CSSV defined in this document is a minor release of the vocabulary created in the past for the development of the ELIS.

## 1.5. Structure of this document

This document consists of the following sections.

- Section 2 describes the related solutions to the Core Standards and Specifications Vocabulary (CSSV).
- Section 3 explains the CSSV model and identifies the classes and properties defined for the vocabulary.
- Section 4 contains the Conformance Statement for this vocabulary.
- Section 5 describes specific accessibility and multilingualism aspects.
- Section 6 lists the different acronyms used in the entire document.
- Section 7 contains related references.

# 2

# RELATED SOLUTIONS

# 2. RELATED SOLUTIONS

This section lists the different related solutions to the CSSV. Note that some are still under development.

## 2.1. CAMSS Ontology1

The Common Assessment Method for Standards and Specifications (CAMSS) and is an action of the ISA2 Programme[2].

The CAMSS Ontology defines the CAMSS terminology and axioms that define the CAMSS concepts and logic rules. The interpretation of the CAMSS concepts describe a clear idea of the method defined in CAMSS to assess standards and specifications.

The CAMSS Ontology is currently under development.

## 2.2. Core Assessment Vocabulary (CAV)3

The Core Assessment Vocabulary represents, expresses, and defines what an “Assessment” of “Assets” is and how to perform the assessment based on “Criteria”. It is a domain-agnostic vocabulary, meaning that it can be used to assess any asset. For this reason, the CAV is at the core of the CAMSS Ontology. Stated differently, the CAMSS Ontology reuses and extends the CAV.

The CAV is also under development.

## 2.3. EIRA Library of Interoperability Specifications (ELIS)

The ELIS is a family of interoperability specifications that define the interoperability aspects of the Architecture Building Blocks (ABBs) contained in EIRA©. It aims to support architects in the modelling of solutions based on EIRA©. The current version of ELIS will have to be slightly revamped to accommodate the concepts defined in the CSSV and support the requirement of all stakeholders, e.g. EIRA-based solution developer needs, NATO profiles, others.

## 2.4. Data Catalogue Vocabulary (DCAT)4

The Data Catalogue Vocabulary (DCAT) is used to describe public sector datasets in Europe. This vocabulary has been developed by the W3C. DCAT can be used to describe any type of asset (treated as a dataset, especially when considering that metadata is also data).

The figure below shows the DCAT conceptual data model with its classes and properties.

[1] CAMSS Ontology: https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/camss-ontology
[2] Achieving a modern standard ICT standardisation policy; CAMSS Action 2016.27: https://ec.europa.eu/isa2/actions/achieving-modern-ict-standardisation-policy_en.
[3] Core Assessment Vocabulary: https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/core-assessment-vocabulary-cav
[4] DCAT: https://www.w3.org/TR/vocab-dcat-2/

In the CSSV model, the class Specification can be considered the “root” class and is a “Resource” as defined under DCAT.

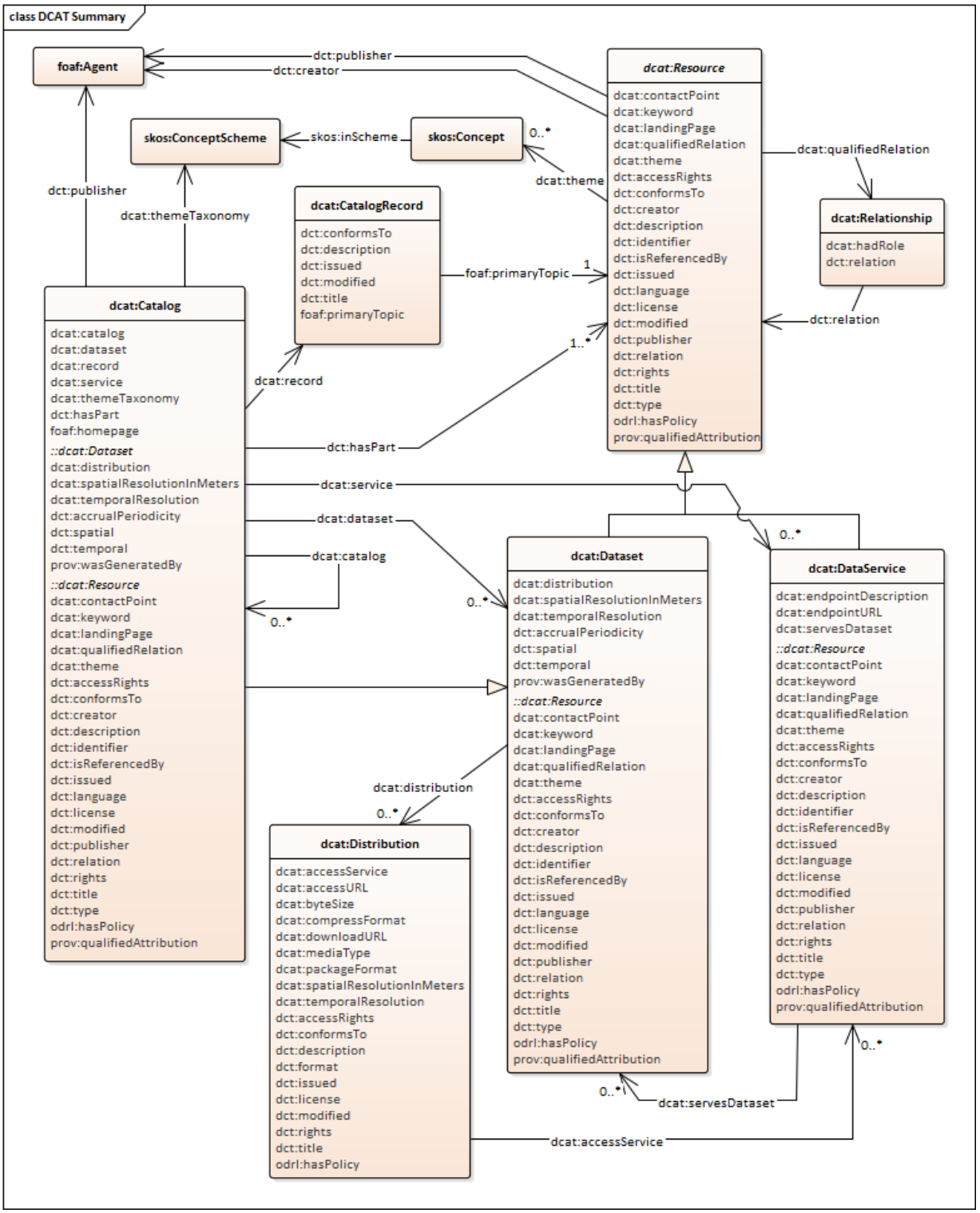


*Figure 1: DCAT classes and properties*

# 3

# CORE STANDARDS AND SPECIFICATIONS VOCABULARY

# 3. CORE STANDARDS AND SPECIFICATIONS VOCABULARY

The Core Standards and Specifications Vocabulary is depicted in Figure 2 CSSV Data model. The figure shows the classes and properties used or defined in the CSSV.

## 3.1. Data Model for the CSSV

The following data model results from:

- the analysis performed by the CAMSS Team;
- the review of the comments issued by the open community in the public GitHub;
- the comments issued by external experts during the review of the next of the Core Assessment Vocabulary (CAV).

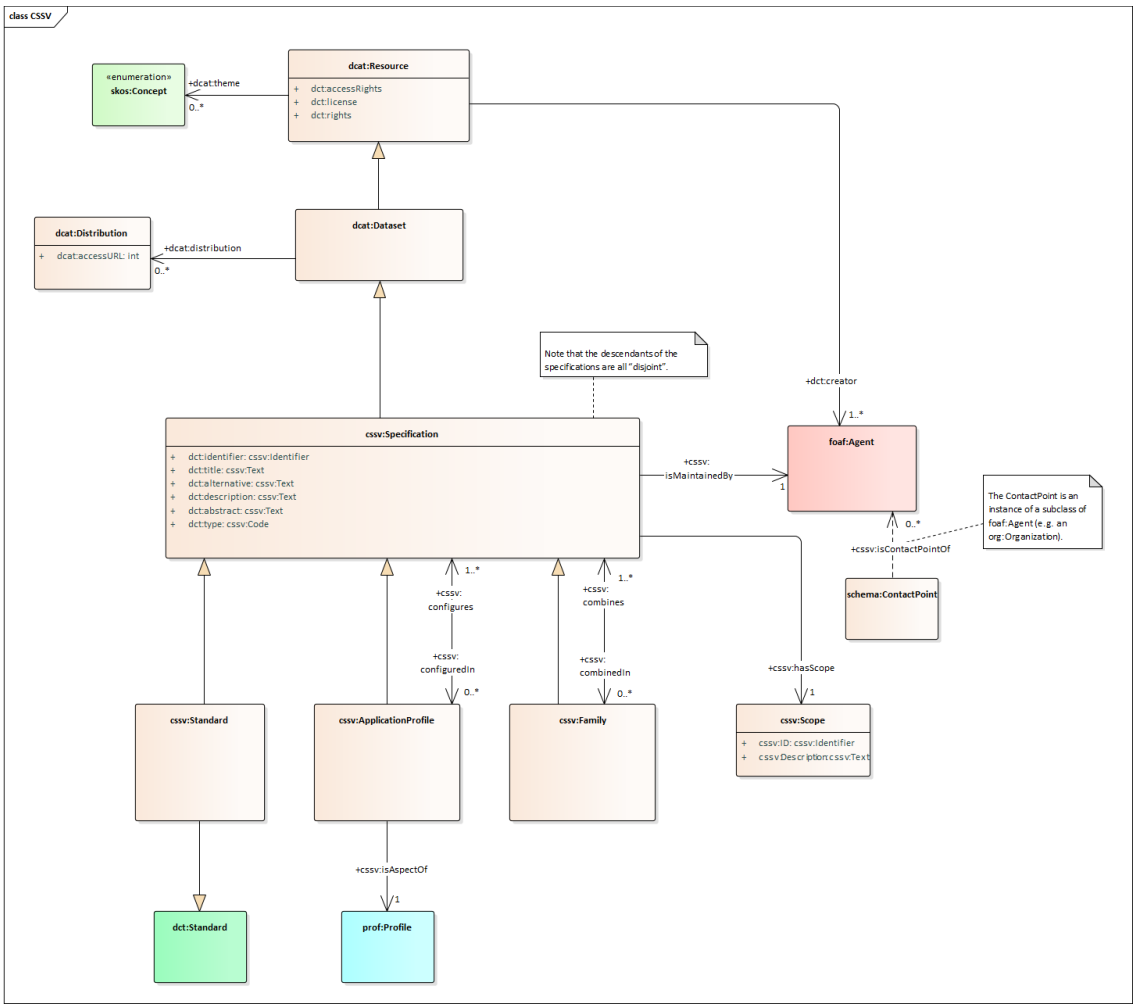


*Figure 2: CSSV Data model*

### 3.1.1. Interpretation

The main class of the CSSV model is “Specification”. A Specification is an asset, as it inherits from the *dcat:Dataset*, which inherits from the *dcat:Resource*.

A Specification can be a Standard, an ApplicationProfile, and/or a Family or a collection of other specifications.

The CSSV model defines the following.

- A **Specification** as a set of agreed, descriptive, and normative statements about how a specification should be designed or made.
- A **Standard** as a specification that is largely adopted and possibly endorsed.
- An **ApplicationProfile** as customisation of one or more existing specifications potentially for a given use case or a policy domain adding an end-to-end narrative describing and ensuring the interoperability of its underlying specification(s). By customisation, we understand the “addition of more specificity by identifying mandatory, recommended, and optional elements, as well as by defining controlled vocabularies to be employed”.
- A **Family** as a collection of interrelated and/or complementary specifications, standards or application profiles and the explanation of how they are combined, used, or both.

A collection of Specifications differs from a Family of Specifications in that the relationship amongst them is not explicit. In the CSSV model, a collection of Specifications is an Asset that is related to other Assets and that is realised as an individual of a Specification. In other words, a Specification that reuses the *dct:relation* property of its base class *dcat:Dataset*.

There are occasions where collections of Specifications are applied to a context or a domain in a specific “configuration”. In this circumstance application profiles may conform sets of “themed” specifications. For this, the CSSV model uses the property “configures/includedIn” and the *dcat:theme* property pointing at a *skos:Concept* (i.e. a code, see the DCAT model above).

It is important to note that the descendants of the specifications are all “disjoint”. Thus, ApplicationProfiles and Families are Specifications that refer to, or are put together with other Specifications and/or Standards, but cannot themselves be considered Standards.

One Specification, in time, may become a Standard. In these cases, the authority (author) that defined the Specification may be different from the one that creates and maintains artefacts out of the Standard. Think for example of the artefacts produced, maintained, and distributed by the Publications Office of the European Union (OP) in its site EU Vocabularies[1]: all these artefacts are defined by other authorities (e.g. the ISO), whilst the artefacts (e.g. the controlled vocabularies expressed in SKOS, XML, GeneriCode, XML, etc.) are supplied by the OP. For this, the CSSV uses the properties *dct:creator* and *cssv:isMaintainedBy*. Additionally, the

[1] EU Vocabularies: https://publications.europa.eu/en/web/eu-vocabularies/controlled-vocabularies

*dcat:Dataset* has the property *dct:type* that can be used to state that the Specification is of type "definition, artefact or other". The DCAT vocabulary also provides the possibility to express who is responsible for the publication of the definition, or the artefacts via the property *dct:publisher* (see the DCAT model).

The maintainer or publisher of a Specification is a *foaf:Agent*, which allows great flexibility to the CSSV model as *foaf:Agent* is the base class in many ontologies. The CSSV puts forward the reuse of the Core Person Vocabulary (ISA$^2$ CPV) and the Organization Ontology (W3C Org) for this purpose. Also, the *foaf:Agent* additionally provides the contact point of the specification.

In terms of reusability, the class *cssv:Scope* allows the reuse of the Specification. It refers to the area of requirements addressed by the specification.

Concerning the Intellectual Property Rights, they are covered by the fact that a specification which is a *dcat:Resource* and it allows to define the *dct:license* and *dct:rights*.

Finally, note that all the descendants of the *ccsv:Specification* are disjoint. This entails that an individual of an application profile or family cannot be a standard, but does not preclude that, in time, the application profile or the family can become standards. If that were the case then individuals of *ccsv:Standard* would be created to represent the standardisation of those specifications that are application profiles and families.

## 3.2. Class: Specification

| OWL Class | cssv:Specification |
|---|---|
| **Label** | Specification |
| **Definition** | Set of agreed, descriptive, and normative statements about how a specification should be designed or made. |
| **Subclass of** | dcat:Dataset |

The sections below list the data properties (class attributes) inherited from DCAT that are of particular interest to the class Specification:

### 3.2.1. Property: dct:identifier

| OWL Property | dct:identifier |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | identifier |
| **Definition** | This property contains the main identifier for the specification, e.g. the URI or another unique identifier. |
| **Property Type** | xsd:AnyURI |

| | |
|---|---|
| **Examples** | Any URI pointing at an instance of an Asset. An example of this could be:<br>- DCAT (W3C)<br>- URI: http://www.w3.org/ns/dcat#<br>- Expression in CSSV:<br>@prefix cssv: <http://data.europa.eu/xyz/cssv#><br>@prefix dct: <http://purl.org/dc/terms/> .<br><br><http://www.w3.org/ns/dcat#><br>a <cssv:Specification> ;<br>dct:identifier "http://www.w3.org/ns/dcat#" . |

### 3.2.2. Property: dct:title

| OWL Property | dct:title |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | title |
| **Definition** | The name given to the Specification. |
| **Property Type** | xsd:String |
| **Examples** | Core Standards and Specifications Vocabulary, Core Assessment Vocabulary, Core Public Service Vocabulary, Core Criterion and Core Evidence Vocabulary, etc. |

### 3.2.3. Property: dct:alternative

| OWL Property | dct:alternative |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | alternativeTitle |
| **Definition** | The alternative name of the specification. |
| **Property Type** | xsd:String |
| **Examples** | CSSV, CAV, CPSV, CCCEV, etc. |

### 3.2.4. Property: dct:description

| OWL Property | dct:description |
|---|---|
| **OWL type** | owl:DataProperty |

| | |
|---|---|
| **Label** | description |
| **Definition** | This property contains a free-text account of the Specification. This property can be repeated for parallel language versions of the description. |
| **Property Type** | xsd:String |
| **Examples** | A free-text account of the Specification. |

### 3.2.5. Property: dct:abstract

| OWL Property | dct:abstract |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | abstract |
| **Definition** | A summary of the specification. |
| **Property Type** | xsd:String |
| **Examples** | To define the main concepts and characteristics related to specifications, standards, and their combinations and relationships. |

### 3.2.6. Property: dct:type

| OWL Property | dct:type |
|---|---|
| **OWL type** | owl:ObjectProperty |
| **Label** | type |
| **Definition** | This property refers to the type of the Specification. A controlled vocabulary for the values has not been defined for the time being. A proposal is provided in the examples below. |
| **Property Type** | skos:Concept |
| **Domain** | *dcat:Resource* |
| **Range** | *skos:Concept* |
| **Examples** | Definition, Artefact, Summary. |

### 3.2.7. Property: dct:accessRights

| OWL Property | dct:accessRights |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | accessRights |

| | |
|---|---|
| **Definition** | Information about who can access the resource or an indication of its security status. |
| **Property Type** | xsd:AnyURI |
| **Examples** | Read, write, modify, and delete rights. |

### 3.2.8. Property: dct:license

| OWL Property | dct:license |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | license |
| **Definition** | A legal document under which the resource is made available. |
| **Property Type** | xsd:AnyURI |
| **Examples** | Creative commons license. |

### 3.2.9. Property: dct:rights

| OWL Property | dct:rights |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | rights |
| **Definition** | A statement that concerns all rights not addressed with dct:license or dct:accessRights, such as copyright statements. |
| **Property Type** | xsd:AnyURI |

### 3.2.10. Property: cssv:configuredIn

| OWL Property | cssv:configuredIn |
|---|---|
| **OWL type** | owl:ObjectProperty |
| **Label** | configuredIn |
| **Definition** | A set of Specifications potentially for a given use case or policy domain that are aggregated in an ApplicationProfile. |
| **Domain** | *cssv:Specification* |
| **Range** | *cssv:ApplicationProfile* |
| **Examples** | Instance classes representing application profiles, such as DCAT-AP, ADMS-AP, others. |

### 3.2.11. Property: cssv:combinedIn

| OWL Property | cssv:combinedIn |
|---|---|
| **OWL type** | owl:ObjectProperty |
| **Label** | combinedIn |
| **Definition** | A set of Specifications that are complementary and interrelated, forming a Family of Specifications. |
| **Domain** | *cssv:Specification* |
| **Range** | *cssv:Family* |
| **Examples** | OASIS UBL XML-based family (XML, XML Schema Definition, ISO Schematron, OASIS Genericode, Context Value Association (CVA), UN/CEFACT unqualified data types); OASIS JSON-based family; CEN TC 440 families; UN/CEFACT CII eInvoice family; other. |

### 3.2.12. Property: cssv:isMaintainedBy

| OWL Property | cssv:isMaintainedBy |
|---|---|
| **OWL type** | owl:ObjectProperty |
| **Label** | isMaintainedBy |
| **Definition** | The Person, Organisation responsible to update and maintain the specification. |
| **Domain** | *cssv:Specification* |
| **Range** | *foaf:Agent* |
| **Examples** | CAMSS Team, SEMIC, W3C, OASIS, others. |

### 3.2.13. Property: cssv:hasScope

| OWL Property | cssv:hasScope |
|---|---|
| **OWL type** | owl:ObjectProperty |
| **Label** | hasScope |
| **Definition** | Area of requirements that the specification addresses. |
| **Domain** | *cssv:Specification* |
| **Range** | *cssv:Scope* |
| **Examples** | Metadata, machine to machine interface, others. |

## 3.3. Class: cssv:Standard

| OWL Class | cssv:Standard |
|---|---|
| **Label** | Standard |
| **Definition** | Specification that is largely adopted and possibly endorsed. |
| **Subclass of** | cssv:Specification |

At the present stage all properties of the *cssv:Standard* class are those inherited from *cssv:Specification* and *dcat:Data set.*

## 3.4. Class: cssv:ApplicationProfile

| OWL Class | cssv:ApplicationProfile |
|---|---|
| **Label** | ApplicationProfile |
| **Definition** | An application profile "customises one or more existing specifications potentially for a given use case or a policy domain adding an end to end narrative describing and ensuring the interoperability of its underlying specification(s)". |
| **Subclass of** | cssv:Specification |

### 3.4.1. Property: cssv:configures

| OWL Property | cssv:configures |
|---|---|
| **OWL type** | owl:ObjectProperty |
| **Label** | configures |
| **Definition** | Whether an Application Profile designs or adapts a Specification for a specific purpose. |
| **Domain** | *cssv:ApplicationProfile* |
| **Range** | *cssv:Specification* |
| **Examples** | DCAT-AP configuring DCAT for its use in the context of the EU Public Administrations; Any NATO profile configuring a set of interoperability Specifications for a specific context of use; other. |

### 3.4.2. Property: cssv:isAspectOf

| OWL Property | cssv:isAspectOf |
|---|---|
| **OWL type** | owl:ObjectProperty |

| | |
|---|---|
| **Label** | isAspectOf |
| **Definition** | ApplicationProfile is a part of a Profile. |
| **Domain** | *cssv:ApplicationProfile* |
| **Range** | *prof:Profile* |
| **Examples** | DCAT-AP. |

## 3.5. Class: cssv:Family

| **OWL Class** | **cssv:Family** |
|---|---|
| **Label** | Family |
| **Definition** | A family is a collection of interrelated and/or complementary specifications, standards, or application profiles and the explanation of how they are combined, used, or both. |
| **Subclass of** | cssv:Specification |

### 3.5.1. Property: cssv:combines

| **OWL Property** | **cssv:combines** |
|---|---|
| **OWL type** | owl:ObjectProperty |
| **Label** | Combines |
| **Definition** | Whether a Family is a union of more than one Specifications. |
| **Domain** | *cssv:Family* |
| **Range** | *cssv:Specification* |
| **Examples** | One or more Specifications that are part of a family, e.g. OASIS UBL XML-based family (XML, XML Schema Definition, ISO Schematron, OASIS Genericode, Context Value Association (CVA), UN/CEFACT unqualified data types); OASIS JSON-based family; CEN TC 440 families; UN/CEFACT CII eInvoice family; other. Conformance Statement. |

## 3.6. Class: cssv:Scope

| **OWL Class** | **cssv:Scope** |
|---|---|
| **Label** | Scope |
| **Definition** | Area of requirements addressed by the specification. |

### 3.6.1. Property: cssv:ID

| OWL Property | cssv:ID |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | identifier |
| **Definition** | This property contains the main identifier for the scope, e.g. the URI or another unique identifier. |
| **Property Type** | xsd:AnyURI |
| **Examples** | Any URI pointing at an instance of the Scope. |

### 3.6.2. Property: cssv:Description

| OWL Property | cssv:Description |
|---|---|
| **OWL type** | owl:DataProperty |
| **Label** | description |
| **Definition** | This property contains a free-text account of the Scope. This property can be repeated for parallel language versions of the description. |
| **Property Type** | xsd:String |
| **Examples** | A free-text account of the Scope. |

# 4

# CONFORMANCE STATEMENT

# 4. CONFORMANCE STATEMENT

A data interchange of Standards or Specifications, regardless of how that interchange occurs, is conformant with the CSSV if:

- it uses the terms (classes and properties) in a way consistent with their semantics as declared in this specification;
- it does not use terms from other vocabularies instead of those defined in this vocabulary that could reasonably be used.

A conforming data interchange:

- may include terms from other vocabularies;
- may use only a subset of CSSV terms.

The CSSV is technology-neutral and a publisher may use any of the terms defined in this document encoded in any technology although RDF and XML are preferred.

# 5

# ACCESSIBILITY AND MULTILINGUAL ASPECTS

# 5. ACCESSIBILITY AND MULTILINGUAL ASPECTS

The CSSV can operate in any language due to the following reasons.

- In a multilingual context, all properties that are datatype “Text”, the value may exist in multiple languages, the property may be instantiated multiple times and tagged with the language identifier for the value used for that property.
- The CSSV specification encourages the use of PURIs as identifiers.

# 6

# ACRONYMS

# 6. ACRONYMS

| Term | Description |
|---|---|
| **ABBs** | Architecture Building Blocks |
| **CAV** | Core Assessment Vocabulary |
| **CPSV** | Core Public Service Vocabulary |
| **CSSV** | Core Standards and Specifications Vocabulary |
| **DCAT** | Data Catalogue Vocabulary |
| **EIRA©** | European Interoperability Reference Architecture |
| **ELIS** | EIRA Library of Interoperability Specifications |
| **SEMIC** | Semantic Interoperability Community |

# 7

# REFERENCES

# 7. REFERENCES

*CAMSS - Common Assessment Method for Standards and Specifications*. (n.d.). Retrieved from https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/about

*EIRA - European Interoperability Reference Architecture*. (n.d.). Retrieved from https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira/about

*ELIS - EIRA Library of Interoperability Specifications*. (n.d.). Retrieved from https://joinup.ec.europa.eu/release/eira-library-interoperability-specifications-elis/v100-beta

*W3C*. (2019, October 03). Retrieved from Data Catalog Vocabulary (DCAT): https://www.w3.org/TR/vocab-dcat/

# 8

# ANNEXES

# 8. ANNEX I – FINDINGS AND CONCLUSIONS

1. **Finding**: a data model, vocabulary, or ontology tackling the domain of standards and specifications was not found. However, two recent initiatives are to be mentioned:

    a. NISO recently voted on a new project[1] to create a Standards-Specific Ontology Standard (short title: NISO SSOS). A working group is in the process of being formed to develop and standardize a high-level ontology to describe a limited set of core concepts and relationships.

    b. W3C has developed "The Profiles Vocabulary", an RDF vocabulary to describe profiles of (one or more) standards for information resources. It describes the general pattern of narrowing the scope of a specification with additional, but consistent, constraints, and is particularly relevant to data exchange situations where conformance to such profiles is expected and carries additional context.

2. **Conclusion related to Finding**: The CAMSS CSSV development team should contact these two initiatives and examine how synergies and collaboration could be established from now on. Additionally, the CAMSS Team should invite them to participate actively in the evolution of the CSSV via the governance and maintenance mechanisms put forward by ISA2.

[1] NISO-SSOS: https://www.niso.org/niso-io/2019/11/wgc-new#ssos.

# 9. ANNEX II – CSSV FILES


cssv_1.1.0.ttl


cssv.xmi

## An action supported by ISA²

ISA² is a EUR 131 million programme of the European Commission which develops digital solutions that enable interoperable cross-border and cross-sector public services, for the benefit of public administrations, businesses and citizens across the EU. ISA² supports a wide range of activities and solutions, among which is the Interoperability Maturity Assessment of a Public Service (IMAPS) action.
ISA² solutions can be used free of charge and are open source when related to IT.

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