D03.03.02 Core Public Event Vocabulary

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1. INTRODUCTION

1.1. Context and problem statement

The notion of a 'public event' is widespread and includes conferences, shows, festivals and many more. Publishing such events online is currently done in a scattered way. Public administrations and organisations do not have a common and stable way of describing the fundamental characteristics of a public event. This in turn hinders the easy redistribution of these events, which is problematic. Consider the promotional efforts of (local) companies for instance. These can benefit from easy redistribution by making their events, be it a product launch or open house day, easier to find. Similarly, citizens can benefit from more festivals and recreational events if public administrations manage to reach their target audience.

The need for a vocabulary that properly captures the basic characteristics of public events is clear. There are some existing efforts in this direction, but none of them succeeds in clearly defining the core characteristics of a public event and spreading them to a wide audience.

1.2. Proposed solution

The Core Public Event Vocabulary (CPEV) is designed to support the exchange of basic information regarding public events. Using the vocabulary will facilitate the process for institutions publishing data about public events to

- share information about public events;
- link information of public events to other data sets;
- enable redistribution of public events by third parties;
- reach their target audience.

To make optimal use of existing solutions. The proposed solution will adhere to existing solutions where possible.

1.3. Scope

The Core Public Event Vocabulary is designed to describe the core characteristics of a public event. A public event is defined as "something that happens at a particular place and time, organised by an agent for a particular purpose, and is of interest to a general audience". This definition excludes natural events such as earthquakes or hurricanes.

1.4. The CPEV Process and methodology

A Core Vocabulary is a simplified, reusable, and extensible data model that captures the fundamental characteristics of an entity in a context-neutral fashion. Well known examples of existing Core Vocabularies include the Dublin Core Metadata Set[1] and the ISA Core Vocabularies[2]. Such Core Vocabularies are the starting point for developing new data specifications and defining mappings between existing ones. Specifications that map to or extend such Core Vocabularies are required to

[1] http://dublincore.org/documents/dcmi-terms/

[2] https://joinup.ec.europa.eu/asset/core_vocabularies/description

guarantee a level of cross-domain and cross-border interoperability that can be attained by public administrations.

The work has been conducted according to the ISA process and methodology for developing Core Vocabularies[3]. The process and methodology provide guidance in two domains. First, the **process** describes how consensus is reached among stakeholders and domain experts so that the vocabulary meets its goals. Second, the **methodology** describes how the core vocabulary is specified following best practices for selecting, reusing, developing and presenting concepts. Table 1 provides an overview of all steps in the process and methodology. Note that for the development of the CPEV, only part of the steps has been taken so far. More specifically, a working draft was published that the working group will pilot.

Table 1: Process and Methodology Overview

Process Reaching consensus	Methodology Developing a specification
1. Identify stakeholders 2. Form working group 3. Identify chair & co-chair 4. Identify editors 5. Form review group 6. Secure IPR 7. Establish working environment and culture 8. Publish drafts 9. Review drafts 10. Publish last call working draft 11. Review last call working draft 12. Gather evidence of acceptance 13. Submit for endorsement 14. Endorse	1. Identify a meaningful set of Core Concepts 2. Research and review existing solutions 3. Research existing data and services 4. Use cases 5. Requirements 6. Terminology and conceptual data model 7. Naming conventions 8. Identifier conventions 9. The namespace document 10. Quality Assurance & Conformance Criteria

1.5. Structure of this document

This document consists of the following sections.

- Section 2 defines the main use cases that drive the specification of the CPEV, as well as the specific requirements.
- Section 3 gives a very brief summary of a number of existing initiatives in this area.
- The classes and properties defined for the CPEV are presented in section 4.
- Section 6 describes the current state of the vocabulary.
- Sections 7 and 8 provide the Conformance Statement for the CPEV and review the accessibility and multilingual issues.
- Finally section 8 lists the prefixes and namespaces used throughout the document.

[3] https://joinup.ec.europa.eu/catalogue/asset_release/process-and-methodology-developing-core-vocabularies

2. USE CASES

The Core Public Event Vocabulary (CPEV) is designed to meet specific needs of public administrations, businesses and citizens across the European Union and beyond. These needs are described in the use cases below.

2.1. A citizen is looking for events of a certain type across regions

The user queries in a search engine for a type of event using tags and keywords related to their interest, and the search engine returns a breakdown of information including details such as location, price, opening hours, organizer, etc. that has been annotated by the respective publisher. This improves the understanding of the provided information.

Notice that, ideally, it should be possible to find an event of a certain type even if this is part of a larger event, which by itself may be categorized differently. For instance, somebody may be interested to attend a music performance which is part of a traditional festival, while somebody else may be only interested in those sub-events that are addressed to children.

The CPEV will facilitate finding events online through search engines.

2.2. A provider of goods or services is looking for opportunities arising from neighbour events

The provider queries a search engine for some types of events his activity can integrate into, located in the neighbouring area so that it is easy for him to move to these events. The search engine returns the details of the relevant events, including their organizers and promoters, so that the provider can contact them directly.

Widespread use of the CPEV will allow providers of goods and services to easily find opportunities arising from local events.

2.3. Citizens or businesses want to find related events

A citizen or business representative wants to find related events within and across countries or organisations. This can be either from a personal interest point of view or for business opportunities. The user can ideally find events that are targeted to the same audience and have similar subjects.

The use of CPEV will allow citizens and business to find related events.

2.4. Harvesting and distribution of public event data

Governments should be able to easily harvest events that are of public interest and distribute them in an easy way. Similarly, companies should be able to redistribute events for various reasons, such as generating web traffic or promotional efforts. Additionally, easy redistribution of events improves the information exchange between e-government systems, data portals, and possibly third parties.

CPEV will allow easy redistribution of events, which is interesting for both governments and companies.

2.5. Users want to add events to their calendar

Ideally, a user should be able to add an event to their calendar with a simple click of a button. This calendar can be iCal, Google Calendar, Outlook Calendar or any calendar that has a reasonably wide user base.

CPEV should allow users to easily add events to their personal calendars.

2.6. Efficient planning of an event

When planning an event, one wishes to avoid overlap with other popular events or even avoid two similar events in a short time span. Additionally, one wants to find a suitable location for the event, for instance a location close to a large target audience group. Another possibility is to plan related events back-to-back, as is often done with conferences and workshops. To efficiently plan an event, one needs easy access to locations, timings and audiences of related events.

CPEV will allow organizers of an event to easily find a suitable time and place for their events.

2.7. Requirements

The use cases set out above give rise to the following requirements:

R1 Basic facts about the event should be recorded such as its title, organiser, place, time, audience, etc.

R2 It should be possible for the specifics of an event to be interpreted by search engines.

R3 It should be possible for users to get events with the same location, time or audience.

R4 It should be possible for users to add an event to their personal calendar.

3. EXISTING SOLUTIONS

The need for a common way to refer to and describe public events is not new. Several solutions already exist, some of which are listed in this section.

3.1. Schema.org Event

Schema.org[4] is a collaborative activity aiming to create, maintain and promote schemas for structured data online. It was founded by Google, Microsoft, Yahoo and Yandex, though all vocabularies are developed by an open community process. Schema.org's Event vocabulary describes an event happing at a certain time and location, such as a concert, lecture, or festival. It is used on 100,000 to 250,000 domains.

3.2. LODE

LODE[5] is an ontology for linking open descriptions of events. More specifically, it aims at publishing descriptions of historical events as Linked Data and at enabling mapping between other event-related vocabularies and ontologies. LODE uses a broad definition for an event, which is "Something that happened," as might be reported in a news article or explained by a historian.

3.3. Eventi Pubblici

Eventi Pubblici[6] is an ontology aimed at public events developed by the Italian Agenzia per l'Italia Digitale.

3.4. The ComunWeb vocabulary of public events

The region of Trentino (Italy) proposed a new Core Vocabulary on public events[7] in light of a pilot project. The portal used in the pilot is called ComunWeb. The PublicEvent class that is defined in their ontology is a specialization of schema:Event. PublicEvent inherits the associations *startDate/endDate, location, audience*, and *offers*. There have been several local changes, concerning among others the addition of the attribute *eventType*, the partition between *SimplePublicEvent* and *ComplexPublicEvent* and changes in the range of associations.

[4] http://schema.org/Event
[5] http://linkedevents.org/ontology/
[6] https://github.com/italia/daf-ontologie-vocabolari-controllati/tree/master/Ontologie/EventiPubblici
[7] https://joinup.ec.europa.eu/news/region-trentino-italy

4. CORE PUBLIC EVENT VOCABULARY

An overview of the full vocabulary is given in Figure 1 below.

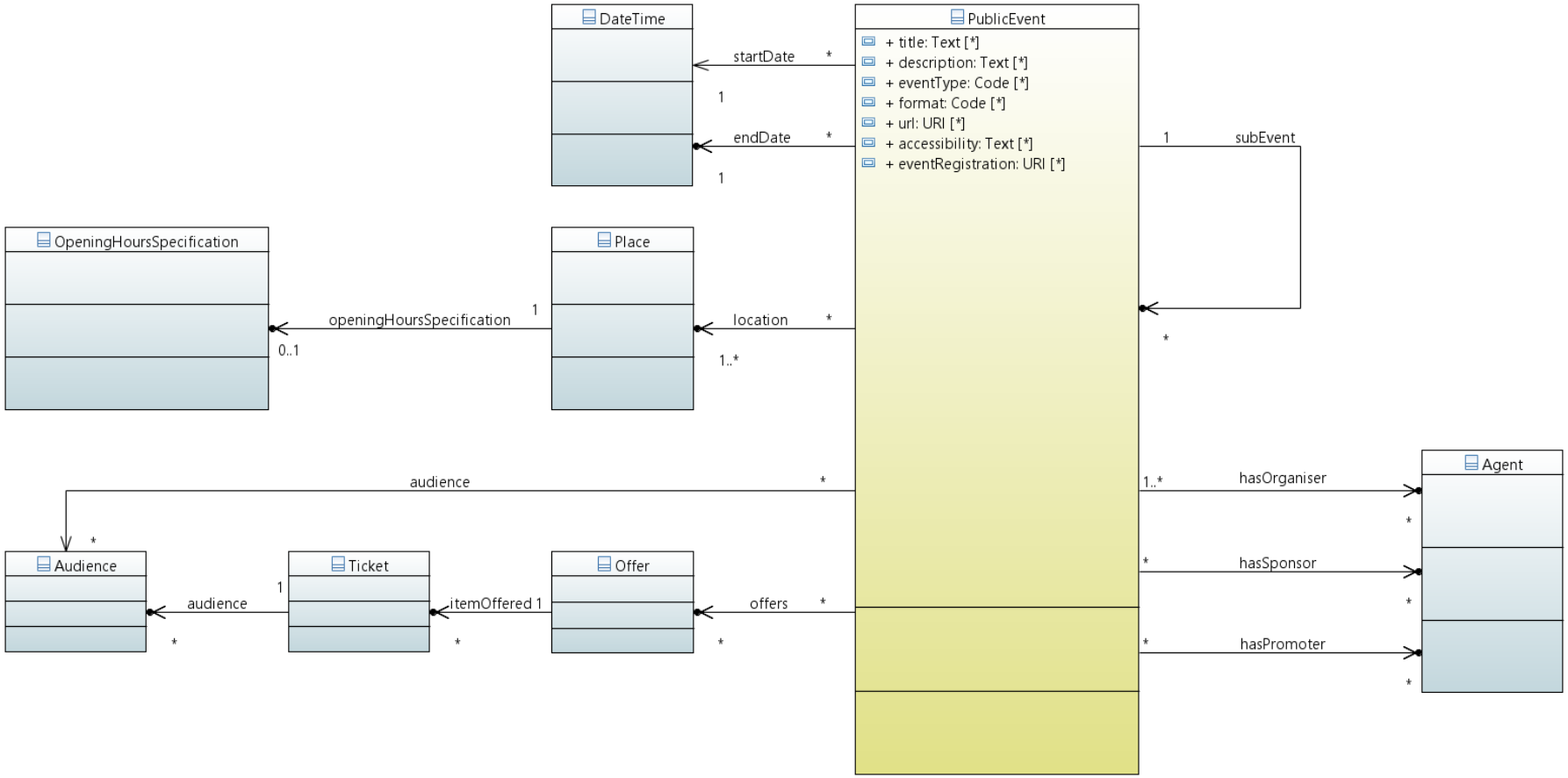

Figure 1: Overview of the Core Public Event Vocabulary.

4.1. Class: PublicEvent

The Public Event class represents the event. One event may comprise several sub-events, which are described by using the same properties and relationships.

A Public Event is defined as: Something that happens at a particular place and time, organised by an agent for a particular purpose, and is of interest to a general audience. This definition excludes natural events such as earthquakes and volcanic eruptions.

In the RDF release of the CPEV, this class is bound to *cpev:PublicEvent*, which is defined as a subclass of *schema:Event*.

Property	Description and comments	RDF release
title	The title property captures the name given to the event. Titles may be provided in multiple languages with multiple instances of the *title* property.	dcterms:title
description	This property contains an account giving the characteristics of the event. Descriptions may be provided in multiple languages with multiple instances of the *description* property.	dcterms:description
eventType	This property contains the nature or genre of the event. Examples include festivals, conferences, city council meetings and public consultations. The *eventType* property links the event to a SKOS Concept that provides a classification.	dcterms:type
format	This property contains a plan of organisation or arrangement of the event. Examples include conference call and physical meeting. The *format* property links the event to a SKOS Concept that provides a classification.	cpev:format
url	This property links to the website of the event. The value of this property is a URL.	schema:url
accessibility	This property contains information about how the event can be approached, reached or entered, in particular for people with special needs. This property may be provided in multiple languages with multiple instances of the *accessibility* property.	cpev:accessibility
eventRegistration	This property contains information regarding the registration of the event. The value of this property can be free text, which also allows to input a URL to guide the user to the registration page.	cpev:eventRegistration

startDate	This property links to a DateTime instance (Section 4.2) specifying the start time of the event.	schema:startDate
endDate	This property links to a DateTime instance (Section 4.2) specifying the end time of the event.	schema:endDate
location	This property links to a Place instance (Section 0) and specifies the physical or virtual location of the event.	schema:location
audience	This property links to an Audience instance (Section 4.7) and specifies the group for whom the resource is intended or useful.	schema:audience
offers	This property links to an Offer instance (Section 4.5) and specifies the possibility to transfer some rights to an item or to provide a service at a certain price.	schema:offers
subEvent	This property links to a PublicEvent instance (Section 4.1) and specifies the subevent of this event.	schema:subEvent
hasOrganiser	This property links to an Agent instance (Section 4.8) specifying the agent that creates or coordinates the event.	cpev:hasOrganiser
hasSponsor	This property links to an Agent instance (Section 4.8) specifying the agent that advertises the event.	cpev:hasSponsor
hasPromotor	This property links to an Agent instance (Section 4.8) specifying agent that financially supports the event.	cpev:hasPromotor

4.2. Class: DateTime

This class captures the date in ISO 8601 date format or the date and time through a combination of date and time of day in the form [-]CCYY-MM-DDThh:mm:ss[Z|(+|-)hh:mm].

In the RDF release of the CPEV, this class is bound to *schema:DateTime* or to *schema:Date*. The user can choose which class to use depending on the available information.

4.3. Class: Place

This class, reused from schema.org[8], describes a physical or virtual location. The *Place* class has a lot of properties, of which we just list the ones that we explicitly model.

[8] http://schema.org/Place

Property	Description and comments	RDF release
openingHoursSpecification	This property links to an OpeningHoursSpecification instance (Section 4.4), which gives the opening hours of a certain place.	schema:openingHoursSpecification

4.4. Class: OpeningHoursSpecification

This class, reused from schema.org[9], describes a structured value providing information about the opening hours of a place or a certain service inside a place.

4.5. Class: Offer

This class, reused from schema.org[10], describes the possibility to transfer some rights to an item or to provide a service at a certain price. The *Offer* class has a lot of properties, of which we just list the ones that we explicitly model.

Property	Description and comments	RDF release
itemOffered	This property links to a Ticket instance (Section 4.6), which denotes any item that grants access to the event.	schema:itemOffered

4.6. Class: Ticket

This class denotes an item that grants access to the event.

In the RDF release of the CPEV, this class is bound to *schema:Product*.

Property	Description and comments	RDF release
audience	This property links to an Audience instance (Section 4.7) specifying the group for whom the resource is intended or useful.	schema:audience

4.7. Class: Audience

This class, reused from schema.org[11], describes the group for whom the resource is intended or useful.

4.8. Class: Agent

[9] http://schema.org/OpeningHoursSpecification
[10] http://schema.org/Offer
[11] http://schema.org/Audience

This class, reused from the FOAF Vocabulary Specification[12], describes an entity that acts, such as an organisation, person or group.

[12] http://xmlns.com/foaf/spec/#term_Agent

5. CURRENT STATE OF THE VOCABULARY

The current version of the Core Public Event Vocabulary is a first stable working version. This version has been established through several working group meetings. The vocabulary will now be used to test against real data and for actual implementations and pilots. This will provide the necessary feedback to discover possible gaps or inconsistencies in the model.

During the development and testing period, a GitHub directory is used to track and discuss possible issues[13]. Working group members and external implementers are encouraged to add and discuss issues here to provide feedback on the first version of the model. This feedback will then be considered after the testing period.

[13] https://github.com/SEMICeu/Core-Public-Event-Vocabulary/

6. CONFORMANCE STATEMENT

A data exchange, however that exchange occurs, is conformant with the Core Public Event Vocabulary 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 ones 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 Core Public Event Vocabulary terms.

A CPEV application profile is a specification for data interchange that adds additional constraints. Such additional constraints in a profile may include:

- a minimum set of required terms;
- classes and properties for additional terms not covered in the Core Public Event Vocabulary;
- controlled vocabularies or URI sets as acceptable values for properties.

The Core Public Event Vocabulary 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.

7. ACCESSIBILITY AND MULTILINGUAL ASPECTS

The CPEV can operate in any language as:

- The values of all properties with a datatype "Literal" may exist in multiple languages. The property may have multiple instances that are tagged with a language identifier for each language in which the value for that property exists.
- The specification strongly encourages the use of URIs as identifiers which are 'dumb strings.' Although they clearly make use of English words, they do not convey those words as data - that is done by the human-readable labels which can be multilingual.
- The acronym URI is used throughout the document due to widespread familiarity. However, Internationalised Resource Identifiers (IRIs) are equally usable, and these can use any character in any script[14].

Translations of the labels used in the various terms can readily be added to the schema (please contact the working group if you can help with this).

[14] http://www.ietf.org/rfc/rfc3987.txt

8. NAMESPACES AND PREFIXES

This specification uses the following prefixes and namespaces.

Table 2: Namespaces and Prefixes

Prefix	Namespace
cpev	A URI for Core Vocabularies on the http://data.europa.eu domain will be assigned in the coming months.
dcterms	http://purl.org/dc/terms/
skos	http://www.w3.org/2004/02/skos/core#
schema	http://schema.org/
foaf	http://xmlns.com/foaf/0.1/
owl	http://www.w3.org/2002/07/owl#
ns	http://www.w3.org/2003/06/sw-vocab-status/ns#
dcam	http://purl.org/dc/dcam/
rdfs	http://www.w3.org/2000/01/rdf-schema#
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#
xml	http://www.w3.org/XML/1998/namespace
vann	http://purl.org/vocab/vann/
dc	http://purl.org/dc/elements/1.1/