

W3C metadata updates

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Outline

- DCAT version 2
- OWL-Time extensions
 - Relationships
 - Temporal aggregates

DCAT Version 2

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Data Catalog Vocabulary (DCAT) - Version 2



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Please check the errata for any errors or issues reported since publication.

See also translations.

This document is also available in this non-normative format: Turtle

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NOTE

DCAT 2 supersedes DCAT [VOCAB-DCAT-20140116], but it does not make it obsolete. DCAT 2 maintains the DCAT namespace as its terms preserve backward compatibility with DCAT [VOCAB-DCAT-20140116]. DCAT 2 relaxes constraints and adds new classes and properties, but these changes do not break the definition of previous terms.

Detailed recs for time and space

§ 9. Time and space

This section is non-normative.

§ 9.1 Temporal properties

Five temporal properties of resources may be described using DCAT.

1. The release time of a resource is given using `dcat:releaseTime`. The value is a `xsd:date`.
2. The revision or update time of a resource is given using `dcat:revisionTime`. The value is a `xsd:date`.
3. The update schedule for a resource is given using `dcat:updateSchedule`. The value is a `xsd:string` from a controlled vocabulary such as `ISO8601`.
4. The minimum temporal separation of resources is given using `dcat:temporalResolution`. The value is encoded as a `xsd:duration`. The update schedule and temporal resolution support the description of different kinds of resources.
5. The temporal extent of a dataset is given using `dct:temporal`. The value is a `dct:PeriodOfTime`. A number of options for expressing the details of a `dct:PeriodOfTime` are recommended in § 6.14 Class: `Period of Time`.

§ 9.2 Spatial properties

Two spatial properties of datasets may be described using DCAT.

1. The minimum spatial separation of items in a dataset is given using `dcat:spatialResolutionInMeters`. The value is a decimal number.

An example of the use of `dcat:spatialResolutionInMeters` is given in [Example 3](#).
2. The spatial extent of a dataset is given using `dct:spatial`. The value is a `dct:Location`. A number of options for expressing the details of a `dct:Location` are recommended in § 6.15 Class: `Location`.

Examples

EXAMPLE 27: Spatial coverage as a polygon

A dataset whose spatial coverage corresponds to A (the coordinate reference system is CRS84).

```
<AnneFrank_0> a dcat:Dataset ;
  dct:spatial [
    a dct:Location ;
    locn:geometry "''''POLYGON((4.8842353 52.3751484 4.8842567 52.3751484 4.8838502 52.3751484 4.8841037 52.3749999 4.8842069 52.3751484 4.8843200 52.3749999 4.8843289 52.3749999 4.8842353 52.3751484))''''^^geosparql:asWKT ] .
```

EXAMPLE 29: Spatial coverage as a representative point of A

The same dataset of Example 27, with its spatial coverage specified as a representative point of A

```
<AnneFrank_2> a dcat:Dataset ;
  dct:spatial [
    a dct:Location ;
    dcat:centroid "POLYGON((4.8842353 52.3751484 4.8842567 52.3751484 4.8838502 52.3751484 4.8841037 52.3749999 4.8842069 52.3751484 4.8843200 52.3749999 4.8843289 52.3749999 4.8842353 52.3751484))" .
```



Figure 2 Map preview of a spatial dataset

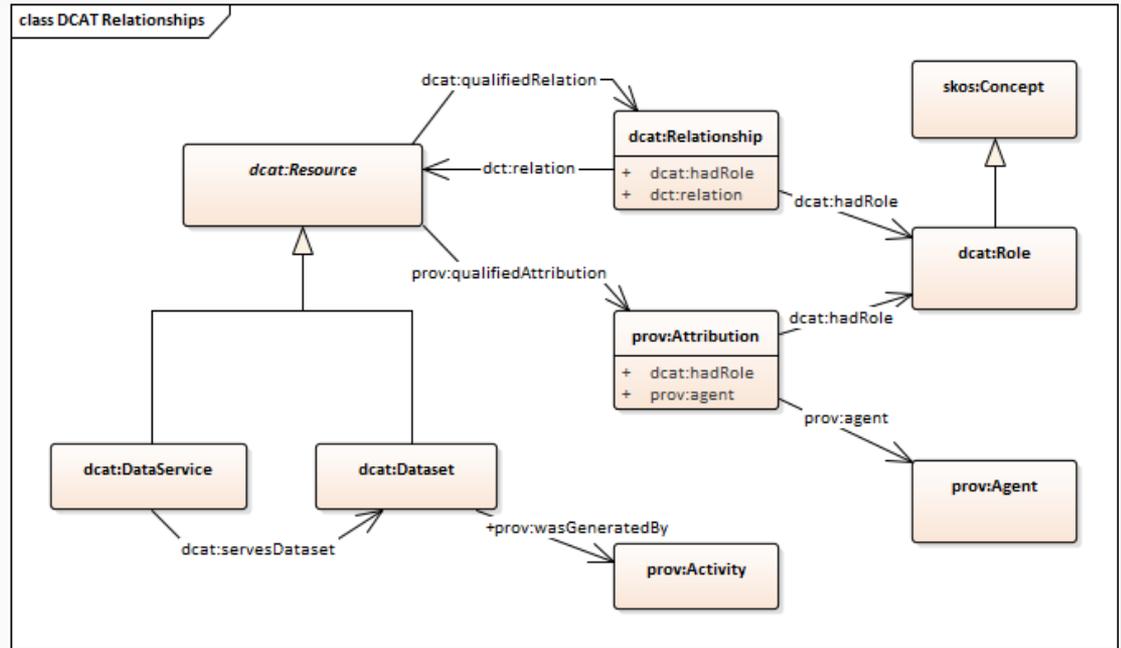
EXAMPLE 30: Spatial coverage as bounding box

The Dutch dataset of postal addresses, with its spatial coverage (Netherlands) specified as a bounding box.

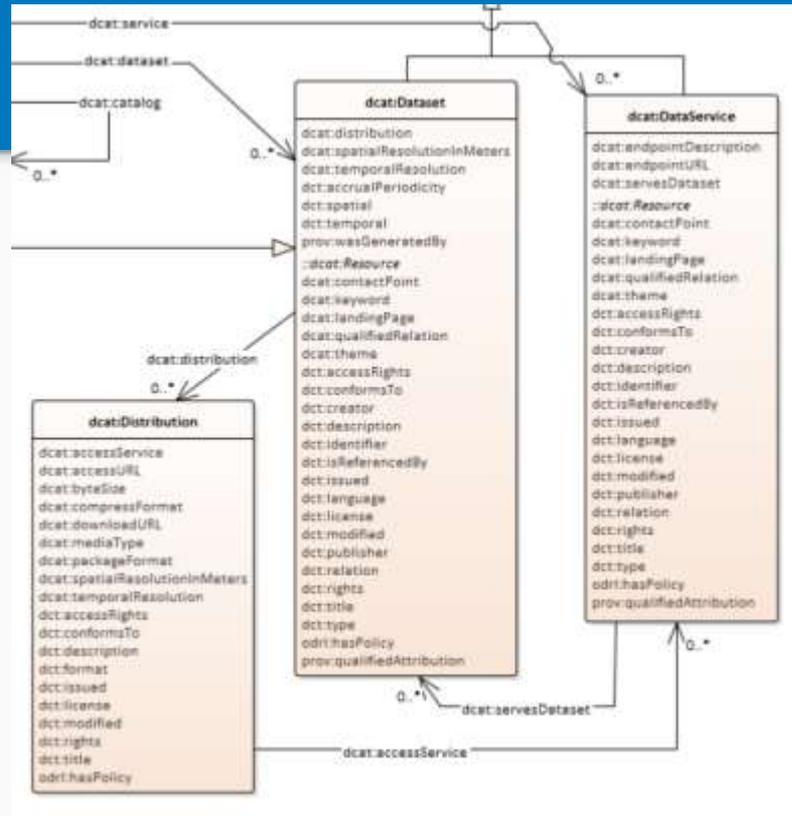
```
<Dutch-postal> a dcat:Dataset ;
  dct:title "Adressen"@nl ;
  dct:title "Addresses"@en ;
  dct:description "''''INSPIRE Adressen afkomstig uit de basisregistratie Adressen, beschikbaar voor heel Nederland''''"@nl ;
  dct:description "''''INSPIRE addresses derived from the Addresses base registry, available for the Netherlands''''"@en ;
  dcat:theme <http://inspire.ec.europa.eu/theme/ad> ;
  dct:spatial [
    a dct:Location ;
    dcat:bbox "''''POLYGON((3.053 47.975, 7.24 47.975, 7.24 53.504, 3.053 53.504, 3.053 47.975))''''^^geosparql:asWKT ] .
```



Relationships



Services



Example

WFS, WMS and ESRI services in GA catalogue

- All serve the same dataset

EXAMPLE 49

```
ga-courts:jc
  rdf:type dcat:Dataset ;
  dct:description "The dataset contains spatial locations, in point format, of the Australian High
  dct:spatial [
    rdf:type dcat:Location ;
    dct:bbox ""*http://www.opengis.net/def/crs/OGS/0/4203> PDLVGM([
      -42.800880 115.804500 , -12.480576 115.804500 ,
      -12.800676 113.276826 , -42.800880 113.276826 ,
      -42.800880 115.804500
    ])*""^geoparq:literal ]
  ] ;
  dct:title "Judicial Courts"@en ;
  dct:type <http://purl.org/dc/dcmitype/Dataset> ;
  dct:landingPage <https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/metadata/cc36568-29
  .

ga-courts:jc-esri
  rdf:type dcat:DataService ;
  dct:conformsTo <https://developers.arcgis.com/rest/> ;
  dct:description "This web service provides access to the National Judicial Courts Dataset and pr
  dct:identifier "2b0546cd-4a43-444d-a053-12a3078a3fff" ;
  dct:title "National Judicial Courts MapServer"@en ;
  dct:type <http://purl.org/dc/dcmitype/Service> ;
  dct:type <https://inspire.ec.europa.eu/metadata-codelist/SpatialDataServiceType/download> ;
  dct:type <https://inspire.ec.europa.eu/metadata-codelist/SpatialDataServiceType/view> ;
  dct:endpointURL <http://services.ga.gov.au/gis/rest/services/Judicial_Courts/MapServer/> ;
  dct:landingPage <https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/metadata/2b0546cd-4a
  dct:serviceDataset ga-courts:jc ]
  .

ga-courts:jc-wfs
  rdf:type dcat:DataService ;
  dct:conformsTo <http://www.opengis.net/def/serviceType/ogc/wfs/1.0.0> ;
  dct:conformsTo <http://www.opengis.net/def/serviceType/ogc/wfs/1.1.0> ;
  dct:conformsTo <http://www.opengis.net/def/serviceType/ogc/wfs/1.0.0> ;
  dct:description "This web service provides access to the National Judicial Courts Dataset and pr
  dct:identifier "2b0546cd-4a43-444d-a053-12a3078a3fff" ;
  dct:title "National Judicial Courts WFS"@en ;
  dct:type <http://purl.org/dc/dcmitype/Service> ;
  dct:type <https://inspire.ec.europa.eu/metadata-codelist/SpatialDataServiceType/download> ;
  dct:endpointDescription <http://services.ga.gov.au/gis/services/Judicial_Courts/MapServer/WFSSE
  dct:endpointURL <http://services.ga.gov.au/gis/services/Judicial_Courts/MapServer/WFSServer/> ;
  dct:landingPage <https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/metadata/2b0546cd-4a
  dct:serviceDataset ga-courts:jc ]
  .

ga-courts:jc-wms
  rdf:type dcat:DataService ;
  dct:conformsTo <http://www.opengis.net/def/serviceType/ogc/wms/1.1.3> ;
  dct:description "This web service provides access to the National Judicial Courts Dataset and pr
  dct:identifier "2b0546cd-4a43-444d-a053-12a3078a3fff" ;
  dct:title "National Judicial Courts WMS"@en ;
  dct:type <http://purl.org/dc/dcmitype/Service> ;
  dct:type <https://inspire.ec.europa.eu/metadata-codelist/SpatialDataServiceType/view> ;
  dct:endpointDescription <http://services.ga.gov.au/gis/services/Judicial_Courts/MapServer/WFSSE
  dct:endpointURL <http://services.ga.gov.au/gis/services/Judicial_Courts/MapServer/WFSServer/> ;
  dct:landingPage <https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/metadata/2b0546cd-4a
  dct:serviceDataset ga-courts:jc ]
  .
```

Time Ontology in OWL

W3C Recommendation 19 October 2017



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Temporal topology in OWL-Time

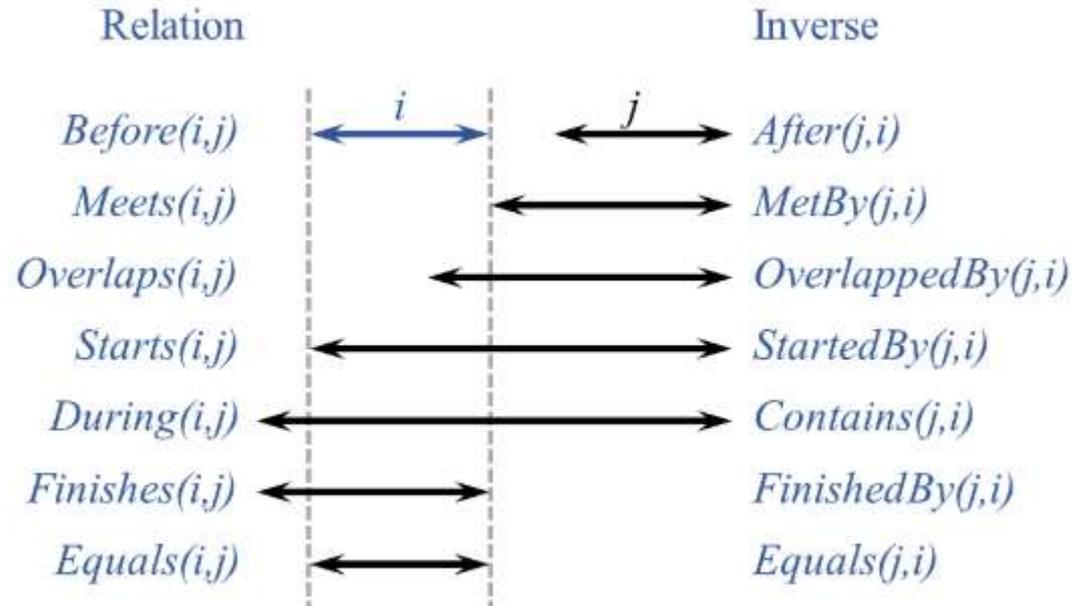


Figure 2 Thirteen elementary possible relations between time periods [af-97].

Missing relation

No way to assert that two time-*instants* are equal (coincident)

<https://github.com/w3c/sdw/issues/1126>

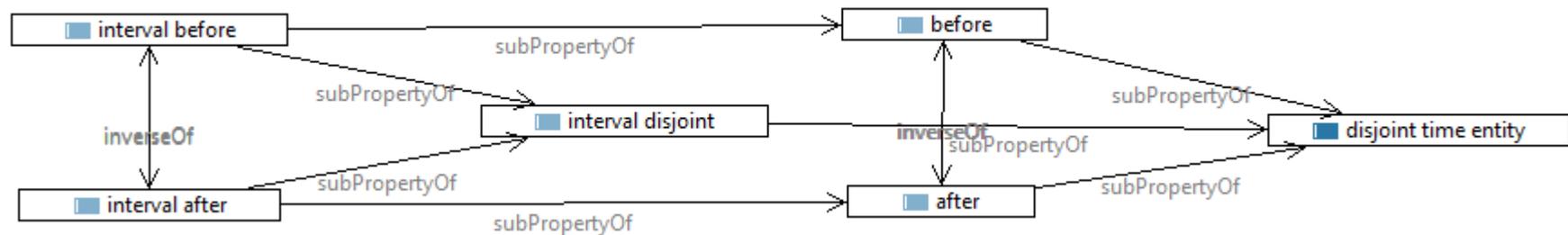
Led to examination of completeness of temporal relations

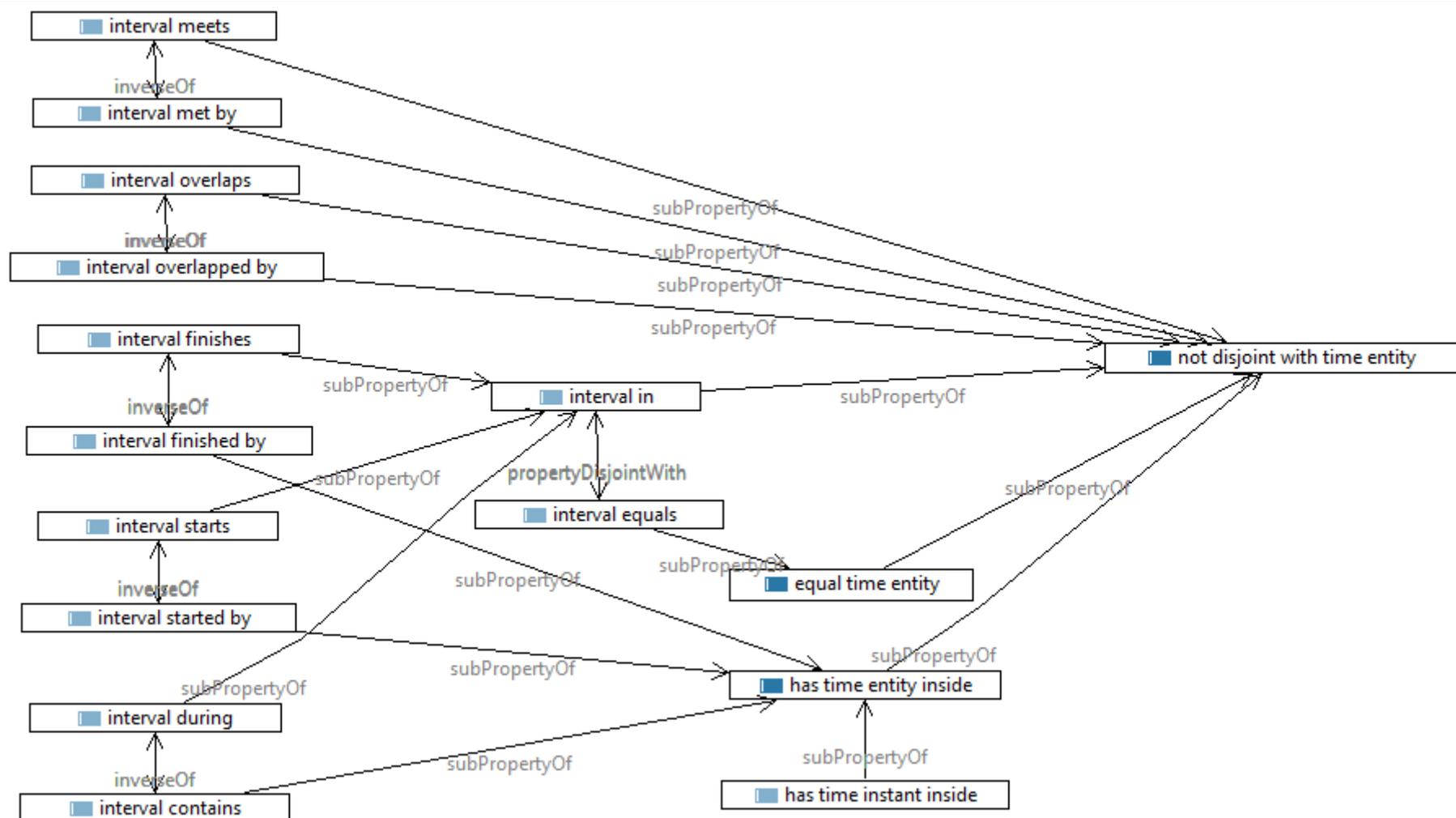
New property - equal time *entity*

Super-property of interval-equals



Looking deeper





Extensions to the OWL-Time Ontology - entity relations

W3C Editor's Draft 18 February 2020

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<https://w3c.github.io/sdw/proposals/time-entity-relations/>

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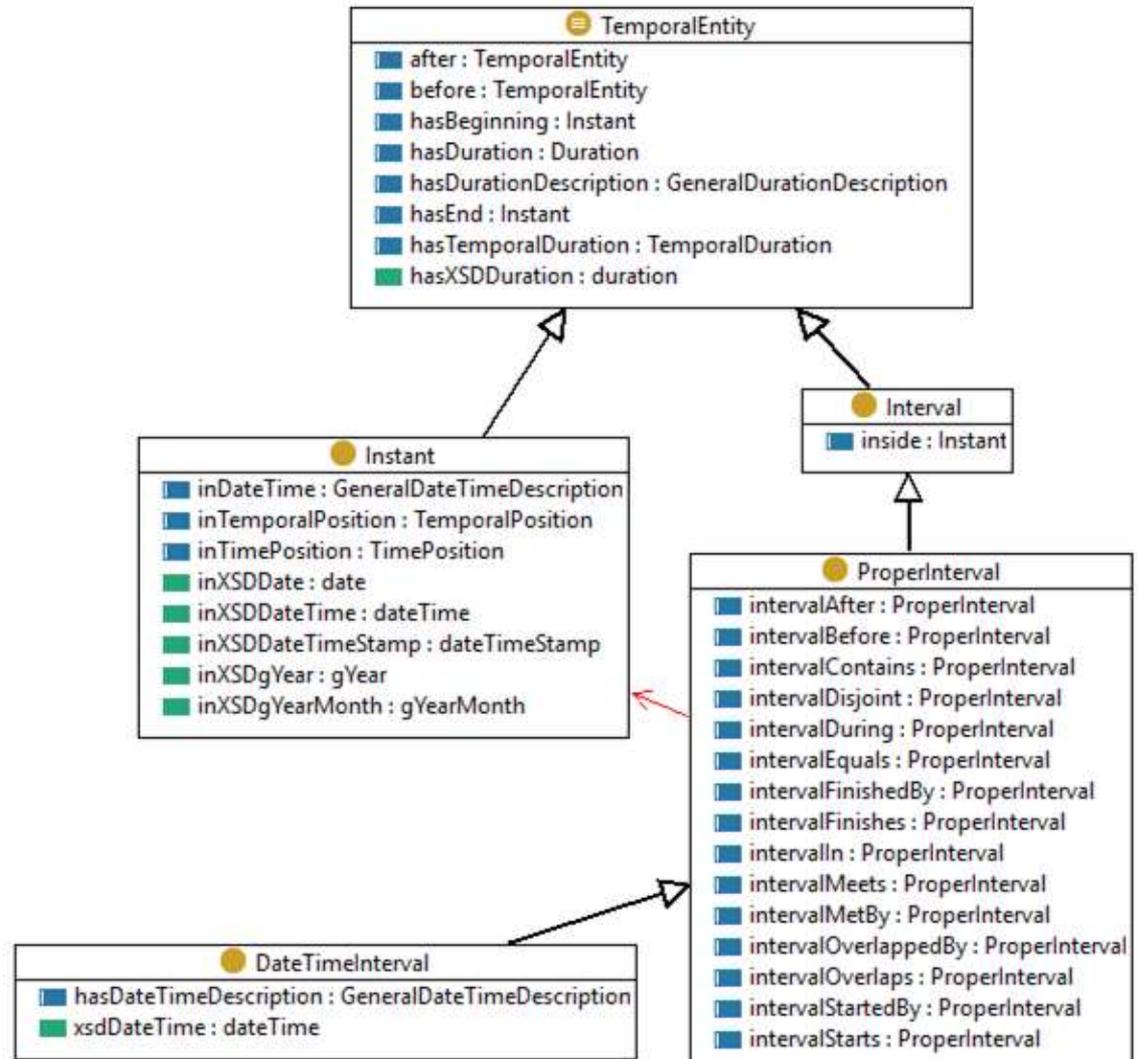
[Pull requests](#)

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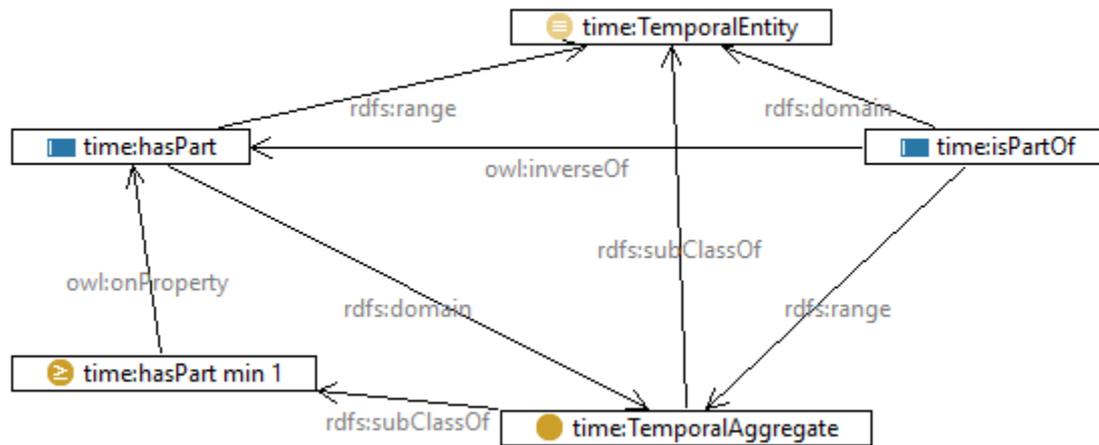
Time entities

OWL-Time defines atomic temporal entities



What about aggregates?

Time aggregates



Example: school terms

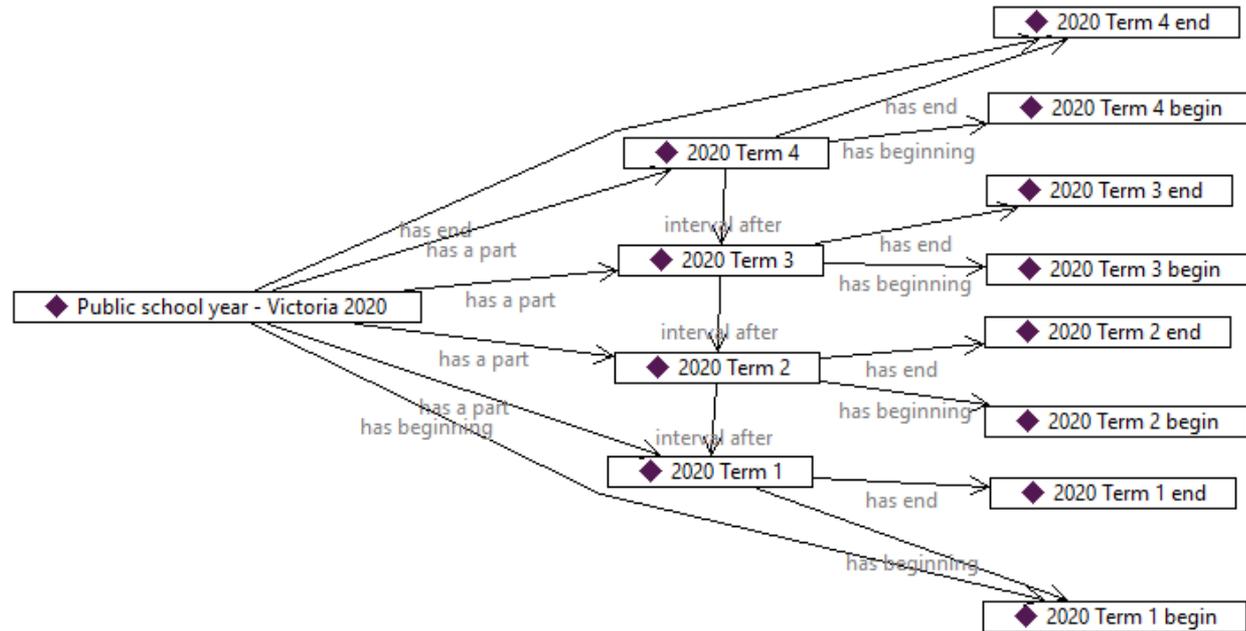


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Extensions to the OWL-Time Ontology - temporal aggregates

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Abstract

OWL-Time [\[owl-time\]](#) is an ontology for temporal entities and relations between them. OWL-Time defines simple temporal entities (intervals and instants). This note adds one new class `time:TemporalAggregate` and two properties `time:hasPart` and its inverse `time:isPartof` to allow for the description of arbitrary aggregates of temporal entities.

Thank you



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