

# Circular Economy Ontology Network (CEON) - Resource ODP

## Metadata

**IRI**

<http://w3id.org/CEON/ontology/resourceODP/>

**Title**

Circular Economy Ontology Network (CEON) - Resource ODP

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**License**

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**Version Iri**

<http://w3id.org/CEON/ontology/resourceODP/0.4/>

**Version Info**

0.4

**Preferred Namespace Prefix**

resourceODP

**Preferred Namespace Uri**

<http://w3id.org/CEON/ontology/resourceODP/>

**Description**

A core ODP of the CEON ontology network defining aspects of the resource concept.

**Covers Requirements**

Covers the following requirements from Onto-DESIDE D3.1: CVN-Resource-1,3, CVN-Composition-1,2, CVN-ResrouceType-4, C7-3, E2-2, E4-6, E5-1, E6-3, T3-1.

Covers the following requirements from Onto-DESIDE D3.2: CE1-2, CE3-3, CE4-3, CE5-2, CE9-1, CE10-1, CE11-8, CE12-2, CE12-4, C7-3, E2-2, E4-6, E5-1, E6-3, T3-1.

## Classes

|                       |   |
|-----------------------|---|
| Location <sup>C</sup> |   |
| IRI                   | <a href="http://w3id.org/CEON/ontology/location/Location">http://w3id.org/CEON/ontology/location/Location</a> |
| In Range Of           | <a href="#">hasResourceLocation</a> <sup>op</sup>   |

|                    |   |
|--------------------|---|
| Asset <sup>C</sup> |   |
| IRI                | <a href="http://w3id.org/CEON/ontology/resourceODP/Asset">http://w3id.org/CEON/ontology/resourceODP/Asset</a> |
| Super Class Of     | <a href="#">Information</a> <sup>C</sup><br><a href="#">Resource</a> <sup>C</sup>                             |

## Batch<sup>C</sup>

|                     |  |
|---------------------|--|
| <b>IRI</b>          | <a href="http://w3id.org/CE0N/ontology/resourceODP/Batch">http://w3id.org/CE0N/ontology/resourceODP/Batch</a>  |
| <b>Description</b>  | A batch of objects is a collection of physical objects that are of the same type, e.g. a set of items (product instances) adhering to the same product model.  |
| <b>Sub Class Of</b> | <a href="#">Resource</a> <sup>C</sup><br><a href="#">has physical object</a> <sup>op</sup> some <a href="#">Physical object</a> <sup>C</sup> and <a href="#">has physical object</a> <sup>op</sup> only <a href="#">Physical object</a> <sup>C</sup> |
| <b>In Domain Of</b> | <a href="#">batch size</a> <sup>dp</sup>   |
| <b>In Range Of</b>  | <a href="#">has batch</a> <sup>op</sup>  |
| <b>Restriction</b>  | <a href="#">batch size</a> <sup>dp</sup> <i>exactly</i> 1 <a href="#">Batch</a> <sup>C</sup>   |

## Constituent<sup>C</sup>

|                    |   |
|--------------------|---|
| <b>IRI</b>         | <a href="http://w3id.org/CE0N/ontology/resourceODP/Constituent">http://w3id.org/CE0N/ontology/resourceODP/Constituent</a> |
| <b>Description</b> | A constituent is a component of object.   |
| <b>In Range Of</b> | <a href="#">has constituent</a> <sup>op</sup>   |

## Digital object<sup>C</sup>

|                     |   |
|---------------------|---|
| <b>IRI</b>          | <a href="http://w3id.org/CE0N/ontology/resourceODP/DigitalObject">http://w3id.org/CE0N/ontology/resourceODP/DigitalObject</a> |
| <b>Sub Class Of</b> | <a href="#">Resource</a> <sup>C</sup>   |

## Information<sup>C</sup>

|                     |  |
|---------------------|--|
| <b>IRI</b>          | <a href="http://w3id.org/CE0N/ontology/resourceODP/Information">http://w3id.org/CE0N/ontology/resourceODP/Information</a>  |
| <b>Description</b>  | Information is an abstract concept that represents any kind of interpretations. For instance, information can be data generated by software systems or data used by people for communications. |
| <b>Sub Class Of</b> | <a href="#">Asset</a> <sup>C</sup>   |
| <b>In Domain Of</b> | <a href="#">containsInformation</a> <sup>op</sup><br><a href="#">isAbout</a> <sup>op</sup>   |
| <b>In Range Of</b>  | <a href="#">containsInformation</a> <sup>op</sup><br><a href="#">is realization of</a> <sup>op</sup>   |

## Matter<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/resource0DP/Matter>

**Description** A matter is a physical substance.

**In Range Of** [has matter](#)<sup>op</sup>

## Physical object<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/resource0DP/PhysicalObject>

**Description** A physical object is a collection of matter.

**Sub Class Of** [Resource](#)<sup>C</sup>  
[has constituent](#)<sup>op</sup> some [Constituent](#)<sup>C</sup> and [has constituent](#)<sup>op</sup> only [Constituent](#)<sup>C</sup>  
[has matter](#)<sup>op</sup> some [Matter](#)<sup>C</sup> and [has matter](#)<sup>op</sup> only [Matter](#)<sup>C</sup>

**In Domain Of** [has constituent](#)<sup>op</sup>  
[has matter](#)<sup>op</sup>

**In Range Of** [has physical object](#)<sup>op</sup>

## Resource<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/resource0DP/Resource>

**Is Defined By** ISO 59004:2024 - 3.1.5 resource

**Description** Asset from which a solution is created or implemented. Depending on the context, reference to “resource” includes “raw material”, “feedstock”, “material” or “component”. Resource includes any energy type (e.g. the energy content or energy potential of materials). Note 4 to entry: Resources can be considered concerning both stocks and flows.

**Sub Class Of** [Asset](#)<sup>C</sup>

**In Domain Of** [hasResourceLocation](#)<sup>op</sup>

**Super Class Of** [Batch](#)<sup>C</sup>  
[Digital object](#)<sup>C</sup>  
[Physical object](#)<sup>C</sup>  
[Set of objects](#)<sup>C</sup>

## Set of objects<sup>c</sup>

|                     |   |
|---------------------|---|
| <b>IRI</b>          | <a href="http://w3id.org/CE0N/ontology/resource0DP/Set0f0bjects">http://w3id.org/CE0N/ontology/resource0DP/Set0f0bjects</a>   |
| <b>Description</b>  | A set of objects is a set of physical objects (items) that can be of different types, i.e. different kinds of items.  |
| <b>Sub Class Of</b> | <a href="#">Resource</a> <sup>c</sup><br><a href="#">has batch</a> <sup>op</sup> some <a href="#">Batch</a> <sup>c</sup> and <a href="#">has batch</a> <sup>op</sup> only <a href="#">Batch</a> <sup>c</sup><br><a href="#">has physical object</a> <sup>op</sup> some <a href="#">Physical object</a> <sup>c</sup> and <a href="#">has physical object</a> <sup>op</sup> only <a href="#">Physical object</a> <sup>c</sup> |
| <b>In Domain Of</b> | <a href="#">has batch</a> <sup>op</sup>   |

## Object Properties

### has location<sup>op</sup>

|                          |   |
|--------------------------|---|
| <b>IRI</b>               | <a href="http://w3id.org/CE0N/ontology/location/hasLocation">http://w3id.org/CE0N/ontology/location/hasLocation</a> |
| <b>Super Property Of</b> | <a href="#">hasResourceLocation</a> <sup>op</sup>   |

### contains information<sup>op</sup>

|                        |   |
|------------------------|---|
| <b>IRI</b>             | <a href="http://w3id.org/CE0N/ontology/resource0DP/containsInformation">http://w3id.org/CE0N/ontology/resource0DP/containsInformation</a> |
| <b>Sub Property Of</b> | <a href="#">hasPart</a> <sup>op</sup>   |
| <b>Domain</b>          | <a href="#">Information</a> <sup>c</sup>  |
| <b>Range</b>           | <a href="#">Information</a> <sup>c</sup>  |

### has batch<sup>op</sup>

|                    |  |
|--------------------|--|
| <b>IRI</b>         | <a href="http://w3id.org/CE0N/ontology/resource0DP/hasBatch">http://w3id.org/CE0N/ontology/resource0DP/hasBatch</a>                                |
| <b>Description</b> | hasBatch intends to represent that a set of objects can be captured by a number of batches where each batch contains a number of physical objects. |
| <b>Domain</b>      | <a href="#">Set of objects</a> <sup>c</sup>  |
| <b>Range</b>       | <a href="#">Batch</a> <sup>c</sup>   |

## has constituent<sup>op</sup>

|                        |   |
|------------------------|---|
| <b>IRI</b>             | <a href="http://w3id.org/CE0N/ontology/resource0DP/hasConstituent">http://w3id.org/CE0N/ontology/resource0DP/hasConstituent</a> |
| <b>Description</b>     | hasConstituent intends to represent that a physical object can have a collection of composing components.                       |
| <b>Sub Property Of</b> | <a href="#">hasPart<sup>op</sup></a>  |
| <b>Domain</b>          | <a href="#">Physical object<sup>c</sup></a>   |
| <b>Range</b>           | <a href="#">Constituent<sup>c</sup></a>   |

## has matter<sup>op</sup>

|                    |   |
|--------------------|---|
| <b>IRI</b>         | <a href="http://w3id.org/CE0N/ontology/resource0DP/hasMatter">http://w3id.org/CE0N/ontology/resource0DP/hasMatter</a> |
| <b>Description</b> | hasMatter intends to represent that a physical object can have a collection of matter.                                |
| <b>Domain</b>      | <a href="#">Physical object<sup>c</sup></a>   |
| <b>Range</b>       | <a href="#">Matter<sup>c</sup></a>  |

## has part<sup>op</sup>

|                          |   |
|--------------------------|---|
| <b>IRI</b>               | <a href="http://w3id.org/CE0N/ontology/resource0DP/hasPart">http://w3id.org/CE0N/ontology/resource0DP/hasPart</a>   |
| <b>Super Property Of</b> | <ul style="list-style-type: none"><li>• <a href="#">containsInformation<sup>op</sup></a></li><li>• <a href="#">has constituent<sup>op</sup></a></li></ul> |

## has physical object<sup>op</sup>

|                    |   |
|--------------------|---|
| <b>IRI</b>         | <a href="http://w3id.org/CE0N/ontology/resource0DP/hasPhysicalObject">http://w3id.org/CE0N/ontology/resource0DP/hasPhysicalObject</a> |
| <b>Description</b> | hasPhysicalObject intends to represent that a batch of objects or a set of objects can have composing components of physical objects. |
| <b>Domain</b>      | <a href="#">Set of objects<sup>c</sup></a> or <a href="#">Batch<sup>c</sup></a>   |
| <b>Range</b>       | <a href="#">Physical object<sup>c</sup></a>   |

## has resource location<sup>op</sup>

|                        |   |
|------------------------|---|
| <b>IRI</b>             | <a href="http://w3id.org/CE0N/ontology/resource0DP/hasResourceLocation">http://w3id.org/CE0N/ontology/resource0DP/hasResourceLocation</a> |
| <b>Sub Property Of</b> | <a href="#">location:hasLocation<sup>op</sup></a>   |
| <b>Domain</b>          | <a href="#">Resource<sup>c</sup></a>  |
| <b>Range</b>           | <a href="#">location:Location<sup>c</sup></a>   |

is about<sup>op</sup>

**IRI** <http://w3id.org/CE0N/ontology/resource0DP/isAbout>

**Domain** [Information](#)<sup>c</sup>

is realization of<sup>op</sup>

**IRI** <http://w3id.org/CE0N/ontology/resource0DP/isRealizationOf>

**Range** [Information](#)<sup>c</sup>

## Datatype Properties

batch size<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/ontology/resource0DP/batchSize>

**Description** batchSize intends to represent how many physical objects are belong to a batch of objects.

**Domain** [Batch](#)<sup>c</sup>

**Range** [xsd:nonNegativeInteger](#)

## Annotation Properties

description<sup>ap</sup>

**IRI** <http://purl.org/dc/elements/1.1/description>

contributor<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/contributor>

created<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/created>

creator<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/creator>

description<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/description>

|  |   |
|--|---|
| license <sup>ap</sup>                    |   |
| IRI                                      | <a href="http://purl.org/dc/terms/license">http://purl.org/dc/terms/license</a>   |
| title <sup>ap</sup>                      |   |
| IRI                                      | <a href="http://purl.org/dc/terms/title">http://purl.org/dc/terms/title</a>   |
| preferred namespace prefix <sup>ap</sup> |   |
| IRI                                      | <a href="http://purl.org/vocab/vann/preferredNamespacePrefix">http://purl.org/vocab/vann/preferredNamespacePrefix</a>   |
| preferred namespace uri <sup>ap</sup>    |   |
| IRI                                      | <a href="http://purl.org/vocab/vann/preferredNamespaceUri">http://purl.org/vocab/vann/preferredNamespaceUri</a>   |
| covers requirements <sup>ap</sup>        |   |
| IRI                                      | <a href="http://www.ontologydesignpatterns.org/schemas/cannotation-schema.owl#coversRequirements">http://www.ontologydesignpatterns.org/schemas/cannotation-schema.owl#coversRequirements</a> |
| definition <sup>ap</sup>                 |   |
| IRI                                      | <a href="http://www.w3.org/2004/02/skos/core#definition">http://www.w3.org/2004/02/skos/core#definition</a>   |
| pref label <sup>ap</sup>                 |   |
| IRI                                      | <a href="http://www.w3.org/2004/02/skos/core#prefLabel">http://www.w3.org/2004/02/skos/core#prefLabel</a>   |

## Namespaces

:

<http://w3id.org/CE0N/ontology/resourceODP/>

**dc**

<http://purl.org/dc/elements/1.1/>

**dcterms**

<http://purl.org/dc/terms/>

**geo**

<http://www.opengis.net/ont/geosparql#>

**location**

<http://w3id.org/CE0N/ontology/location/>

**odp**

<http://www.ontologydesignpatterns.org/schemas/cannotationschema.owl#>

**owl**

<http://www.w3.org/2002/07/owl#>

**prov**

<http://www.w3.org/ns/prov#>

**rdf**

<http://www.w3.org/1999/02/22-rdf-syntax-ns#>

**rdfs**

<http://www.w3.org/2000/01/rdf-schema#>

**skos**

<http://www.w3.org/2004/02/skos/core#>

**vann**

<http://purl.org/vocab/vann/>

**xsd**

<http://www.w3.org/2001/XMLSchema#>

## Legend

|    |                          |
|----|--------------------------|
| c  | Classes                  |
| op | Object<br>Properties     |
| dp | Datatype<br>Properties   |
| ap | Annotation<br>Properties |