

# Circular Economy Ontology Network (CEON) - Resource ODP

## Metadata

### IRI

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

### Title

Circular Economy Ontology Network (CEON) - Resource ODP

### Creator

Huanyu Li

### Contributor

Eva Blomqvist

Mikael Lindecrantz

Robin Keskisärkkä

### Date Created

2023-03-16

### License

<https://creativecommons.org/licenses/by/4.0/>

### Version Iri

<http://w3id.org/CEON/ontology/resourceODP/0.2/>

### Version Info

0.2

### 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-ResourceType-4, C7-3, E2-2, E4-6, E5-1, E6-3, T3-1.

## Classes

## Batch Of Objects<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/BatchOfObjects">http://w3id.org/CEON/ontology/resourceODP/BatchOfObjects</a>
<b>Description</b>	A batch of object is a collection of physical objects that are of the same type.
<b>Sub Class Of</b>	<a href="#">Resource</a> <sup>c</sup> <a href="#">hasPhysicalObject</a> <sup>op</sup> some <a href="#">PhysicalObject</a> <sup>c</sup> and <a href="#">hasPhysicalObject</a> <sup>op</sup> only <a href="#">PhysicalObject</a> <sup>c</sup>
<b>In Domain Of</b>	<a href="#">batchSize</a> <sup>dp</sup>
<b>In Range Of</b>	<a href="#">hasBatch</a> <sup>op</sup>
<b>Restriction</b>	<a href="#">batchSize</a> <sup>dp</sup> <i>exactly</i> 1 <a href="#">Batch Of Objects</a> <sup>c</sup>

## Composition<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/Composition">http://w3id.org/CEON/ontology/resourceODP/Composition</a>
<b>Description</b>	A composition is used to represent what composing a physical object.

## Constituent<sup>c</sup>

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

## digital object<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/DigitalObject">http://w3id.org/CEON/ontology/resourceODP/DigitalObject</a>
<b>Description</b>	A digital object, e.g. a computer file, that is located on some server, hard drive, or on the web. Most often the digital object is the realization of some piece of information.
<b>Sub Class Of</b>	<a href="#">Resource</a> <sup>c</sup>

## Information<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/resourceODP/Information>

### Description

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.

### Sub Class Of

[Resource<sup>c</sup>](#)

### In Domain Of

[contains information<sup>op</sup>](#)  
[is about<sup>op</sup>](#)

### In Range Of

[contains information<sup>op</sup>](#)  
[is realization of<sup>op</sup>](#)

## Matter<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/resourceODP/Matter>

### Description

A matter is a physical substance.

### In Range Of

[hasMatter<sup>op</sup>](#)

## PhysicalObject<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/resourceODP/PhysicalObject>

### Description

A physical object is a collection of matter.

### Sub Class Of

[Resource<sup>c</sup>](#)  
[hasConstituent<sup>op</sup>](#) only [Constituent<sup>c</sup>](#) and [hasConstituent<sup>op</sup>](#) some [Constituent<sup>c</sup>](#)  
[hasMatter<sup>op</sup>](#) only [Matter<sup>c</sup>](#) and [hasMatter<sup>op</sup>](#) some [Matter<sup>c</sup>](#)

### In Domain Of

[hasConstituent<sup>op</sup>](#)  
[hasMatter<sup>op</sup>](#)

### In Range Of

[hasPhysicalObject<sup>op</sup>](#)

## Resource<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/resourceODP/Resource>

### Description

A resource able to be handled in the context of a circular value network, e.g. data generated by software systems in the CVN, materials or prooducts as physical objects handled in the CVN.

### Super Class Of

[Batch Of Objects<sup>c</sup>](#)  
[digital object<sup>c</sup>](#)  
[Information<sup>c</sup>](#)  
[PhysicalObject<sup>c</sup>](#)  
[Set Of Objects<sup>c</sup>](#)

## Set Of Objects<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/resourceODP/SetOfObjects>

### Description

A set of object is a set of physical objects that can be different types.

### Sub Class Of

[Resource<sup>c</sup>](#)  
[hasBatch<sup>op</sup>](#) some [Batch Of Objects<sup>c</sup>](#) *and* [hasBatch<sup>op</sup>](#) only [Batch Of Objects<sup>c</sup>](#)  
[hasPhysicalObject<sup>op</sup>](#) some [PhysicalObject<sup>c</sup>](#) *and* [hasPhysicalObject<sup>op</sup>](#) only [PhysicalObject<sup>c</sup>](#)

### In Domain Of

[hasBatch<sup>op</sup>](#)

## Object Properties

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

**IRI** <http://w3id.org/CEON/ontology/resourceODP/containsInformation>

### Description

Indicating that some piece of information is contained in a larger collection of information, e.g. a data sheet contains a statement about a certain parameter of a product.

### Sub Property Of

[has part<sup>op</sup>](#)

### Domain

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

### Range

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

## hasBatch<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/hasBatch">http://w3id.org/CEON/ontology/resourceODP/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 Of Objects</a> <sup>c</sup>

## hasConstituent<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/hasConstituent">http://w3id.org/CEON/ontology/resourceODP/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="#">has part</a> <sup>op</sup>
<b>Domain</b>	<a href="#">PhysicalObject</a> <sup>c</sup>
<b>Range</b>	<a href="#">Constituent</a> <sup>c</sup>

## hasMatter<sup>op</sup>

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

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

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/hasPart">http://w3id.org/CEON/ontology/resourceODP/hasPart</a>
<b>Description</b>	Indicating that something is part of or is contained by something else.
<b>Super Property Of</b>	<ul style="list-style-type: none"><li>• <a href="#">contains information</a><sup>op</sup></li><li>• <a href="#">hasConstituent</a><sup>op</sup></li></ul>

## hasPhysicalObject<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/hasPhysicalObject">http://w3id.org/CEON/ontology/resourceODP/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="#">Batch Of Objects</a> <sup>c</sup> or <a href="#">Set Of Objects</a> <sup>c</sup>
<b>Range</b>	<a href="#">PhysicalObject</a> <sup>c</sup>

## is about<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/isAbout">http://w3id.org/CEON/ontology/resourceODP/isAbout</a>
<b>Description</b>	Connecting the information to the object (physical, virtual, imaginary) that the information is about.
<b>Domain</b>	<a href="#">Information</a> <sup>c</sup>

## is realization of<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/isRealizationOf">http://w3id.org/CEON/ontology/resourceODP/isRealizationOf</a>
<b>Description</b>	Relates a thing, e.g. a digital object, or a physical object, to the information it is a realization of. C.f. a physical book that is the realization of a novel, or a pdf or Excel-file that is a realization of a certain data sheet.
<b>Range</b>	<a href="#">Information</a> <sup>c</sup>

## Datatype Properties

### batchSize<sup>dp</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/batchSize">http://w3id.org/CEON/ontology/resourceODP/batchSize</a>
<b>Description</b>	batchSize intends to represent how many physical objects are belong to a batch of objects.
<b>Domain</b>	<a href="#">Batch Of Objects</a> <sup>c</sup>
<b>Range</b>	<a href="#">xsd:nonNegativeInteger</a>

## 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** <http://purl.org/dc/terms/license>

title<sup>ap</sup>

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

preferred namespace prefix<sup>ap</sup>

**IRI** <http://purl.org/vocab/vann/preferredNamespacePrefix>

preferred namespace uri<sup>ap</sup>

**IRI** <http://purl.org/vocab/vann/preferredNamespaceUri>

covers requirements<sup>ap</sup>

<b>IRI</b>	<a href="http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#coversRequirements">http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#coversRequirements</a>
------------	---

## Namespaces

:

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

**dc**

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

**dcterms**

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

**odp**

<http://www.ontologydesignpatterns.org/schemas/cpannotationschema.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#>

**vann**

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

**xsd**

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

## Legend

c

Classes

op

Object Properties

dp

Datatype Properties

ap

Annotation Properties