

# 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**

2024-11-12

**License**

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

**Version Iri**

<http://w3id.org/CEON/ontology/resourceODP/0.3/>

**Version Info**

0.3

**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.

## 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>

## Batch of objects<sup>C</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/resourceODP/BatchOf0bjects">http://w3id.org/CE0N/ontology/resourceODP/BatchOf0bjects</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 objects) adhering to the same product model.
<b>Sub Class Of</b>	<a href="#">Resource</a> <sup>C</sup> <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 of objects</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/Digital0bject">http://w3id.org/CE0N/ontology/resourceODP/Digital0bject</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="#">Resource</a> <sup>C</sup>
<b>In Domain Of</b>	<a href="#">containsInformation</a> <sup>op</sup> <a href="#">isAbout</a> <sup>op</sup>
<b>In Range Of</b>	<a href="#">containsInformation</a> <sup>op</sup> <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> only [Constituent](#)<sup>C</sup> and [has constituent](#)<sup>op</sup> some [Constituent](#)<sup>C</sup>  
[has matter](#)<sup>op</sup> only [Matter](#)<sup>C</sup> and [has matter](#)<sup>op</sup> some [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>

**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 products as physical objects handled in the CVN.

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

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

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

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

**Description** A set of objects is a set of physical objects (items) that can be of different types, i.e. different kinds of items.

**Sub Class Of** [Resource](#)<sup>C</sup>  
[has batch](#)<sup>op</sup> some [Batch of objects](#)<sup>C</sup> and [has batch](#)<sup>op</sup> only [Batch of objects](#)<sup>C</sup>  
[has physical object](#)<sup>op</sup> some [Physical object](#)<sup>C</sup> and [has physical object](#)<sup>op</sup> only [Physical object](#)<sup>C</sup>

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

## Object Properties

has location<sup>op</sup>

**IRI** <http://w3id.org/CE0N/ontology/location/hasLocation>

**Super Property Of** [hasResourceLocation<sup>op</sup>](#)

contains information<sup>op</sup>

**IRI** <http://w3id.org/CE0N/ontology/resourceODP/containsInformation>

**Sub Property Of** [hasPart<sup>op</sup>](#)

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

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

has batch<sup>op</sup>

**IRI** <http://w3id.org/CE0N/ontology/resourceODP/hasBatch>

**Description** 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.

**Domain** [Set of objects<sup>c</sup>](#)

**Range** [Batch of objects<sup>c</sup>](#)

has constituent<sup>op</sup>

**IRI** <http://w3id.org/CE0N/ontology/resourceODP/hasConstituent>

**Description** hasConstituent intends to represent that a physical object can have a collection of composing components.

**Sub Property Of** [hasPart<sup>op</sup>](#)

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

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

has matter<sup>op</sup>

**IRI** <http://w3id.org/CE0N/ontology/resourceODP/hasMatter>

**Description** hasMatter intends to represent that a physical object can have a collection of matter.

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

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

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

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

**Super Property Of**

- [containsInformation](#)<sup>op</sup>
- [has constituent](#)<sup>op</sup>

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

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

**Description**

hasPhysicalObject intends to represent that a batch of objects or a set of objects can have composing components of physical objects.

**Domain**

[Set of objects](#)<sup>c</sup> or [Batch of objects](#)<sup>c</sup>

**Range**

[Physical object](#)<sup>c</sup>

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

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

**Sub Property Of** [location:hasLocation](#)<sup>op</sup>

**Domain**

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

**Range**

[location:Location](#)<sup>c</sup>

## 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	<a href="http://w3id.org/CE0N/ontology/resource0DP/batchSize">http://w3id.org/CE0N/ontology/resource0DP/batchSize</a>
Description	batchSize intends to represent how many physical objects are belong to a batch of objects.
Domain	<a href="#">Batch of objects</a> <sup>c</sup>
Range	<a href="#">xsd:nonNegativeInteger</a>

## Annotation Properties

description <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/elements/1.1/description">http://purl.org/dc/elements/1.1/description</a>
contributor <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/contributor">http://purl.org/dc/terms/contributor</a>
created <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/created">http://purl.org/dc/terms/created</a>
creator <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/creator">http://purl.org/dc/terms/creator</a>
description <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/description">http://purl.org/dc/terms/description</a>
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

:	<a href="http://w3id.org/CEON/ontology/resourceODP/">http://w3id.org/CEON/ontology/resourceODP/</a>
dc	<a href="http://purl.org/dc/elements/1.1/">http://purl.org/dc/elements/1.1/</a>
dcterms	<a href="http://purl.org/dc/terms/">http://purl.org/dc/terms/</a>
geo	<a href="http://www.opengis.net/ont/geosparql#">http://www.opengis.net/ont/geosparql#</a>
location	<a href="http://w3id.org/CEON/ontology/location/">http://w3id.org/CEON/ontology/location/</a>
odp	<a href="http://www.ontologydesignpatterns.org/schemas/cannotationschema.owl#">http://www.ontologydesignpatterns.org/schemas/cannotationschema.owl#</a>
owl	<a href="http://www.w3.org/2002/07/owl#">http://www.w3.org/2002/07/owl#</a>
prov	<a href="http://www.w3.org/ns/prov#">http://www.w3.org/ns/prov#</a>
rdf	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#">http://www.w3.org/1999/02/22-rdf-syntax-ns#</a>
rdfs	<a href="http://www.w3.org/2000/01/rdf-schema#">http://www.w3.org/2000/01/rdf-schema#</a>
skos	<a href="http://www.w3.org/2004/02/skos/core#">http://www.w3.org/2004/02/skos/core#</a>
vann	<a href="http://purl.org/vocab/vann/">http://purl.org/vocab/vann/</a>
xsd	<a href="http://www.w3.org/2001/XMLSchema#">http://www.w3.org/2001/XMLSchema#</a>

## Legend

c	Classes
op	Object Properties
dp	Datatype Properties
ap	Annotation Properties