# Circular Economy Ontology Network (CEON) - Subset of the QUDT Schema

## Metadata

**IRI**

`http://w3id.org/CEON/ontology/qudt/`

**Title**

Circular Economy Ontology Network (CEON) - Subset of the QUDT Schema

**Creator**

Robin Keskisärkkä

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**Version Iri**

http://w3id.org/CEON/ontology/qudt/2.1/

**Preferred Namespace Prefix**

qudt

**Preferred Namespace Uri**

http://qudt.org/2.1/schema/qudt#

**Description**

The QUDT, or "Quantity, Unit, Dimension and Type" schema defines the base classes properties, and restrictions used for modeling physical quantities, units of measure, and their dimensions in various measurement systems. The goal of the QUDT ontology is to provide a unified model of, measurable quantities, units for

measuring different kinds of quantities, the numerical values of quantities in different units of measure and the data structures and data types used to store and manipulate these objects in software.

Except for unit prefixes, all units are specified in separate vocabularies. Descriptions are provided in both HTML and LaTeX formats. A quantity is a measure of an observable phenomenon, that, when associated with something, becomes a property of that thing; a particular object, event, or physical system.

A quantity has meaning in the context of a measurement (i.e. the thing measured, the measured value, the accuracy of measurement, etc.) whereas the underlying quantity kind is independent of any particular measurement. Thus, length is a quantity kind while the height of a rocket is a specific quantity of length; its magnitude that may be expressed in meters, feet, inches, etc. Or, as stated at Wikipedia, in the language of measurement, quantities are quantifiable aspects of the world, such as time, distance, velocity, mass, momentum, energy, and weight, and units are used to describe their measure. Many of these quantities are related to each other by various physical laws, and as a result the units of some of the quantities can be expressed as products (or ratios) of powers of other units (e.g., momentum is mass times velocity and velocity is measured in distance divided by time).

# Classes

## Quantity [c]

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/Quantity` |
| **Is Defined By** | http://qudt.org/2.1/schema/qudt |
| **Restriction** | has quantity kind [op] only qudt:Quantity [c]<br>qudt:quantityValue [op] only qudt:Quantity [c]<br>has quantity kind [op] *min* 0 qudt:Quantity [c] |

## Quantity Kind [c]

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/QuantityKind` |
| **Is Defined By** | http://qudt.org/2.1/schema/qudt |
| **In Range Of** | has quantity kind [op] |

## Quantity Value [c]

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/QuantityValue` |
| **In Range Of** | qudt:quantityValue [op] |

## Unit [c]

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/Unit` |
| **Is Defined By** | http://qudt.org/2.1/schema/qudt |
| **Description** | A unit of measure, or unit, is a particular quantity value that has been chosen as a scale for measuring other quantities the same kind (more generally of equivalent dimension). For example, the meter is a quantity of length that has been rigorously defined and standardized by the BIPM (International Board of Weights and Measures). Any measurement of the length can be expressed as a number multiplied by the unit meter. More formally, the value of a physical quantity Q with respect to a unit (U) is expressed as the scalar multiple of a real number (n) and U, as (Q = nU). |
| **In Range Of** | has unit [op] |
| **Restriction** | has quantity kind [op] only qudt:Unit [c] |

## Object Properties

### has quantity kind [op]

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/hasQuantityKind` |
| **Is Defined By** | http://qudt.org/2.1/schema/qudt |
| **Range** | qudt:QuantityKind [c] |

## has unit [op]

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/hasUnit` |
| **Is Defined By** | http://qudt.org/2.1/schema/qudt |
| **Description** | • This property relates a system of units with a unit of measure that is either a) defined by the system, or b) accepted for use by the system and is convertible to a unit of equivalent dimension that is defined by the system. Systems of units may distinguish between base and derived units. Base units are the units which measure the base quantities for the corresponding system of quantities. The base units are used to define units for all other quantities as products of powers of the base units. Such units are called derived units for the system.<br>• This property relates a system of units with a unit of measure that is either a) defined by the system, or b) accepted for use by the system and is convertible to a unit of equivalent |

| | |
|---|---|
| | dimension that is defined by the system. Systems of units may distinguish between base and derived units. Base units are the units which measure the base quantities for the corresponding system of quantities. The base units are used to define units for all other quantities as products of powers of the base units. Such units are called derived units for the system. |
| **Range** | qudt:Unit[c] |

## quantity value[op]

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/quantityValue` |
| **Is Defined By** | http://qudt.org/2.1/schema/qudt |
| **Range** | qudt:QuantityValue[c] |

## Datatype Properties

### numeric value dp

| | |
|---|---|
| **IRI** | `http://qudt.org/schema/qudt/numericValue` |
| **Is Defined By** | http://qudt.org/2.1/schema/qudt |

## Namespaces

**:**

`http://qudt.org/2.1/schema/qudt#`

**dc**

`http://purl.org/dc/elements/1.1/`

**dcterms**

`http://purl.org/dc/terms/`

**owl**

`http://www.w3.org/2002/07/owl#`

**prov**

`http://www.w3.org/ns/prov#`

**qudt**

`http://qudt.org/schema/qudt/`

**rdf**

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

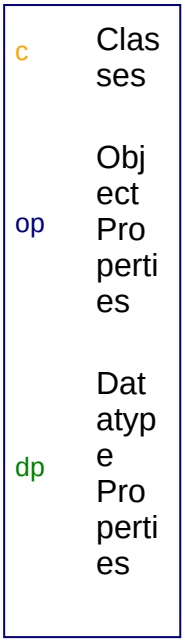
**rdfs**

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

**vann**

`http://purl.org/vocab/vann/`

## Legend


c
Classes
op
Object Properties
dp
Datatype Properties