

# O&M Phenomenon dictionary

From OGC 05-087r4



# Simple phenomenon

E.g. *Temperature, length, power*

Can be largely characterized through dimensional analysis

## Constrained phenomenon

Qualify a phenomenon by constraints on various axes

E.g. “surface-water-temperature” = *temperature* where (*medium*=water)  
+ *depth*=0m—0.3m)

Uses secondary vocabularies for qualifying attributes

# Compound phenomenon

Multiple components, vector-quantities

## Composite phenomenon

E.g *weather = temperature + rainfall + wind velocity + atmospheric pressure + ...*

i.e. arbitrary set of components

## Phenomenon series

E.g. spectral channels

*Power* in 256 channels

where

*wavelength* = 0.9-1 $\mu$ m, 1-1.1 $\mu$ m, 1.1-1.2 $\mu$ m, ...

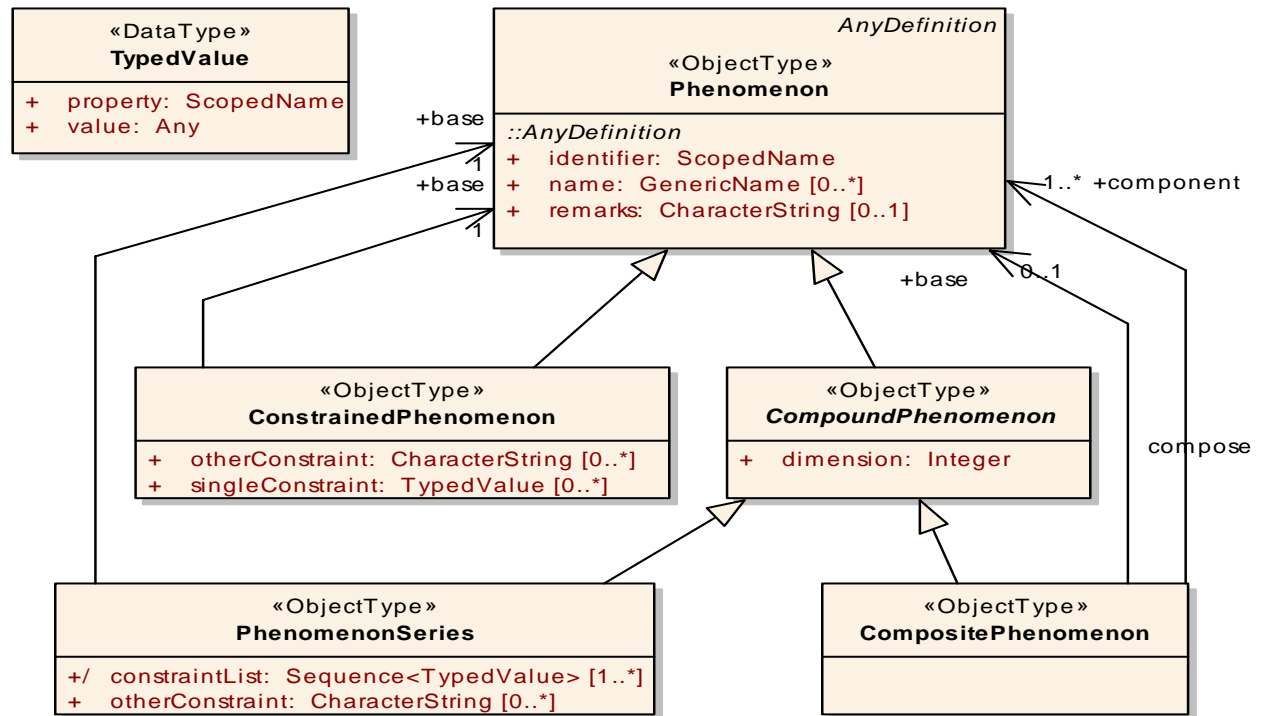
i.e. homogeneous components differing by the value of one or more constraints

# Formalization

XML serialization

using GML

UML → XML encoding rule





## In XML

```
<gml:dictionaryEntry>
  <swe:ConstrainedPhenomenon gml:id="WindVelocity">
    <gml:identifier codeSpace="urn:x-ogc:tc:arch:doc-rp(05-010)"
    >urn:x-ogc:def:phenomenon:OGC:WindVelocity</gml:identifier>
    <gml:name>Wind Velocity</gml:name>
    <swe:base xlink:href="#Velocity"/>
    <swe:singleConstraint>
      <swe:TypedValue>
        <swe:property
codeSpace="."/>Medium</swe:property>
        <swe:value xsi:type="gml:CodeType">Air</swe:value>
      </swe:TypedValue>
    </swe:singleConstraint>
  </swe:ConstrainedPhenomenon>
</gml:dictionaryEntry>
```

## The dictionary in OGC 05-087r4

Highly incomplete, prepared primarily to illustrate how the encoding satisfies the requirements

Some links to SWEET 1

# Summary

**Why?**

1. to support OGC testbed
2. to validate model

**Status**

no longer maintained

**Concept doc.**

rarely

**Key framework**

base + elaborations (constraints, composition)

**Coverage**

Broad scope, but patchy completion

**Sophistication**

Sophisticated - base + elaborations

**Adoption**

OGC testbeds

**Best feature?**

Rigorous, well documented model

**Weakest?**

non-standard encoding

**Other**

**Good basis?**