

# Description logic view: BFO-Continuants

## Classes

### Continuant

$\text{Continuant} \equiv \text{DependentContinuant} \sqcup \text{IndependentContinuant} \sqcup \text{SpatialRegion}$

$\text{Continuant} \sqsubseteq \text{Entity}$

### DependentContinuant

$\text{DependentContinuant} \equiv \text{GenericallyDependentContinuant} \sqcup \text{SpecificallyDependentContinuant}$

$\text{DependentContinuant} \sqsubseteq \text{Continuant}$

$\text{DependentContinuant} \sqsubseteq \neg \text{SpatialRegion}$

$\text{DependentContinuant} \sqsubseteq \neg \text{IndependentContinuant}$

### Disposition

$\text{Disposition} \sqsubseteq \text{RealizableEntity}$

$\text{Disposition} \sqsubseteq \neg \text{Role}$

$\text{Disposition} \sqsubseteq \neg \text{Function}$

### Entity

#### FiatObjectPart

$\text{FiatObjectPart} \sqsubseteq \text{MaterialEntity}$

$\text{FiatObjectPart} \sqsubseteq \neg \text{ObjectBoundary}$

$\text{FiatObjectPart} \sqsubseteq \neg \text{Site}$

$\text{FiatObjectPart} \sqsubseteq \neg \text{Object}$

$\text{FiatObjectPart} \sqsubseteq \neg \text{ObjectAggregate}$

### Function

$\text{Function} \sqsubseteq \text{RealizableEntity}$

$\text{Function} \sqsubseteq \neg \text{Disposition}$

$\text{Function} \sqsubseteq \neg \text{Role}$

### GenericallyDependentContinuant

$\text{GenericallyDependentContinuant} \sqsubseteq \text{DependentContinuant}$

$\text{GenericallyDependentContinuant} \sqsubseteq \neg \text{SpecificallyDependentContinuant}$

### IndependentContinuant

$\text{IndependentContinuant} \equiv \text{MaterialEntity} \sqcup \text{ObjectBoundary} \sqcup \text{Site}$

$\text{IndependentContinuant} \sqsubseteq \text{Continuant}$

$\text{IndependentContinuant} \sqsubseteq \neg \text{DependentContinuant}$

$\text{IndependentContinuant} \sqsubseteq \neg \text{SpatialRegion}$

### **MaterialEntity**

$\text{MaterialEntity} \equiv \text{FiatObjectPart} \sqcup \text{Object} \sqcup \text{ObjectAggregate}$   
 $\text{MaterialEntity} \sqsubseteq \text{IndependentContinuant}$   
 $\text{MaterialEntity} \sqsubseteq \neg \text{Site}$   
 $\text{MaterialEntity} \sqsubseteq \neg \text{ObjectBoundary}$

### **Object**

$\text{Object} \sqsubseteq \text{MaterialEntity}$   
 $\text{Object} \sqsubseteq \neg \text{ObjectAggregate}$   
 $\text{Object} \sqsubseteq \neg \text{ObjectBoundary}$   
 $\text{Object} \sqsubseteq \neg \text{FiatObjectPart}$   
 $\text{Object} \sqsubseteq \neg \text{Site}$

### **ObjectAggregate**

$\text{ObjectAggregate} \sqsubseteq \text{MaterialEntity}$   
 $\text{ObjectAggregate} \sqsubseteq \neg \text{Object}$   
 $\text{ObjectAggregate} \sqsubseteq \neg \text{ObjectBoundary}$   
 $\text{ObjectAggregate} \sqsubseteq \neg \text{Site}$   
 $\text{ObjectAggregate} \sqsubseteq \neg \text{FiatObjectPart}$

### **ObjectBoundary**

$\text{ObjectBoundary} \sqsubseteq \text{IndependentContinuant}$   
 $\text{ObjectBoundary} \sqsubseteq \neg \text{ObjectAggregate}$   
 $\text{ObjectBoundary} \sqsubseteq \neg \text{FiatObjectPart}$   
 $\text{ObjectBoundary} \sqsubseteq \neg \text{Site}$   
 $\text{ObjectBoundary} \sqsubseteq \neg \text{MaterialEntity}$   
 $\text{ObjectBoundary} \sqsubseteq \neg \text{Object}$

### **OneDimensionalRegion**

$\text{OneDimensionalRegion} \sqsubseteq \text{SpatialRegion}$   
 $\text{OneDimensionalRegion} \sqsubseteq \neg \text{TwoDimensionalRegion}$   
 $\text{OneDimensionalRegion} \sqsubseteq \neg \text{ThreeDimensionalRegion}$   
 $\text{OneDimensionalRegion} \sqsubseteq \neg \text{ZeroDimensionalRegion}$

### **Quality**

$\text{Quality} \sqsubseteq \text{SpecificallyDependentContinuant}$   
 $\text{Quality} \sqsubseteq \neg \text{RealizableEntity}$

### **RealizableEntity**

$\text{RealizableEntity} \sqsubseteq \text{SpecificallyDependentContinuant}$   
 $\text{RealizableEntity} \sqsubseteq \neg \text{Quality}$

## Role

Role  $\sqsubseteq$  RealizableEntity  
Role  $\sqsubseteq \neg$  Disposition  
Role  $\sqsubseteq \neg$  Function

## Site

Site  $\sqsubseteq$  IndependentContinuant  
Site  $\sqsubseteq \neg$  ObjectAggregate  
Site  $\sqsubseteq \neg$  ObjectBoundary  
Site  $\sqsubseteq \neg$  FiatObjectPart  
Site  $\sqsubseteq \neg$  MaterialEntity  
Site  $\sqsubseteq \neg$  Object

## SpatialRegion

SpatialRegion  $\equiv$  OneDimensionalRegion  $\sqcup$  ThreeDimensionalRegion  $\sqcup$  TwoDimensionalRegion  $\sqcup$  ZeroDimensionalRegion  
SpatialRegion  $\sqsubseteq$  Continuant  
SpatialRegion  $\sqsubseteq \neg$  DependentContinuant  
SpatialRegion  $\sqsubseteq \neg$  IndependentContinuant

## SpecificallyDependentContinuant

SpecificallyDependentContinuant  $\equiv$  Quality  $\sqcup$  RealizableEntity  
SpecificallyDependentContinuant  $\sqsubseteq$  DependentContinuant  
SpecificallyDependentContinuant  $\sqsubseteq \neg$  GenericallyDependentContinuant

## ThreeDimensionalRegion

ThreeDimensionalRegion  $\sqsubseteq$  SpatialRegion  
ThreeDimensionalRegion  $\sqsubseteq \neg$  TwoDimensionalRegion  
ThreeDimensionalRegion  $\sqsubseteq \neg$  OneDimensionalRegion  
ThreeDimensionalRegion  $\sqsubseteq \neg$  ZeroDimensionalRegion

## TwoDimensionalRegion

TwoDimensionalRegion  $\sqsubseteq$  SpatialRegion  
TwoDimensionalRegion  $\sqsubseteq \neg$  ZeroDimensionalRegion  
TwoDimensionalRegion  $\sqsubseteq \neg$  ThreeDimensionalRegion  
TwoDimensionalRegion  $\sqsubseteq \neg$  OneDimensionalRegion

## ZeroDimensionalRegion

ZeroDimensionalRegion  $\sqsubseteq$  SpatialRegion  
ZeroDimensionalRegion  $\sqsubseteq \neg$  TwoDimensionalRegion  
ZeroDimensionalRegion  $\sqsubseteq \neg$  ThreeDimensionalRegion  
ZeroDimensionalRegion  $\sqsubseteq \neg$  OneDimensionalRegion

**Object properties**

**Data properties**

**Individuals**

**Datatypes**

**string**