

Description logic view: GFO No Persistants and Presentials

Classes

Abstract

Abstract \sqsubseteq Individual
Abstract $\sqsubseteq \neg$ Concrete
Abstract $\sqsubseteq \neg$ Space_time

Action

Action \sqsubseteq Occurrent

Amount_{of}substrate

Amount_of_substrate \equiv Mass_entity
Amount_of_substrate \sqsubseteq Continuous

Awareness_{level}

Awareness_level \sqsubseteq Level
Awareness_level $\sqsubseteq \exists$ abstract_part_of Mental_stratum

Biological_{level}

Biological_level \sqsubseteq Level
Biological_level $\sqsubseteq \exists$ abstract_part_of Material_stratum

Category

Category \sqsubseteq Item
Category $\sqsubseteq \neg$ Individual

Change

Change \sqsubseteq Occurrent
Change $\sqsubseteq \neg$ History
Change $\sqsubseteq \neg$ Process

Chemical_{level}

Chemical_level $\sqsubseteq \exists$ abstract_part_of Material_stratum
Chemical_level \sqsubseteq Level

Chronoid

Chronoid \sqsubseteq Temporal_region

Concept

Concept \sqsubseteq Category

Concept $\sqsubseteq \neg$ Universal

Concept $\sqsubseteq \neg$ Symbol_structure

Concrete

Concrete \sqsubseteq Individual

Concrete $\sqsubseteq \neg$ Abstract

Concrete $\sqsubseteq \neg$ Space_time

Configuroid

Configuroid \sqsubseteq Process

Continuous

Continuous \equiv Individual $\sqcap \neg$ Discrete

Continuous \sqsubseteq Individual

Continuous_{change}

Continuous_change \equiv Intrinsic_change

Continuous_change \sqsubseteq Change

Continuous_{process}

Continuous_process \sqsubseteq Process

Continuous_process \sqsubseteq Continuous

Continuous_process $\sqsubseteq \neg$ Discrete_process

Dependent

Dependent $\equiv \exists$ depends_on Item

Dependent \sqsubseteq Individual

Dependent $\sqsubseteq \neg$ Independent

Discrete

Discrete \sqsubseteq Individual

Discrete_{process}

Discrete_process \sqsubseteq Process

Discrete_process \sqsubseteq Discrete

Discrete_process $\sqsubseteq \neg$ Continuous_process

Entity

Entity \equiv Item \sqcup Set

Extrinsic_change

Extrinsic_change \equiv Instantaneous_change

Extrinsic_change \sqsubseteq Change

Extrinsic_change \sqsubseteq \neg Intrinsic_change

Function

Function \sqsubseteq Concept

History

History \sqsubseteq Occurrent

History \sqsubseteq \neg Change

History \sqsubseteq \neg Process

Independent

Independent \sqsubseteq Individual

Independent \sqsubseteq \neg Dependent

Individual

Individual \equiv Abstract \sqcup Concrete \sqcup Space_time \sqcap Dependent \sqcup Independent \sqcap Role \sqcup Individual \sqcap \neg Role

Individual \sqsubseteq $\neg(\exists$ instantiated_by Item)

Individual \sqsubseteq Item

Individual \sqsubseteq \neg Category

Instantaneous_change

Instantaneous_change \equiv Extrinsic_change

Instantaneous_change \sqsubseteq Change

Intrinsic_change

Intrinsic_change \equiv Continuous_change

Intrinsic_change \sqsubseteq Change

Intrinsic_change \sqsubseteq \neg Extrinsic_change

Item

Item \equiv Category \sqcup Individual

Item \sqsubseteq Entity

Item \sqsubseteq $\neg(\exists$ has_member Entity)

Item \sqsubseteq \neg Set

Level

Level $\sqsubseteq \exists$ abstract_part_of Stratum

Level \sqsubseteq Ontological_layer

Level $\sqsubseteq \neg$ Stratum

Line

Line $\equiv \exists$ spatial_boundary_of Surface

Line \sqsubseteq Spatial_boundary

Mass_entity

Mass_entity \equiv Amount_of_substrate

Mass_entity \sqsubseteq Continuous

Material_boundary

Material_boundary \sqsubseteq Dependent

Material_line

Material_line \sqsubseteq Material_boundary

Material_line $\sqsubseteq \exists$ boundary_of Material_surface

Material_line $\sqsubseteq \neg$ Material_surface

Material_line $\sqsubseteq \neg$ Material_point

Material_point

Material_point $\sqsubseteq \exists$ boundary_of Material_line

Material_point \sqsubseteq Material_boundary

Material_point $\sqsubseteq \neg$ Material_line

Material_point $\sqsubseteq \neg$ Material_surface

Material_stratum

Material_stratum \sqsubseteq Stratum

Material_surface

Material_surface \sqsubseteq Material_boundary

Material_surface $\sqsubseteq \neg$ Material_line

Material_surface $\sqsubseteq \neg$ Material_point

Mental_stratum

Mental_stratum \sqsubseteq Stratum

Occurrent

Occurrent \sqsubseteq Concrete

Ontological_{layer}

Ontological_layer \sqsubseteq Category

Personality_{level}

Personality_level \sqsubseteq Level

Personality_level $\sqsubseteq \exists$ abstract_part_of Mental_stratum

Physical_{level}

Physical_level \sqsubseteq Level

Physical_level $\sqsubseteq \exists$ abstract_part_of Material_stratum

Point

Point $\equiv \exists$ spatial_boundary_of Line

Point \sqsubseteq Spatial_boundary

Process

Process \sqsubseteq Occurrent

Process $\sqsubseteq \neg$ History

Process $\sqsubseteq \neg$ Change

Processual_{role}

Processual_role $\sqsubseteq \exists$ role_of Process

Processual_role \sqsubseteq Process

Processual_role \sqsubseteq Role

Processual_role $\sqsubseteq \neg$ Relational_role

Processual_role $\sqsubseteq \neg$ Social_role

Property

Property \sqsubseteq Concrete

Property \sqsubseteq Dependent

Property $\sqsubseteq \neg$ Relator

Property_{value}

Property_value $\equiv \exists$ value_of Property

Property_value \sqsubseteq Dependent

Property_value \sqsubseteq Concrete

Relational_{r,ole}

Relational_role $\sqsubseteq \exists$ role_of Relator
Relational_role \sqsubseteq Dependent
Relational_role \sqsubseteq Role
Relational_role $\sqsubseteq \neg$ Processual_role
Relational_role $\sqsubseteq \neg$ Social_role

Relator

Relator \sqsubseteq Individual
Relator $\sqsubseteq \neg$ Property

Role

Role \sqsubseteq Concrete

Set

Set \sqsubseteq Entity
Set $\sqsubseteq \neg$ Item

Situoid

Situoid \sqsubseteq Configuroid

Social_{r,ole}

Social_role \sqsubseteq Role
Social_role \sqsubseteq Independent
Social_role $\sqsubseteq \neg$ Processual_role
Social_role $\sqsubseteq \neg$ Relational_role

Social_{s,tratum}

Social_stratum \sqsubseteq Stratum

Space

Space \sqsubseteq Space_time
Space $\sqsubseteq \neg$ Time

Space_{t,ime}

Space_time \sqsubseteq Individual
Space_time $\sqsubseteq \neg$ Concrete
Space_time $\sqsubseteq \neg$ Abstract

Spatial_boundary

Spatial_boundary $\equiv \exists$ spatial_boundary_of Space

Spatial_boundary \sqsubseteq Space

Spatial_boundary $\sqsubseteq \neg$ Spatial_region

Spatial_region

Spatial_region \sqsubseteq Space

Spatial_region $\sqsubseteq \neg$ Spatial_boundary

State

State \sqsubseteq Process

Stratum

Stratum \sqsubseteq Ontological_layer

Stratum $\sqsubseteq \neg$ Level

Surface

Surface $\equiv \exists$ spatial_boundary_of Topoid

Surface \sqsubseteq Spatial_boundary

Symbol

Symbol \sqsubseteq Symbol_structure

Symbol_sequences

Symbol_sequence \sqsubseteq Symbol_structure

Symbol_structure

Symbol_structure \sqsubseteq Category

Symbol_structure $\sqsubseteq \neg$ Concept

Symbol_structure $\sqsubseteq \neg$ Universal

Temporal_region

Temporal_region \sqsubseteq Time

Temporal_region $\sqsubseteq \neg$ Time_boundary

Thing

Time

Time \sqsubseteq Space_time

Time $\sqsubseteq \neg$ Space

Time_boundary

Time_boundary $\sqsubseteq \exists$ time_boundary_of Chronoid

Time_boundary \sqsubseteq Time

Time_boundary $\sqsubseteq \neg$ Temporal_region

Token

Token $\sqsubseteq \exists$ instance_of Symbol_structure

Token \sqsubseteq Concrete

Topoid

Topoid \sqsubseteq Spatial_region

Universal

Universal \sqsubseteq Category

Universal $\sqsubseteq \exists$ instantiated_by Item

Universal $\sqsubseteq \neg$ Concept

Universal $\sqsubseteq \neg$ Symbol_structure

Value_space

Value_space \sqsubseteq Universal

Object properties

abstract_has_part

$\text{jhttp://www.onto-med.de/ontologies/gfo.owlabstract}_p\text{art}_of > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlab}$

\exists abstract_has_part Thing \sqsubseteq Item

$\top \sqsubseteq \forall$ abstract_has_part Item

abstract_part_{of}

$\text{jhttp://www.onto-med.de/ontologies/gfo.owlabstract}_p\text{art}_of > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlab}$

\exists abstract_part_of Thing \sqsubseteq Item

$\top \sqsubseteq \forall$ abstract_part_of Item

agent_in

\sqsubseteq causes

\sqsubseteq participates_in

$\text{jhttp://www.onto-med.de/ontologies/gfo.owlagent}_i\text{n} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlhas}_a\text{gent}$

boundary_{of}

\sqsubseteq depends_on

$\text{!http://www.onto-med.de/ontologies/gfo.owlhas}_{boundary} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlbound}$

categorial_{part_of}

\sqsubseteq abstract_part_of

$\text{!http://www.onto-med.de/ontologies/gfo.owlhas}_{categorial}_{part} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owl}$

category_{inlayer}

\sqsubseteq categorial_part_of

$\text{!http://www.onto-med.de/ontologies/gfo.owlhas}_{category} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlcategor}$

caused_{by}

$\text{!http://www.onto-med.de/ontologies/gfo.owlcaused}_{by} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlcauses}$

causes

$\text{!http://www.onto-med.de/ontologies/gfo.owlcaused}_{by} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlcauses}$

constituent_{part_of}

\sqsubseteq proper_part_of

$\text{!http://www.onto-med.de/ontologies/gfo.owlconstituent}_{part_of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owl}$

depends_{on}

$\text{!http://www.onto-med.de/ontologies/gfo.owlnecessary}_{for} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owldepe}$

\exists depends_on Thing \sqsubseteq Item

$\top \sqsubseteq \forall$ depends_on Item

exists_{at}

$\top \sqsubseteq \leq 1$ exists_at Thing

$\top \sqsubseteq \forall$ exists_at Time_boundary

framed_{by}

\sqsubseteq occupies

$\text{!http://www.onto-med.de/ontologies/gfo.owlframes}_{i} \equiv \text{!http://www.onto-med.de/ontologies/gfo.owlframed}_{by} >^{-}$

$\top \sqsubseteq \leq 1$ framed_by Thing

$\top \sqsubseteq \forall$ framed_by Topoid

frames

$\text{[http://www.onto-med.de/ontologies/gfo.owlframes]} \equiv \text{[http://www.onto-med.de/ontologies/gfo.owlframed}_by >^-$
 $\top \sqsubseteq \leq 1 \text{ frames}^- \text{ Thing}$
 $\exists \text{ frames Thing} \sqsubseteq \text{Topoid}$

function_determinant_of

$\text{[http://www.onto-med.de/ontologies/gfo.owlhas}_function_determinant > \equiv < \text{http://www.onto-med.de/ontologies/}$
 $\top \sqsubseteq \forall \text{ function_determinant_of Function}$

function_of

$\text{[http://www.onto-med.de/ontologies/gfo.owlfunction}_of > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlhas}_function_of >$

functional_item_of

$\sqsubseteq \text{function_determinant_of}$
 $\text{[http://www.onto-med.de/ontologies/gfo.owlhas}_functional_item > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owl}$
 $\exists \text{ functional_item_of Thing} \sqsubseteq \text{Role}$

goal_of

$\sqsubseteq \text{function_determinant_of}$
 $\text{[http://www.onto-med.de/ontologies/gfo.owlhas}_goal > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlgoal}_of >$

has_agent

$\text{[http://www.onto-med.de/ontologies/gfo.owlagent}_n > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlhas}_agent >$

has_boundary

$\text{[http://www.onto-med.de/ontologies/gfo.owlhas}_boundary > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlbound}$
 $\top \sqsubseteq \leq 1 \text{ has_boundary}^- \text{ Thing}$

has_categorical_part

$\sqsubseteq \text{abstract_has_part}$
 $\text{[http://www.onto-med.de/ontologies/gfo.owlhas}_categorical_part > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owl}$
 $\exists \text{ has_categorical_part Thing} \sqsubseteq \text{Category}$
 $\top \sqsubseteq \forall \text{ has_categorical_part Category}$

has_category

$\text{[http://www.onto-med.de/ontologies/gfo.owlhas}_category > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlcatego}$
 $\exists \text{ has_category Thing} \sqsubseteq \text{Ontological_layer}$
 $\top \sqsubseteq \forall \text{ has_category Category}$

has_cconstituent_part

⊆ has_proper_part

⊔http://www.onto-med.de/ontologies/gfo.owl#constituent_part_of ≡ <http://www.onto-med.de/ontologies/gfo.owl#constituent_part_of>

has_ffunction

⊔http://www.onto-med.de/ontologies/gfo.owl#function_of ≡ <http://www.onto-med.de/ontologies/gfo.owl#function_of>

∃ has_function Thing ⊆ Individual

⊔ ⊆ ∀ has_function Function

has_ffunction_ddeterminant

⊔http://www.onto-med.de/ontologies/gfo.owl#function_determinant ≡ <http://www.onto-med.de/ontologies/gfo.owl#function_determinant>

∃ has_function_determinant Thing ⊆ Function

⊔ ⊆ ∀ has_function_determinant Individual

has_ffunctional_iitem

⊆ has_function_determinant

⊔http://www.onto-med.de/ontologies/gfo.owl#functional_item ≡ <http://www.onto-med.de/ontologies/gfo.owl#functional_item>

⊔ ⊆ ≤ 1 has_functional_item Thing

∃ has_functional_item Thing ⊆ Function

⊔ ⊆ ∀ has_functional_item Role

has_ggoal

⊆ has_function_determinant

⊔http://www.onto-med.de/ontologies/gfo.owl#goal_of ≡ <http://www.onto-med.de/ontologies/gfo.owl#goal_of>

∃ has_goal Thing ⊆ Function

has_lleft_ttime_boundary

⊆ has_time_boundary

⊔http://www.onto-med.de/ontologies/gfo.owl#left_time_boundary ≡ <http://www.onto-med.de/ontologies/gfo.owl#left_time_boundary>

⊔ ⊆ ≤ 1 has_left_time_boundary Thing

has_mmember

⊔http://www.onto-med.de/ontologies/gfo.owl#member_of ≡ <http://www.onto-med.de/ontologies/gfo.owl#member_of>

∃ has_member Thing ⊆ Set

⊔ ⊆ ∀ has_member Entity

has_ppart

⊆ abstract_has_part

⊔http://www.onto-med.de/ontologies/gfo.owl#part_of ≡ <http://www.onto-med.de/ontologies/gfo.owl#part_of>

∃ has_part Thing ⊆ Concrete

⊔ ⊆ ∀ has_part Concrete

has_pparticipant

\exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_p\text{participant} \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owlparticipant} \rangle$
 \exists has_participant Thing \sqsubseteq Occurrent

has_pproper_part

\sqsubseteq has_part
 \exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlproper}_p\text{art}_of \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_p\text{proper}_p\text{art}_of \rangle$

has_rrequirement

\sqsubseteq has_function_determinant
 \exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlrequirement}_of \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_r\text{requirement}_of \rangle$
 \exists has_requirement Thing \sqsubseteq Function

has_rright_time_boundary

\sqsubseteq has_time_boundary
 \exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlright}_t\text{ime}_b\text{oundary}_of \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_r\text{right}_t\text{ime}_b\text{oundary}_of \rangle$
 $\top \sqsubseteq \leq 1$ has_right_time_boundary Thing

has_ssequence_constituent

\exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlsequence}_c\text{onstituent}_of \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_s\text{sequence}_c\text{onstituent}_of \rangle$

has_sspatial_boundary

\sqsubseteq has_boundary
 \exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_s\text{spatial}_b\text{oundary} \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_s\text{spatial}_b\text{oundary}_of \rangle$
 $\top \sqsubseteq \forall$ has_spatial_boundary Spatial_boundary

has_time_boundary

\sqsubseteq has_boundary
 \exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_t\text{ime}_b\text{oundary} \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_t\text{ime}_b\text{oundary}_of \rangle$
 \exists has_time_boundary Thing \sqsubseteq Chronoid
 $\top \sqsubseteq \forall$ has_time_boundary Time_boundary

has_token

\sqsubseteq instance_of
 \exists $\langle \text{http://www.onto-med.de/ontologies/gfo.owlhas}_t\text{oken} \rangle \equiv \langle \text{http://www.onto-med.de/ontologies/gfo.owltoken}_of \rangle$
 \exists has_token Thing \sqsubseteq Symbol_structure
 $\top \sqsubseteq \forall$ has_token Concrete

has_value

$\text{!http://www.onto-med.de/ontologies/gfo.owlvalue}_of > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlhas}_value$
 $\exists \text{ has_value Thing} \sqsubseteq \text{Property}$
 $\top \sqsubseteq \forall \text{ has_value Property_value}$

instance_of

$\text{!http://www.onto-med.de/ontologies/gfo.owlinstantiated}_by > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlins}$
 $\exists \text{ instance_of Thing} \sqsubseteq \text{Entity}$
 $\top \sqsubseteq \forall \text{ instance_of Category}$

instantiated_by

$\text{!http://www.onto-med.de/ontologies/gfo.owlinstantiated}_by > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlins}$
 $\exists \text{ instantiated_by Thing} \sqsubseteq \text{Category}$

layer_of

$\text{!http://www.onto-med.de/ontologies/gfo.owllayer}_of > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlon}_layer$
 $\exists \text{ layer_of Thing} \sqsubseteq \text{Ontological_layer}$
 $\top \sqsubseteq \forall \text{ layer_of Individual}$

left_boundary_of

$\text{!http://www.onto-med.de/ontologies/gfo.owlhas}_left_time_boundary > \equiv < \text{http://www.onto-med.de/ontologies/gfo}$
 $\top \sqsubseteq \leq 1 \text{ left_boundary_of Thing}$

level_of

$\sqsubseteq \text{layer_of}$
 $\text{!http://www.onto-med.de/ontologies/gfo.owllevel}_of > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlon}_level >$
 $\exists \text{ level_of Thing} \sqsubseteq \text{Level}$

member_of

$\text{!http://www.onto-med.de/ontologies/gfo.owlhas}_member > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlmemb}$
 $\exists \text{ member_of Thing} \sqsubseteq \text{Entity}$
 $\top \sqsubseteq \forall \text{ member_of Set}$

necessary_for

$\text{!http://www.onto-med.de/ontologies/gfo.owlnecessary}_for > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owldepe}$
 $\exists \text{ necessary_for Thing} \sqsubseteq \text{Item}$
 $\top \sqsubseteq \forall \text{ necessary_for Item}$

occupied_{by}

$\text{!http://www.onto-med.de/ontologies/gfo.owloccupies}_i \equiv \text{!http://www.onto-med.de/ontologies/gfo.owloccupied}_{by} > ^-$
 $\top \sqsubseteq \leq 1 \text{ occupied_by}^- \text{ Thing}$
 $\exists \text{ occupied_by Thing} \sqsubseteq \text{Space}$

occupies

$\text{!http://www.onto-med.de/ontologies/gfo.owloccupies}_i \equiv \text{!http://www.onto-med.de/ontologies/gfo.owloccupied}_{by} > ^-$
 $\top \sqsubseteq \leq 1 \text{ occupies Thing}$
 $\top \sqsubseteq \forall \text{ occupies Space}$

on_{layer}

$\text{!http://www.onto-med.de/ontologies/gfo.owllayer}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlon}_{layer} >$
 $\exists \text{ on_layer Thing} \sqsubseteq \text{Individual}$
 $\top \sqsubseteq \forall \text{ on_layer Ontological_layer}$

on_{level}

$\sqsubseteq \text{on_layer}$
 $\text{!http://www.onto-med.de/ontologies/gfo.owllevel}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlon}_{level} >$
 $\top \sqsubseteq \forall \text{ on_level Level}$

on_{stratum}

$\sqsubseteq \text{on_layer}$
 $\text{!http://www.onto-med.de/ontologies/gfo.owlon}_{stratum} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlstratum} >$
 $\top \sqsubseteq \forall \text{ on_stratum Stratum}$

part_{of}

$\sqsubseteq \text{abstract_part_of}$
 $\text{!http://www.onto-med.de/ontologies/gfo.owlpart}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlhas}_{part} >$
 $\exists \text{ part_of Thing} \sqsubseteq \text{Concrete}$
 $\top \sqsubseteq \forall \text{ part_of Concrete}$

participates_{in}

$\text{!http://www.onto-med.de/ontologies/gfo.owlhas}_{participant} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlparticipates}_{in} >$
 $\top \sqsubseteq \forall \text{ participates_in Occurrent}$

plays_{role}

$\exists \text{ plays_role Thing} \sqsubseteq \text{Thing}$
 $\top \sqsubseteq \forall \text{ plays_role Role}$

projection_{of}

$\text{!http://www.onto-med.de/ontologies/gfo.owlprojection}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlproj}$
 $\top \sqsubseteq \leq 1 \text{ projection_of}^- \text{ Thing}$

projects_{to}

$\text{!http://www.onto-med.de/ontologies/gfo.owlprojection}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlproj}$
 $\top \sqsubseteq \leq 1 \text{ projects_to} \text{ Thing}$
 $\exists \text{ projects_to} \text{ Thing} \sqsubseteq \text{ Occurrent}$
 $\top \sqsubseteq \forall \text{ projects_to} \text{ Temporal_region}$

proper_{part}_{of}

$\sqsubseteq \text{ part_of}$
 $\text{!http://www.onto-med.de/ontologies/gfo.owlproper}_{part}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlhas}$

realized_{by}

$\text{!http://www.onto-med.de/ontologies/gfo.owlrealizes}_i \equiv \text{!http://www.onto-med.de/ontologies/gfo.owlrealized}_{by} >^-$

realizes

$\text{!http://www.onto-med.de/ontologies/gfo.owlrealizes}_i \equiv \text{!http://www.onto-med.de/ontologies/gfo.owlrealized}_{by} >^-$
 $\exists \text{ realizes} \text{ Thing} \sqsubseteq \text{ Individual}$
 $\top \sqsubseteq \forall \text{ realizes} \text{ Function}$

requirement_{of}

$\sqsubseteq \text{ function_determinant_of}$
 $\text{!http://www.onto-med.de/ontologies/gfo.owlrequirement}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlhas}$

right_{boundary}_{of}

$\text{!http://www.onto-med.de/ontologies/gfo.owlright}_{boundary}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/gfo.owlh}$
 $\top \sqsubseteq \leq 1 \text{ right_boundary_of}^- \text{ Thing}$

role_{of}

$\exists \text{ role_of} \text{ Thing} \sqsubseteq \text{ Role}$
 $\top \sqsubseteq \forall \text{ role_of} \text{ Individual}$

sequence_{constituent}_{of}

$\sqsubseteq \text{ part_of}$
 $\text{!http://www.onto-med.de/ontologies/gfo.owlsequence}_{constituent}_{of} > \equiv < \text{http://www.onto-med.de/ontologies/g}$
 $\exists \text{ sequence_constituent_of} \text{ Thing} \sqsubseteq \text{ Token}$
 $\top \sqsubseteq \forall \text{ sequence_constituent_of} \text{ Symbol_sequence}$

spatial_boundary_of

⊆ boundary_of

!http://www.onto-med.de/ontologies/gfo.owlhas_spatial_boundary > ≡ < http://www.onto-med.de/ontologies/gfo.o

∃ spatial_boundary_of Thing ⊆ Spatial_boundary

⊤ ⊆ ∀ spatial_boundary_of Space

stratum_of

⊆ layer_of

!http://www.onto-med.de/ontologies/gfo.owlon_stratum > ≡ < http://www.onto-med.de/ontologies/gfo.owlstratum

∃ stratum_of Thing ⊆ Stratum

time_boundary_of

⊆ boundary_of

!http://www.onto-med.de/ontologies/gfo.owlhas_time_boundary > ≡ < http://www.onto-med.de/ontologies/gfo.owl

∃ time_boundary_of Thing ⊆ Time_boundary

⊤ ⊆ ∀ time_boundary_of Chronoid

token_of

!http://www.onto-med.de/ontologies/gfo.owlhas_token > ≡ < http://www.onto-med.de/ontologies/gfo.owltoken_of

value_of

!http://www.onto-med.de/ontologies/gfo.owlvalue_of > ≡ < http://www.onto-med.de/ontologies/gfo.owlhas_value

∃ value_of Thing ⊆ Property_value

⊤ ⊆ ∀ value_of Property

Data properties

Individuals

empty_set

empty_set : Set

org.coode.owlapi.latex.LatexWriter@b7e998