Ontology Application Framework

Authors : Michael Uschold, Semantic Arts
Michael Gruniger, U. of Toronto
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Classes

Properties

Ontology Application Framework

The objective of this framework is to provide a common terminology for describing applications of ontologies and the benefits that ontologies deliver within these applications. In addition to classifying ontology applications, this provides the basis for benchmarks and the ability to compare different applications of ontologies.

OWL Standard : 2.0

Base URI : http://ontologies.semanticarts.com/ontapp
Default Namespace : http://ontologies.semanticarts.com/ontapp#

Namespaces

oaf   http://ontologies.semanticarts.com/ontapp#
Ontology Application Framework

Imports

None of this is cut and dried.

A technology or technique can be tightly linked with the role of the ontology, and/or the architecture.

Technologies and techniques can directly lead to benefits.

Purpose is often conflated with benefit. The purpose is to have a particular benefit, but the purpose might be expressed as a particular way the ontology will be used, or it could be expressed as a benefit, or both.

An ontology may play a particular role, and do so according to spec, but there may be no benefit at the end of the day.

The ontology role is often tightly tied up with an architecture.

Still To DO:
Enumerate some key technologies/techniques/ approaches and relate them to each other.

Enumerate some ontology roles,relate them to architectures and benefits.

Enumerate some architecture patterns, relate them to ontology roles and benefits.

Create a sample ontology applications with two AppliedOntologyRoles

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Object properties are yellow rectangles with rounded corners. The inverse property is in parenthesis. This generates an owl property and its inverse.

A class is in a square box. It generates an owl class.

A property inside a class creates a restriction. In this case, an OntologyApplication (N)ecessarily has at least one AppliedOntologyRole

OntologyApplication
An application that has or uses an ontology in some significant way

(N) hasAppliedOntologyRole
some AppliedOntologyRole

hasAppliedOntologyRole
(theOntologyApplication)
Links an OntologyApplication to a reified relationship indicating a role one of the applications ontologies played.

OntologyActor
Who is using the ontology and what are they doing?

- OntologyAuthor
OntologyActor - DataAuthor
- ApplicationDeveloper
- ApplicationUser

Gray ovals are instances. In this case because DataAuthor is inside the OntologyActor class box, it is not necessary to explicitly stated the class.

AppliedOntologyRole
A reified relationship indicating that an Ontology plays an OntologyRole in a particular OntologyApplication

(N) theOntologyApplication
some OntologyApplication

(N) theOntology
some Ontology

(N) theOntologyRole
some OntologyRole

(N) intendedBenefit
some Benefit

(N) actualBenefit
some Benefit

(N) kindOfUser
some OntologyActor

(N) deploysTechnique
some TechnologyOrTechnique

(N) whenOntologyUsed
some UseTime

Ontology
NB: should use the OOR ontology?

theOntology
the Ontology in the reified AppliedOntologyRole relationship.

theOntologyRole
the OntologyRole in the reified AppliedOntologyRole relationship.

facilitates
(isFacilitatedBy)
A technique or benefit contributes to the achievement of a benefit. For example, reduced maintenance effort facilitates increased agility.

intendedBenefit
(intendedBenefitOf)
The benefit that using the ontology was intended to accrue.

actualBenefit
(actualBenefitOf)
The benefit that using the ontology that actually accrued.

TechnologyOrTechnique
A way of accomplishing something, can include specific techniques as well as broader technologies.

facilitates
min 0 TechnologyOrTechnique

facilitates
min 0 Benefit

These two restrictions could be replaced by one if I created a class which is the union of TechnologyOrTechnique and Benefit.

OntologyRole
The role of an ontology answers the question: how is the ontology used in an application. An OntologyRole role can also be a TechnologyOrTechnique, e.g. to drive user interface forms.

kindOfUser
The kind of OntologyActor that makes use of the ontology.

deploysTechnique
The technology or technique that the applied ontology role deploys. Related to OntologyRole.

whenOntologyUsed
The kind of OntologyActor that makes use of the ontology.

Benefit
A desirable outcome. For this ontology, we are specifically intersted in benefits that arise from the application of a particular technology, technique, or approach. Benefits may also derive from other benefits. For example, reduct maintenance effort is a benefit that contributes to reduced costs.

facilitates
min 0 Benefit

This convention is for documentation purposes only. It is used to indicate that Benefits may facilitate other Benefits. The cardinality constraint of min 0 means that this has no logical import.

UseTime
When is the ontology used? e.g. design time or run time.

- DesignTime
- RunTime

This kind of arrow is for documentation purposes. In this case, it highlights the fact that the property actualBenefit will link an AppliedOntologyRole to a Benefit..