

Table 1 (Partial): Graphical vocabulary of G-OWL entities

	Graphical Alphabet	Meaning	Typed disambiguation	Polysemy in OWL
Abstract level	«name space» Concept name	The rectangle depicts the « what » of things		owl:Class
	Restriction type Concept, Fact, Value	The containing rectangle depicts a universal or existential <i>Restriction</i> or its value or cardinality.	\exists \forall $\exists, \leq, \geq, =$	owl:someValuesFrom owl:allValuesFrom <i>plus others ...</i>
	Collection type «name space» Collection name	The containing rectangle is also used to represent a collection of declarative knowledge	\cap $\cup, [,], \neg, \neq$	owl:intersectionOf owl:unionOf <i>plus others...</i>
	Role type «name space» Role name	The hexagon is used for representing a role that defines the property between abstract or factual entities.	<i>if codomain is a data</i> <i>if codomain is a fact</i> $T, S(\text{symmetric}),$ $F(\text{func.}),$ <i>plus others ...</i>	owl:DatatypeProperty owl:ObjectProperty owl:TransitivProperty <i>plus others ...</i>
Factual level	«name space» Fact name	The dotted-line rectangle depicts a fact.		OWL individual
	Data type Value	The dotted-line depicts data of the type <i>integer, real, s, etc.</i>	Bool, String, Int, Float	xsd:Boolean <i>plus others ...</i>

Table 2 (Partial): Graphical vocabulary of G-OWL relations

Type	Meaning	disambiguation rule	Polysemy in OWL
--- S --> SLink	The <i>specialization link</i> associates two knowledge items of the same type of which the first is a specialization of the second.	<i>if SLink between two concepts</i>	rdfs:subClassOf
<-- S --> LinkDS (LinkS with double orientation)	The <i>synonymy link</i> associates two knowledge items of the same type at the abstract level or two facts. It indicates that the first knowledge item is the equivalent (or synonym) of the second.	<i>if SLink between two roles</i>	rdfs:subPropertyOf
		<i>if DLink between two concepts</i>	owl:equivalentClass
		<i>if DLink between two roles</i>	owl:equivalentProperty
-- A --> ALink	The <i>attribution link</i> associates an attribute to a concept, a restriction or a collection to specify the image or domain of a property.	<i>if source is concept and destination is role</i>	rdfs:domain
		<i>if source is role and destination is concept</i>	rdfs:range
--name--> Non Typed Link	The <i>Non Typed link</i> associates a <i>predicate</i> between a fact and a knowledge item. The name of the predicate is associated to an existing attribute via the <i>RoleName</i> .	<i>if source is a fact and destination is a fact</i>	<i>Predicate</i>
-- I --> ILink	The <i>Instantiation link</i> associates a concept with a fact which designates an instance of this knowledge item.	<i>if source is a fact and destination is a concept</i>	rdf:type

using it as a supporting tool for knowledge elicitation and brainstorming, as well as for building more domain ontologies.

6. REFERENCE

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Fig. 1. Partial ontology of the Château d'Yquem Sauterne in graphical representation and G-OWL (extracted from wine.owl).

Graph representation	G-OWL Representation	Protégé OntoGraph	Criteria Ent/link	Graph	G-OWL	OntoGraph
			Number of types	6/8	5/3	6/3
			Total number	13/13	9/5	6/7