

LexEVS 6.3 Design Document - Detailed Design - OWL2 enhancements, modifications and new features

Document Information

Author: Craig Stancl
Email: Stancl.craig@mayo.edu
Team: LexEVS
Contract: S13-500 MOD4
Client: NCI CBIIT
National Institutes of Health
US Department of Health and Human Services

Contents of this Page

- [Design](#)

Overview

Loading OWL2 sources is part of an ongoing project to create a viable mapping of OWL2 sources into the LexGrid model. Challenges presented by this mapping include the punning of some owl classes into individuals and providing a mapping of annotations properties into a variety of LexEVS objects depending on the nature of the OWL2 annotation property. In some cases drilling down into the NAry structure of boolean sentences to construct relationships that are otherwise hidden by the nature of anonymous class was necessary. Individual examples of these issues have been detailed in the spread sheet below.

[LEXEVS-583](#) - Getting issue details...

STATUS

[LEXEVS-614](#) - Getting issue details...

STATUS

Design

JIRA	entities	test entity	test annotation	comment	LbGUI Structure	LbGUI annotation	Priority	LexEVS Team Comments	0.1.2	0.1.1	0.1.3	0.1.0
LEXEVS-775	Ontology metadata						1	Make sure the OWL:Ontology tag contents are expressed as coding scheme metadata	Yes	Yes	Yes	Yes
	special class	C123 (Gene)			+		0		N/A			
LEXEVS-776	external class	http://purl.obolibrary.org/obo/CL_0000000 (Cell) http://purl.obolibrary.org/obo/CL_0000148 (melanocyte)		entity code missing "http:" portion	?		5 (?)	the issue is that depending on the context, the "http" might be present, raising the question of whether the references can be trusted. See e.g. item 85 vs 97	Yes	Yes	Yes	Yes
LEXEVS-777	datatype property	has_physical_location in_organism semanticType		no datatype ranges are shown in lbgui (in_organism and semanticType)	+/-		1	Some properties will be treated as first class entity. Range one of would be treated as flattened list. See semantic type. See also in_organism where we'd add provenance and definition	Yes	Yes	Yes	Yes

LEXEVS-778	annotation property	AssociationLIT AssociationSTR AssociationURI AssociationV1 date definition note provenance semanticType source term term_type		only AssociationV1 and semanticType show up in primitive-unannotated (dual definitions with ranges)	-		2	lexevs has built-in properties for various things, e. g. definitions. But there are other properties that are not built into the lexevs model that might still be needed to be exposed to the end-user. Properties to be attached to the entity such as in_organism.	Yes	Yes	N/A	N/A
LEXEVS-779	anonymous class (test with unattached restriction)	Patient_Has_Finding some Finding SubClassOf SickPatient		express in LexEVS? Yes.	-		3	Left hand side is anon node subClass is the association. The intersection does not seem to be expressed in the annotated primitives. Assuming it is acceptably resolved for the defined annotated.	Yes	Yes	Yes	Yes
LEXEVS-780	association, annotation (literal)	AssociationLIT			-		1		Yes		N/A	N/A
LEXEVS-781	association, annotation (anyURI)	AssociationURI			-		1		Yes	Yes	N/A	N/A
LEXEVS-782	association, annotation (string)	AssociationSTR			-		1		Yes	Yes	N/A	N/A
	annotations on entities (declaration)											
LEXEVS-783	annotation on anonymous class (test with unattached restriction)	Patient_Has_Finding some Finding SubClassOf SickPatient	note, provenance, source	expose in lexevs? Yes. See above for priority.	-	+	3		Yes	Yes	N/A	N/A
LEXEVS-784	annotation on association, object + annotation (v1)	term		not consistent with other properties	-	+	1	not specific to these "association" properties, their metadata should be included as if they were first class citizens. Referring to the annotations in 10- 12	Yes	Yes	N/A	N/A
LEXEVS-785	annotation on association, annotation (literal)	term		not consistent with other properties	-	+	1	Not to be loaded as assoc entity -- only as a property on a class. This because the filler type is not anyURI.	Yes	Yes	N/A	N/A
LEXEVS-786	annotation on association, annotation (anyURI)	term		not consistent with other properties	-	+	1	Needs Entity description. Annotated on	Yes	Yes	N/A	N/A
LEXEVS-787	annotation on association, annotation (string)	term		not consistent with other properties	-	+	1	Not to be loaded as assoc entity -- only as a property on a class. This because the filler type is not anyURI.	Yes	Yes	N/A	N/A
	axioms, annotated											
									N/A			
LEXEVS-788	subclassOf, external named class	Epithelial_Cell isa Cell =	definition on subclass axiom	"http" of external class, missing?	+/-	+	5 (?)		Yes	Yes	Yes	Yes
	subclassOf, intersection named classes	TotalPerson isa Person and PersonRole	note on subclass axiom	PersonRole not extracted	-	+	5	question: should we also present the standalone conjunction.	Dup?			
	subclassOf, union named classes	Prognosis isa (PrognosisGood or PrognosisBad), SickPatient isa Patient and (CancerPatient or MildlySickPatient or VerySickPatient)	note on subclass axiom	unions anon classes appear parsed because the subclasses are "[R] subClassOf"	+/=	+	0		Dup?			

	subclassOf, union named disjoint classes	Gene isa disjointunion(Braf or Brca1 or Erbb2 or Mefv or OncogeneTim or Ras or Actin)	note on disjoint union	the classes in the disjoint union appear parsed, but it's because they are also subclasses (see above)	+/-	-	5		Dup?			
	subclassOf, complement named class	HealthyPatient not (SickPatient)	note on subclass axiom	anon class not parsed	-	+	3	representation issue	Dup?			
	subclassOf, one of	Finding one of (Fever, PaleSkin, ShallowBreathing) [individuals]	note on subclass axiom	anon class appears parsed because the individuals have [R]type relations	N/A	+	0		Dup?			
									Dup?			
	subclassOf, some datatype restriction	ras isa gene and has_physical_location some positiveInteger	note on subclass axiom	anon class not parsed	-	+	3	representation issue	Dup?			
	subclassOf, all datatype restriction	k-ras isa gene and has_physical_location all positiveInteger	note on subclass axiom	anon class not parsed	-	+	3	representation issue	Dup?			
	subclassOf, datatype hasValue	oncogeneTim isa gene and has_physical_location value 12345	note on subclass axiom	anon class not parsed	-	+	3	representation issue	Dup?			
	subclassOf, some objectype restriction	SOS isa gene and gene_related_to_disease some NeoplasticDisease	note on subclass axiom	anon class not parsed	-	+	5		Dup?			
	subclassOf, some objectype restriction external class	braf isa gene and gene_expressed_in some melanocyte	note on subclass axiom	anon class not parsed. "http" present in class IRI	-	+	5		Dup?			
	subclassOf, all objectype restriction external class	erb2 isa gene and gene_expressed_in only melanocyte	note on subclass axiom	anon class not parsed. "http" present in class IRI	-	+	5		Dup?			
	subclassOf, all objectype restriction	shh isa gene and gene_related_to_disease only NeoplasticDisease	note on subclass axiom	anon class not parsed	-	+	5		Dup?			
	subclassOf, object hasValue	Mefv isa Gene and gene_related_to_disease value Fever	note on subclass axiom	anon class not parsed. Individual present	-	+	5		Dup?			
	subclassOf, intersection object restrictions	MildlySickCancerPatient isa MildlySickPatient and (patient_has_finding some TumorBenign) and (patient_has_prognosis some PrognosisGood)	note on subclass axiom	anon class not parsed	-	+	5		Dup?			
	subclassOf, union object restrictions	VerySickCancerPatient isa VerySickPatient and (patient_has_finding some TumorMalignant) or (patient_has_prognosis some PrognosisBad)	note on subclass axiom	anon class not parsed	-	+	5		Dup?			
	subclassOf, role group	CancerPatient isa SickPatient and ((patient_has_finding some TumorBenign) and (patient_has_prognosis some PrognosisGood)) or ((patient_has_finding some TumorMalignant) and (patient_has_prognosis some PrognosisBad))	note on subclass axiom	anon class not parsed	-	+	5		Dup?			
	subclassOf, class expression (intersection object & datatype)	brca1 isa gene and ((gene_expressed_in some EpithelialCell) and (in_organism value "homo sapiens"))		anon class not parsed	-	+	3	representation issue	Dup?			
	subclassOf, class expression (union object & datatype)	actin isa gene and ((gene_expressed_in some EpithelialCell) or (in_organism value "all Organisms"))		anon class not parsed	-	+	3	representation issue	Dup?			
LEXEVS-789	association internal class (PrognosisGood)	HappyPatientDrivingAround: Associations V1, STR, URI, LIT, and URI as resource		type=anyURI is not being used for the association (V1 unannotated, OWLAPI issue)	-	+	5		Yes	Yes	N/A	N/A
LEXEVS-790	association external class (melanocyte)	HappyPatientWalkingAround: Associations V1, STR, URI, LIT, and URI as resource		1) as above, 2) "http" not present in the external class URI, 3) annotation on V1 belongs to another property	-	+	5		Yes	Yes	N/A	N/A
LEXEVS-791	equivalentClass, external named class			(external class does not have "http")	-		5 (?)		Yes	Yes	Yes	Yes

[illegible]

[illegible]