



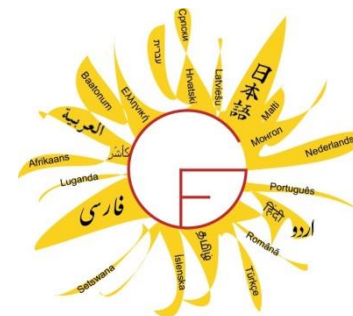
EIROPAS SAVIENĪBA



EIROPAS REĢIONĀLĀS
ATTĪSTĪBAS FONDS

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OWLGrEd/CNL: a Graphical Editor for OWL with Multilingual CNL Support

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Institute of Mathematics and Computer Science

University of Latvia

Third GF Summer School: Frontiers of Multilingual Technology

Frauenchiemsee, Bavaria, Germany

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owlgred.lumii.lv

OWLGrEd

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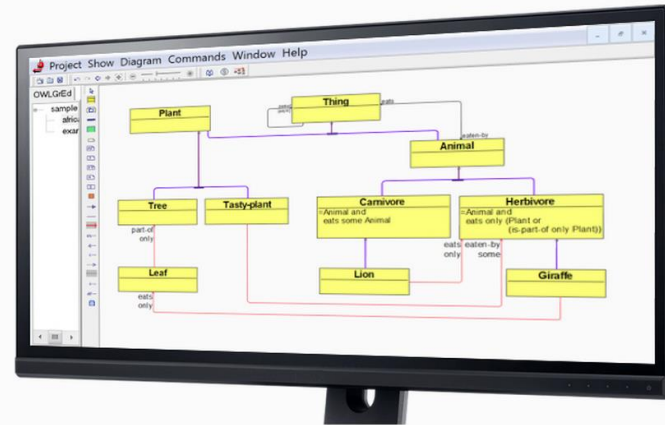
R&D

About Us

Finally, an **easy** way
to work with ontologies

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See like never before

No more scrolling through long and cryptic text files or seeing only one item at a time. With OWLGrEd you can see your whole ontology at a glance.



Edit like a Pro

OWLGrEd is easy to understand and use even for "non-ontologists". You can give it without hesitation to your industrial partners.



Customize for your needs

You can choose which OWL entity types are included in the visualization. You can change the automatic layout of the ontology as well as its graphical style.



Share your insight

After you have visualized and fine-tuned your ontology, you can export it as an image for use in documentation or inside a web page.

Licensing

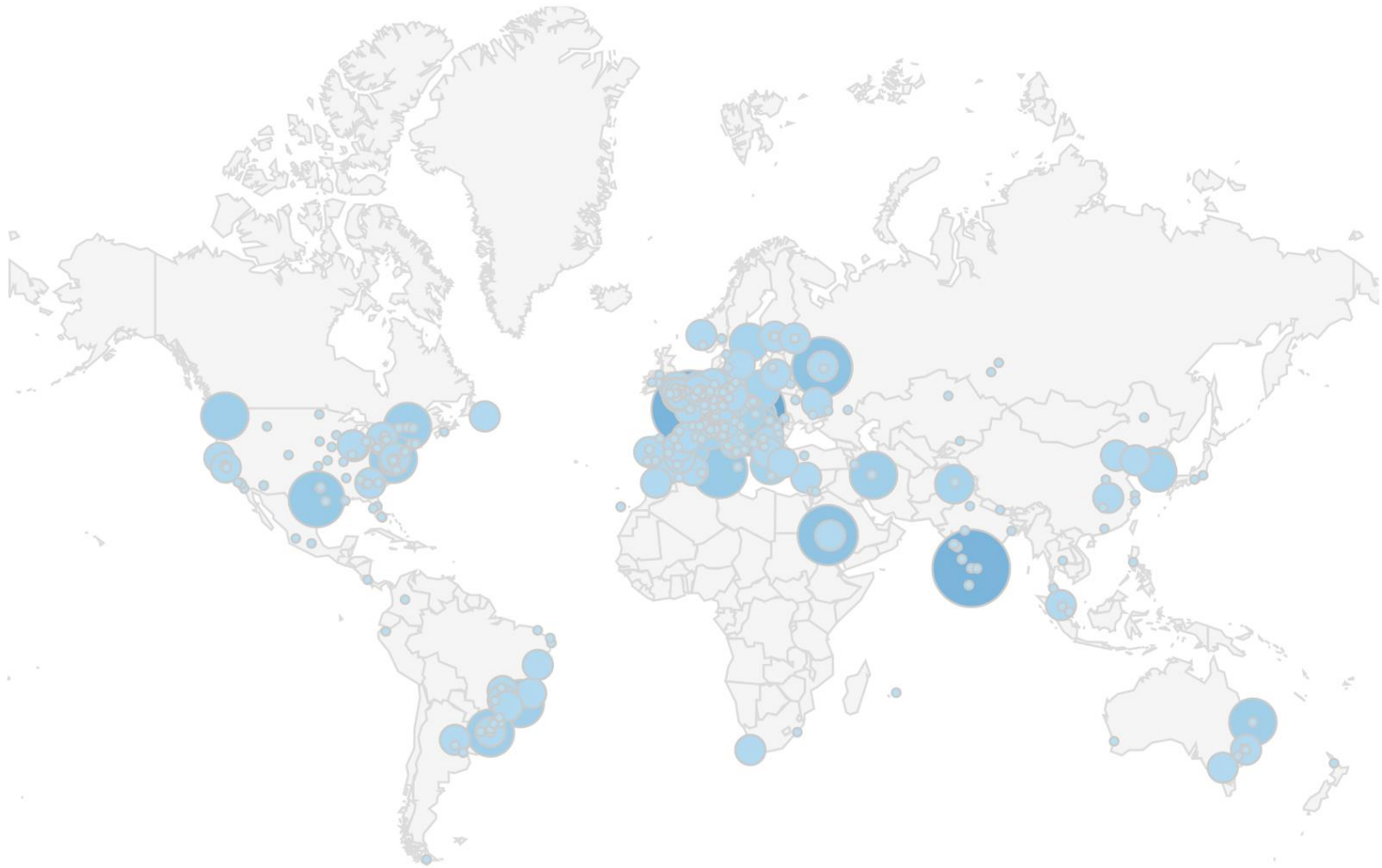
OWLGrEd is free for personal, academic and evaluation purposes.

To obtain a commercial license please contact us at owlgred@lumii.lv.

About OWLGrEd

- A compact UML-style graphical **notation** and **editor** for OWL 2
 - Uses the Manchester OWL Syntax for class expressions
- Builds on 20 years of experience in graphical modeling languages and tools
 - Implemented using the Transformation-Driven Architecture technology (tda.lumii.lv)
 - Provides a set of automatic graph layout algorithms
- Full interoperability with Protégé
- Extensions:
 - OWLGrEd/S: supports schema editing for Stardog OWL/RDF databases
 - OWLGrEd/**CNL**: supports axiom verbalization in controlled languages

Downloads in the last 3 months



The CNL plug-in

- Under construction
- Combines the controlled graphical language with controlled natural languages (CNL), currently English and Latvian
 - Graphics **demonstrate** the structure and connections
 - CNL helps to **understand** (and **check**) the semantics
- Uses:
 - The OWL subset of **Attempto Controlled English** (ACE) as an interlingua
 - Attempto **OWL verbalizer** for translating from OWL to ACE (attempto.ifi.uzh.ch)
 - **Grammatical Framework** (GF) to support the multilingualism
 - The **ACE-in-GF** application grammar (github.com/Attempto/ACE-in-GF)

Declaring a class

The screenshot shows the OWLGrEd interface for editing an ontology. A class named 'LivingThing' is highlighted in the main workspace. A 'Class' dialog box is open, showing the following fields:

Field	Value
DisplayLabel	LivingThing
English	living thing
Latvian	dzīva būtne
Name	LivingThing
Namespace	
Comment	
Annotation	
EquivalentClasses(=)	
SuperClasses(<)	

Annotations on the right side of the dialog box:

- A box labeled "Lexical forms in English and Latvian" has arrows pointing to the English and Latvian text input fields.
- A box labeled "Ontology symbol, generated from the English term" has an arrow pointing to the Name dropdown menu.

The status bar at the bottom left shows the coordinates "x=243,y=47".

Declaring a property

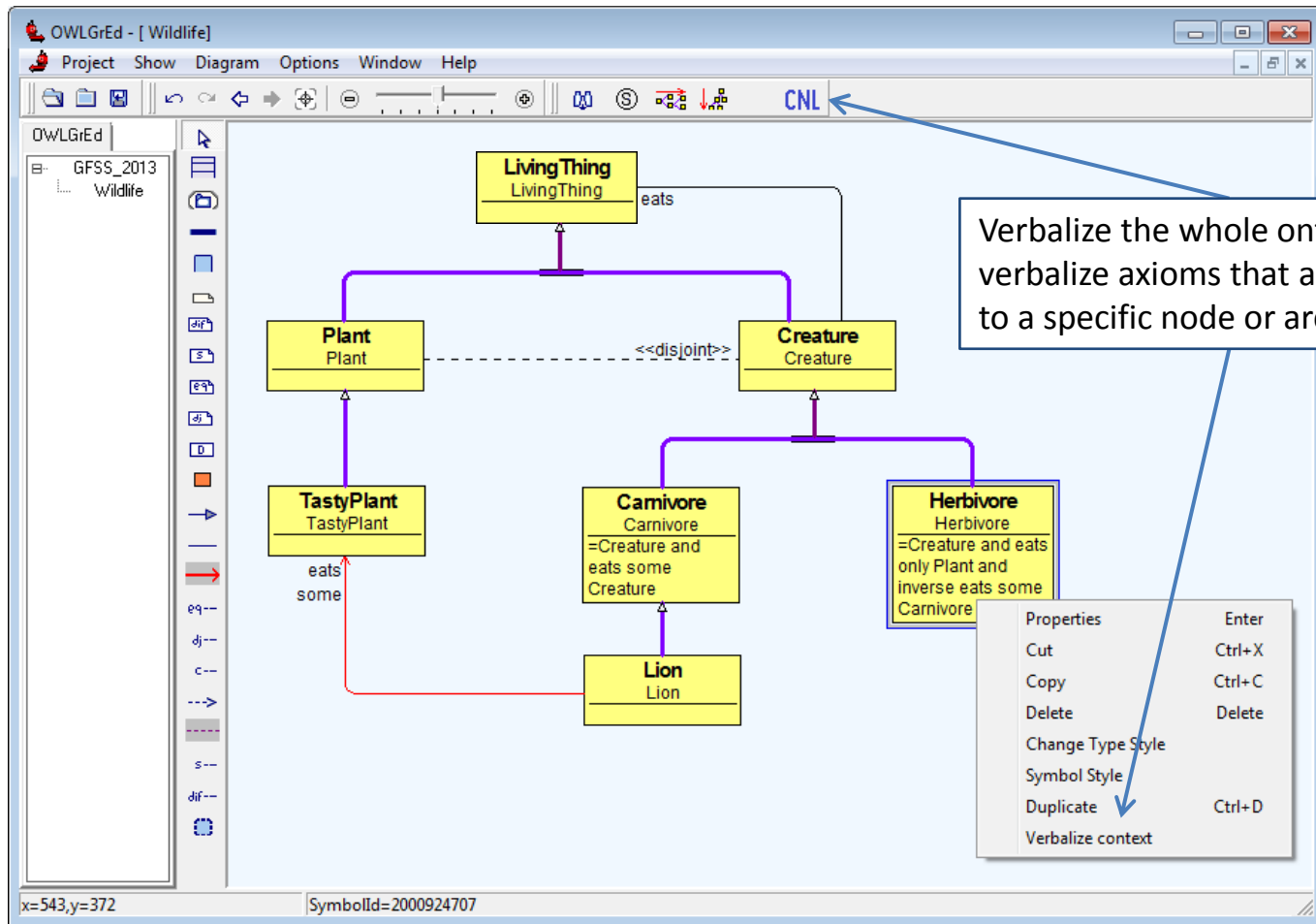
The screenshot shows the OWLGrEd interface with a project named 'GFSS_2013 Wildlife'. A diagram shows a 'LivingThing' class with a property 'eats' pointing to a 'Creature' class. An 'Association' dialog box is open, showing the configuration for the 'eats' property. The dialog has two tabs: 'Direct' and 'Inverse'. The 'Direct' tab is active, showing the following fields:

- Role For LivingThing: (empty)
- DisplayLabel: eats
- Type of predicate: Verb Noun
- English: Subject: creature, Predicate: eats, Object: living thing
- Latvian: Subject: radījums, Predicate: ēd, Object: dzīvu būtni (with a dropdown menu open showing options: dzīva būtne, dzīvas būtnes, dzīvai būtnei, dzīvu būtni, dzīvā būtnē)
- Name: (empty)
- Namespace: dzīvu būtni (with a dropdown menu open showing options: dzīvu būtni, dzīvā būtnē)
- Multiplicity: (empty)
- Annotation: (empty)

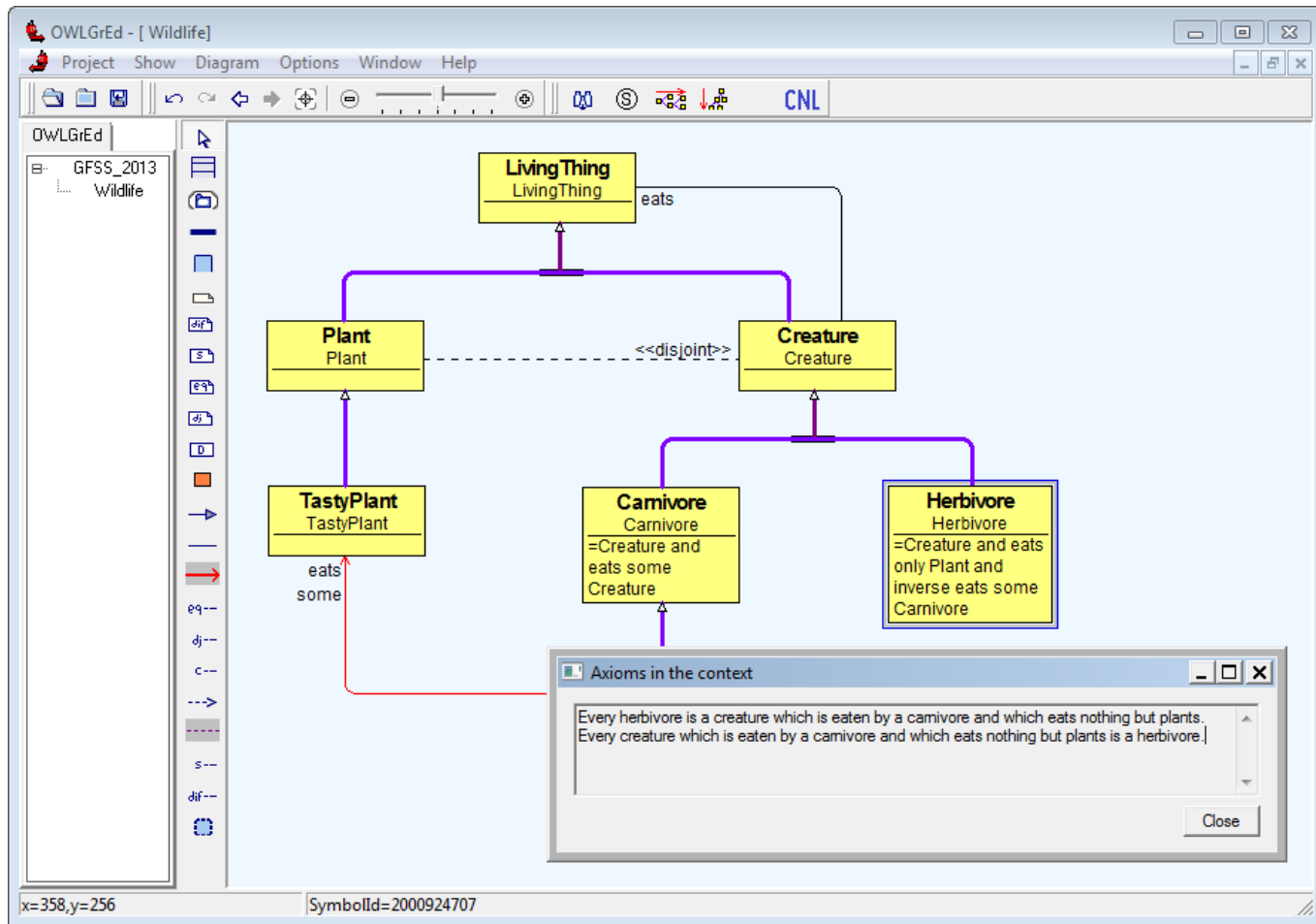
Two callout boxes provide additional information:

- Properties are always declared and lexicalized in the context of their domain and range
- In Latvian, the grammatical case of the subject and object can depend on the verb; The user can implicitly correct the cases, if the automatically suggested are incorrect

Verbalizing all/specific axioms

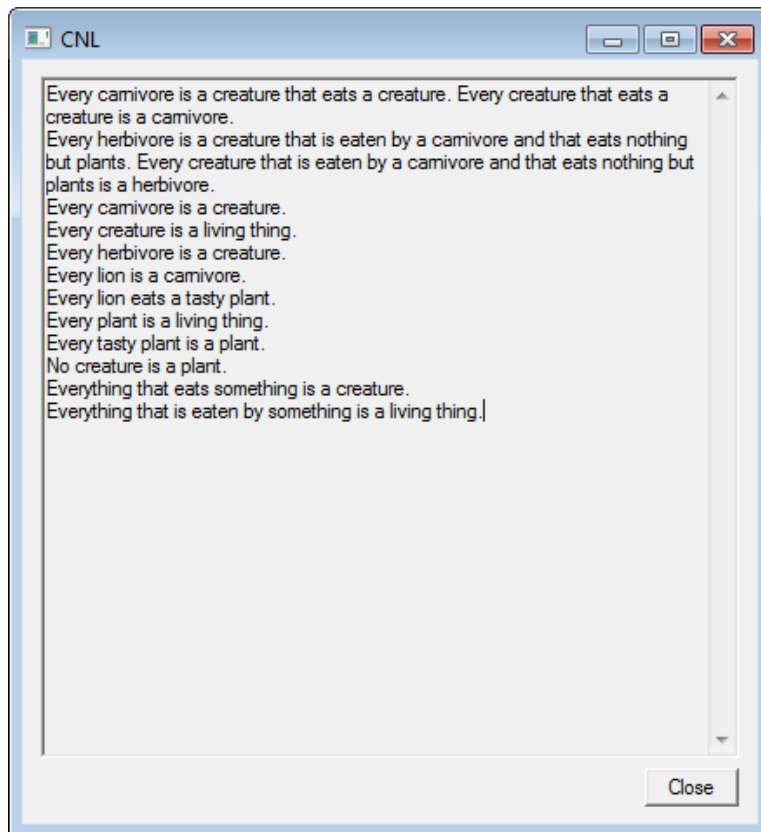


Axioms in the context

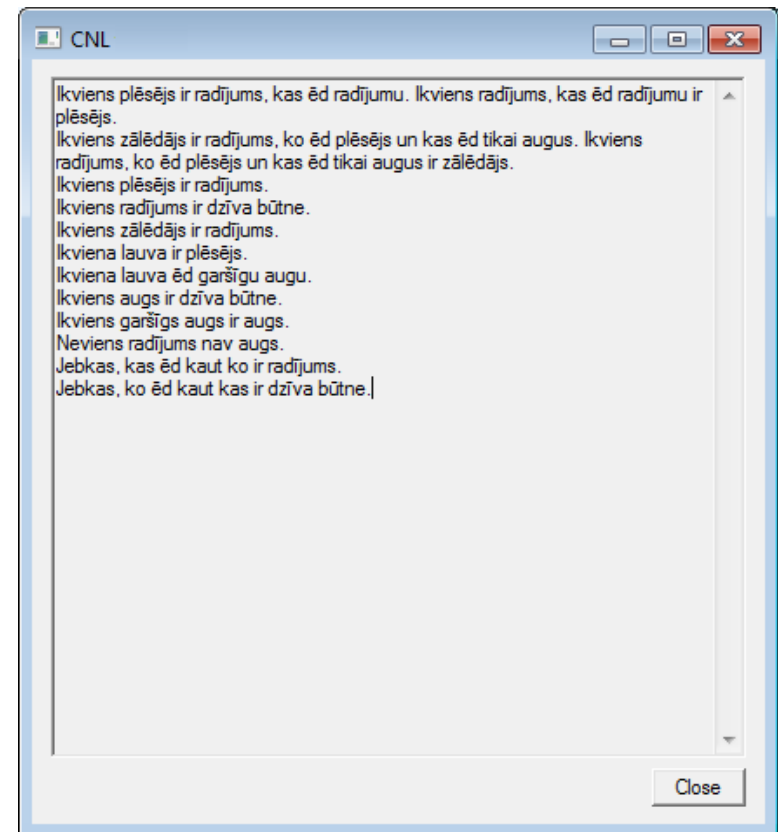


The whole ontology

In English:



In Latvian:



ToDo

- Extended support for verbalizing nominal object properties, used both directly and inversely
 - Introducing more ACE constructions into the ACE-in-GF grammar
- Limited support for verbalizing data properties
 - Introducing more ACE constructions into the ACE-in-GF grammar
- Authoring ontologies in CNL (in parallel to the graphical means): instant translation from CNL to OWL and, thus, to the graphical representation
 - The lexicon→grammar problem