



NeOn Toolkit Description

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What is the NeOn Toolkit?

The NeOn Toolkit is an ontology engineering environment that supports the complete life cycle of large-scale networked ontologies. In order to support such a broad ontology modelling functionality, it has an open and modular architecture, which the NeOn Toolkit inherits from its underlying platform, Eclipse. Eclipse is a very rich development environment, which is widely adopted in the programming world and which perfectly fits to the modelling paradigm for ontologies. It provides developers with a framework to easily create, publish and integrate new features into the NeOn Toolkit. A substantial number of so-called plug-ins has been developed within and outside the NeOn consortium and are available at NeOn Toolkit homepage (<http://neon-toolkit.org/>) (See Chapter 19).

The NeOn Toolkit now supports the newly released standard Web Ontology Language OWL 2 (<http://www.w3.org/2007/OWL>). In order to support the new language features and also to ensure compatibility with other Semantic Web software and future developments, we have decided to build the OWL features of the NeOn Toolkit on-top of the OWL API (<http://owlapi.sourceforge.net>). The OWL API has emerged as the de facto standard for implementing OWL based application.

The NeOn Toolkit is available as an installable core version with the basic ontology functionality such as editing, browsing, ontology and project management. Its full functionality is described in the NeOn Deliverable D6.7.3 and also in the online-documentation, which is available on the NeOn-Toolkit web site and also from within the Toolkit itself.

The screenshot displays the NeOn Toolkit interface with the following components:

- Ontology Navigator:** A tree view on the left showing the ontology structure. The root is 'NewOntologyProject [OWL2]'. It contains several classes, including 'Food:ConsumableThing 0|102', 'Food:EdibleThing 0|49', 'Food:Meal', 'Food:MealCourse', 'Food:PotableLiquid 0|53', 'Food:Juice', 'Wine 0|53', 'Food:Fruit', 'Food:NonConsumableThing', 'Region 36|36', 'Vintage', 'VintageYear 1|1', 'Food:Wine', 'WineDescriptor 0|12', and 'Winery 43|43'. It also shows object and data properties, annotation properties, and datatypes.
- Entity Properties:** A panel at the top of the main window showing 'Zoom: 125%', 'Rotate: 0°', and search, history, legend, and tooltips options.
- Ontology Visualizer:** The main workspace showing a radial ontology graph. The central node is 'http://www.w3.org/TR/2003/PR-owl-guide-20031209/wine'. It has several outgoing arrows to other classes: 'food:EdibleThing', 'food:PotableLiquid', 'food:Meal', 'food:MealCourse', 'food:ConsumableThing', 'Region', 'food:NonConsumableThing', 'food:Fruit', 'WineDescriptor', 'VintageYear', 'Winery', 'Vintage', and 'Food:Wine'. A legend at the bottom left identifies 'Ontology' (blue circle) and 'Class' (blue square).
- Individuals:** A list at the bottom left showing various regions: AlsaceRegion, AnjouRegion, ArroyoGrandeRegion, AustralianRegion, BeaujolaisRegion, BordeauxRegion, BourgogneRegion, CaliforniaRegion, CentralCoastRegion, CentralTexasRegion, ChiantiRegion, CotesDOrRegion, EdnaValleyRegion, and FrenchRegion.

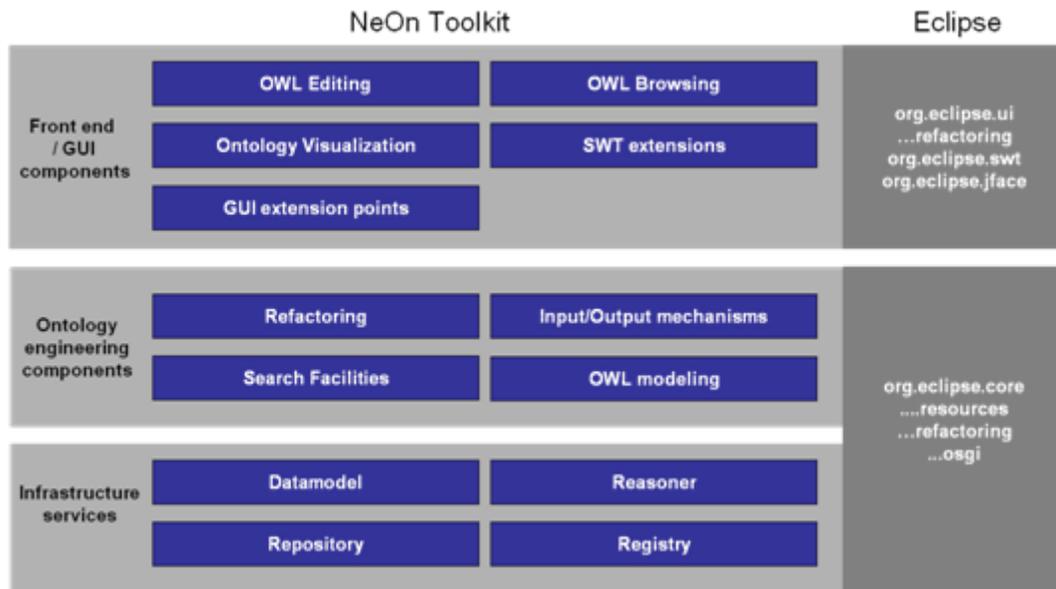


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NeOn Toolkit Architecture

The architecture of the NeOn Toolkit differentiates among three layers:

- Infrastructure services: these are the basic ontology services contained in all versions of the NeOn Toolkit. The OWL API implementation is the most important one.
- Engineering components: the main ontology functionality is contained in the engineering plug-ins provided by the NeOn Toolkit core. They can be (and are) extended by arbitrary ontology engineering plug-ins.
- GUI components: they contain the user interfaces for the engineering plug-ins. They are also extendible, like the engineering components.
- This layering and more details are described in the NeOn design deliverables, e.g. D6.2.1 and D6.9.1.



NeOn Toolkit Versions

The following versions are available:

- The basic NeOn Toolkit provides the core functionality for handling OWL 2 ontologies.
- The NeOn Toolkit extended configuration includes advanced functionality for managing rule based models and ontology mapping facilities based on commercial extensions.

After installing the NeOn Toolkit, you can use the convenient Eclipse update mechanism to add a large number of additional features to the NeOn Toolkit to better cover the complete ontology life cycle.

You can download the NeOn Toolkit under the open source Eclipse Public License (EPL) from its homepage (<http://www.neon-toolkit.org>).

Additional information:

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- ❑ M. Erdmann. D6.7.3: Update and next release of the core NeOn Toolkit with new OWL API realisation. NeOn Deliverable, January 2010.
- ❑ W. Waterfeld et. al. D6.2.1: Specification of NeOn reference architecture and NeOn APIs. NeOn Deliverable, February 2007.
- ❑ W. Waterfeld et. al. D6.9.1: Specification of NeOn architecture and API V2. NeOn Deliverable, February 2008.