DIP D2.8: Ontology Editing and Browsing Tool

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Abstract (for dissemination)	This document contains information summary and installation instru of the "Ontology Management Suite (OMS)" - an eclipse based soft to manage different aspects of ontologies, such as: editing, browsin versioning, mapping and persistence. The ontology metamodel is d by WSMO1.2 [2] and the ontology mapping metamodel is defined b OMWG Mapping
Keywords	Ontology Management

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1. Availability and Contacts

Version:
0.3, 30 June 2006.
Download:
There two options for download:
- Separate OMS plugins - http://www.omwg.org/tools/dip/tools/final/plugins, to be put under your

"eclipse/plugins" directory (note that GEF plugins are a prerequisite).
- OMS standalone application - http://www.omwg.org/tools/dip/tools/final/oms.zip

Please see installation instructions for details.

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2. Purpose and Functionality

This deliverable is a graphical user interface (GUI) for creating, maintaining and browsing WSML [1] Ontologies.

The tool is developed as an eclipse plugin to leverage the eclipse benefits as a powerful platform.

The tool is designed with emphasis on the following core enterprise requirements:

1. Scalability – Supports browsing and editing of large-scale ontologies is one of the primary goals of the editor. This means that the tool **does not** hold in-memory representation of the entire ontology including its sub-elements. This scalable design which is implemented in this deliverable includes the loading of the subsets of the ontology from the repository as the user navigates the ontology graph.
2. Usability – There is an emphasis on user-friendly GUI components which provide a pleasant, intuitive experience when working with the tool's interface.

Integration of the editing and browsing tool has focused on interfacing with the tools that are being developed by other partners in DIP. Specific integration includes:

1. Usage of wsmo4j API for importing and exporting WSML files.
2. Usage of versioning API to provide the versioning functionality layer .

3. Requirements

Nature: Tool
Interfaces (API, Web Services): Graphical User Interface.
Platform: Eclipse 3.1 and above.
Supported standards:WSMO

Required Libraries (OMWG, SDK Cluster, WSMO-related):

- All 3d party libraries are bundled with the plugins.
- WSMO4J and WSMO API is a WSMO compliant API and a reference implementation for building Semantic Web Services applications. Specifically the supported versions are: WSMO1.2 [2] and WSML0.2 [1].
- OMWG Versioning [3]: API for versioning WSML ontologies.

Required Libraries (others):

- All other third-party libraries are also bundled with the plugins.

4. Licensing

- See IBM licensing agreement for DIP: license.txt
- In addition see the LGPL license for the following libraries required for runtime: Hibernate, wsmo4j, omwg versioning and omwg mapping: LGPL license

5. Installation and Usage

Note: If you have already installed the Mapping Editor Eclipse Tool provided by Unicorn (see http://www.omwg.org/tools/dip/factsheets/MappingEditorFactSheet.html), the ontology editor is already installed.

5.1 Installation Prerequisite: Ontology Repository

Note: If you have already installed the 'FOR' repository provided by Unicorn (see: http://sw.deri.org/2005/03/diprdf/UnicornRepositoryFactSheet.html), the MSDE RDB is already installed.

As the ontology editor uses a repository backed by an RDMS, an RDMS should be installed first. As a default free lightweight choice please download MSDE (Microsoft SQLServer Desktop Engine), available http://www.omwg.org/tools/dip/tools/msde.zip.

MSDE DB server installation:

1. Extract msde.zip.
2. Run setup.exe.

   A message reading: "The instance name specified is invalid" may appear at the end of the MSDE installation, please ignore the message.

3. When the MSDE installation is completed, go to Start > Settings > Control panel > Administrative tools > Services.
4. Start MSSQLSERVER service.

5.2 Installing the OMS

5.2.1 OMS as Eclipse Plugins

The OMS plugins are available as separate plugins or bundled in a WSMO Studio. If you already have an Eclipse or WSMO Studio Installation, please download the 3 plugins from http://www.omwg.org/tools/dip/tools/final/plugins

- com.unicorn.eplugin.core_1.0.0.jar
- com.unicorn.eplugin.dip_1.0.0.jar
- com.unicorn.eplugin.gabase_1.0.0.jar

Please put the plugins under your Eclipse / WSMO Studio "plugins" directory.

You also need to install the GEF plugins for your Eclipse version:

- download at: http://download.eclipse.org/tools/gef/downloads/
- installation: put the GEF plugins under your Eclipse / WSMO Studio "plugins" directory.

5.2.2 OMS Standalone

If you do not have an Eclipse / WSMO Studio installed, for your convenience download the OMS standalone - http://www.omwg.org/tools/dip/tools/final/oms.zip
Simply extract the zip file, and run ***%INSTALLTION_DIR/oms/oms.exe*.**
When Eclipse has opened, please open the “Ontology Management” perspective. Please note that the **first time** the ontology management perspective is opened, a warning message will be presented. Click "OK" for approval, it may take a while for the system is to build the repository configuration.

Note: It is advised **not** to extract the OMS to a deep file directory (C:\dir1\dir2\dir3 \dir4...\OMS), as Windows and other OS have a limit on the directory depth that may fail the OMS installation.

Tip - Importing large ontologies may need more RAM than allocated by default (128M). To allow more RAM for the OMS; run eclipse with the -Xmx java flag that determines the maximum memory heap allocation. E.g. "C:\Eclipse\eclipse.exe -vmargs -Xmx256M"

5.2.3 OMS Upgrade

If you have a previous version of the OMS plugins installed:

- Close your Eclipse / WsmoStudio editor.
- Please note that the names of the plugins are the same as the currently installed, so the 3 jar files of the plugins should be replaced.
- Now, run Eclipse / WsmoStudio using “-clean” flag. (e.g. "C:\WsmoStudio\eclipse.exe" -clean -vmargs -Xms64M -Xmx512M).
- Please note that “-clean” flag is needed only for the first time running the editor so it would clear its cache holding obsolete plugin data. The flag significantly slows Eclipse down, since the cache is cleaned and repopulated.
- Please also note that the repository may need to be rebuilt and the old information in the repository will be lost. If so, a warning message will appear; click "OK" for approval, it may take a while for the system is to build the repository configuration.

6. Usage Examples

Please see user guide http://www.omwg.org/tools/dip/oms/

Appendix

[1] J. de Bruijn, H. Lausen , R. Krummenacher, A. Polleres, L. Predoiu, M. Kifer, D Fensel: *The Web Service Modeling Language WSML*. Deliverable d16.1v0.2, WSML, 2005. http://www.wsmo.org/TR/d16/d16.1/v0.2/

[2] D. Roman, H. Lausen, U. Keller (eds); J. de Bruijn, Ch. Bussler, J. Domingue, D. Fensel, M. Hepp, M. Kifer, B. Konig-Ries, J. Kopecky, R. Lara, E. Oren, A. Polleres,

J. Scicluna, M. Stollberg: *Web Service Modeling Ontology (WSMO)*. Deliverable d2v1.2, WSMO, 2005. http://www.wsmo.org/TR/d2/v1.2/

[3] Kopecký, Jacek. OMWG D6.3: Versioning Tool Prototype Implementation DERI OMWG Working Draft 4 February 2005 http://www.omwg.org/TR/d6/d6.3/

[4] Scharffe, François and de Bruijn, Jos. A Language to Specify Mappings between Ontologies. In IEEE SITIS'05, Yaoundé, Cameroon, November 27th - December 1st, 2005.