A revised edition

Hozo – Ontology Editor (Distributed Development Version)

Operating Manual

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Industrial Research, Osaka University

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(Representative: Kazuhiko OHE, Faculty of Medicine, Tokyo University, Contributors: Riichiro MIZOGUCHI, Osaka University, et al.)

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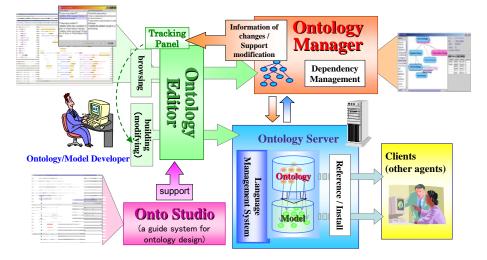
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2. Introduction

Hozo is a tool for building ontologies in a distributed environment. The following figure shows the block diagram of Hozo. It consists of three major components: Ontology editor, Ontology server and Ontology manager. Onto Studio is specialized to support ontology-building. Users build and use ontologies through the Ontology editor which has a friendly GUI. Ontology manager manages projects in which several ontologies are built collaboratively and in a distributed environment through the internet. It also manages versions of ontologies. Ontology server stores ontologies and instances and provides APIs for clients.

The main characteristics of Hozo are summarized as follows:

- Unlike OWL, its conceptual level is closer to that of human beings. OWL is a low level language which is good for an interlingua for ontology exchange. If one uses it as an ontology representation language directly, it would degrade user's understanding of ontology by restricting their idea to semantic-network/description-logics levels which are inappropriate and less expressive for understanding the content of the ontology.
- Its representation scheme is based on a frame structure
- It helps users build ontologies with Roles in a natural way supported by the advanced theory of Roles.
- It represents nested structures of slots. That is, any slot can have its own slots.
- Inheritance information is explicit and is always accessible. Two ways of inheritance: one from super classes through *is-a* link and the other from *class constraint*
- A user-friendly GUI is available
- Version management is available with a useful function for displaying changes.
- Ontology building in a distributed environment over internet is supported.
- APIs are available for accessing ontologies and instances.



3. System Overview

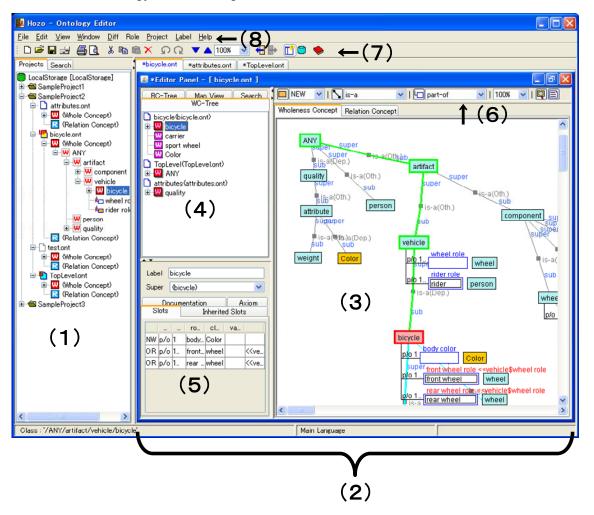
3.1. System Requirements (Recommended Environment)

*Also confirmed to run under Mac OS X 10.4.x, and Windows XP, Vista, 7.

Machine	PC/AT compatible (DOS/V)
CPU	Intel Pentium III processor, 800MHz or higher
Memory	256MB or more RAM (512MB or more recommended)
Hard Disk Space	30MB or more available hard disk space.
Monitor Resolution	1024x768 (XGA) or higher
OS*	Windows 2000 or higher (Windows XP or higher recommended),
	Mac OS X 10.4 or higher
Java	JRE/JDK 1.5.0_10 or higher (1.6.0 or higher recommended)
Network	Not required if using on a local machine. When sharing within
	networks, clients and servers are connected via Ethernet using
	TCP/IP protocol.
Other, Supplementary	Communication via the Internet ¹ will utilize the Jakarta Slide
Items	project's WebDav client module as the WebDav communication
	module. URL: http://jakarta.apache.org/slide/

¹ Features for communication via the Internet will be released soon and become available in the next version.

3.2. Screen Layout



3.2.1.Ontology Editor Editing Screen

(1) **Project Management Pane**: allows user to display and manage a tree view of the project and ontologies within the project.

- [Project] Management View: allows user to display and operate projects and ontologies.
- [Search] View: allows user to search ontologies within the project.
- (2) Editing Pane: allows user to switch between multiple ontologies with a tabbed display.
- (3) Browsing Pane: displays ontologies graphically.
- (4) Navigation Pane: provides an overview of the ontology.
 - [WC (Wholeness Concept) Tree] View: provides a tree view of Wholeness Concept super and sub levels (is-a hierarchy).
 - [Relational Tree] View: provides a tree view of Relational Concept super and sub levels (is-a hierarchy).

- [Concept Map] View: Provides a map view of the ontology's concept in its entirety.
- [Search] View: allows user to search the ontologies being edited.
- (5) Definition Pane: allows user to display/edit the definitions of the concepts/classes in the ontology.
- (6) Editing Tool Bar: a menu of buttons for editing ontologies.
- (7) Operation Tool Bar: menu of buttons used for ontology operations.
- (8) Menu Bar: drop-down menu for running various features.

3.3. Installation

3.3.1. Installation Instructions

• Decompress the archive you downloaded, and place the decompressed folder in a location of your choice on your machine.

[Note] This manual assumes the files are installed on c:\

[Note] To use this tool you must have a Java Runtime Environment.

Java Runtime Environment: Java 2 Platform, Standard Edition

(version 1.5.0_10 or higher recommended)

 \rightarrow Can be downloaded from the below site.

http://java.sun.com/javase/downloads/

* Select Java Runtime Environment (JRE), which contains only the runtime environment, or the Java SE Development Kit (JDK), which includes a development environment.

[Note] If the "lib" folder in the downloaded folder does not contain all of the following library files, please download the missing files from the below site.

<Download Site>

http://jakarta.apache.org/slide/

<Required Library Files>

- · commons-httpclient.jar
- commons-logging.jar
- · jakarta-slide-webdavlib-2.1.jar
- jdom-1.0.jar

3.3.2. Uninstall Instructions

Delete the installed folder.

[Note] There is no uninstaller.

3.3.3. File Structure

This software is comprised of two programs: Hozo Ontology Editor ver.5 (OE5) and Model Editor ver.4 (ME4). The contents of the files and folders are as follows.

File / Folder Name	Description	
oe5.jar	Ontology Editor executable file (jar file)	
oe5.bat	AppleScript file for launching under	
	Macintosh environments	
me5.bat	Explanations of tools (text version)	
data3	Settings file for Model Editor	
LocalStorage	Settings file for Ontology Editor	
ServerStorage	Ontology Editor manual (HTML file)	
lib	Stores libraries required by tools	
manual	Folder for managing server projects	
	(contains samples)	
hozo.properties	Folder for managing local projects (contains	
	samples)	
me4.properties	Folder for storing data. Also contains sample	
	data	
readme_jp.txt	Batch file for launching Model Editor	
oe5.scpt	Batch file for launching Ontology Editor	

3.4. Starting the Software

3.4.1. Starting the Ontology Editor

<Windows>

• Execute "oe5.bat", located in the tool folder.

[Note] If you are unable to start the software, please check your Java Runtime Environment version. Please see chapter 5 for directions on checking your Runtime Environment version.

<Mac OS X>

• In Macintosh environments (Mac OS X or higher), place the package folder on the desktop and use the AppleScript file to execute the program.

Alternatively, move to the decompressed folder (see 1.4.1.) in the terminal, and execute the following command:

> java -cp lib/commons-httpclient.jar:lib/commons-logging.jar:lib/jdom-1.0.jar:lib/Jakarta -slide-webdavlib-2.1.jar:oe5.jar hozo.oe.OntologyEditorHZ

[Attention] Do not insert line breaks when entering this command.

*If the Initial Setup Dialog is displayed in the center of the screen, you have succeeded in starting the program.

Various settings can be performed in the Initial Setup Dialog, and the program can be set to launch in the following usage modes.

🕌 Initial Settings	
user name	
Author : Author	
C Local Project Folder	
LocalStorage 💌	é
Server Project Folder	
ServerStorage	2
🔽 check Server Project updated	
🔽 use Project Manager	
OK Cancel settings	

Figure 3-3. Initial Setup (Dialog)

 The initial setup dialog, shown in Fig. 3-3, will be displayed in the center of the window at startup. If this is the first time the program has been started, the default username will be "Author". Follow the dialog's instructions, and change the username to something other than "Author".

*As of now, usernames are not managed on the server; if identical usernames are used, they will be handled as the same user. Please take appropriate measures, such as using mail addresses for usernames, to assure that usernames are not duplicated among users.

[Attention] These characters cannot be used in usernames: \/:*?" <> |_

· Click OK to display the Ontology Editing screen.

ile Edit Vew Window Diff Role Project Label Heb Projects Search Costinger SampleProject2 SampleProject3	Hozo - Ontology Editor	
Image: Search Image: Search Image: Search Forthing		
Projects Search LocalStorace Costing SampleProject1 SampleProject2 LocalStorace SampleProject3		
Decemberogent Samphroject Sam		
	CostSivare (LocaStoree) GampeProject1 GampeProject2 SampleProject3	
Main Language	Main Lane	nguage

Figure 3-4. Ontology Editor Editing Screen

*The below error message will be displayed if no connection can be made with the server. If this happens, please try changing the project folder settings or network (WebDAV) settings (See chapter 4.3.6).



(1) Initial Setup Dialog

🤽 Initial Settings	×
user name Author : Author	
Local Project Folder]
Server Project Folder ServerStorage	
✓ check Server Project updated ✓ use Project Manager	
OK Cancel Settings	

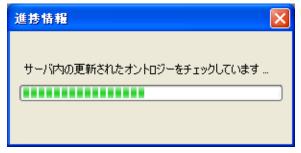
Figure 3-4. Initial Setup Dialog

- The below settings can be performed with the Initial Setup Dialog.
 - ① Change username
 - (2) Change referent local project folder
 - ③ Change referent server project folder
 - ④ Enable/disable checking for server updates at startup
 - (5) Select whether or not to use project management features
 - 6 Network settings
 - [Reference] Please see chapter 4.3.6 Tool settings for instructions on performing the above settings.

(2) Checking for server updates

 In order to confirm if there are Ontology updates on the Ontology Server each time the Ontology Editor is started, check the "Connect to server to check for updates" box in the Initial Setup Dialog and click OK. The startup process will take several tens of seconds to several minutes. If the box is unchecked, Ontology Editor will not check for updates.

A progress dialog box (below) will be displayed when checking for updates.



(3) Starting without using project management features

(Use the same interface as the previous version of Ontology Editor)

• To start the Ontology Editor as in previous versions, without the Project Management Pane, uncheck the "Use project management features" box in the Initial Setup Dialog and click OK.

user name enegate		: enegate	
Local Project Fold	ler		
LocalStorage			Image: A state of the state
Server Project Fo	lder		
Server Project Fo ServerStorage	lder		v 💕
ServerStorage	oject updated		

Figure 3-5. Initial Setup Dialog (disabled project management)

• You can edit the Ontology Editor without using project management features, as shown in the below editing screen image.

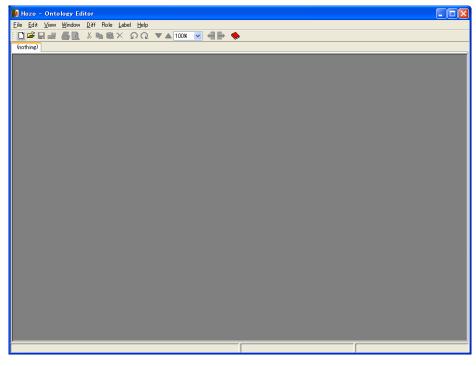


Figure 3-6. Editing screen without project management features

(4) Checking your Java Runtime Environment version

• With regards to start-up errors, if you are unable to start the software as described in chapter 1.5, please check your Java Runtime Environment version. Follow the below instructions.

<Windows>

- (1) Open a command prompt.
- (2) Type "java -version" (without quotes) and press enter to display the version of Java Runtime Environment currently installed.

🔤 C:\WINDOWS\system32\cmd.exe	- 🗆
Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp.	_
C:\Documents and Settings\lee>_	
↓	J.

(3) If the installed version of Java is older than the one recommended (JRE/JDK 1.5.0_10 or higher), uninstall it and install a version of Java that will allow you to run the tools.

3.4.2. Closing the editor

• Select [File]-[Close] in the menu bar, or click the [x] on the upper right hand corner of the screen. The below dialog will be displayed. Click the [Yes] button to close the editor.



Figure 3-8. Dialog that appears when closing the Editor

4. Operation instructions

4.1. Editing Ontologies

This section will explain the basic editing functions of the Ontology Editor.

4.1.1. Creating a new ontology

(1) Creating a new ontology (project)

• Select [File]-[Create new...] in the menu bar. The "Create new Ontology" dialog will be displayed.

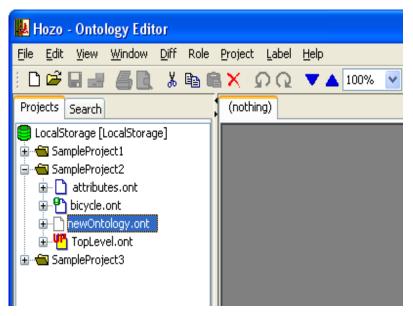
📕 Hozo - Ontology Editor	r			
File Edit View Window D				
new File	Ctrl+Shift+N	Ω 🔻 🔺 100% 💌		
open File	Ctrl+O hing			
save	Ctrl+S			
save as	Ctrl+Shift+S			
save without Dependency	·			
open Instance Editor		_		
import	•		🛃 New Ontology	
export	>		New Ontology Name :	
remove Backup Files	•		new_file	
set Page Format			Project File	
print Preview				
print	Ctrl+P		Please select a project to create new ontology.	
exit	Ctrl+E		(no project)	
quit	Ctrl+Q		LocalStorage [LocalStorage]	
			new Project New Close	
	, jr		Main Language	

- Enter a name for the ontology file in the "New Ontology Name" text box.
- Next, select the project in which the new ontology will be created from the project folders in the [Project] tab.

👢 New Ontology 🛛 🔀
New Ontology Name : newOntology
Project File
Please select a project to create new ontology.
SampleProject2
LocalStorage [LocalStorage] Image: SampleProject1 Image: SampleProject2 Image: SampleProject3
new Project
New Close

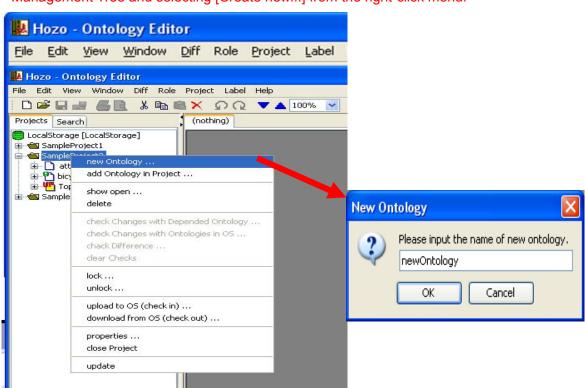
• Click the [New] button on the bottom of the dialog to create the ontology file in the project.

*When creating a project Ontology file, its file extension will be ".ont".



*New projects can be created by right clicking the Project Management Tree and selecting "Create new project..." from the right-click menu. (Refer to chapter 4.2.2 of this manual)

*The same operation can be performed by right clicking the project name on the Project



Management Tree and selecting [Create new...] from the right-click menu.

(2) Creating a new Ontology (file)

• Open the "Create New Ontology" dialog as in (1).

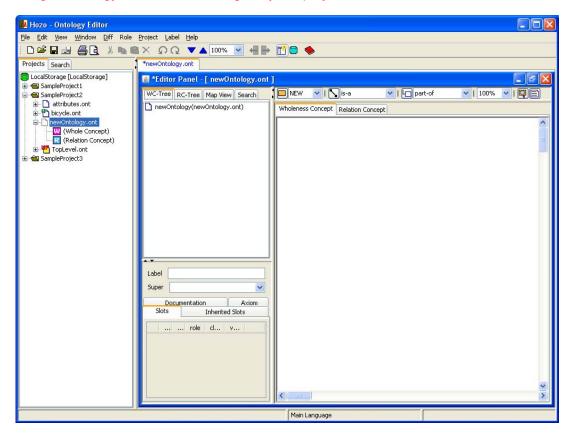
• Select the [File] tab to view the list displaying the default Ontology folder, and the existing Ontology files in that folder.

👢 New Ontology 🛛 🔀
New Ontology Name : newOntology
Project File
Please input a file path to create new ontology.
./data3 🗃
 BIKE_sample.xml BIKE_sample_new.xml new_file.xml soccer_ver.12en.xml travelling.xml vehicle.xml
Delete
New Close

• Click the [New] button on the bottom of the dialog to create an Ontology file in the folder.

*When creating a single Ontology file, its file extension will be ".xml".

Single Ontology files are not managed by the project.



*Ontology files can be deleted by clicking the [Delete] button in the [File] tab of the "Create New Ontology" dialog. (Refer to chapter 4.2.2)

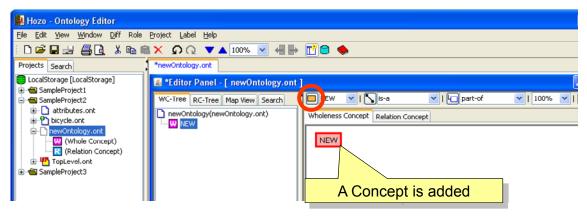
*Multiple files having the same filename cannot be created in the same folder or one project (an error message will be displayed).

4.1.2. Editing Ontologies

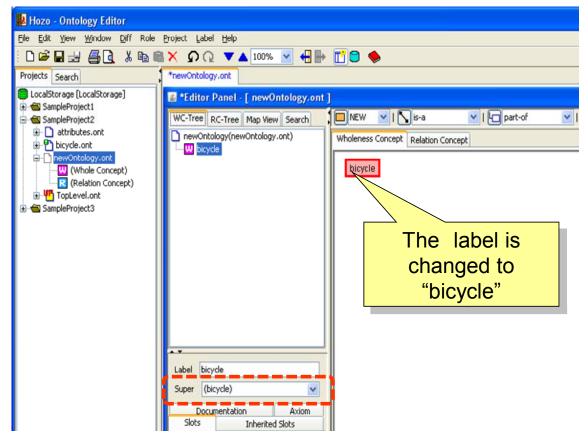
Clicking graphic objects (nodes, slots, links) on the browsing panel will select them, after which they can be edited.

(1) Adding a concept (concept class)

• Click the [NEW Concept] button on the Ontology Editing Tool Bar to add a node (i.e. concept) to the concepts displayed in the Browsing Pane.



• To change the concept's label, edit the Label field displayed in the Definition Pane on the bottom left of the Editing Panel.



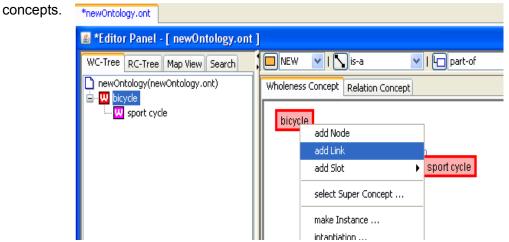
(2) Creating an is-a hierarchy (creating sub concepts)

• If a concept is added as described above while an existing concept is selected, an is-a link will be added between it and the selected concept ("bicycle" in the below figure) to indicate an is-a relationship exists.

📕 Hozo - Ontology Editor						
<u>File Edit View Window Diff Role</u>	Project Label Help					
0 🖻 🖬 🛃 🔮 🖪 👗 🛍 🛍	i 🗅 😂 🖬 🛃 🧸 🦓 🎕 🛍 🗙 🕥 🔍 🔻 🔺 100% 🔽 📲 🖶 🚺 🖨 🧇					
Projects Search	*newOntology.ont					
LocalStorage [LocalStorage] Image: SampleProject1						
SampleProject2 WC-Tree RC-Tree Map View Search , NEW VI is-a						
definition of the second	newOntology(newOntology.ont) Wholeness Concept Relation Concept					
- newOntology.ont						
W (Whole Concept)	bicycle					
TopLevel.ont						
🖅 📹 SampleProject3	NEW					
	An is-a link is					
	added					

• To create is-a links between previously defined concepts, click the relevant concepts while holding the Shift key, clicking the super concept first and the sub concept second, then click the "Create Link" button.

*The same operation can be performed from the right-click menu after selecting the



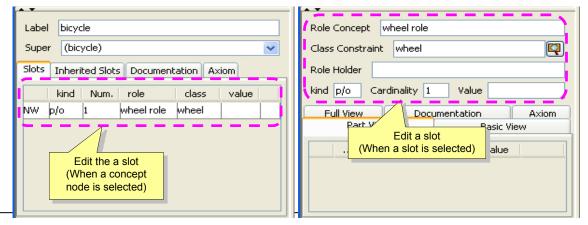
(3) Creating slots

 Select a concept (node) and click the [Add Slot] button on the Ontology Editing Tool Bar to add a slot to the selected concept (node).

📕 Hozo - Ontology Editor	
<u>File Edit View Window Diff Role</u>	Project Label Help
: D й 🖬 🛃 🎒 🐧 🕷 🖷	🖹 🗙 🖸 🔍 🔻 📥 🛄 🖨 🍉
Projects Search	*newOntology.ont
LocalStorage [LocalStorage] Image: Image and I	E *Editor Panel - [newOntology.ont]
🖃 📹 SampleProject2	WC-Tree RC-Tree Map View Search 📜 NEW 🕑 📐 is-a 🔍 I 🕞 part-of
attributes.ont ⊕ P bicycle.ont	newOntology(newOntology.ont) Wholeness Concept Relation Concept
rewOntology.ont W (Whole Concept)	Weicycle Sport cycle Dicycle Super
Relation Concept)	
⊕-₩ TopLevel.ont ⊕-₩ SampleProject3	
	An slot is added

*The same operation can be performed from the right-click menu after selecting the concept (node).

• To change the slot's definition, edit the Label field displayed in the Definition Pane on the bottom left of the editing panel.



• Editing of the slot's definition can be performed when either the concept node or slot is selected. The below content can be edited.

- Role concept
- Class constraint
- Role holder
- Class (part-of, attribute-of)
- Quantity constraint (cardinality)
- Constraint value

*In regards to class constraints, the existing concept tree can be displayed, selected and edited by clicking the [Select Class Constraint] button on the right side of the text box when an existing concept is selected (text editing is also possible).

🙆 Select Class Dialog - [vehicle\$wheel
wheel
🖃 🚾 🚾 component
w sport wheel
tront wheel
tear wheel
w tube
i ⊡ datatype
set All < OK Cancel

(4) Deleting objects

• Objects can be deleted by selecting concept nodes, slots, and relationships and selecting [Delete] from the right-click menu.

*The same operation can be performed with the [Delete] button on the Menu Bar, Ontology Operation Tool Bar/Editing Tool Bar.

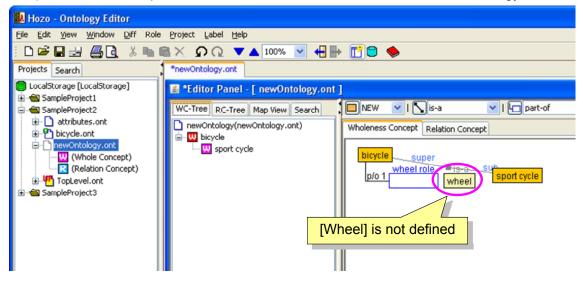
*newOntology.ont	
🛎 *Editor Panel - [newOntology.ont]
WC-Tree RC-Tree Map View Search newOntology(newOntology.ont)	NEW VISis-a VIE part-of VI 100% VIE
Invertibility (novertibility) (invertibility) invertibility (invertibility) invertibility (invertibility) invertibility (invertibility) invertibility (invertibility) invertibility (invertibility)	Wholeness Concept
Label city cycle	cut
Super (city cycle)	paste Slot
Documentation Axiom Slots Inherited Slots	delete

Multiple objects can be selected then deleted by holding the Shift key while clicking.

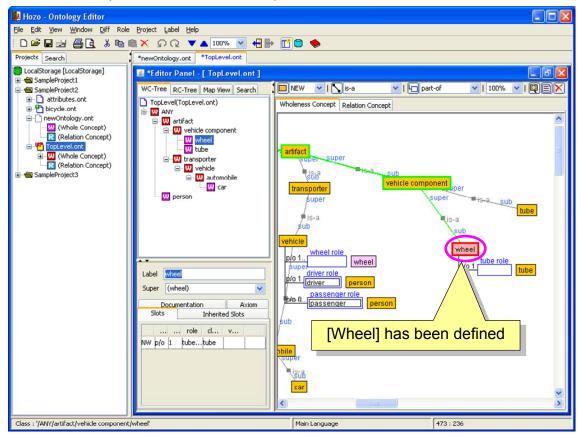
4.1.3. Creating Ontology dependency relationships

It is possible to reference concepts defined in other Ontologies in the project.

Ex.) Below, the concept "wheel" is undefined, but it is defined in another Ontology.

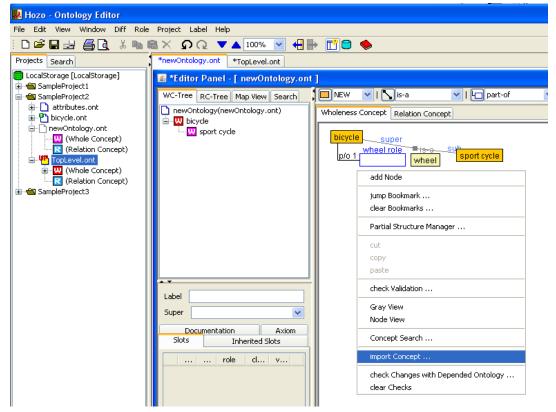


The concept "wheel" is defined in "TopLevel.ont".



[Operating instructions]

• Without selecting anything, right-click in the Browsing Pane of the referencing Ontology (newOntology.ont) to display the right-click menu, and select "Import concept".

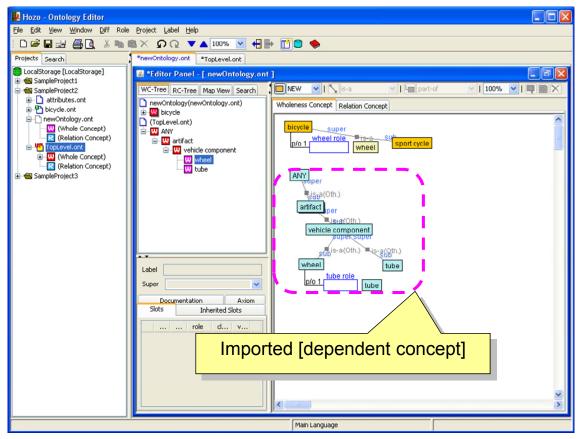


The Import Concept Dialog will be displayed.

Select the Ontology to be referenced from the list, and select the concept to be imported.

*When a concept is selected to be imported, concepts necessary to that concept will be selected and imported at the same time.

• When the "Import" button on the bottom of the dialog is clicked, the selected concepts will be imported.



*After importing, the imported concepts will be in a selected state. The node arrangement will also be moved, so the user should manually rearrange it, or use the layout feature (select Menu Bar: [Display]-[Layout]).

[Attention] Unlike regular concepts, imported concepts will be displayed in light blue. However, as they are references only, they cannot be edited in the referencing Ontology. *Importing to the Ontology being edited can also be performed from the right-click menu by selecting the Ontology to be referenced in the Project Management Tree, and right-clicking it.

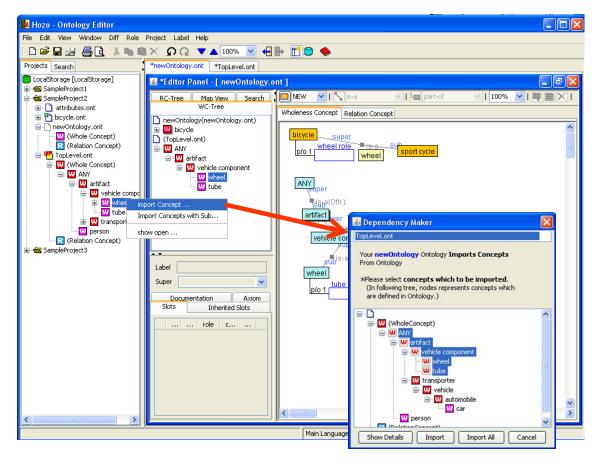
[Operating instructions]

- Open the Ontology that is importing (referencing) a concept in the Editing Panel. (Refer to chapter 4.1.5)
- Select the Ontology concept to be referenced in the Project Management Tree, bring up the right-click menu, and select "Import Concept".

The Import Concept Dialog will be displayed.

Select the Ontology to be referenced from the list, and select the concept to be imported.

*Only the Ontologies to be imported will be displayed in the list.



4.1.4. Saving Ontologies

(1) Save

• To save, overwriting the existing file, select [File]-[Save] in the menu bar.

(No confirmation dialog will be displayed)

• When an Ontology file is saved, the icon in the Project Management Tree shows the local update status (

(2) Save as...

• When [File]-[Save as...] is selected in the menu bar, the file selection dialog is displayed.

• Enter a filename and click the [Open] button to save to a new Ontology file.

📕 Hozo - Ontology Editor							
File Edit View Window D	iff Role Proj	ect Label Hel	lp				
new File	Ctrl+Shift+N	ଚ ଜ 🔻	🔺 100% 💌	₩			
open File	Ctrl+O	wOntology.ont	*TopLevel.ont				
save	Ctrl+S	Editor Pane	el - [newOntolo	ev.ont 1			. 🕫 🔀
save as	Ctrl+Shift+S		-		VI 🖛 part-of	V 100% V 🜉	
save without Dependency			Map View Sear C-Tree			· I 100 % ▼ I ₩	
open Instance Editor			newOntology.ont)	Wholeness Concept Relation C	oncept		
import	,	THE LOCAL COMPANY					^
export	•	(TopLevel.o	Save				
remove Backup Files	•	- 🛄 ANY		Protection and the second			
· · · · · · · · · · · · · · · · · · ·	•	🖮 🛄 artif	Save in:	SampleProject2	~	🧊 📁 🗔 🗖	
set Page Format				ackup			
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print	Ctrl+P		My Recent	attributes.ont			
exit	Ctrl+E		Documents	i bicycle.ont			
quit	Ctrl+Q			newOntology.ont			
Relation Concer	pt)			TopLevel.ont			
🗄 📹 SampleProject3		-	Desktop				
		abel					
		iuper	My Documents				
		Documen					
		Slots					
		[]	My Computer				
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- (3) Save without dependency relationships
 - Select [File]-[Save without dependency relationships] in the menu bar and click [Yes] on the confirmation dialog; the file selection dialog is displayed as in (2).

• Enter a filename and click the [Open] button to save to a new Ontology file (file extension: .xml).

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*Ontologies in the project will be saved as a single Ontology file. After saving, the Ontologies will be standalone Ontologies and Ontology files; moreover they will have no dependency relationships and be redefined as self-defined concepts.

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4.1.5. Loading Ontologies

(1) Loading and exiting an Ontology (project)

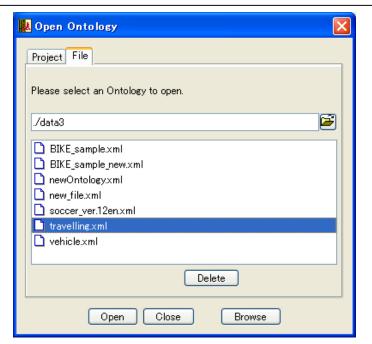
· Select [File]-[Open] in the menu bar to display the "Open Ontology" dialog.

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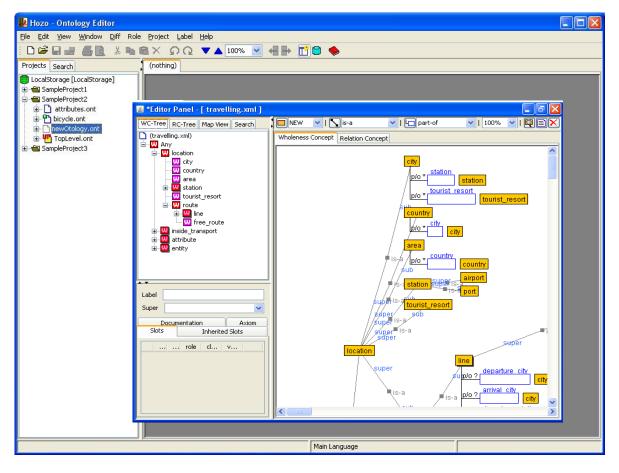
- Select the Ontology to be displayed from the project folders on the [Project] tab.
- Click the [Open] button at the bottom of the dialog to open a new editing panel and display the Ontology.
 - *The Ontology can be displayed in a separate window by clicking the [Browse] button at the bottom of the dialog (editing not possible).
 - *Double click the Ontology file icon in the Project Management Tree, or select [Open] from the right click menu to perform the same operation.

(2) Loading and exiting an Ontology (file)

- Open the "Open Ontology" dialog as in (1).
- Select the [File] tab to view the list displaying the default Ontology folder, and the existing Ontology files in that folder.



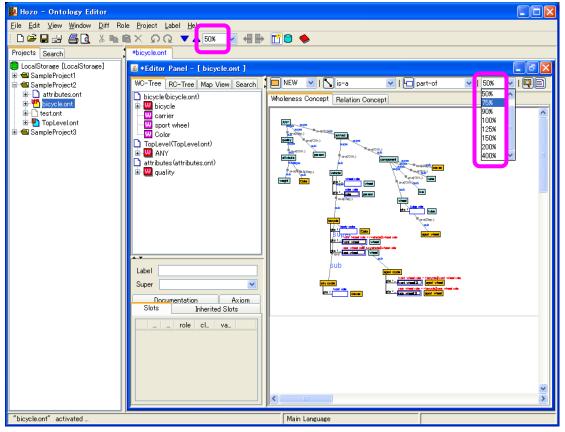
- Click the [Open] button at the bottom of the dialog to open a new editing panel and display the Ontology.
- *The Ontology can be displayed in a separate window by clicking the [Browse] button at the bottom of the dialog (editing not possible).



4.1.6. Other features

(1) Zoom in/out

• The Browsing Pane magnification can be changed by selecting the magnification rate in the combo box on the Ontology Operation Tool Bar, or the Editing Tool Bar.



*By clicking the [▲] [▼] buttons on the left side of the magnification list in the Ontology Operation Tool Bar, the next higher (or lower) magnification can be selected, zooming in or out on the pane.

(2) Display concept map

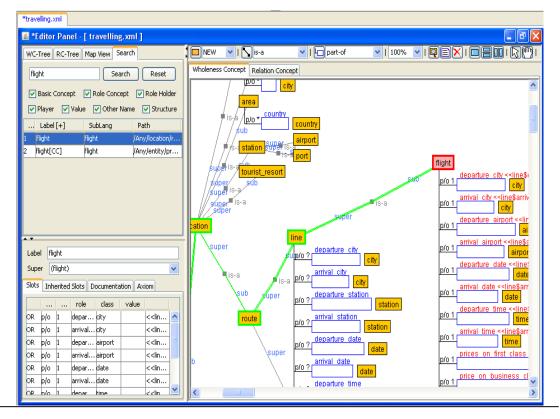
If the concept map display (Map) tab is selected in the Navigation Pane, a reduced view of the entire Ontology is shown, with a red frame indicating the area being displayed. If this frame is dragged, the area drew in the Browsing Pane will move correspondingly.
Also, when toggling between Wholeness Concepts and Relational Concepts, the

concept map view changes.

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(3) Ontology search

• Displays the Search tab in the Navigation Pane. Enter text for the search criteria and click the [Search] button; search results will be displayed in a table on the lower part of the tab.



- · Selecting a search result column will highlight the corresponding object.
- · Objects that can be specified as search objectives are as follows.
 - ① Basic Concept, class
 - ② Role Concept, slot
 - ③ Role Holder
 - ④ Class constraint (Player)
 - (5) Value

[Attention] The scope of the search is the open Ontology (being edited) only.

[Reference] See 4.2 on project management features for more regarding searching Ontologies within a project.

(4) Printing

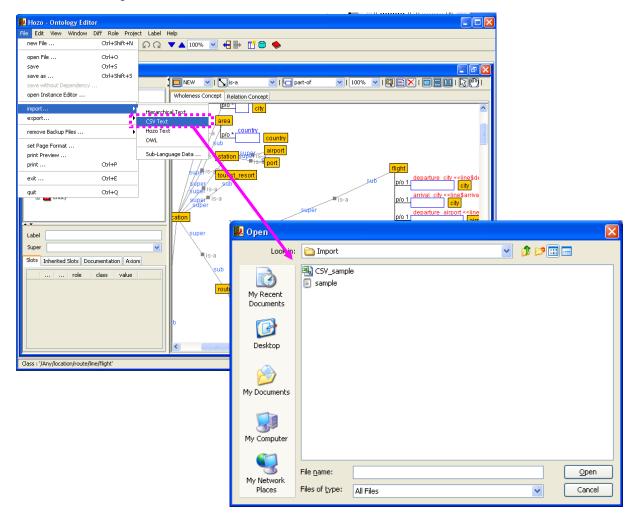
• Select [File]-[Print Preview...] in the menu bar, or click the [Print Preview...] button in the Ontology Operation Tool Bar, to open the print preview dialog.

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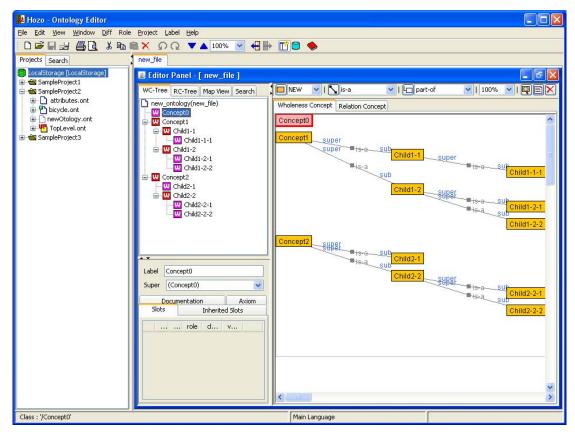
- These operations can be performed in the print preview dialog:
 - Confirmation of the printed image (use [Next] and [Prev] to navigate pages)
 - Set the magnification to be used when printing (Scale)
 - Enable/disable display of headers, footers and crop marks
 - Set printer paper size ([Settings] button)
- When the [Print] button on the upper part of the print preview dialog is clicked, the print dialog is displayed, and printing can be performed.

(5) Import

- An Ontology can be created automatically from an existing text file.
- Select [File]-[Import]-[Hierarchical Text] (CSV Text) in the menu bar to open the file selection dialog.



- Select a file and click the [Open] button to import it.



*The below formats are supported

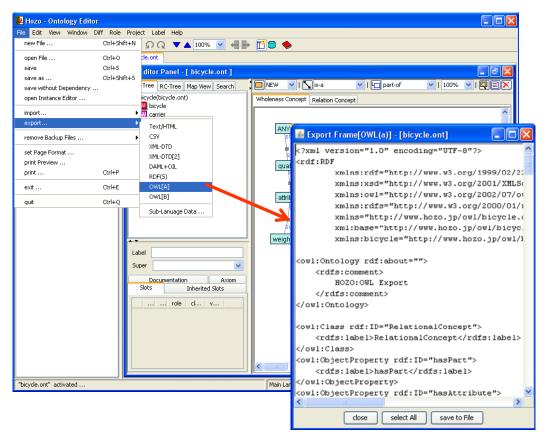
1 Hierarchical Text

- 2 CSV Text
- 3 Hozo Text
- (4) OWL

Regarding description formats, please see the sample file in "(root folder)/data3/Import/".

(6) Export

- An Ontology file that is being edited can be output to a file with a different format.
- Select [File]-[Export]-[OWL] in the menu bar to open the file output window.

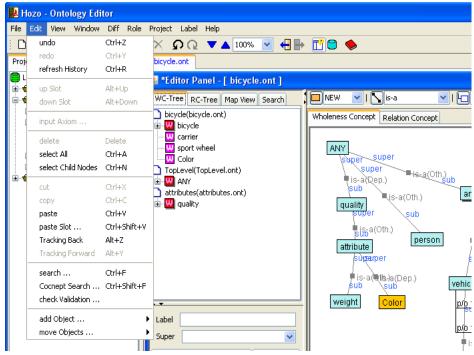


• Click the [Save File] button on the bottom of the output window to display the file selection dialog; choose a file and click the [Open] button to export the file.

- *The below formats are supported
 - Text / HTML
 - XML-DTD
 - DAML+OIL
 - RDF(S)
 - OWL

(7) Ontology editing operations

• Ontology editing operations can be found the menu bar ([Edit] menu), the Ontology Operations Tool Bar/Editing Tool Bar, and the right click menu of the Browsing Pane.



No	Menu item	Description	1	2	3	4
1	Undo	Performs the Undo operation	•	٠		
2	Redo	Performs the Redo operation	•	•		
3	Refresh History	Clears the operation log	•			
4	Up slot	Raises slot by one position	•			•
5	Down slot	Lowers slot by one position	•			•
6	Input Axiom	*This item is not used now.	•		•	•
7	Delete	Deletes the selected graphic object	•	•	•	•
8	Select all	Selects all graphic objects on the Browsing Pane	•			
9	Select Child Nodes	Selects selected concept's sub concepts	•			
10	Cut	Cuts the selected graphic object	•	•		•
11	Сору	Copies the selected graphic object	•	•		•
12	Paste	Pastes the selected graphic object	•	•		•
13	Tracking back	Moves to the previous selected graphic object	•	•	•	
14	Tracking forward	Moves to the next selected graphic object	•	•	•	

Note) ①: Item located in Menu Bar

(2): Item located in Ontology Operation Tool Bar

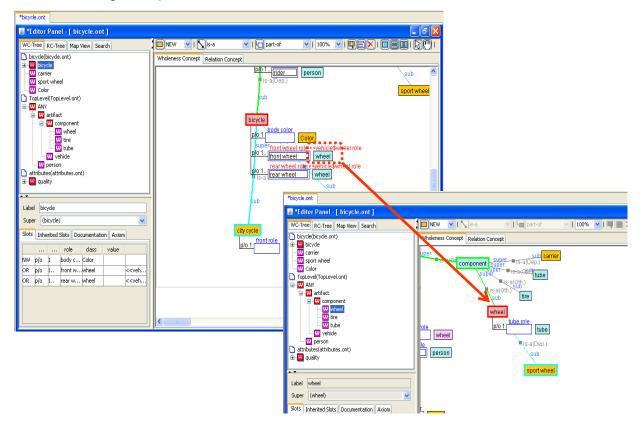
③: Item located in Ontology Editing Tool Bar

(4): Item located in Browsing Pane right click menu

(8) Ontology selection operations

- 1 Move to defined concept
 - · When the graphic object of a constrained concept is clicked on the Browsing Pane,

its defining concept class is selected.



② Selection tracking

• This tool tracks (records) selection of graphic objects with respect to jump functions such as ①, and screen scrolling during editing.

• To move to the previous selected graphic object, use the selection tracking menu located in the Menu Bar, Operation Tool Bar or Editing Bar.

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		paste Slot	Ctrl+Shift+V		
		Tracking Back	Alt+Z		
		Tracking Forward	Alt+Y	wheel	
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③ Scrolling the screen with the mouse

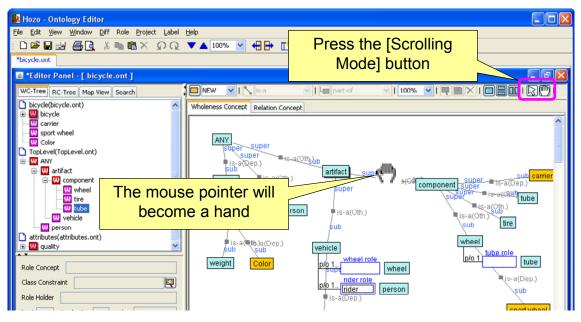
· Scrolling the screen with the mousewheel

The mousewheel scrolls the screen up and down.

To scroll left and right with the mousewheel, hold the Ctrl key.

· Scrolling the screen by dragging the mouse

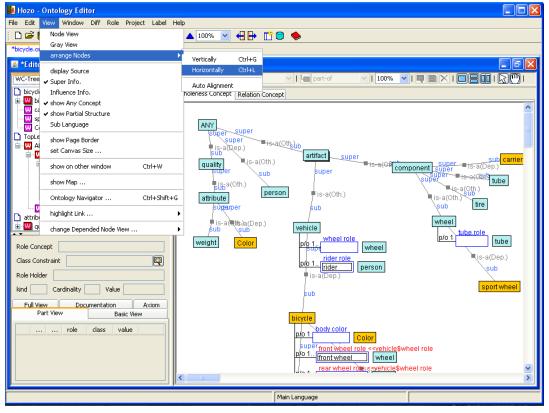
Press the [Scrolling Mode] button in the Operations Tool Bar; the mouse pointer will become a hand, and it will be possible to scroll the screen by dragging the mouse. Press the [Selection Mode] button to return the mouse pointer to normal; it will now be possible to select objects.



(9) Ontology view

① Vertical/Horizontal layout

- · Select a concept.
- Select [View]-[Layout]-[Vertical Layout] (or Horizontal Layout) in the Menu Bar to arrange the sub concepts of the selected concept in a pyramid. (The below figure shows the concept "artifact" after being arranged)



2 Automatic layout

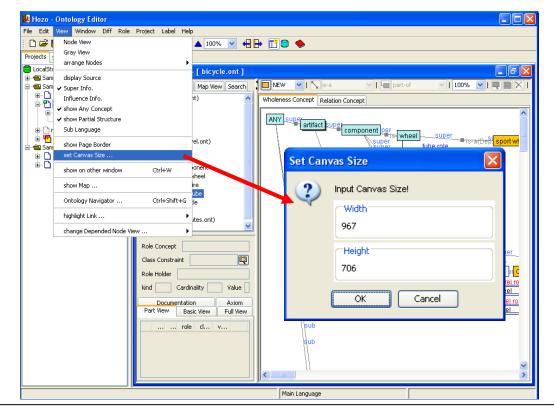
- Select [View]-[Layout]-[Automatic Layout] to switch to automatic layout mode.
- When automatic layout mode is ON, the root concept and its sub concepts are arranged evenly in the drawing area of the Browsing Pane from upper left to lower right.
- When automatic layout mode is switched from ON to OFF, the below confirmation dialog appears and the user can select whether or not to keep the layout.

*When automatic layout mode is enabled, the canvas size is also set automatically.

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③ Canvas size setting

- Change the canvas size setting to alter the drawing size of the Browsing Pane when the Ontology grows too large.
- Select [View]-[Canvas Size Setting] from the Menu Bar to open the canvas size setting dialog; the canvas size setting can now be changed.

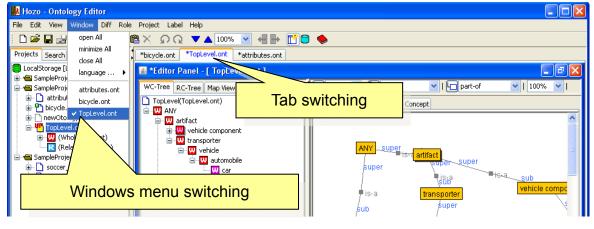


(10) Toggling windows

1) Toggling windows (Editing Panel)

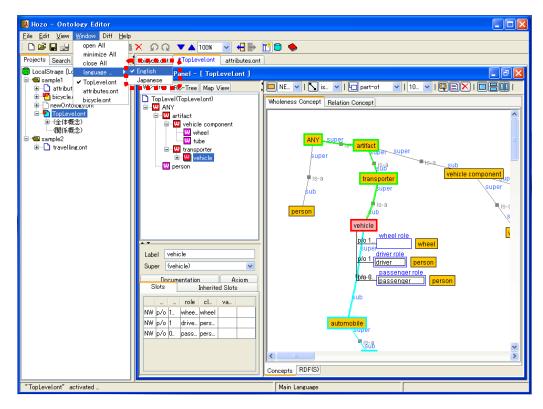
- Toggling windows is performed by selecting the Window Menu under [Window] in the

Menu Bar, or with the tab in the upper part of the Editing Panel.



2 Language settings

• The language specified for displaying the menus can be changed by selecting [Window]-[Language...] in the Menu Bar and setting the language submenu.



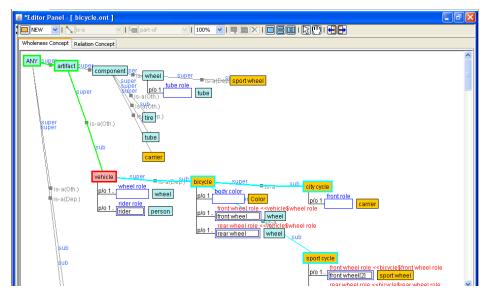
*At installation, only "English" and "Japanese" are available.

(11) Navigation support

• There are features that support navigation on the Browsing Pane for cases in which the user wants to move to a part that cannot be displayed there, for example when structuring large scale Ontologies.

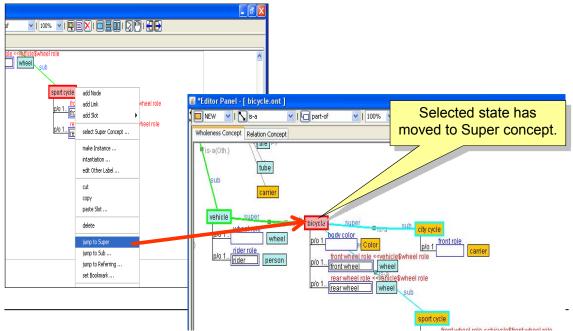
1 Highlight display

• Highlights concepts that are in an *is-a* relationship (general-special relationship). When concept nodes and slots are selected, the super concept (is-a link) is highlighted in yellow-green, and the sub concept is highlighted in light blue.

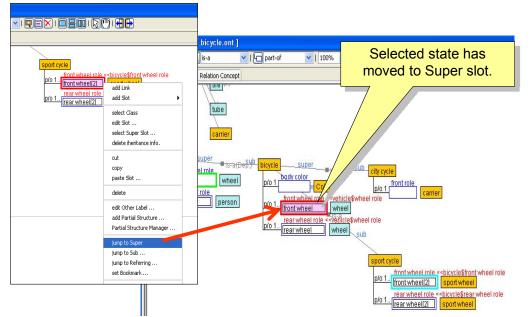


② Jumping to super concepts

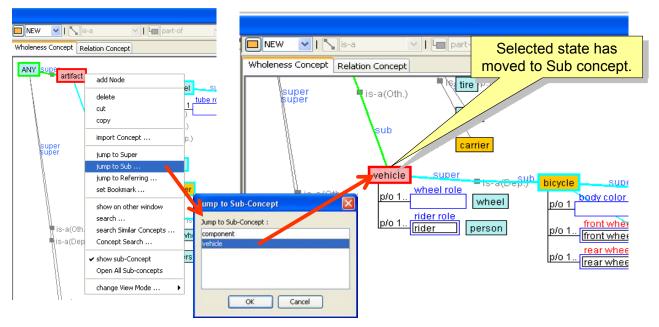
• When a concept node is selected and [Jump to Super] is chosen from the right click menu, the screen will move to the position of the super concept node, and it will be selected.



• When a slot is selected, the user can jump to the super slot by using the same operation as above.



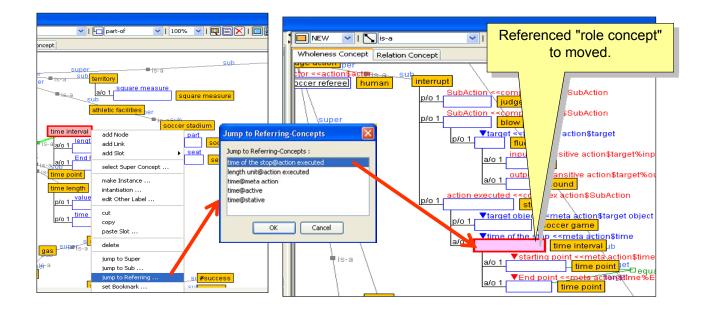
- ③ Jumping to sub concepts
 - When a concept node is selected and [Jump to Sub] is chosen from the right click menu, a dialog with a list of destination sub concepts will appear.
 - When a destination is selected from the sub concept list and the [OK] button is clicked, the screen will move to the position of the sub concept node, and it will be selected.
 - When a slot is selected, the user can jump to a sub slot by using the same operation as above.



④ Move to reference concept

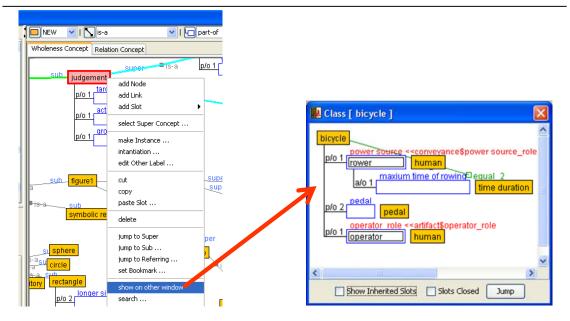
- It is possible to jump to role concepts (reference concepts) that are referencing as class constraints.
- When a concept node is selected and [Jump to Reference] is chosen from the right-click menu, a dialog with a list of reference concepts (reference slots) will appear.
- When a destination is selected from the reference concept list and the [OK] button is clicked, the screen will move to the position of the selected concept node, and it will be selected.
- When a slot is selected, the user can jump to the reference slot by using the same operation as above.

*Class referenced as Role Holder

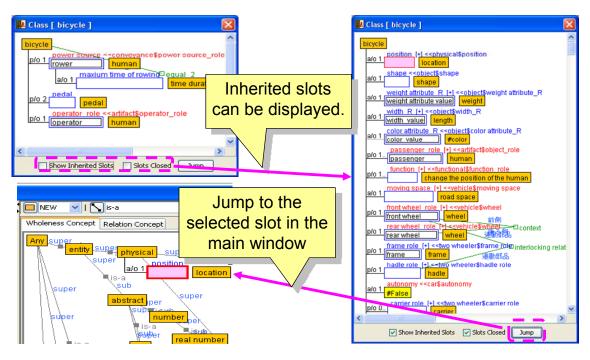


(5) Display in separate window

- Various concept nodes can be displayed simultaneously in separate windows, allowing the user to simultaneously view and edit concept nodes that are in different locations.
- Select the concept node and choose [Display in Separate Window...] from the right click menu to display the selected concept class in a separate window.



- In the separate window display, inherited slots, other than slot information defined by the selected concept class, can be displayed.
- Check the [Display Inherited Slots] box in the bottom part of the separate window display dialog to display all slots, including inherited slots.



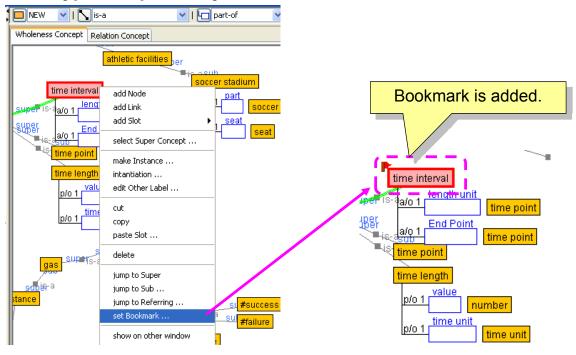
- Concept nodes and slot selection operations can be performed in the separate window display dialog, just as in the Browsing Pane.
- In order to confirm the selection status on the Browsing Pane, click the [Jump] button to move the screen to the position of the selected concept node (slot).

(12) Setting bookmarks

• This feature saves, in the form of a marker, a bookmark in the concept or slot being edited to aid in structuring large scale Ontologies.

① Setting bookmarks

• A bookmark can be added to an object by selecting the concept node or slot, and choosing [Bookmark] from the right click menu.



• Bookmarks are set when the Ontology file is saved. They reappear when the file is loaded.

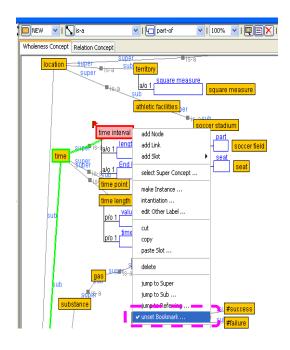
② Jumping to bookmarks

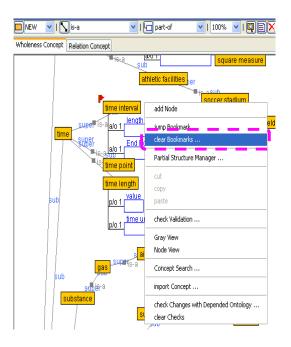
- Make sure that no objects, such as concept nodes and slots, are selected, and select [Jump to Bookmark] from the Browsing Pane right click menu to open the bookmark selection dialog.
- Select the desired bookmark from the list and click the [OK] button to move to the object assigned to the bookmark; the object will also be selected.

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③ Removing bookmarks

- Select a bookmarked concept node or slot, and choose [Remove Bookmark] from the right click menu to remove the bookmark from the object.
- It is possible to remove all bookmarks from the Browsing Pane; make sure that no objects, such as concept nodes and slots, are selected, and select [Remove all Bookmarks] from the Browsing Pane right click menu.





(13) Ontology editing support

• Here, aside from selective editing of class constraints when editing slots (4.1.2(3)), we will provide a guide to editing by the user as per the Ontology's rules when defining concepts and slots.

① Edit cardinality (quantity constraint)

- Cardinality (quantity constraint) input can be performed by directly entering a value into the quantity constraint text field in the Definition Pane, but there are input support features to ensure editing as per the Ontology's rules.
- Move the mouse pointer to the quantity constraint text field in the Definition Pane, and double click over the input field to open the cardinality (quantity constraint) editing input support dialog.
- Set the "Maximum Quantity" and "Minimum Quantity" and click the [OK] button to update the value of the quantity constraint text field in the Definition Pane.

*If no quantity is specified, the value will be blank.

C W time W time interval ✓	The cardinality (quantity constraint) editing input support dialog is shown.
Role Concept value Class Constraint length measure Role Holder Role Holder kind p/o Cardinality 1 Value Axiom Part V Ouble Click View role class value	input Cardinality MinCardinality : MinCardinality : MaxCardinality : OK Cancel
Slot : 'length\$value << quantity\$value'	

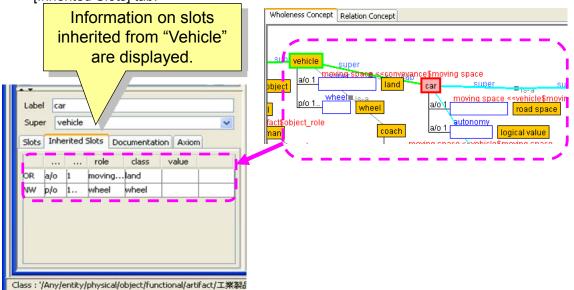
② Specializing slots

• If two concepts are in an *is-a* relationship (general-special relationship) property information (slot information) will be imported from the super concept and used to refine the definition (i.e. slot inheritance and specialization).

<Display information on slots inherited from super concepts>

· Information on inherited slots can be viewed by selecting a super concept from the

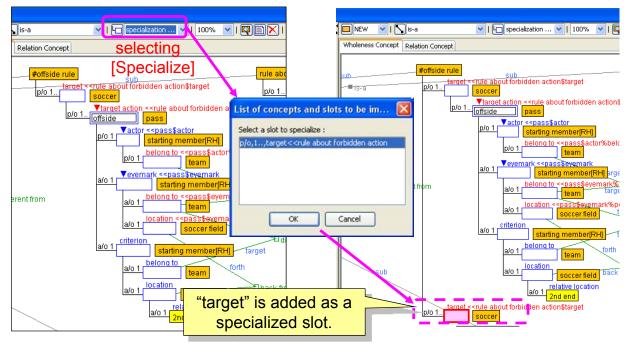
[Super Concept] list in the Definition Pane. Inherited slots will be displayed on the [Inherited Slots] tab.



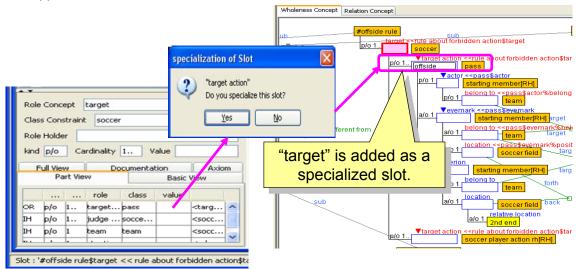
<Specialization of slots inherited from super concepts>

- Specialization of slot information inherited from super concepts that are in an *is-a* relationship within a sub concept can be performed by selecting the [Specialize] slot category of the toolbar, and clicking the [Add Slot] button to open a selection dialog displaying a list of importable slots.
- Click the slot to be specialized in the list on the dialog to import both the slot information and inheritance information to the sub concept.

*The [Imported Concepts/Slots List] dialog can also be displayed by selecting a mouse-right-clicking-menu.

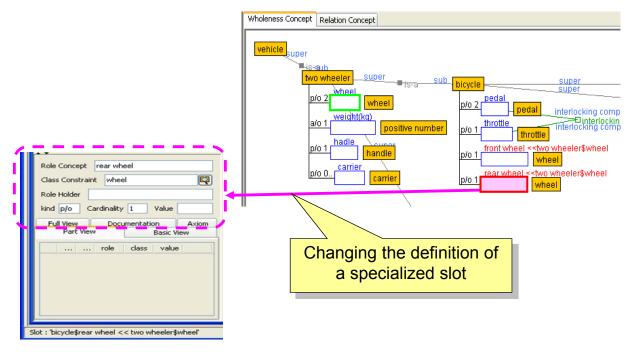


- The same slot specialization operation can be performed from the inherited slot view in the Definition Pane too.
- For concept nodes, click the item to be specialized in the inherited slots list on the [Inherited Slots] tab; and for slots, click the item to be specialized in the inherited slots list on the [Role Concept] or [Class Constraint] tab, then the confirmation dialog appears, .



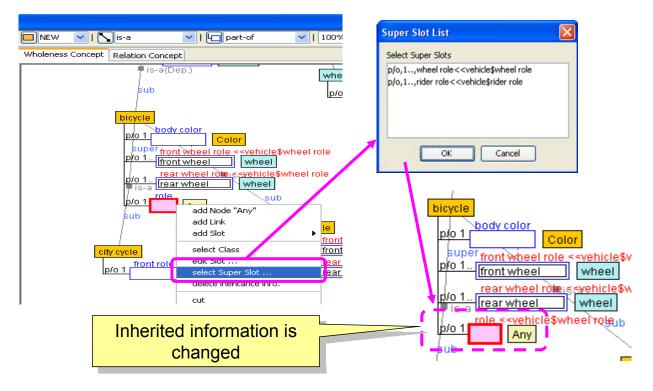
<Editing specialized slots>

• Definition details of specialized slots can be edited or rewritten in the Definition Pane, using the same operations used to edit normal slots definitions.



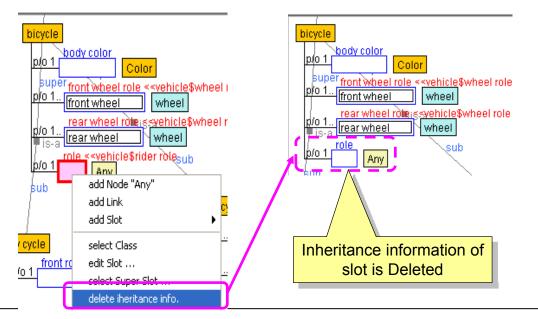
<Editing slot inheritance information>

• To import slot inheritance information only, select a slot, and choose [Select Super Slot] from the right click menu to open the [Super Slot Candidate List] selection dialog. Select a candidate from the list and click the [OK] button to change just the inheritance information.



<Deleting slot inheritance information>

• To delete slot inheritance information, select a slot, and choose [Delete Slot Inheritance Information] from the right click menu to delete inheritance information.



4.1.7. Using the Ontology Editor's extended features

(1) Search for similar concepts (Analogous Concept Search Feature)

When importing large amounts of data, the Analogous Concept Search Feature assists with conceptualization by comparing concepts with similar properties (i.e. slot structures), and generalizing those similar concepts.

- ① Searching for analogous concepts
 - Select the node of the concept class to search for, right click to open the pop-up menu, and choose [Analogous Concept Search] to open the analogous concept search dialog.

NEW VI I is	i-a 🔽 🖵 part-of						
y sub p/o 1 fro	sport wheel add Node add Link	vheel role	Concer	ilar Consept Search D	ialog	selec	t.
carrier <u>p/o 1 [re:</u>	add Slot select Super Concept make Instance intantiation edit Other Label	heel role	No. 1	h Results (13) Concept city cycle [Sibling]	Similarity 0.8533	Path /bicycle/	~
	cut copy paste Slot	1	2 3 4 5	bicycle [Parent] vehicle [Parent] wheel sport wheel	0.8200 0.5333 0.2200 0.2200	/ /ANY/artifact/ /ANY/artifact/component/ /	ini.
	delete jump to Super jump to Sub jump to Referring set Bookmark		6 7 8 9 10	front wheel[RH] rear wheel[RH] front wheel[2][RH] rear wheel[2][RH] ANY [Parent]	0.2200 0.2200 0.2200 0.2200 0.0333	/bicycle\$front wheel role /bicycle\$rear wheel role /bicycle/sport cycle\$front w /bicycle/sport cycle\$rear wh /	
0	show on other window coarst search Similar Concepts		11	artifact [Parent]	0.0333	(ANV) Close	~

- 2 Display Analogous Concepts
 - Clicking an item in the Analogous Concept Search dialog list will select the chosen node from the list.
 - Double click the selected node to open a separate window displaying all inherited slots and confirm matching slot details.

Conce	milar Consept Search E ept : sport cycle ch Results (13)	Dialog	select			ss [city cycle	View details in another window	
No.	Concept	Similarity	Path			ss [city cycle		
1	city cycle (Sibling)	0.8533	/bicycle/		city cy	ycle		2
2	bicycle [Parent]	0.8200	1			rider role <<	vehicle§rider role	
3	vehicle [Parent]	0.5333	/ANY/artifact/		<u>p/o 1</u>	1 rider	person	
4	wheel	0.2200	/ANY/artifact/component/		n/o 4	body color <<	bicycle\$body color	
5	sport wheel	0.2200	1		<u>p/o 1</u>	Ч	Color	
6	front wheel[RH]	0.2200	/bicycle\$front wheel role		p/o 1	front wheel i	ole_[+] < <vehicle\$wheel role<="" th=""><th></th></vehicle\$wheel>	
7	rear wheel[RH]	0.2200	/bicycle\$rear wheel role		Part-of	liront wheel	wheel	
8	front wheel[2][RH]	0.2200	/bicycle/sport cycle\$front w		p/o 1		ole_[+] < <vehicle\$wheel role<="" th=""><th></th></vehicle\$wheel>	
9	rear wheel[2][RH]	0.2200	/bicycle/sport cycle\$rear wh		p/01	rear wheel	wheel	
10 11	ANY [Parent] artifact [Parent]	0.0333	/ /ANY/		, rear wheel rolleiss	1 Any Any	\$role	
	Edit	Support	Close		Vo 1 [rear wheel] [p/o 1 IS-a [rear wheel] [p/o 1 Vo 1 [Any]	1 front role	arrier	
				1	ub Contraction of the second sec			>
_				ſ		Show Inhe	rited Slots 🔲 Slots Closed 🛛 Jump	
	Seleo	cted		t				
			city	cyc	le			
	analo	gous		01	front role			
		•	10/	01	carrier			
	conc	ept						

- ③ Editing analogous concepts
 - Editing operations can be performed on the analogous concepts returned as search results.
 - Select an item on the Analogous Concept Search dialog list, and click the [Editing Assistance] button on the bottom of the dialog to open the Editing Assistance dialog.
 - Editing operations can be performed easily on analogous concepts by selecting a candidate displayed in the editing dialog, and clicking the [Edit] button.

Edit Support Dialog						
Concept(A): sport cycle Concept(B): city cycle						
下位として定義する(is-a関係を結ぶ: B is-a A) 上位概念を作成する(上位概念(C): A is-a C, B is-a C)						
◯ edit Nothing OK Cancel						

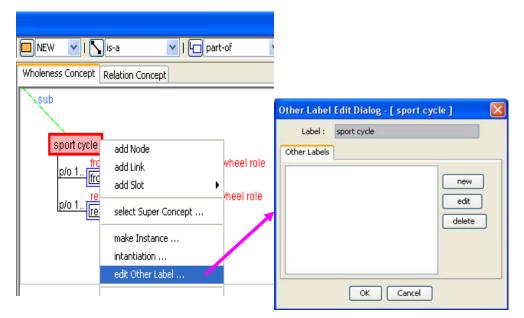
(2) Edit alias (Alias Management Features)

In some cases, users want to define a separate name (i.e. label) when defining a concept. In such cases, multiple labels can be defined for one concept.

① Alias Editing Feature

This feature allows multiple labels to be defined and edited for one concept.

 Select the concept node or slot, and choose [Edit Alias] from the right click menu to open the alias editing dialog.



• Click the [New] button and edit the alias in the alias editing dialog, then click the [New] button to add the alias.

*To selectively view by term class, see "2 Alias Management Features".

Other Label Edit Dialog - [Edit]	Alias is added
edit Other Label : Mountain biky Glossary : Alias1 Language : en Abbreviation : Alias1	Other Label Edit Dialog - [sport cycle]
	OK Cancel

Aliases can be displayed in the Browsing Pane by selecting [Alias Management]-[Display Alias] in the Menu Bar.

Project Label Help			
*bicycle	Other Labels	•	Alias is displayed
select dispaly I			
WC-Tre Glossary Mana		ess Concept Rela	tion Concept
w city cycle w city cycle carrier w carrier w sport wheel			Mountain biky (Alias1)
Color TopLevel(TopLevel.on 		p/o 1 [front wh	eel role < bicycle\$rear wheel role
🖶 🛄 quality			

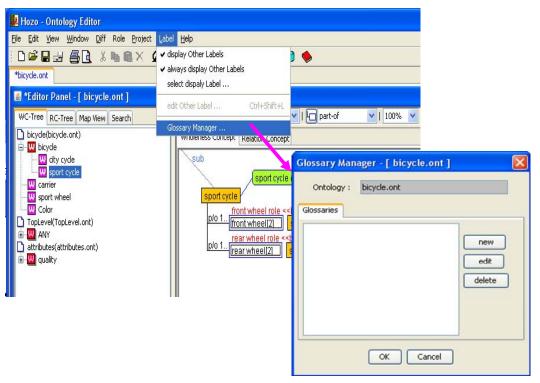
 Aliases can be displayed as concept labels by toggling alias classes in the Menu Bar, [Alias Management]-[Select Alias Display].

Project Label Help	
🖹 🗙 🗸 🗸 display Other Labels 💦 👌 🌰	
*bicycle	
select dispaly Label	
edit Other Label Ctrl+Shift+L	
Glossary Manager BicVouvery seriency Glossary Manager BicVouvery seriency Glossary Manager BicVouvery seriency Glossary Manager Glossary Manager BicVouvery seriency Glossary Manager Glossary Mana	\mathbf{x}
bicycle	-
aty cycle	-
Mountain biky O display Hozo Label	
sport wheel	
Color front wheel role << hick	
Toplevel(TopLevel.ont)	
The analysis of the second sec	
auributes(atributes,ont) <u>invorm [rear wheel[2]]</u> spo	
NEW VI Sis-a VI part-of V	
	-
Wholeness Concept Relation Concept OK Cancel	
sport cycle (Hozo)	
sport cycle fort wheel role cohicycle front wheel role Alias is displayed as	
n/o 1 mont wheel for a subject of the subject of th	
pro 1 [front wheel role sport wheel role rear wheel role sport wheel role rear wheel role sport wheel role	
p/o 1 [rear wheel role < sport wheel [2] sport wheel role	

② Alias Management Features

Labels can be grouped by term class.

Select [Alias Management]-[Manage Term Class] in the Menu Bar to open the term class management dialog.



• Click the [New] button and perform editing in the term class editing dialog, then click the [New] button to add the term class.

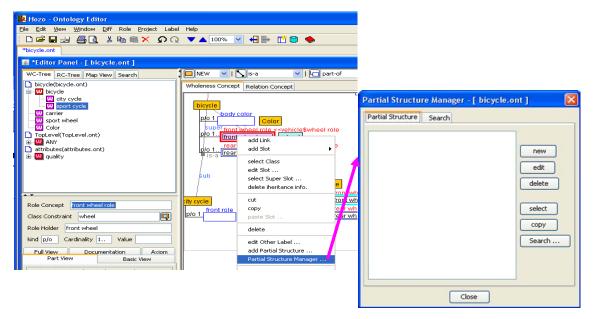
Glossary Manager - [edit]	Glossary is added
Glossary : Alias1	Glossary Mr
Language : en	Ontology
Abbreviation : Alias	Glossaries
URL :	Alias1 (en, Alias)
Description :	MC
visible Other Labels	OK
new Cancel	Cancel

*Will not be displayed unless the "Display alias of this term class" box is checked.

(3) Labeling component structures (Concept Component Structure Management Features)

Optional labels can be assigned to specific component structures within concept definitions.

- · Select any slot in the concept class.
- Select [Register Component Structure] in the right click menu to open the concept component structure management dialog.



- Click the [New] button to display the concept component structure management dialog.
- Enter the necessary items, and click the [Register New] button to register the concept component structure.

👪 Hozo - Ontology Editor	
<u>File E</u> dit <u>V</u> iew <u>W</u> indow <u>D</u> iff Role <u>P</u> roject <u>L</u> abel	Help
፤ 🗅 📽 🖬 🛃 🞒 🛃 👗 🐚 🛍 🗙 🕠 🔾	🔻 🔺 100% 💌 🕂 🖶 📅 🖨 🧇
*bicycle.ont	
🛎 *Editor Panel - [bicycle.ont]	
WC-Tree RC-Tree Map View Search	NEW 🔽 I 💊 is-a 🔽 I 🖵 part-of 💌 I
D bicycle(bicycle.ont) ⊡	Wholeness Concept Relation Concept
city cycle	
w sport cycle	What with the wheels
Sport wheel	Color
D TopLevel(TopLevel.ont)	pro 1 [front wheel role <
⊕-₩ ANY ANY Attributes(attributes.ont)	rear wheel rollei≲≲vehicle\$wheel role
i - 🛄 quality	is-a liear wheel
	sub

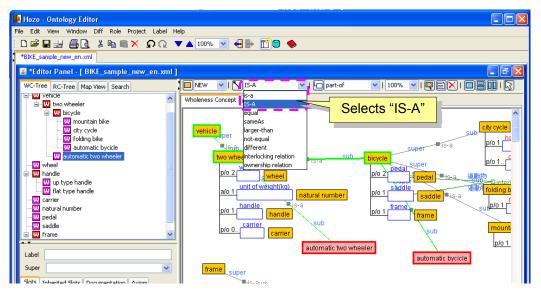
• In the concept component structure registration dialog, selecting an item in the concept component structure list will highlight the corresponding concept structure.

(4) Editing multiple inheritance (Multiple Inheritance Display and Editing Features)

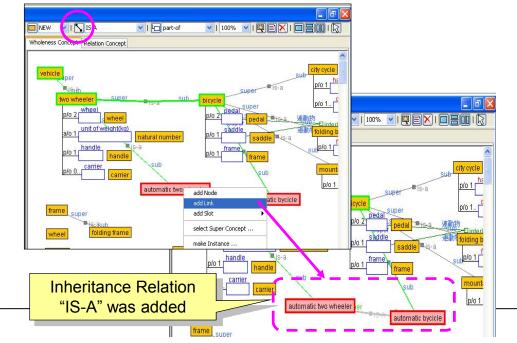
It is possible to multiplex the super and sub relationships (inheritance relationships) of concepts (i.e. multiple inheritance), toggle the perspective (view) and edit them.

• For concepts that already have an inheritance relationship, the weak inheritance relationship (is-a relationship) link will be edited.

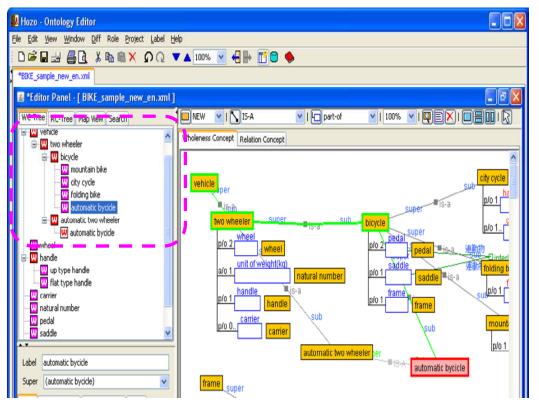
• Choose the concept to be multiplexed and select "IS-A" (capitalized) from the relationship class list in the Ontology Editing Tool Bar.



• As when editing an is-a relationship link, click the [Add Link] button in the Ontology Editing Tool Bar, or select [Add Link] from the right-click pop-up menu to add a weak inheritance relationship (is-a relationship) link.



• When a weak inheritance relationship (is-a relationship) link is added, it will be added to the is-a hierarchal tree on the Navigation Pane. The concept with the weak inheritance relationship will appear on the tree as a white icon.



- It will be possible to view and edit slots with multiple inheritance when editing in the Definition Pane and slots.
- *[Important]: With regards to weak inheritance relationships (is-a relationship), it is necessary to define any behavior that differs from is-a relationships based on the basic Ontology theories put forward by the Mizoguchi Laboratory. Please use with caution as it is possible that feature specifications will change with future theoretical development.

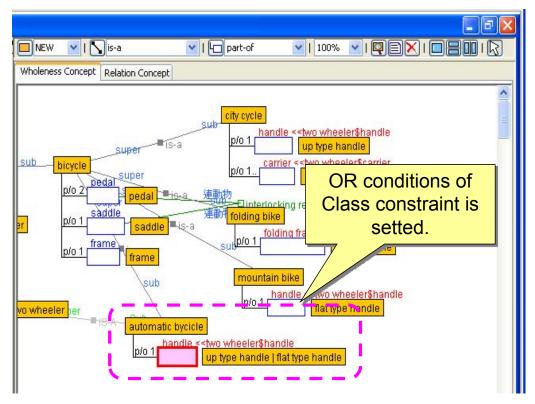
5) Setting an OR condition in a class constraint (using extended features for editing class constraints)

Editing support features make it possible to set multiple slot class constraints when defining concepts, and to use a combination condition (OR condition) between them.

• When editing with the class constraint selection dialog, it is possible to hold the Ctrl key (or Shift key) to select multiple concept classes assigned to class constraints.

🔲 NEW 🔍 📉 is-a 💙 🕞 part-of 🔍 100% 💙 👰 🗎 🏷	
Wholeness Concept Relation Concept Sub city cycle Sub p/o 1 Sub sub Sub p/o 1 Sub folding frame sub p/o 1 frame sub sub p/o 1 frame sub	Selecting more than one concept as a class constraint.
	set All < OK Cancel

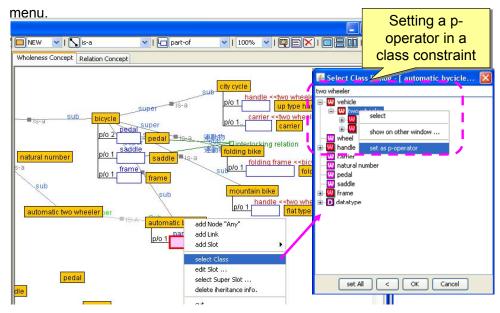
• Click the [Select] button on the bottom of the dialog after making selections to set a class constraint OR condition.



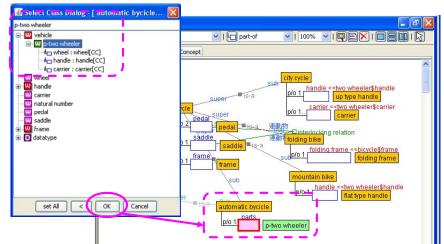
*It is also possible to edit the text in the Definition Pane ("|": delimiter character). *Role Holders and Datatypes can also be specified as OR conditions. 6) Setting a p-operator in a class constraint (p-operator Editing Feature)

*The "p-operator" is an expanded setting for slot class constraints. By setting a p-operator for a given concept within a class constraint, the concept (class) to which it was set, or that instance of a component concept, can be retrieved as that slot's value.

• When editing with the class constraint selection dialog, select the concept class node, then toggle the selection display by choosing [Assign as p-operator] in the right click

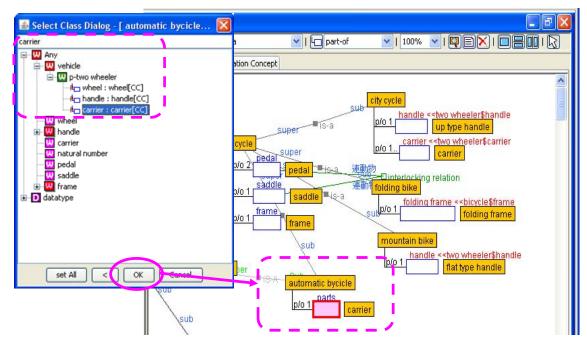


• The tree icon assigned as a p-operator will turn green, and it will become possible to specify p-operators. Click the [OK] button on the bottom of the dialog to set the p-operator as a class constraint.



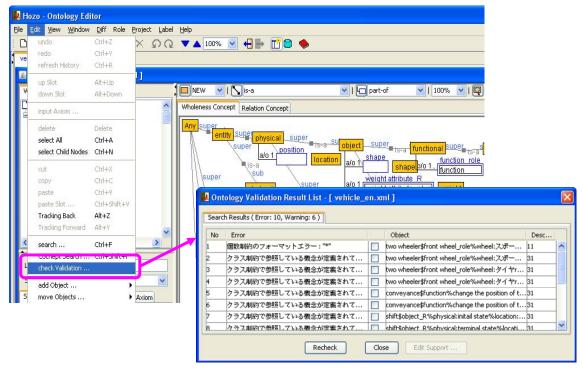
*It is also possible to edit the text in the Definition Pane (add the prefix "p-"). If the corresponding concept class is undefined, it will be displayed in light green in the Browsing Pane.

• Details of component concepts will be displayed underneath concepts assigned p-operators in the p-operator assignment view. If a component concept is selected and set, it will be set as a class constraint.



(7) Validating Ontologies (Ontology Consistency Check Feature)

- The Ontology Consistency Check feature utilizes the Hozo inference structure to verify whether or not the Ontology being edited is structured according to the rules.
- Details of the Ontology consistency check are as follows.
 - -Duplicate labels (Basic Concept, Role Holder)
 - -Cardinality (quantity constraint) format
 - -Cardinality (quantity constraint) consistency check
 - -Slot inheritance consistency check
 - -Inheritance from super slot
 - -Inheritance from class constraint
 - -Class constraint consistency check
 - -Presence/absence of class constraint concept
 - -Check consistency between super slot and class constraint concept etc.
- 1 Checking Ontology consistency
- Select [Edit (E)]-[Consistency Check] from the Menu Bar to validate the Ontology being edited; after validation the results will be displayed in a list.



*The same operation can be performed by making sure no object is selected, then choosing "Consistency Check" in the right-click menu.

*Explanation of the "Ontology Consistency Check Results List" dialog

🛿 Ontology Validation Result List - [vehicle_en.xml]							
Searc	h Results (Error: 10, Warning: 6)						
No	Error		Object	Desc			
1	個数制約のフォーマットエラー:"*"		two wheeler\$front wheel_role%wheel:スポー	11	^		
2	クラス制約で参照している概念が定義されて		two wheeler\$front wheel_role%wheel:スポー	31			
3	クラス制約で参照している概念が定義されて		two wheeler\$front wheel_role%wheel:タイヤr	31			
4	クラス制約で参照している概念が定義されて		two wheeler\$front wheel_role%wheel:タイヤr	31			
5	クラス制約で参照している概念が定義されて		conveyance\$function%change the position of t	31			
6	クラス制約で参照している概念が定義されて		conveyance\$function%change the position of t	31	1		
7	クラス制約で参照している概念が定義されて		shift\$object_R%physical:initail state%location:	31			
8	クラス制約で参昭している概念が定義されて		shift\$object_R%pbysical:terminal_state%locati	31	v		
	Recheck	Clo:	e Edit Support				

[Check Again] button: Check Ontology consistency again.

[Close] button: Close dialog screen.

[Editing Support] button: Perform editing operations on error items (explained later).

② Correcting errors

- Hozo provides the features support editing in order to remove errors.
- Chose an error item on the Ontology consistency check results list and click the [Editing Support] button to open a dialog that provides editing support according to each error contents. Editing support for each error is explained below.

<Case-1>Duplicate Label Error

• Clicking the [Editing Support] button for a duplicate label error will open the label editing support dialog.

H		ology Validation Result List - [vehicle_	en.x	ni]			
	Searc	h Results (Error: 10, Warning: 7)				Label Edit Support	6
1	No	Error	1	Object	Desc		
н	10	クラス制約で参照している概念が定義されて		change the position of the human\$object_R%h.	31 🔼		
I	11	[警告]:ロールホルダー名がオントロジー内で		frame[RH]	3	[Overlaped Labels] "frame"Please change the Label of this object.	
	12	[警告]:ロールホルダー名がオントロジー内で		tire[RH]	3		
	13	[警告]:ロールホルダー名がオントロジー内で		object[RH]	3	Before Change : frame	
	14	[警告]:ロールホルダー名がオントロジー内で		conveyance[RH]	3	After Change : frame 1	
	15	[警告]:ロールホルダー名がオントロジー内で		function[RH]	3	Hor charge : Indite_1	
	16	[警告]:ロールホルダー名がオントロジー内で		context[RH]	3		
l	17	「警告]:ト位スロットの情報が正しくない可能		conveyance\$function%change the position of t	be 🔟	Description	
L		Recheck	Clo	se Edit Support		Slot: "two wheeler\$frame role"	
						Cancel change Object update	

• Follow the editing support dialog directions to edit duplicate labels.

[Update] button: Updates the label.

[Change Object] button: Changes the object whose label is being edited. [Cancel] button: Closes the dialog without performing any editing operations.

Label Edit Support	×
[Overlaped Labels] "frame"Please change the Label of this object.	
Before Change : frame	
After Change : frame_1	
Description	
Slot : 'two wheeler\$frame role'	
Cancel change Object update]

<Case-2> Cardinality (quantity constraint) Error

• Clicking the [Editing Support] button for a cardinality (quantity constraint) error will open the cardinality editing support dialog.

No	Error	Object	Desc						
	個数制約のフォーマットエラー:"*"	two wheeler\$front wheel_role%wheel:spoke role	11	<u>~</u>					
	上位スロットで設定された個数制約に違反し	two wheeler\$front wheel_role	12						
	上位スロットで設定された個数制約に違反し	two wheeler\$rear wheel_role	12						
	▲位入事ットで設定された個数制約に違反し	fourwhoolor\$whool	12	-					
	クラス制約で参照している概念が定義されて	two wheeler\$front wheel_role%wheel:spoke role	31						
	クラス制約で参照している概念が定義されて	two wheeler\$front wheel_role%wheel:tire role	31						
	クラス制約で参照している概念が定義されて	two wheeler\$front wheel_role%wheel:tire role	31						
	クラス制約で参照している概念が定義されて	conveyance\$function%change the position of t	31	~					
3 クラス加約で参照している梅金が定義されて Conveyance\$function%channe the position of t31 Recheck Close Edit Support									

	dinality Edit Support [two wheelerSrear wheel_role]
	Please reset cardinalities of the Slot.
	Super Slot(Cardinality)
	Dependent Concept : vehicle
	RoleName : wheel
	Cardinality(1) \Rightarrow 1 (1 \leq N \leq 1)
-	Specialization(Cardinality) Dependent Concept : two wheeler
	Role List : front wheel role (1) \Rightarrow (1)
	Role List : front wheel_role (1) \Rightarrow (1) rear wheel_role (1) \Rightarrow (1)

• Follow the editing support dialog directions to edit cardinality definitions in super slots and specialized slots.

[Update] button: Updates cardinality definitions.

[Cancel] button: Closes the dialog without performing any editing operations.

Cardinality Edit Support [two wheeler\$rear wheel_role]	×					
This Slot sets error cardinality for a cardinality of the super Slot. Please reset cardinalities of the Slot.						
Super Slot(Cardinality)						
Dependent Concept : vehicle						
RoleName : wheel						
Cardinality(1) \Rightarrow 1 (1 \leq N \leq 1)						
Specialization(Cardinality)						
Dependent Concept : two wheeler						
Role List : front wheel_role $(1) \Rightarrow (1)$ rear wheel_role $(1) \Rightarrow (1)$						
Cardinality(Whole): 2 (2 $\leq N \leq 2$)						
Cancel Update						

*Double clicking on super slot settings and specialized slot role list items will open the cardinality editing dialog, allowing editing operations to be performed.

Cardinality Edit Support [two wheeler\$rear wheel_role] 🛛 🔀	
This Slot sets error cardinality for a cardinality of the super Slot. Please reset cardinalities of the Slot.	
-Super Slot(Cardinality)	
Dependent Concept : vehicle	
RoleName : wheel	input Cardinality
Cardinality(1) \Rightarrow 1 (1 $\leq N \leq$ 1)	MinCardinality :
Specialization(Cardinality Double click	1
Dependent Concept : two wheeler	MaxCardinality :
Role List : front wheel_role $(1) \Rightarrow (1)$	OK Cancel
rear wheel_role (1) \Rightarrow (1) Double click	OK Cancer
Cardinality(Whole): $2 (2 \leq N \leq 2)$	
Cancel	

<Case-3> Slot Class Constraint Error

Clicking the [Editing Support] button for a slot class constraint error will open the class constraint editing support dialog.

11.1	_			1 - 1	1	Class Constraint Edit Support [change the position of th.
	Error		Object	Desc		The classConst set by the HeightSlot is not defined
3	ケラス制約で参照している概念が定義されて		conveyance\$function%change the position of t	31 🔶		Please select the following edit candidate, and push the button of the
2	クラス制約で参照している概念が定義されて		shift\$object_R%physical:initail state%location:	31		Please select the following edit candidate, and push the button of the
•	シストリックを照している概念が定義されて		shif ut ebject_f%physical:terminal-state%lesati.			Edit Candidate List :
ð	ケラス制約で参照している概念が定義されて		change the position of the human\$object_R%h	31		Class Constraint Concept ("time point") is created and edited.
•	▶●ス制約で参照して ₩●版金が定義されて ₩		change the position of the human pobject_R4%h.			Class Constraint is set in a sub concept of "time point".
Ľ	警告]:ロールホルダー名がオントロジー内で		rim[RH]	3		
[警告]:ロールホルダー名がオントロジー内で		tire rubber[RH]	3		
r	警告]:ロールホルダー名がオントロジー内で		frame[RH]	×		
	Recheck	Clo	se Edit Support			Explanation

• Follow the editing support dialog directions to perform class constraint creation and selective editing operations.

Class Constraint Edit Support [change the position of th 🔀		=
The classConst set by the HeightSlot is not defined	Select Class Dialog	×
Please select the following edit candidate, and push the button of the edit	🕀 🛄 Any	-
Edit Candidate List :	Wrim Wrim Wire rubber	
Class Constraint Concept ("time point") is created and edited. Class Constraint is set in a sub concept of "time point".	datatype	
Explanation Class Constraint Concept ("time point") is created and edited.		
Cancel edit Label Edit		
New Making Concept	set All < OK Cancel	
Please input the ConceptLabel newly made		
Concept Name : time point		
OK Cancel		

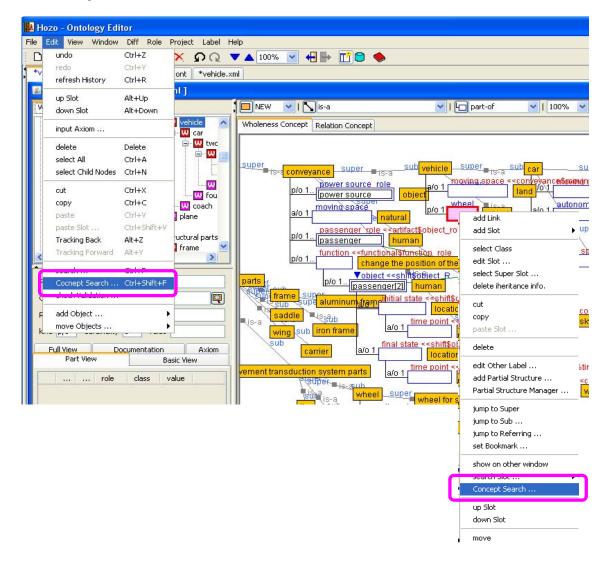
[Perform Edit] button: Implements class constraint editing operations.

[Edit Label] button: the concept label can be edited.

[Cancel] button: Closes the dialog without performing any editing operations.

(8) Performing searches using slot information (Advanced Concept Search Feature)

- Searches using slot information (role concept, class constraint) can be performed with the Advanced Concept Search Feature.
- ① Assigning search conditions
 - When assigning conditions from an existing concept structure, select the slot to be used as the search condition, and chose [Advanced Concept Search] from the right-click menu.
 - When assigning arbitrary search conditions, select [Edit (E)]-[Advanced Concept Search] from the main menu.



2 Editing search conditions

- · Performing menu selection will open the Advanced Concept Search dialog.
- · Edit slot information.

-Search Conditions: Puts constraints on output concepts.

-Slot Condition Field: Input slot information to use as a search condition.

*It is possible to add/remove slot conditions.

*If this field is left blank, the search condition will be all values (arbitrary).

NEW 🔽 I 🖣	🖌 is-a	🕶 I 🗠	-			A REAL PROPERTY OF A		
Wholeness Concept	Relation Concept			Conce	ot Searc	ch Dialog		
a/o 1 mov object p/o 1 whe ral tifact\$object_role uman	ring space < < conveyance some land 10 1 el lisso autono add Link			Condition	Concept Search : ndition Lis			Lower Cor
Stanction role e position of the h	edit Slot select Super Slot	tr		kind	Num.	role	class	value
21 human	delete iheritance info.			p/o	1	wheel	wheel	
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role tire	jump to Sub		0				Temove Rem	COK
=1s-a	jump to Referring set Bookmark					Search	Closes	
	show on other window							
	Concept Search							

- ③ Performing advanced searches
 - After assigning search conditions, click the [Perform Search] button on the bottom of the dialog to perform the advanced search; the view will toggle to the [Search Results] tab to display search results.

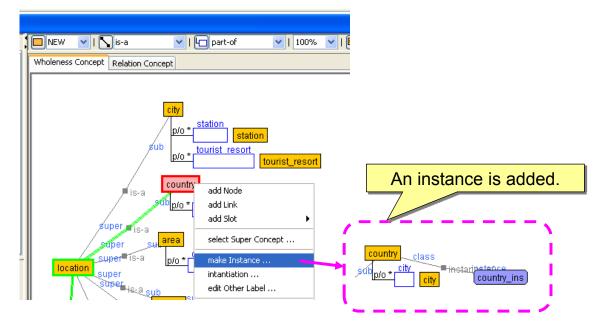
Concep	t Searc	ch Dialog			🔛 Co	ncept Search Dialog		
arch Cor	dition	Search Result			Searc	ch Condition Search Result (8)	
earching	Concept	s which has Slots w	with following cond	litions.	Ĩ	Label	matches	Path
ondition Search :		vehicle		Lower Cor	1	car [Child]	1.0000	Any/entity/physical/o
					2	four wheeler [Child]	1.0000	/Any/entity/physical/o
t Con	dition Lis	t			3	coach [Child]	1.0000	/Any/entity/physical/o
kind	Num.	role	class	value	4	two wheeler [Child]	0.9000	/Any/entity/physical/o
0	1	wheel	wheel		5	bicycle [Child]	0.9000	/Any/entity/physical/o
			1		6	automatic two wheeler [Child]	0.9000	/Any/entity/physical/e
					7	city cycle [Child]	0.9000	/Any/entity/physical/e
					8	mountain bike [Child]	0.9000	/Any/entity/physical/o
		apeend Item	remove Item	rat				
		Search	Closes			Search	Closes	 ר

- ④ Viewing search results
 - Search results are displayed in order by relevance.
 - Note) Concepts annotated with a (*) are dependent concepts of the Specified slots.
 - When an item on the search results list is selected, the corresponding concept node (or slot, if a Role Holder) will be selected. Slots matching the search conditions will also be selected.

(9) Editing Instances (Simple Instance Editing Feature)

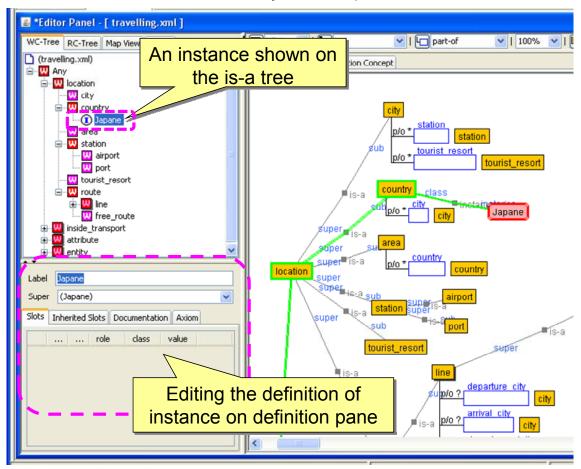
Instances required for Ontology structuring, such as instances used as constraint values within Ontology definitions, can be created with the Ontology Editor.

- ① Creating an Instance
 - Select the concept node or slot, and choose [Create Instance] from the right click menu to open the editor (in the Browsing Pane) and create an instance node.
 - It is not possible, however, to create sub nodes of an instance, or create instances without a super concept node.

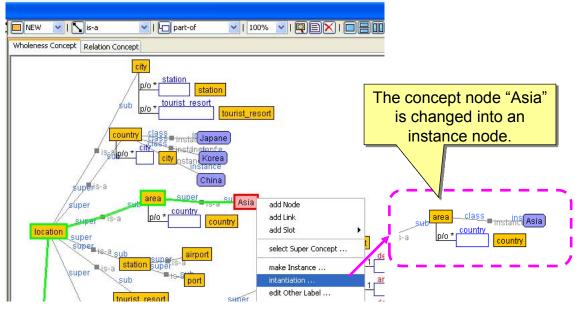


2 Viewing and editing instances

· Instance nodes can be viewed/edited just as concept nodes.



- ③ Instantiating an existing concept
 - It is possible to instantiate an existing concept node.
 - Select the concept node, and choose [Instantiate] from the right click menu to change the concept node into an instance node.
 - However, instantiation can only be performed when the node has no sub concepts.



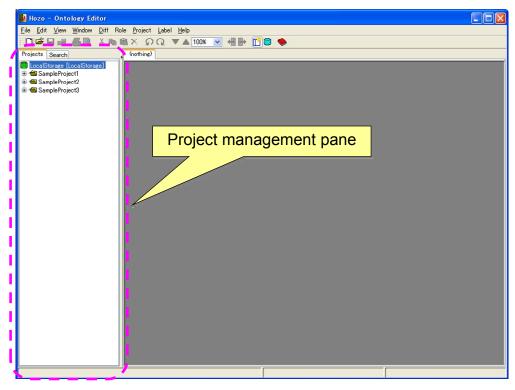
*The same operation can be used to change from an instance to a concept node.

4.2. Managing projects

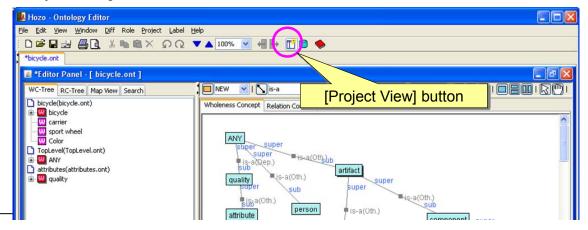
The Project Management Features allow an Ontology to be divided into multiple component Ontologies to facilitate the structuring of large scale Ontologies and collaborative work by multiple developers.

4.2.1. Viewing project management

 If the "Use project management features" box is checked in the Initial Setup Dialog, the Project Management Pane will be displayed on the left side of the screen when the Ontology Editor is started. Most project management operations can be performed in the Project Management Pane.



• Clicking the [Project View] button in the Ontology Operations Toolbar toggles the Project Management Pane view.



(Reference) About the Project Management Tree view

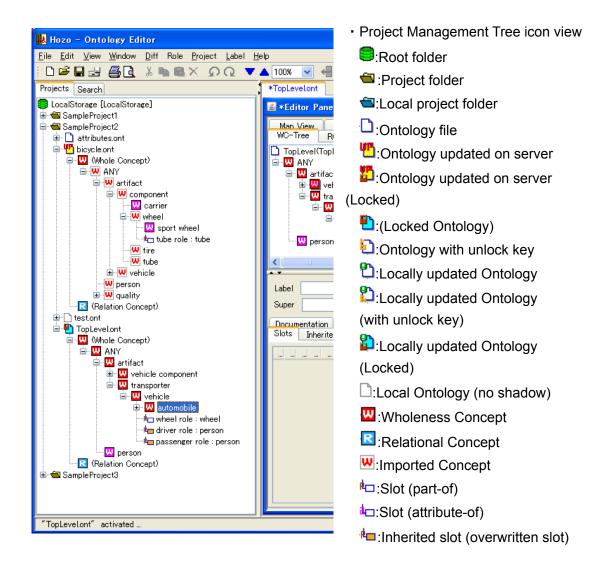
• The Project Management Tree displays and operates the following managed entities in Hozo (local directory) in a tree hierarchy:

"Project" (folder) in Hozo

"Ontology" in Project

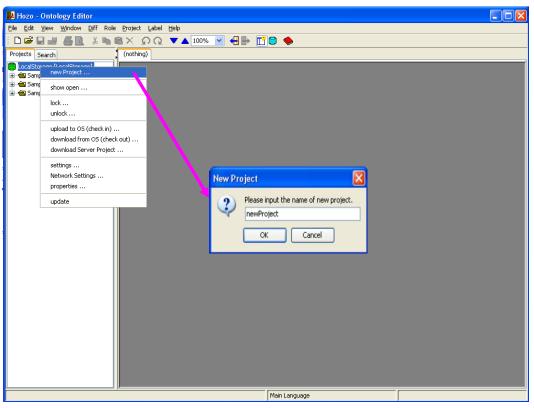
"Concept" in Ontology

"Slot" in Concept

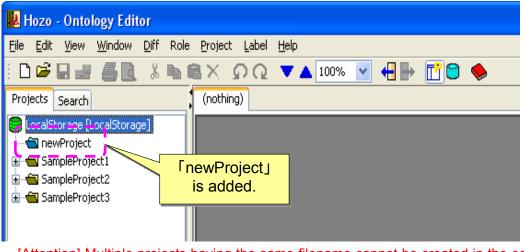


4.2.2. Creating a New Project

Select and right-click on the root folder icon in the Project Management Tree then select [New Project] from the right-click menu to open the "New Project Creation" dialog.



• Enter a name for the new project and click the [OK] button to add the new project. The project will be a local project and have a blue icon.

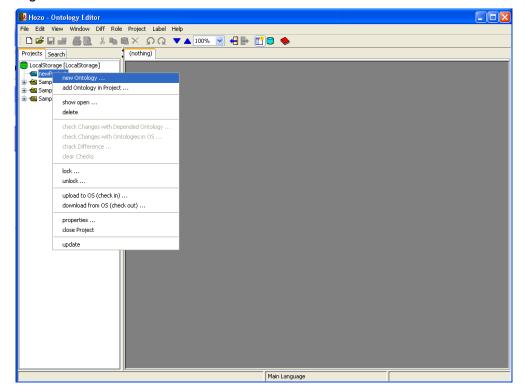


[Attention] Multiple projects having the same filename cannot be created in the editor (local directory); an error message will be displayed.

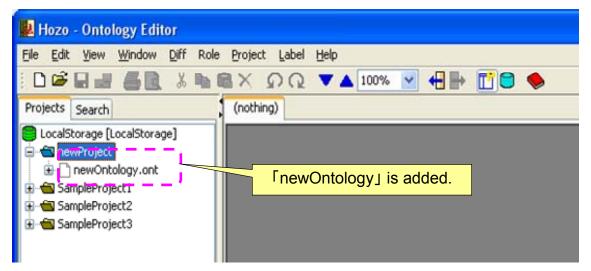
4.2.3. Operating the Project

(1) Adding a new Ontology

 Select and right-click on the Project Management Tree root or project folder icon then select [New Ontology] from the right-click menu to open the "New Ontology Creation" dialog.



• Enter a name for the new Ontology and click the [OK] button to add the new Ontology.

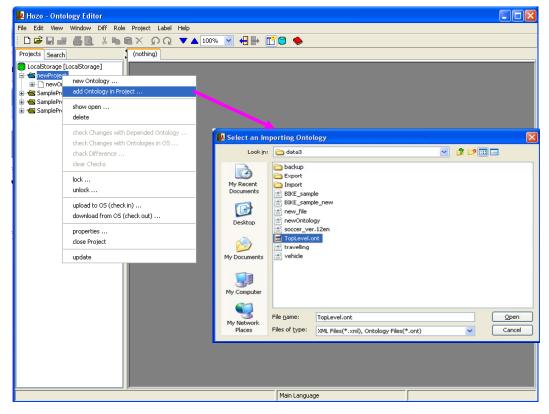


[Attention] Multiple Ontologies having the same filename cannot be created in the project (an error message will be displayed).

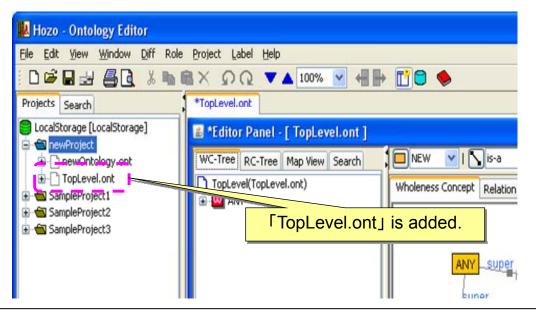
(2) Adding an existing Ontology

*Allows importing of standalone Ontology files (.xml) and Ontology files created in other projects (.ont).

• Select and right-click on the Project Management Tree root or project folder icon then select [Add Existing Ontology] from the right-click menu to open the file selection dialog.



• Enter a name for the new Ontology and click the [OK] button to add (import) the existing Ontology.

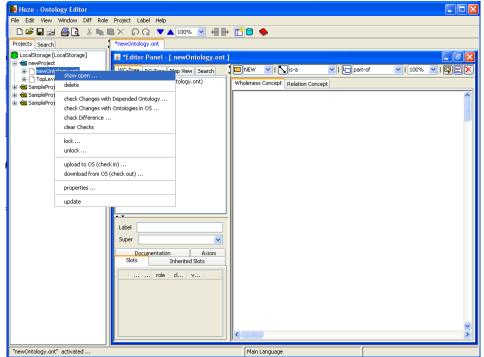


* The designated Ontology file will automatically be copied to the project as a new Ontology file (its file extension will be changed to .ont).

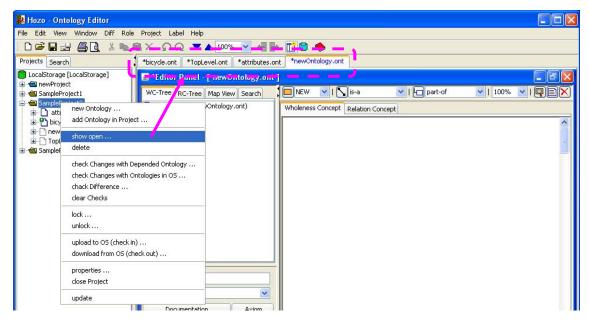
(This will have no effect on the existing Ontology file.)

(3) Viewing Ontologies

• Double click the Ontology file icon in the Project Management Tree, or select [Open] from the right-click menu to open a new Editing Panel in the window.



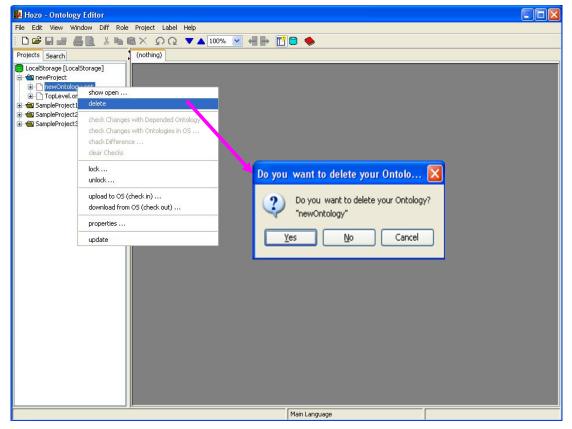
*Right clicking the project folder icon in the Project Management Tree and selecting [Open] from the right-click menu will display all Ontology files in that project in the Editing Panels.



(4) Deleting Ontologies

• Right-click on the Ontology file icon in the Project Management Tree and select [Delete] in the right-click menu to open the deletion confirmation dialog.

• Click the [Yes] button on the bottom of the dialog to delete the selected Ontology file from the project.



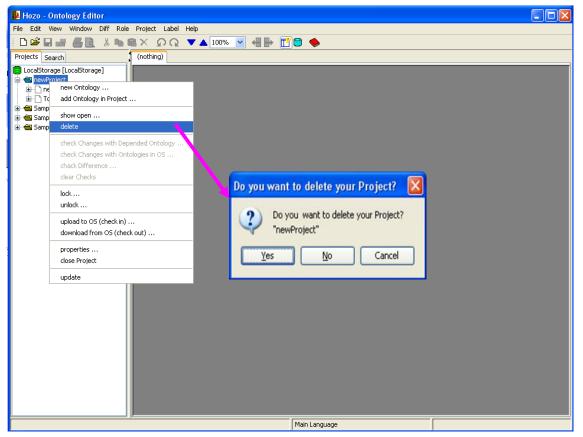
*It is not possible to delete Ontologies when their files are open (Ontologies that are being edited). Close the editing panel before proceeding.



(5) Deleting projects

• Right-click on the project folder icon in the Project Management Tree and select [Delete] in the right-click menu to open the deletion confirmation dialog.

· Click the [Yes] button on the bottom of the dialog to delete the project folder.



*It is not possible to delete projects that have open Ontology files (Ontologies that are being edited). Close the editing panel before proceeding.

*When a project is deleted, the Ontologies in that project are also deleted.

4.2.4. Other Features

Server Ontology Name

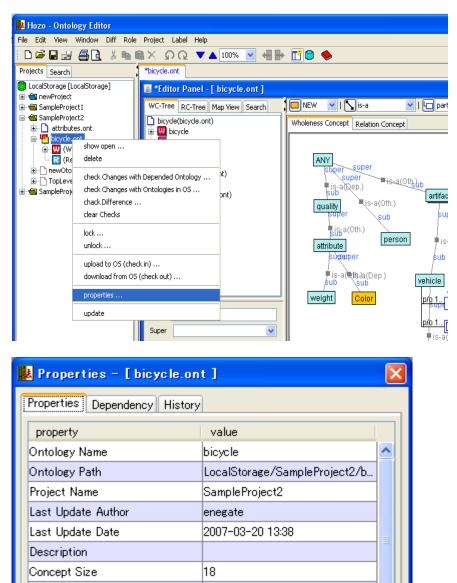
Server Ontology Path

Updated

Locked

(1) Viewing properties

• Right-click on the Ontology file icon in the Project Management Tree and select [Properties] in the right-click menu to open the properties dialog.



bicycle

true

false

Cancel

ΟK

ServerStorage/SampleProject2/...

¥

(Reference) Items shown in the Ontology properties dialog

① "Properties" tab

- Ontology name: the Ontology's name (i.e. filename)
- · Ontology path: path of the Ontology file
- · Project name: name of the affiliated project
- · Last updated by: name of last user to update the Ontology file
- · Last update date: date when the Ontology file was last updated
- · Explanation: Explanation of Ontology files
- · Concept class number: number of concepts stored in the Ontology file
- · Server Ontology name: name of Ontology on the server
- · Server Ontology path: path of the Ontology file on the server
- · Server update: indicates whether the Ontology file on the server is updating
- · Locked: indicates whether the Ontology file on the server is locked
- · With key: indicates whether or not the unlock key is possessed
- 2 "Dependency Relationship" tab
 - · Depended Ontology: list of depending (referencing) Ontologies
 - · Referenced Ontology: list of Ontologies being depended (referenced)
- ③ "History" tab
 - Backup Ontology: list of Ontologies backed up during updates
 [Delete] button: delete backup files selected from list
 - [Replace] button: replace selected file with latest Ontology file

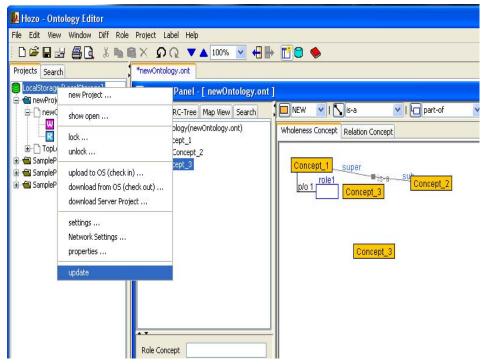
[Browse] button: display selected file's Ontology in a separate window

💹 Properties - [bicycle.ont]	Properties - [bicycle.ont]
Properties Dependency History	Properties Dependency History
Dependent Ontologies :	Backup Ontologies :"bicycle.ont"
 TopLeveLont @ 2007-02-26 20:31 (SampleProject2) attributes.ont @ 2007-02-26 20:25 (SampleProject2) 	L enegate @ 2007-06-20 18:48 L enegate @ 2007-03-20 13:38
Reference Ontologies :	
	delete replace browse
OK Cancel	OK Cancel

(2) Updating the Project Management Tree

*Project Management Features are applicable to saved Ontology files To apply updates made to Ontologies it is necessary to update the Project Management Tree.

• Right-click on the root folder (project folder) icon in the Project Management Tree and select [Update with Latest Information] to update the Project Management Tree.



*Checks whether the server-side Ontology files are up to date when updating the Project Management Tree.

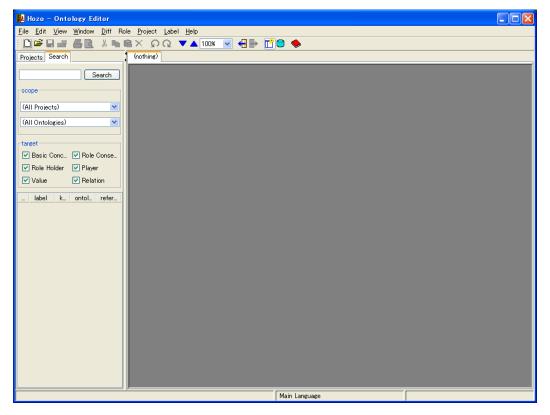
Updated Ontology - Do you download ontolog 🔀
Ontology is updated. (1 ontology) Do you download ontologies from Server? (check out)
Yes No Cancel

It is possible to confirm whether or not the server-side Ontology files are up to date by clicking the [Yes] button on the above screen.

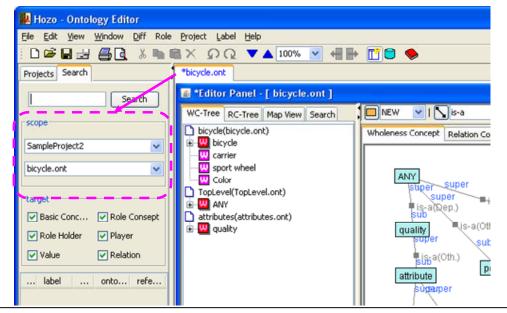
(3) Searching within a project

*Searching Ontologies within a project is performed using the Project Search Feature found in the "Search" tab of the Project Management Pane.

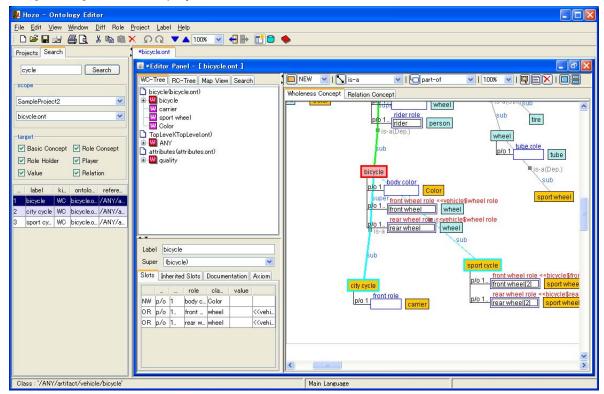
• Select "Search" tab of the Project Management Pane on the left side of the screen to open the "Project Search Panel".



*If the "Project Search Panel" is opened while editing an Ontology, the scope of the search will be that Ontology file.



• Assign search conditions in the upper part of the "Project Search Panel" and click the [Search] button to display search results in a table.



*Items specified in search conditions

- ① Search text
 - · Search text: enter a character string to search
 - · [Search] button: performs search
 - · [Reset] button: clears search conditions and results
- ② Search scope
 - · Project list: designate projects to search
 - · Ontology list: designate Ontologies to search
 - *Note) No Ontology list will be displayed if no project is designated
- ③ Search target: if checked, will be targeted by the search
 - Basic Concept (class)
 - Role Concept (slot)
 - Role Holder
 - Class Constraint
 - Constraint Value
 - Relationship

- Select and double click an item on the search result table on the bottom of the panel to select the corresponding Ontology object.
- [Attention] There may be discrepancies when searching Ontologies that are currently being edited because the project search feature searches the saved Ontologies. Before searching, always save the file being edited, and update the Project Management Tree. When searching within Ontologies that are currently open (being edited), use the search feature in the Navigation Pane.
- *Explanation of search table view

No	label	kind	ontology	reference
1	bicycle	WC	bicycle.ont	/ANY/artifact
2	city cycle	WC	bicycle.ont	/ANY/artifact
3	sport cycle	WC	bicycle.ont	/ANY/artifact
<u> </u>				
Clas	ss : '/ANY/artifa	ct/vehic	cle/bicycle'	

- No: item number
- Label: Ontology or slot label
- Class: shows Ontology class
 - -"WC": Wholeness Concept -"C": other
 - -"RC": Relational Concept
 - -"**SL**": slot (role concept)
 - -"RH": Role Holder
 - concept (imported concept)
 - -"RR": Relational Concept relationship
- Ontology: shows affiliated Ontologies
- Reference: shows path of concept hierarchy within Ontology
- · (Status Bar): shows number of search results

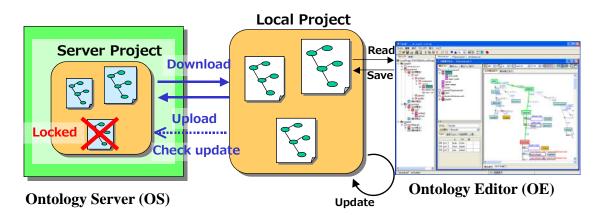
*Click the header of the search results table to sort that header's column by ascending (or reverse) order.

- -"C": other concepts
- -"R": Other Relationships
- -"(concept)+ 's": species concept
- -"'ref.' + (concept)": reference

4.3. Sharing Ontologies (distributed management)

In order to share Ontologies among multiple users, it is necessary to upload the locally created Ontology file. Furthermore, features are necessary to restrict (lock) changes to the uploaded file during editing, and to check the update information of other Ontology files. The below features will be explained in this chapter.

- Uploading Ontologies (4.3.1)
- Downloading Ontologies (4.3.2)
- Locking Ontologies (4.3.3)
- · Checking Ontologies for updates (4.3.4)
- Managing server projects (4.3.5)



4.3.1. Uploading Ontologies

*In order to share Ontologies among multiple users, it is necessary to upload the locally created Ontology file to the Ontology server so that other users can reference it.

(1) Uploading local projects

• Right-click on the Project Management Tree project folder or Ontology file icon, and select [Upload to server (check in)] to open the Check-in Dialog in the center of the screen.

* If the corresponding project does not exist on the server, the project will be added (appended) on the server. If the project (or Ontology) already exists on the server, an update will be performed.

<mark>lozo - Ontology Editor</mark> Edit View Window Diff Role Project Label Help			
iects Search (nothing)			
.ocalStorage [LocalStorage]			
👜 🛅 new Ontology			
add Ontology in Project			
Sam show open			
Sam delete			
check Changes with Depended Ontology			
check Changes with Ontologies in OS	(
chack Difference	📕 Upload to Ontology Server (Check in) -	[newProject]	Ľ
clear Checks	Do you upload follow ontologies to Ontology Server?		
lock	object	task description	
unlock	Project [newProject]	append	
	Ontology [newOntology.ont (newProject)]	append	
upload to OS (check in)			
download from OS (check out)			
properties			
close Project			
update			
	lock Ontology		🗹 check All
	Comment:		
			^
			~
	OK	Cancel	

• Confirm the content to be uploaded, and click the [OK] button to upload the project folder (Ontology file) to the server; a confirmation message will be displayed.

R	🜡 Message 🛛 🔀
	Message: "newProject" append in the ser ver. "newOntology.ont" copy to the server. "newOntology.ont" comment copy to the server. Time = [0.046 秒]
	Close

*Standalone Ontology files are uploaded using the right-click menu of the Ontology file icon.

*Explanation of the Check-in Dialog

📕 Upload to Ontology Server (Check in) -	[newProjec	et]	×
Do you upload follow ontologies to Ontology Server?			
object	task	description	
Project [newProject]	append		
Ontology [newOntology.ont (newProject)]	append		
lock Ontology		3	✔ check All
Comment:	4		
ОК	Cancel		

① Project task/table (center of screen):

• Displays list of items to be handled during check-in. If the check box at the head of the list is unchecked, it will be excluded from the target and will not be uploaded.

• When handling is not possible, for example the existing project file is locked (unchangeable) etc., the list color will change and it will automatically be excluded from handling.

· Handling details

"append": adds folders or files.

"update": updates folders or files.

"delete": deletes folders or files.

2 Ontology lock (check box):

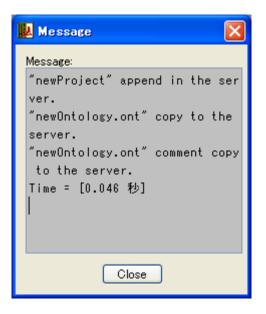
- · If checked, Ontology will be locked on update (server updates not possible).
- If unchecked, Ontology will be unlocked on update (server updates possible).
- 3 Check all (check box):
 - If checked, all items on the task list will be checked.
 - If unchecked, all items on the task list will be unchecked.
- (4) Comment (text field);
 - · Adds comments to the update file.

(2) Update server project

*Performs check-in, as in (1), to update an updated project or Ontology to the server project (Ontology).

As in (1), right-click on the updated project's (Ontology's) Project Management Tree project folder or Ontology file icon, and select [Upload to server (check in)] to open the Check in Dialog in the center of the screen.

N U	oload to Ontology Server (Check in) – [newProjec	at]	
Do y	ou upload follow ontologies to Ontology Server?			
	object	task	description	
	Project [newProject]	append		
	Ontology [newOntology.ont (newProject)]	append		
	ock Ontology			🗹 check All
Com	ment:			
	ОК	Cancel		

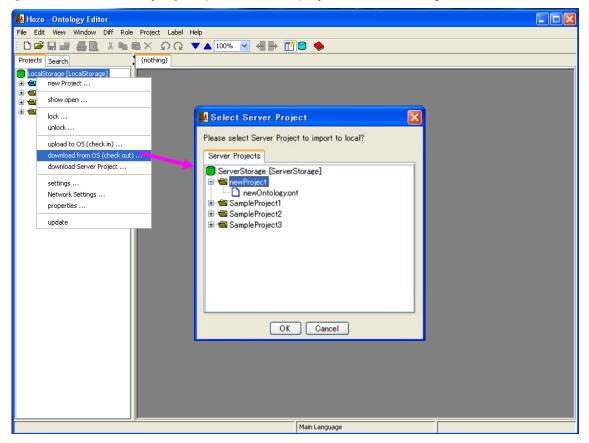


4.3.2. Downloading Ontology

- *Downloads a server-side project (Ontology) previously uploaded to the Ontology server in order to import it into a local project.
- *This operation is used when collaborating with other users over a LAN. When using this feature, please use an installation of Hozo that is in a different location (PC) from the one used to upload the project.

(1) Downloading Server Projects

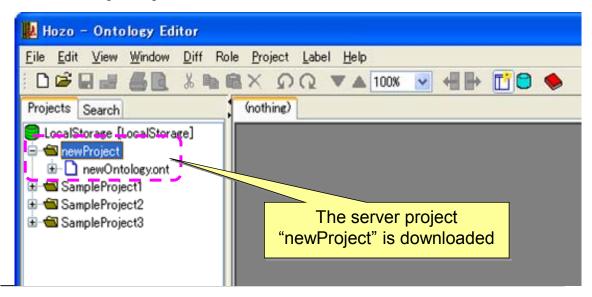
• Right-click on the Root folder icon in the Project Management Tree and select [Download Server Project] to open the server project selection dialog.



- Select the project file to be downloaded and click the [OK] button on the bottom of the dialog to bring up the project import confirmation dialog.
- Confirm the content to be downloaded, and click the [OK] button to download the project folder (Ontology file) from the server. A confirmation message will be displayed.

🔛 Import	Server Project - [newProject]		
Do you dov	wnload follow ontologies from Ontology Serve	r? (Check out)
ot	nject	task	description
	ect [newProject]	append	
🗹 Onto	ology [newOntology.ont (newProject)]	append	
🗌 lock O	ntology	Cancel	⊽ check All
		Cancer	
	Message		
	Message: "newProject" append in l "newOntology.ont " copy al. Time = [0.016 秒]		
	Close		

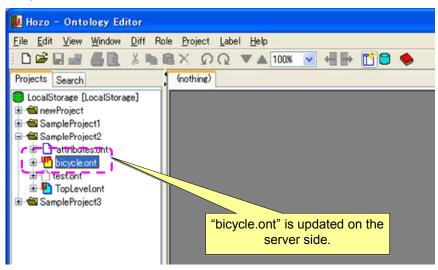
• Refresh the Project Management Tree to display the downloaded project and enable local browsing/editing.



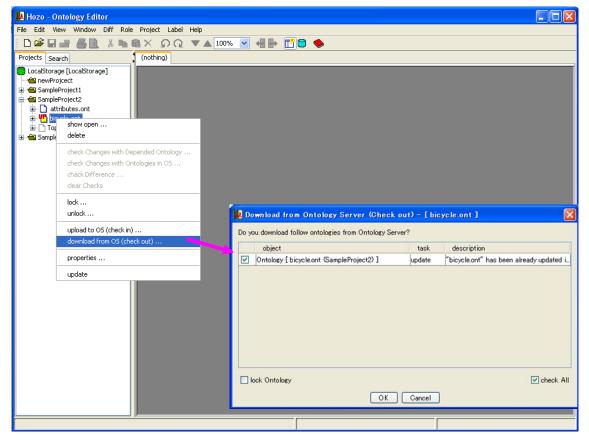
(2) Update local project (check-out)

*Check-out a server-side project (Ontology) in order to update a previously imported local project (Ontology).

• When an Ontology is updated on the server-side, the Ontology file icon indicates that it was updated.

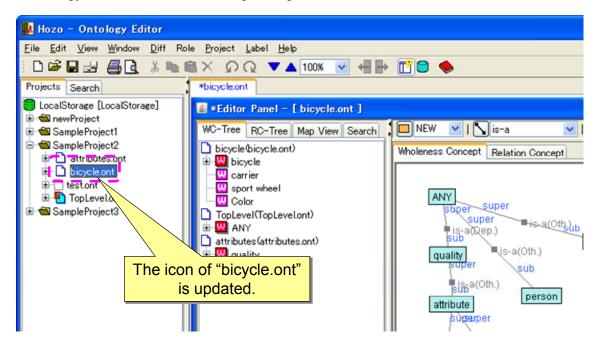


• Right-click on the Ontology file (project folder) icon in the Project Management Tree and select [Download Server Project] to open the server project selection dialog.



• Confirm the content to be downloaded, and click the [OK] button to download the project folder (Ontology file) from the server to local; a confirmation message will be displayed.

• Refresh the Project Management Tree to display the downloaded and updated Ontology and enable local browsing/editing.



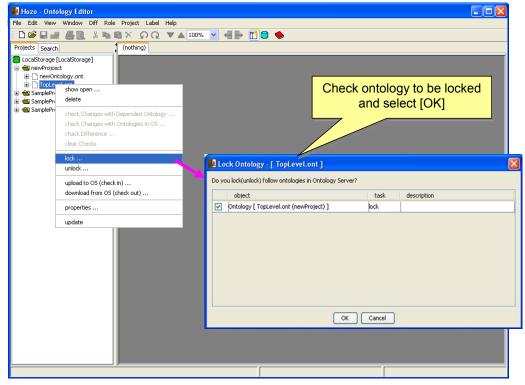
*Project Management Tree updates occur when downloads/uploads, locking and Hozo startup occur. If the icon display is not updated, update the Project Management Tree from the right-click menu of root folder.

4.3.3. Locking Ontologies

*Restricts (locks) uploaded Ontology files from updating on the server during local editing of the Ontology, etc. .

(1) Locking Ontologies

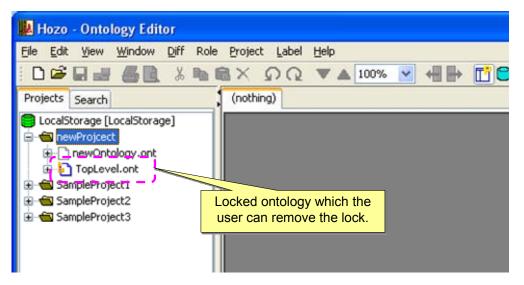
• Right-click on the project folder or Ontology file icon in the Project Management Tree, and select [Lock] to open the lock confirmation dialog in the middle of the screen.



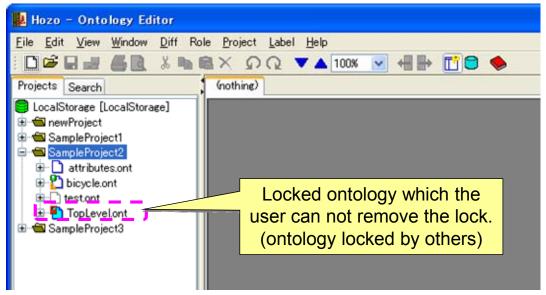
• Confirm the Ontology to be locked, and click the [OK] button to lock the Ontology file; a confirmation message will be displayed.

Message: "TopLevel.ont" is locked. Time = [0.0 秒]

• Refresh the Project Management Tree to display the locked Ontology and prevent other users from updating the Ontology on the server.



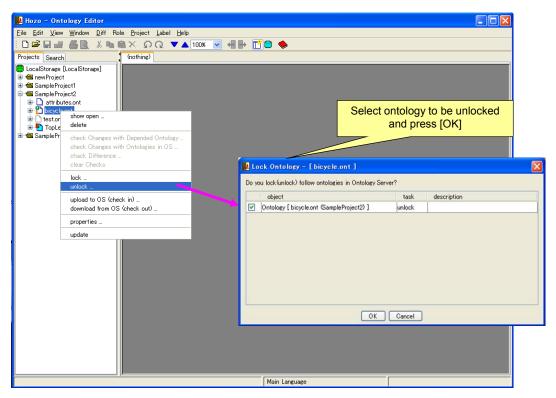
*In the above situation, other users' editors will display an icon indicating that the lock cannot be removed, as shown below.



*Check the "Lock Ontology" check box when downloading an Ontology to lock it at the same time it is downloaded.

(2) Unlocking Ontologies

• Right-click on the project folder or Ontology file icon in the Project Management Tree, and select [Unlock] to open the unlock confirmation dialog in the middle of the screen.



• Confirm the Ontology to be unlocked, and click the [OK] button to unlock the Ontology file; a confirmation message will be displayed.

📕 Message	×
Message: "bicycle.ont" is unlocked. Time = [0.016 秒] 	
Close	

[Attention] Unlocking cannot be performed if the unlock key is incorrect.

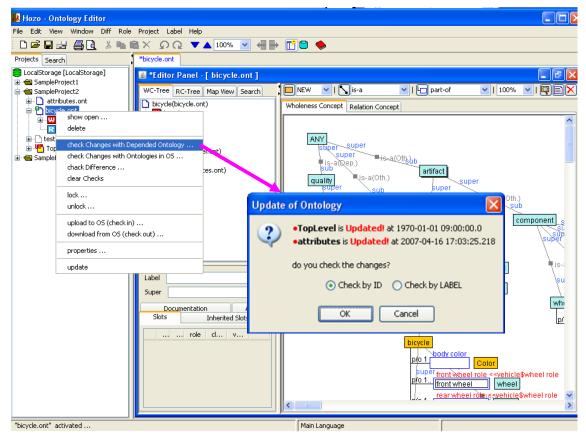
*In order to view lock information or deliberately remove a lock, it is necessary to use the Ontology Management Tools (see "4.3.5. (5) Displaying lock information").

4.3.4. Checking Ontology changes

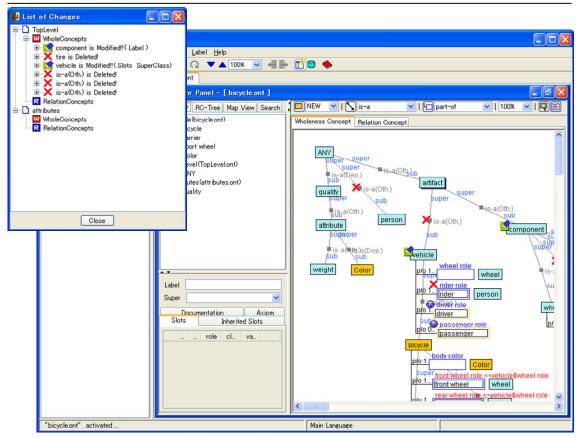
*Checks changed items by checking against Ontologies that are in dependency relations and comparing with previous versions of Ontologies with respect to the updated Ontologies.

(1) Checking changes in depended Ontologies

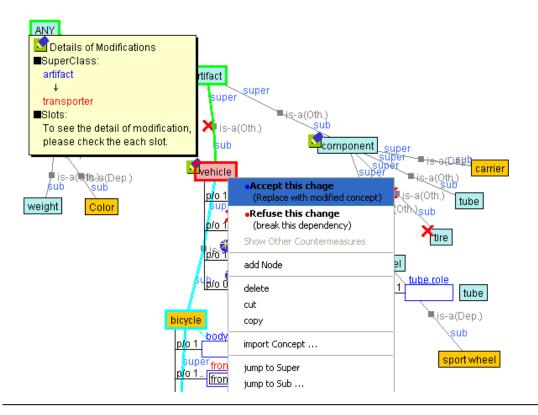
- Open the Ontology in the Editing Panel.
- Right-click on the Ontology file icon in the Project Management Tree and select [Check for Changes in Depended Ontologies] in the right-click menu to open the update confirmation dialog in the center of the screen.



- Click the [OK] button after confirming the updated contents to display a changes checklist dialog and view an Ontology change log in the Editing Panel.
 - *Select the "Check by ID" option on the bottom of the update confirmation dialog to compare changes in each object by ID. Or, select "Check by LABEL" to compare changes in each object by name (Label).



Selecting an item on the changes checklist will select and highlight the changed items.
 Right click a changed object to open the "Accept this change", "Refuse this change" menu, allowing actions to be selected for each change.



(2) Checking changes with Ontologies on the server

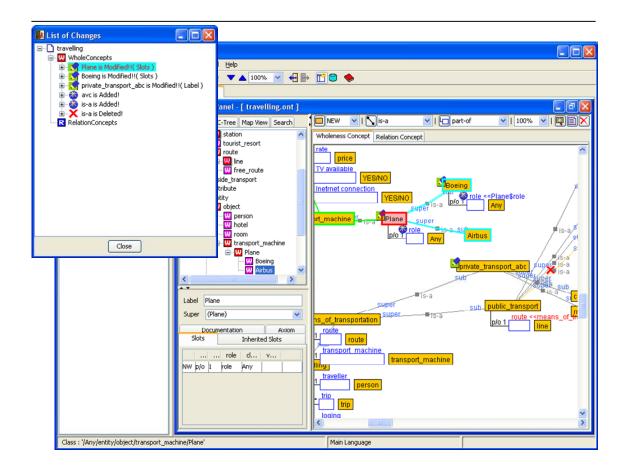
- Open the Ontology in the Editing Panel.
- Right-click on the Ontology file icon in the Project Management Tree and select [Check for Changes in Ontologies on the Server] in the right-click menu to open the server Ontology selection dialog in the center of the screen.

📕 Hozo - Ontology I	Editor	
File Edit View Windo	dow Diff Role Project Label Help	
D 🖻 🖬 🛃 🎒		
Projects Search	*bicycle.ont	
Projects Search CocalStorage [LocalSt SampleProject1 SampleProject2 SampleProject2 CocalStorage [LocalSt SampleProject2 SampleProject2 SampleProject2 CocalStorage [LocalSt SampleProject2 SampleProject2 CocalStorage [LocalSt SampleProject2 SampleProject2 CocalStorage [LocalSt SampleProject2 CocalStorage [LocalSt SampleProject2 CocalStorage [LocalSt SampleProject2 CocalStorage [LocalSt SampleProject2 CocalStorage [LocalSt SampleProject2 SampleProject2 SampleProject2 CocalStorage [LocalSt SampleProject2 SampleP	*bicycle.ont torage] *Cifior Panel - [bicycle.ont] Wc-Tree Rc-Tree Map View Search *bicycle(bicycle.ont) / open e k Changes with Obtologies in OS k set <td><pre> (Oth.) (Sub (Component) (Sub (S</pre></td>	<pre> (Oth.) (Sub (Component) (Sub (S</pre>
		wheel Mei <u>s≤vehicle</u> \$wheel role
	Main Language	

• Select the server-side Ontology that will be compared for changes and click [OK] button to open the check method confirmation dialog; the changes checklist dialog will be displayed as in (1) and a change log will be displayed in the Editing Panel.

[Note] If there is a "*" in front of the title, it is the latest version on the server.

Update	of Ontology 🛛 🔀
?	do you check the changes? Oheck by ID Check by LABEL OK Cancel



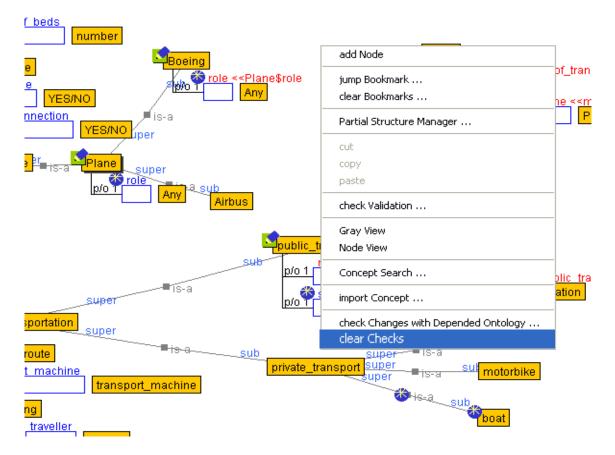
(3) Checking for changes in any Ontology

*Aside from Ontologies managed by the project, standalone Ontologies can also be checked for changes.

- Put any Ontology in edit mode.
- From the menu bar, select [Diff.]-[Check for differences with any file...].
- · Select the Ontology file that will be the comparison target in the file selection dialog.
- Select a file in the file selection dialog and click [Open] to open the options dialog. Choose comparison options, and click the [OK] button.
- A list of changes will be displayed in the dialog.
- Changed items are indicated by changed icons on the Browsing Pane allowing changes to be confirmed visually.
- · Selecting an item on the changes list will highlight the changed area.

📕 Hozo - Ontology Editor					
Elle Edit View Window Off Role Project Label Help					
Image: Second					
*Editor Panel - [Bl chack Differen	ence				
WC-Tree RC-Tree Map clear Checks (BIKE_sample_new_en.comp	letion				
📄 🖳 🛄 vehicle	wroueness cincept Relation Concept				
i wo wheeler					
w mountain bike		🔀 in bike			
U city cycle		handle showing			
automatic two whee	Look in: 🛅 data3	nandie < <two td="" w<=""></two>			
wheel ⊡-₩ handle	Beckup	物			
	Ay Recent import	物 ☴━━□interlockin 物			
Carrier D	Documents BIKE_sample	y cycle			
	BIKE_sample_new	vo 1 handle <<			
w saddle	Desktop ew_file	carrier <=			
Frame	en newOntology	<u>//o1</u>			
Label	TopLevel.ont				
Super My	Documents copOntoRep061231b.ont	<mark>g bike</mark> folding frame			
Slots Inherited Slots Documenta	vehicle				
role class	vehicle_en				
My	y Computer				
	File name: BIKE_sample_new_en.xml	Open			
My	ly Network				
	Places Files of type: XML Files(*.xml), Ontology Files(*.ont)	Cancel			
"BIKE_sample_new_en.xml" activated Main Language					

• Select [Clear Change Log] in the right-click menu on the Browsing Pane of the Editing Panel to close the change log view and return to the normal Ontology view.

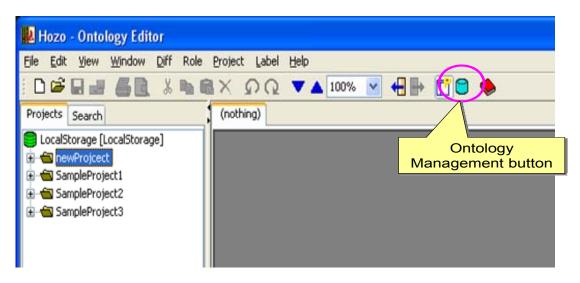


4.3.5. Server Ontology management features

*Ontology management features, utilizing the Ontology management window, for server administrators will be explained here.

(1) Viewing Ontology management

• Click the [Ontology Management] button in the Ontology Operation Tool Bar to view the confirmation message.



• Click the [Yes] button in the below confirmation message dialog to open the Ontology management window. Click the [No] button to return to the original editing window without viewing Ontology management.

Do you	continue this operation? 🛛 🔀
♪	Ontology Manager is for administrators. This operation may spends a lot of time to launch Ontology Manager according to the circumstances. Do you continue this operation?
	Yes No

🔣 Version Manager [ServerStorage]		
Local Projects	Server Projects	
 LocalStorage [LocalStorage] InewProject TopLevel.ont SampleProject2 Attributes.ont TopLevel.ont Soccer_ver.12en.ont Travelling.ont 	ServerStorage [ServerStorage] ServerStorage [ServerStorage] Image: ServerStorage [ServerStorage] <	
	Properties History Lock Info, Comment	value
	Project Name	SampleProject1
	Project Path	C:\Documents and Settings\lee\Desktop\oe52
	Last Update Author	
	Last Update Date	
	Description	
	Ontology Size	1

*In addition to the local project management features described in 4.2, the Ontology management window can perform the following operations.

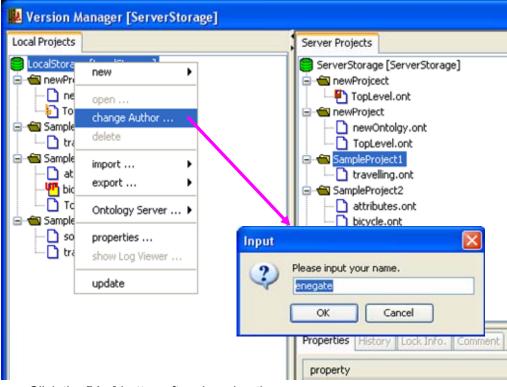
 Changing usernames 	→(2)
Creating server projects	→(3)
Creating server Ontologies	→(4)
 Viewing lock information 	→(5)
Viewing comments	→(6)

*When opening the Ontology management window, it may take several minutes for the window to display depending on network conditions. If it takes longer than a few minutes, check the network settings (4.3.6(2)) and try to reopen the window.

(2) Changing usernames

*Allows changing of the username entered the first time Hozo was run.

• Right click the local Project Management Tree and select [Change Username] to open the Change Username dialog.



• Click the [Yes] button after changing the username.

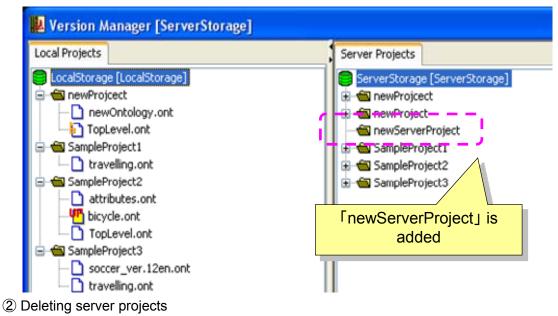
(3) Creating server projects

1 Creating a new server project

• Right-click on the server Project Management Tree then select [New]-[Project] from the right-click menu to open the "New Project Creation" dialog.

📕 Version Manager [ServerStorage]	
Local Projects S	ierver Projects
newOntology.ont TopLevel.ont SampleProject1 Travelling.ont SampleProject2 attributes.ont	ServerStorag new Project TopL open TopL new Project Ontology Ontology delete mport trave export Ontology Server properties
Cance	show Log Viewer
	update

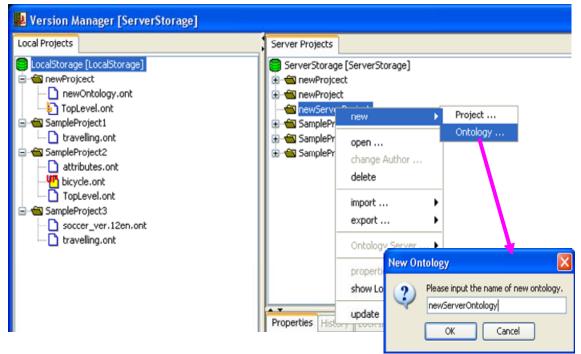
• Enter a name for the new project and click the [OK] button to add the new project to the server.



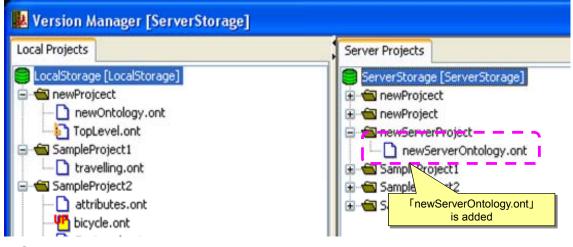
 Right-click on the project folder icon in the server Project Management Tree and select [Delete] in the right-click menu to open the deletion confirmation dialog. Click the [Yes] button to delete the project from the server.

(4) Creating server Ontologies

- ① Creating a new server Ontology
 - Right-click on the server Project Management Tree project folder, then select [New]-[Ontology] from the right-click menu to open the "New Ontology Creation" dialog.



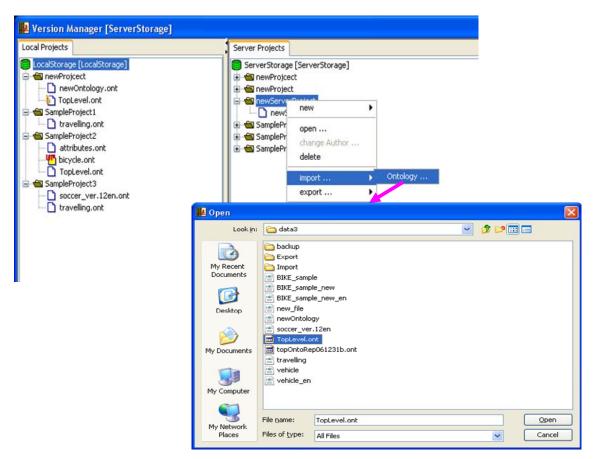
• Enter a name for the new Ontology and click the [OK] button to add the new Ontology to the server project.



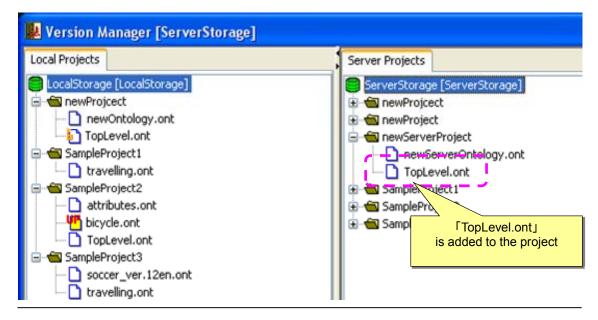
- ② Deleting a server Ontology
 - Right-click on the Ontology file in the server Project Management Tree and select [Delete] in the right-click menu to open the deletion confirmation dialog. Click the

[Yes] button to delete the Ontology from the server project.

- ③ Importing a server Ontology
 - Right-click on the server Project Management Tree project folder then select [Import]-[Ontology] from the right-click menu to open the file selection dialog.



• Select an Ontology file to import and click the [Open] button to import it into the server project.



(5) Viewing lock information

1 Viewing lock information

• Select the Ontology file icon in the server Project Management Tree and click on the [Lock Information] tab in the property view pane on the right bottom of the window to view Ontology lock information.

Server Projects	
 ServerStorage [ServerStorage] Main newProject Main newProject Main newServerProject Main SampleProject2 SampleProject3 	
Properties History Lock Info. Comment	
property	value
Lock User Name	enegate
Lock Update Date	2009-07-22 17:45
d	elete

② Delete lock information

Click the [Delete] button at the bottom of the lock information panel in the property view pane to open the deletion confirmation dialog and click the [Yes] button to remove the lock.

Do you want to delete Lock File? 💦 👂	<
Do you want to delete Lock File? "TopLevel"	
Yes <u>N</u> o Cancel	

[Attention] This feature will force lock removal, but this action will cause problems when multiple users are collaboratively working on Ontologies. Take necessary precautions when using this feature.

(6) Displaying comments

- 1 Displaying comments
 - Select the Ontology file icon in the server Project Management Tree and click on the [Comment] tab in the property view pane at the right bottom of the window to view Ontology comments that were added when the Ontology was uploaded (check-in).

Server Projects
 ServerStorage [ServerStorage] TenewProject TopLevel.ont SampleProject1 SampleProject3
Properties History Lock Info. Comment
Comment :
concept_5 added.
update display All Comments

- 2 Edit comments
 - The text area in the comment view panel of the property view pane can be edited. Click the [Update] button underneath it to update comments.
- ③ View update log
 - Select the Ontology file icon in the server Project Management Tree and click on the [Update Log] tab in the property view pane at the right bottom of the window to view a list of Ontology files that have been backed up during updates.
 - Select a backup Ontology file to view comments made during past backups in the comment field at the bottom.

Server Projects	
ServerStorage [ServerStorage] mewProjcect TopLevel.ont mewProject mewServerProject memServerProject1 memSampleProject2 memSampleProject3	
Properties History Lock Info. Comment	
Backup Ontologies :"newOntology.ont"	
henegate @ 2009-07-22 17:44	
Comment :	
update	
delete replace update	

*Click the [View All Comments] button underneath comment view panel of the property view pane to view a list of past comments; comments can be updated.

🔛 Comment	Viewer		×
■enegate update	2009-07-22	17:44	
	(Close	

4.3.6. Tool settings

(1) Project folder settings

• To change the project's root folder path, select and right-click on the root node in the Project Management Tree then select [Settings] from the right-click menu to open the project folder path "Settings" dialog.

🔛 Hozo - (Ontology Editor	
File Edit V	/iew Window Diff Role Project Label Help	
i 🗅 😅 层	မြ အခြို့ နိမိုးရေး🗙 ဂုလု 🔻 🔺 100	
Projects Se		
🗄 📹 newl	new Project	
🕀 📹 Samp 🕀 📹 Samp	show open	
in a samp in a samp	lock unlock	Settings
	upload to OS (check in) download from OS (check out)	enegate : enegate
-	download Server Project	Local Project Folder
	settings	LocalStorage
	Network Settings properties	Server Project Folder
-	update	ServerStorage
		Check Server Project updated OK Cancel settings

• After making changes, click the [OK] button to change the username, and/or local and server folder path.

- *Check the "Connect to server to check for updates" box and click the [OK] button to check for Ontology updates on the server at the same time the path change is made.
- When changing networks to connect to an external server, click the [Network Settings] button on the bottom of the dialog. Network settings will be explained in the next section.
- (Reference) It is necessary to change the parameters in the "hozo.properties" settings file to change the default path setting of the project folder.
 - Local project folder path (approximately line 83 of the file)
 - # Project management settings
 - ProjectRoot=LocalStorage
 - Server project folder path (approximately line 60 of the file)
 #Ontology server address
 - ServerLocation=ServerStorage

(2) Setting up the network (WebDAV)

*In order for users to use this system on a network environment, it is necessary to change the network (WebDAV) settings to work with the environment being used.

• Select and right-click on the root node in the Project Management Tree, then select [Network Settings] from the right-click menu to open the "Network Settings" dialog.

👪 Hozo - Ontology Editor	
File Edit View Window Diff Role Project Label Help	
🗄 🖼 😹 📕 🛔 🐧 🛍 🛍 🗙 ភ្ល 🔻 🔺 100% 💌 ៤	
Projects Search (nothing)	
ewProject	
🖬 📹 SamplePri show open	Network Settings
anguern lock anguern lock	HTTP Connection enabled
upload to OS (check in) download from OS (check out) download Server Project	Server Project Folder ServerStorage
settings	Security
Network Settings	User
properties	Password
update	
	Proxy Host IP Port V check Server Project updated OK Cancel Set Default

- After making changes, click the [OK] button to change the network (WebDAV) settings.
- *Explanation of the network settings
 - "Enable/disable HTTP Communication": Determines whether or not the application's internal WebDAV module is enabled. Used especially when accessing Web servers that utilize specific security settings.
 - *By default, this is unchecked (disabled), but it can still be used because operating systems from Windows XP and higher versions come standard with WebDAV support.

*None of the settings can be edited when disabled; settings will become available when enabled.

🖳 Network Settings
HTTP Connection enabled
Server
Server Project Folder //123.123.0.1/web/ServerStorage
Security
User ontology
Password
Proxy
Host IP 123.123.0.1
Port 8080
✓ check Server Project updated
OK Cancel Set Default

- ② "Server project folder": Path of the server project folder.
- (3) "Security (User Authentication): Specifies a username and password when Ontology server user authentication (Basic Authentication) is set.
- ④ "Proxy": Specifies the proxy address and port number when connecting to the Ontology server via a proxy.
- (5) "Connect to server to check for updates": Checks for Ontology updates when connecting to the server to make setting changes.
- (6) [Restore Defaults] button: Replaces settings with default parameter information from the "hozo.properties" setting file.

(3) About Usage Modes

The Hozo-Ontology Editor (Distributed Development Edition) can be toggled between three modes, depending on the intended use.

A) Non-distributed Mode (Chapter 2)

*Uncheck "Use Project Management Feature".

This will start the software in the traditional Ontology Editor interface, without using distributed development features.

B) Local PC Distributed Mode (Chapter 3)

*Check "Use Project Management Feature", and select a folder on your computer to use as a server project folder.

A project management folder is set on the local PC (not shared with other users), allowing dependency and version management for multiple Ontologies to be performed while constructing Ontologies.

C) Local Network Distributed Mode (Chapter 4)²

*Check "Use Project Management Feature", select a shared <u>folder on the LAN</u> as a server project folder.

Create/share a project management folder on a server in your local network environment; Ontologies are shared between multiple users while being structured.

Methods for setting each mode at launch will be explained below.

[Explanation of annotations used in this document]

[Note] (blue): indicates information that is supplementary to the explanation. [Operation Example](green): indicates an example operation that uses a sample file.

[Attention] (red): describes things which should be given care during operation. [Reference] (purple): indicates a reference found in another document (or chapter).

²

An Internet distributed mode will be released soon.

A) Non-distributed Mode (uses traditional Ontology Editor interface)

In this mode, editing can be performed using the traditional Ontology Editor interface. Furthermore, allows new features "Advanced Search" and "Differential Comparison" to be used.

Making Settings during Startup

(How to Select Options in the Initial Setup Dialog)

(1) Enter a username (any half-width alphanumeric characters).

[Note] You cannot start the program without entering a username.

These characters cannot be used in usernames: "\/:*?" <> |_".

(2) Uncheck the "Use Project Management Feature" box.

[Note] All fields other than username will be disabled.

	nitial Settings user name	: Author	
		Hadhor	
Γ	Local Project Folder		
	LocalStorage		V 🖬
[Server Project Folder		
L	check Server Project updated use Project Manager		
	OK Cancel	settings	

(3) Click the [OK] button to display the Ontology Editing screen in Non-distributed Mode (with no Project Management Pane).

📕 Hozo - Ontology Editor	
Elle Edit View Window Diff Role Label Help	
ା 🗋 🖬 📕 🛔 👗 📾 🕮 ୪ ନେୟ 🔻 🔺 🖬 🗣 ଏ	
(nothing)	
	· · · · · · · · · · · · · · · · · · ·

B). Local PC Distributed Mode (Managing Dependencies in Multiple Ontologies)

In this mode, the project is managed on a local PC. As long as a project management folder is designated, dependencies and versions can be managed for multiple Ontologies.

Making Settings during Startup

(How to Select Options in the Initial Setup Dialog)

- (1)Enter a username (any half-width alphanumeric characters).
- (2) Check the "Use Project Management Feature" box.

	nitial Settings	×
[user name	
	user : Author	
	Local Provide Colden	
	Local Project Folder	
[Server Project Folder	
	ServerStorage	
	Check Server Project updated	
	☑ Lise Project Manager	
	OK Cancel settings	

(3) Designate a name in the "Local Projects Folder" box for the folder that will be used to manage local projects³.

[Note] Default is "LocalStorage" (you should use this setting in most cases).

(4) Designate a name in the "Server Projects Folder" box for the folder where server projects will be saved.

[Note] Default is "ServerStorage" (you should use this setting in most cases).

- (5) Click the [OK] button to start the Ontology editor in Local Distributed Mode (with the Project Management Pane displayed).
 - [Note] If you check the "Connect and check server for updates" box, the server project will be checked for updates. If this box is unchecked, the server will not be checked for updates (it will be possible to check for updates once the program is started).

³ Designate the relative or absolute path for the Hozo installation folder. You can also click on the directory button next to the text box to select the folder.

📕 Hozo - Ontology Editor	
Elle Edit View Window Diff Role Project Label Help	
ြမ်ာများများများဆို နိုရာရဲသေ ဂူလူ 🔻 🛓 🔟	
Projects Search (nothing)	
Projects Search (nothing) Localstorage [Localstorage] Image: Comparison of the second of	

About the Project Management Screen

- If the Ontology Editor is started in Distributed Mode, the "Project Management Tree" will be displayed on the left side of the screen.
- The Project Management Tree is composed of:
 - Root Node: the local project folder.
 - Project Node: a unit that manages multiple Ontologies (project).
 - Ontology Node: constructed from Ontologies that are managed by that project.

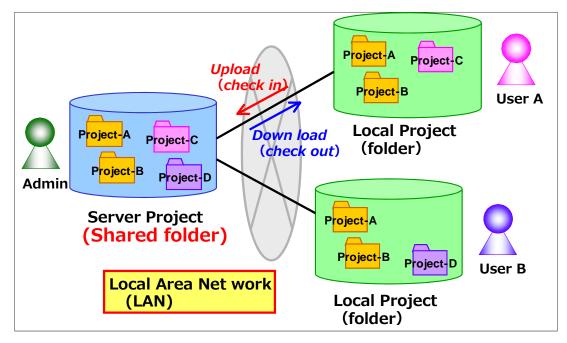
These icons may change due to updates.

[Reference] See Appendix B for an explanation of the icons.

- [Reference] For details see chapter 4.2. "Managing Projects", in the Operating Manual.
- Ontologies can be opened for editing by double clicking on the Ontology Node.

C). Network Distributed Mode (Sharing Ontologies over a LAN)

Projects and Ontologies can be shared with multiple users over a LAN by setting the server project folder to <u>a shared folder on the local network (LAN)</u>.



Creating a Shared Folder

*In order to share Ontologies over a LAN, it is necessary to create in advance a folder to be used as the server project folder that can be shared on the LAN.

Create a sharable folder on the local network to be used the folder for sharing Ontologies among multiple users. (Normally, it is recommended you create the shared folder on a server etc. on the LAN.)

[Operation Example] Hereafter, examples will assume a folder called "share" has been created on "win_server", a server computer on the LAN.

- (1) In Windows2000/XP, right-click the folder you wish to share and select [Sharing and Security...] to display the properties dialog.
- (2) On the [Sharing] tab, check the boxes labeled [Share this folder on the network], and [Allow network users to change files] under [Sharing and Security on the network].
 - [Note] The above steps for creating shared folders may differ depending on your OS version etc. Please see your OS help documentation etc. for details.
 - [Note] File sharing and access permission may not be possible depending on your network environment. If this is the case,

please inquire with your network administrator.

Making Settings during Startup

(How to Select Options in the Initial Setup Dialog)

- (1) Check the "Use Project Management Feature" box.
- [Note] If you check the "Connect and check server for updates" box, the server project will be checked for updates. If this box is unchecked, the server will not be checked for updates (it will be possible to check for updates once the program is started).
- (2) Specify the local project folder.

[Note] Default is "LocalStorage" (you should use this setting in most cases).

(3) Specify the server project folder.

[Operation Example] Select the shared folder on the LAN created in 4.1.

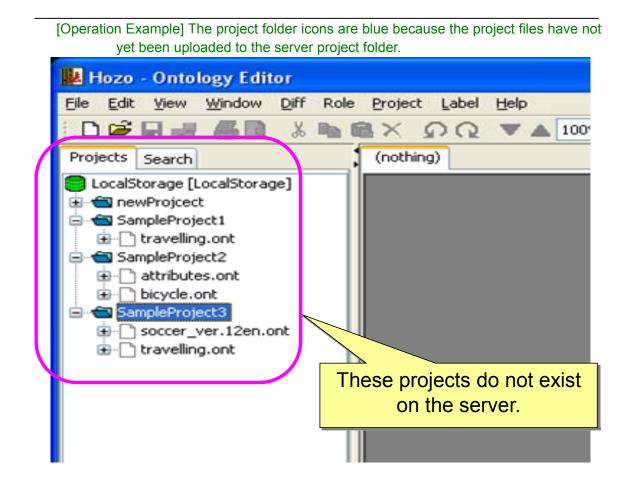
👪 Initial Settings	
user name	: Author
Local Project Folder	✓
Server Project Folder	✓
 check Server Project updated use Project Manager 	
OK Cancel	settings

[How to Specify the Server Project Folder]

 To specify the server project folder on Windows network, use
"//(computer name)/(folder name or path)" (Note: "http:" not needed)
or
"\\(computer name)\(folder name or path)".
Example: "//192.168.1.5/webdav/ServerStorage"
You can also click on the directory button next to the text box to select the
folder.
In the directory dialog, select "My Network" and specify the folder.
[Operation Example] To specify the folder from the previous example, you would us

"\\win_server\share".

(4) Click [OK] to start the Ontology editor.



5. Explanation of the menus

(1) Menu Bar

File menu

New	create a new project/Ontology
Open	used to open Editing Panels and load files
Save	save the data being edited to file
Save as	save the data being edited in a new file under a different
	name
Save without dependency	save data being edited with dependency relationships
relationships	removed
Start Model Editor	launch the Model Editor
Import	import a Hierarchical Text/CSV Text file
Expor	export data being edited
Backup File	delete backup file made at save
Page Settings	set printer settings
Print Preview	display a print preview on the screen
Print	print the Ontology being edited
Quit	quit the system
Force Quit	system forced quit (data being edited not saved)

• Edit menu

Undo	undo editing
Redo	redo editing
Clear Editing Log	clear the editing history
Raise Slot by One	raise selected slot by one position in the view
Lower Slot by One	lower slot by one position in the view
Edit Principle	edit principles in selected node or slot
Delete	delete the selected graphic object
Select All	select all graphic objects on the browsing panel
Select Sub Concepts	select the selected node's sub concepts
Cut	cut the selected graphic object
Сору	copy the selected graphic object

Paste	paste a graphic object that was cut
Selection Tracking Back	move to the previous selected graphic object
Selection Tracking Forward	move to the next selected graphic object

View menu

View Concents Only	display only concepts (nodes) on the browsing papel
View Concepts Only	display only concepts (nodes) on the browsing panel
B&W Display	display browsing panel in black and white
	(for monochrome printing)
Layout	automatically arranges the selected node and its sub
	concept nodes in either a vertical or horizontal layout
Source View	view the Ontology Editor source code in a separate
	window
View Super Concept	display inherited slots' super concepts on the browsing
	panel (super concepts displayed when checked)
Display Page Frame	display a frame indicating the printer paper size on the
	browsing panel
Specify Canvas Size	set the canvas size of the browsing panel
Change Dependent Node	set the imported concept display mode
Display	
	·

Window menu

View All	open all Editing Panels
Minimize All	minimize all Editing Panels
Close All	close all Editing Panels
Language	toggle Editing Panel language between English and Japanese

• Diff. menu

Check for Changes in	confirm whether or not imported concepts in the Ontology
Depended Ontologies	being edited have been changed
Check for Changes in	confirm whether or not the Ontology being edited has been
Ontologies on the Server	updated from the corresponding Ontology on the server
	(i.e. the previous version)
Check for differences with any	check for differences between the Ontology being edited

file	and an existing Ontology file
Clear Change Log	clear the change history in the Diff. display

• Help menu

View Help	open help
Quick Reference	open the Quick Reference
Operating Manual	open the Operating Manual
Version Information	display version information

(2) Operation Tool Bar

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D : create a new project/Ontology Ē : open Editing Panels and load files Н : save the data being edited to file **1**7 : save the data being edited in a new file under a different name ð : print the Ontology being edited ٩ : display a print preview on the screen : cut the selected graphic object Đ : copy the selected graphic object 6 : paste a graphic object that was cut × : deletes the selected graphic object Ω : undo editing Q : redo editing : decrease magnification on Browsing Pane (zoom out) : increases magnification on Browsing Pane (zoom in) 10... * : display Browsing Pane magnification (selectable list) + : jump to the previous selected graphic object ┢ : jump to the next selected graphic object Ľ : show/hide Project Management Pane : display Ontology management window : view help

(3) Editing Tool Bar
■ NE ▼
IDINE • : concept class create button and concept selection list
: relational link create button and relational link selection list
part-of : slot create button and slot selection list
: display Browsing Pane magnification (selectable list)
: select constraint concept
E : select principle
: toggle screen mode (single screen view)
: toggle screen mode (vertical split screen view)
: toggle screen mode (horizontal split screen view)
: toggle to selection mode
: toggle to jump mode
: jump to the previous selected graphic object
: jump to the next selected graphic object

(4) Shortcut keys

There are shortcut keys for the operation menu and editing menu.

	I
New	Ctrl+ O
Save	Ctrl+ S
Print	Ctrl+P
Quit	Ctrl+E
Force Quit	Ctrl+Q
Undo	Ctrl+Z
Redo	Ctrl+Y
Raise Slot by One	Alt+Up
Lower Slot by One	Alt+Down
Delete	Delete
Select All	Ctrl+A
Select Sub Concepts	Ctrl+N
Cut	Ctrl+X
Сору	Ctrl+C
Paste	Ctrl+V
Vertical Layout	Ctrl+G
Horizontal Layout	Ctrl+H
Selection Tracking Back	Alt+Z
Selection Tracking Forward	Alt+Y

(5) Mouse menu

The mouse menu will be displayed when right clicking on selected objects in the Navigation Pane, Browsing Pane, or the Project Management Pane in the Editing Panel.

6. Contact Information

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