

RELOAD SCORM 1.2 Player v1.2 Introductory Guide

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1 Introduction

The RELOAD Editor can be used to create, edit and repurpose content packages conforming to the learning technology specifications produced by ADL and IMS. Within the editor, simple content can be previewed in a web browser with a single-click. This is fine for IMS content and simple SCORM packages containing only Assets - normal web content such as web pages, word documents and flash movies.

SCORM content can be more complex however - it supports the concept of a sco - smart content which can communicate with an LMS (Learner Management System) through an established series of calls implemented in JavaScript. These 'runtime' calls allow the sco to report back when the user starts viewing a sco, and when they move away from it. They also provide a means whereby the sco can report back information such as test scores or choices, for tracking by the LMS. Information is stored in the CMI Datamodel.

The RELOAD Editor does not add these runtime calls into the package, instead they would be added using a dedicated web content editor such as Macromedia Dreamweaver or created within an LMS itself. The simple preview facility provided by the Editor does not support the runtime calls and does not demonstrate the effect of some of the SCORM controls added (e.g. Prerequisites, Mastery Score and Time Limit Actions). Therefore, looking at the behaviour of SCORM packages normally requires the content to be uploaded to an LMS which understands the extra tags and JavaScript calls.

However, loading SCORM content into an LMS can be problematic too - you may not have sufficient access privileges, or may not have access to a suitable test area. You may need to set up dummy access accounts, and if the reason you are uploading content is to check and refine it, then having to repeatedly remove prototype content is an extra burden.

What is needed is the RELOAD SCORM 1.2 Player.

RELOAD SCORM 1.2 Player

The RELOAD SCORM 1.2 Player is effectively a stripped down single user LMS with no user administration or discussion facilities. The Player allows you to play and review the full functionality of SCORM 1.2 Packages without the need to load content into a fully fledged LMS.

The RELOAD SCORM 1.2 Player comes in two parts: a learner (runtime) view of the content - served to a normal web browser via the integrated Tomcat web server, and the management view of the same content, provided by the player software itself. This twin view allows the user to relate what the learner does to what is being reported back via the CMI Datamodel.

SCORM

The RELOAD SCORM 1.2 Player implements the ADL SCORM 1.2 Application Profile implementation of the IMS Metadata and Content Packaging specifications. If you are not familiar with these specifications then it will be helpful to refer to the documentation available at the IMS and ADL web sites: (<http://www.imsglobal.org/> and: <http://www.adlnet.org/>).

Where to get RELOAD SCORM 1.2 Player

The RELOAD SCORM 1.2 Player is free software (released under the MIT Open Source license) and is available for download from the project web site at <http://www.reload.ac.uk/>

The SCORM 1.2 Player is under active development, but since version v1.0 it has been stable and fully functional. Subsequent versions have sought to provide improvements in usability and customisability.

This Guide

This document has four sections:

- this **Introduction** section provides some background to the RELOAD SCORM player;
- the **Player** section describes the installation process and the user workspace,
- the **Workspace** section describes the player and the facilities it provides,
- the **Tutorial** section describes the whole process of playing a SCORM 1.2 package.

The screenshots used in this document are taken from the v1.2 release of RELOAD SCORM 1.2 Player.

We are always keen to improve the RELOAD tools and the documentation that accompanies them. And we are also keen to know who is using the tools and for what purpose. Please get in touch with your ideas, comments, suggestions and testimonies by sending email to: colin.milligan@strath.ac.uk **Thank you**

These help files refer to v1.2 of the RELOAD SCORM 1.2 Player. If the version of the tools you are using is newer then check the user guide section of the web site: <http://www.reload.ac.uk/guide.html> for a more up to date version of this document.

(v1.4.2.04) should not interfere with other Java Virtual Machines installed elsewhere on your system. The Mac installer does not include a JVM, but utilises the system JVM. No JVM is included with the Linux package either. Instructions on the Reload Web Site explain how to obtain and install a JVM for Linux.

The information and instructions given here (and throughout this document) pertain to the Microsoft Windows version of the Player. Other versions should function in (almost) the same way -though they may look slightly different.

System Requirements (MS Windows)

To run RELOAD SCORM 1.2 Player you should have a PC with at least the following specification (*for Linux and Mac (OSX), a similar/equivalent specification would be required*):

- Intel Pentium 3 (or equivalent) Processor, 800Mhz,
- 256 Mb RAM,
- Microsoft Windows 95, 98, Me Windows NT4.0, Windows 2000 or Windows XP,
- A Web Browser for viewing SCORM Packages.

Installation (MS Windows)

To install the RELOAD SCORM 1.2 Player, download the most recent install file from <http://www.reload.ac.uk/download/>. The download file is approximately 18Mb. This equates to a download time of around 75 minutes on a 56kbps modem (assumes sustained transfer rates of 4k/s). Obviously the download time will be much reduced if you use a broadband or an institutional connection.



2 RELOAD SCORM 1.2 Player

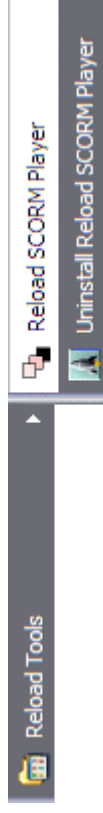
The RELOAD SCORM 1.2 Player is a Java application, and should run on any platform capable of running Java applications. From the RELOAD web site, installation packages are available for the Microsoft Windows and Macintosh (OSX only) platforms, with a binary package (.bin) available for Linux. The install file for Windows includes a copy of the Java Runtime Environment (JRE) which is installed under the RELOAD Editor installation directory. This JRE

Once download is complete, simply double click on the Installer file (similar to that shown above) and follow the on-screen instructions. The installation allows you to choose where to install the software. The RELOAD SCORM 1.2 Player is installed to 'C:\Program Files\ReloadTools\ScormPlayer' by default, although you can of course change the location. Once installation is finished you can launch the RELOAD SCORM 1.2 Player by clicking on the Start Menu and finding its' Program Group:



Uninstalling (MS Windows)

To remove RELOAD Editor from your system (and prior to upgrading to a new version of the software), click the 'Uninstall Reload Editor' icon in the RELOAD program group.

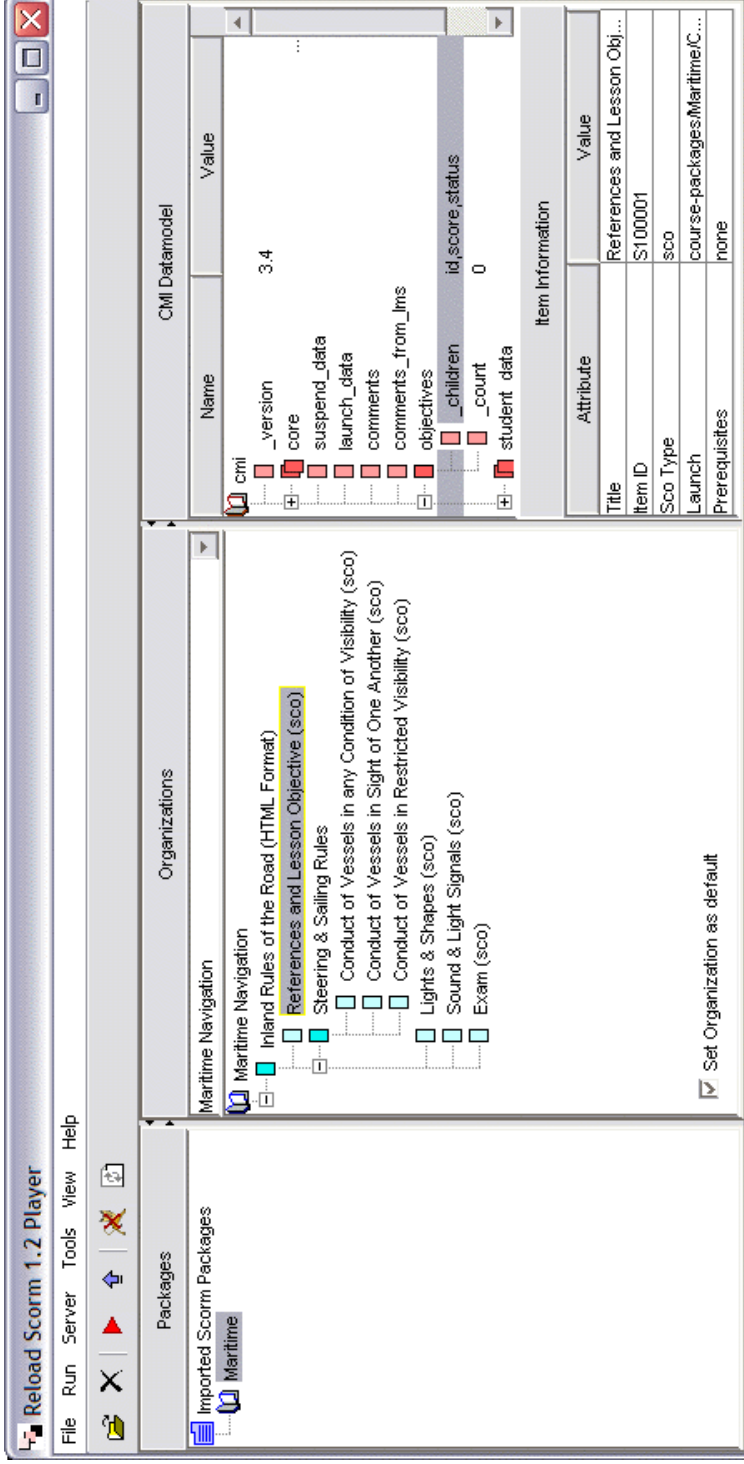


If you chose not to create a Program Group, you will find the relevant file at: C:\Program Files\ReloadTools\ScormPlayer\UninstallerData\Uninstall Reload SCORM Player.exe or where you installed to.

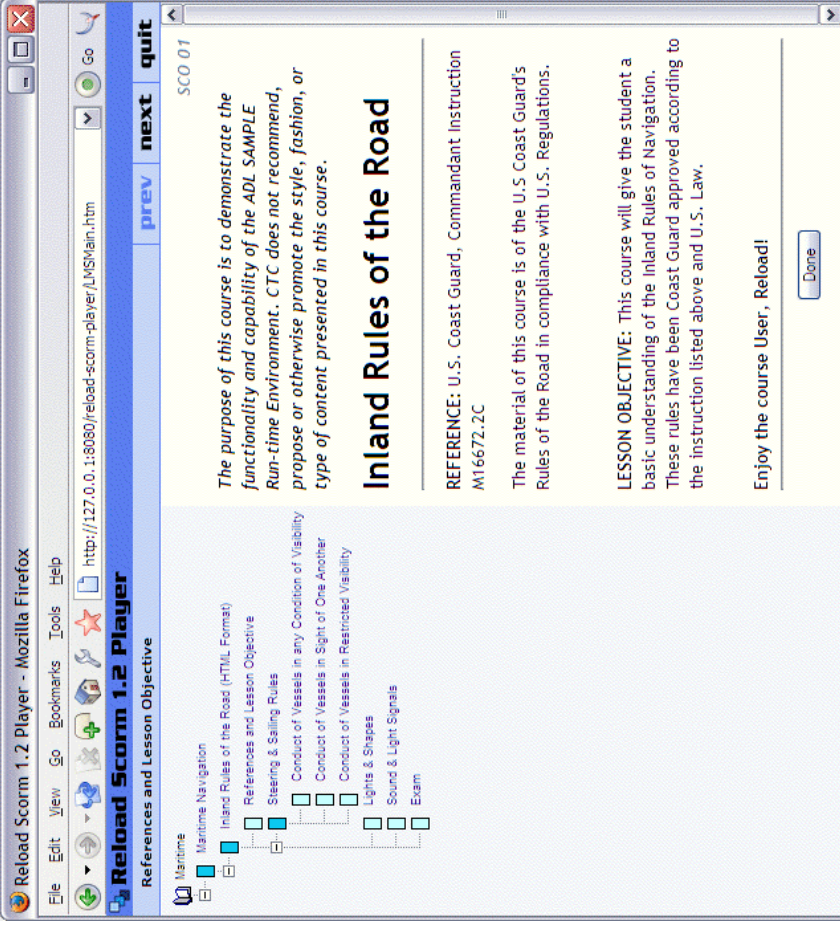
On uninstall, files and folders you have created in the ScormPlayer directory will not be removed.

SCORM 1.2 Player Workspace

The RELOAD SCORM 1.2 Player Workspace basically consists of three panes: a Packages pane (left), an Organizations pane (centre), and a CMI Datamodel pane (right). The packages pane lists all the SCORM Packages which the Player knows about. You can choose to play any package in this pane. The Organizations pane is the key area as this space presents the structure of the SCORM Package - showing the hierarchical organisation of resources, identifying the sco's by adding the suffix (sco) to their item name. The CMI (Computer Managed Instruction) Datamodel pane shows the status of the package (information being recorded). This information updates in real time as the user progresses through the course and their progress is tracked and recorded.



Typically, the user loads a SCORM Package into the player, selects the SCO they are interested in and examines the status of the CMI Datamodel. They then play the Package (the Tomcat server starts automatically) and navigate through the package (see below) before returning to the Player to view changes to the CMI Datamodel for the sco being watched.



Toolbars

The RELOAD SCORM 1.2 Player has a single toolbar



From left to right, the icons represent (with equivalent menu actions in brackets):



Import SCORM Package (File, Import SCORM Package) opens an existing SCORM 1.2 Content Package (CP) and adds it to the player's package list.



Remove SCORM Package (File, Remove SCORM Package) removes the currently selected package from the player's package list.



Run SCORM Package (Run, Run SCORM Package) plays the SCORM 1.2 Content Package.



Reset SCORM Package (Run, Reset SCORM Package) resets the package to the original state.



Start Server (Server, Start Server) starts (and stops) the embedded Apache Tomcat server.



Refresh Screen

Within the player view (which utilises a standard web browser), the user is shown the structure of the SCORM package, the content itself, and navigation buttons to move through it.

We will see this process in more detail in the Tutorial section.

Menu Items

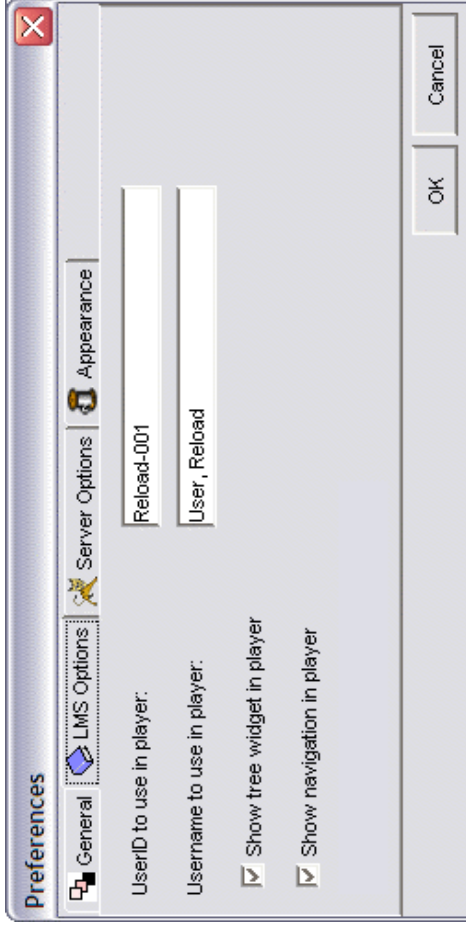
Most menu items are covered by the icons in the toolbar above, however the following additional features are available.

File, Exit.

Exits from the program.

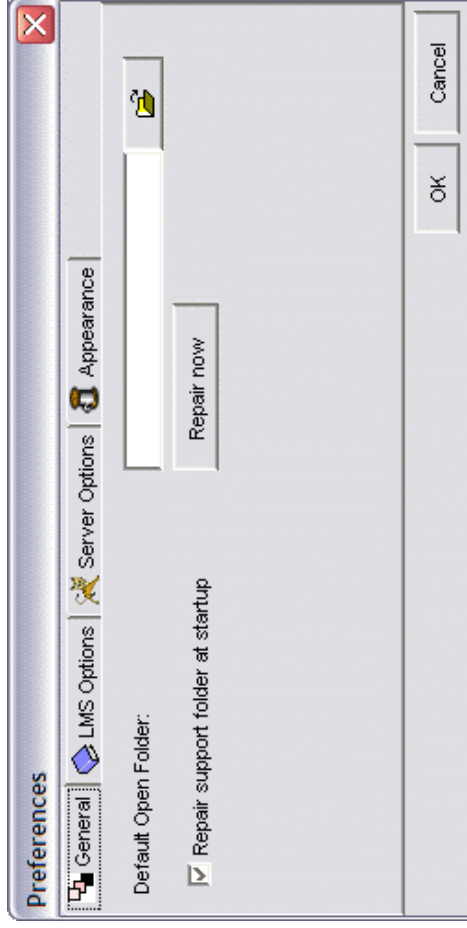
Tools, Options,

Provides access to various preferences which the user may set. The Options panel consists of four panes:



The **LMS Options Pane** allows control of the behaviour of the LMS.

- The CMI Datamodel has values for UserID and Username. Here you can change these values to your own Username and UserID (purely for display purposes, the username and UserID mean nothing).
- The option to 'Show tree widget in player' controls whether the organisational structure of the package is shown within the LMS. This option is checked by default.
- The option 'Show navigation in player' controls whether explicit navigation buttons are shown in the LMS. This option is checked by default.



This **General Preferences Pane** allows the user to set a default opening folder, useful when SCORM 1.2 Packages are stored together.

For the Reload Scorm Player to run correctly, there must be a special folder copied to your user account. This is done automatically by the software. However, if this folder was to become corrupted or accidentally deleted for some reason, then the Player may not function correctly. To avoid this, we recommend you leave the "repair startup folder" checked. This makes sure that the necessary

The **Appearance Pane** allows you to choose the default ‘Look and Feel’ for the SCORM 1.2 Player.

View, Status Window

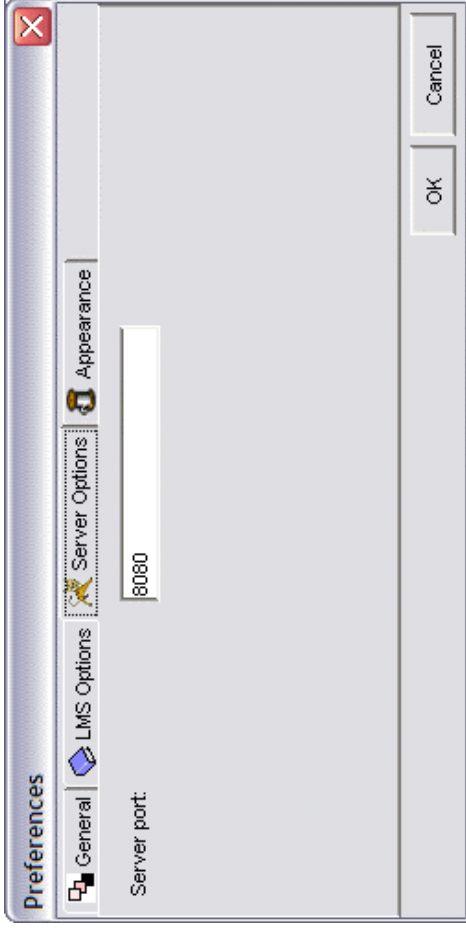
Shows the current Java Console.

Help, Help

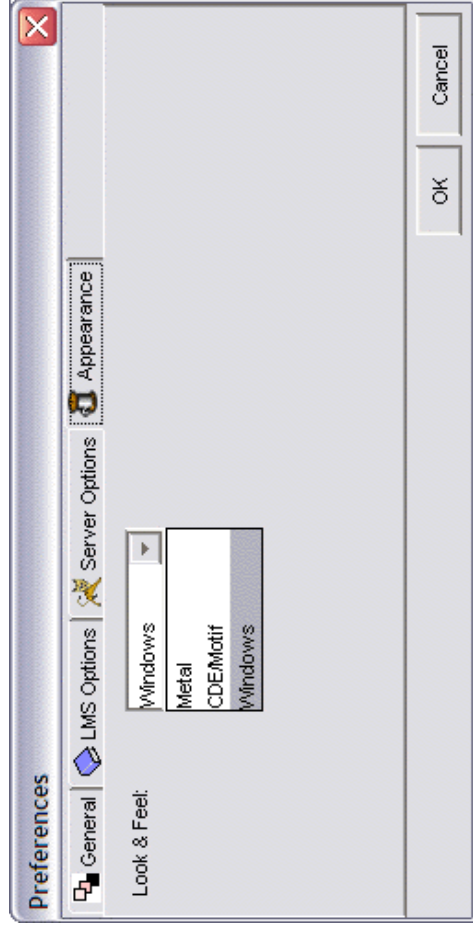
Provides access to the online Help.

Help, About Reload SCORM 1.2 Player

Provides information about the current release of the RELOAD SCORM 1.2 Player



The **Server Options Pane** allows the user to decide which port to run the Tomcat server on. Port 8080 is the default, but you can change this to another one if you have software already using this port. The Reload Scorm Player will detect if this port is already in use and show a message telling you to change the port number. It is recommended to increment to port 8081, if you have some other software using port 8080.



3 Tutorial

This section takes you through the opening and playback of a SCORM 1.2 Content Package.

Exemplar Content

To understand fully the facilities offered by RELOAD SCORM 1.2 Player, you should examine an existing SCORM Package. The pages which follow lead you through all the stages in opening, previewing and 'playing' an existing SCORM package. For this purpose we will use one of the exemplar SCORM1.2 packages from ADL: <http://www.adlnet.org/index.cfm?fuseaction=rcdetails&libid=32&filterid=24&page=1&keywords=&applyto=libTitle,libAuthor,contentText> or follow the link from the RELOAD web site at:

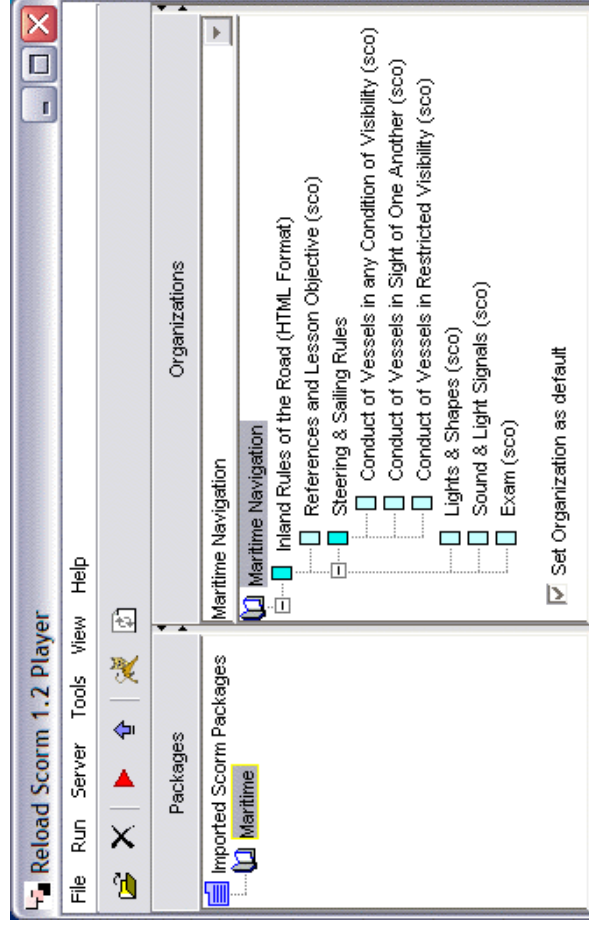
<http://www.reload.ac.uk/guide.html> In each case, you are taken to a web page on the ADL SCORM web site which links to a zip file of SCORM content (895k). Unzip the file and look for the sub-folder entitled 'SingleCourse'. This folder contains a single zipped Content Package SingleCourseEx.zip containing a course on Maritime Navigation that ADL have released as a 'Demonstration of one possible way to package a Course in a Content Package'. Retrieve this zip and place it in a folder where you can find it from within the RELOAD SCORM 1.2 Player.

The example package is a short course on Maritime Navigation. It consists of a set of web pages that have been aggregated together as a SCORM Content Package. SCORM elements have been utilised to define a set of rules that can be utilised by any LMS to govern progression through the materials by students. For instance, progression may be dependent upon a student having looked at a previous resource (Prerequisites), achieving a specific score in a test (Mastery Score), or completing a task within a defined timeframe (Max Time Allowed, Time Limit Action). Control of progression etc. is mediated through a JavaScript API which allows the LMS to communicate with the content through the CMI Datamodel. As we will see, as the learner progresses through the content, their progress

is tracked and recorded. The RELOAD SCORM 1.2 Player allows the user to follow the student view and the management view side by side. This is useful if we wish to test that a SCORM Package behaves as expected. In the next section we will open and play the example content package, following the student and data views.

Opening and Playing the Example Package

To open the example package, Click the Import SCORM Package Icon, or click File > Import SCORM Package. You will be asked to provide a name for the package (use Maritime, or anything you wish). You do not need to choose a destination folder, because the files are being unzipped into the Tomcat web server folder. A new entry will appear in the SCORM Packages list, and selecting this entry will display the organisational structure of the Content Package in the Organizations pane (see below).



(note in this screenshot that the CMI Datamodel pane is not visible - individual panes can be hidden and made visible by clicking on the small arrowheads adjacent to the titles of each pane).

Although you can play only one package at any time, you can load as many packages as you want into the Packages pane (indeed they will persist between sessions unless you specifically delete them from this list. The organizations pane shows the structure of the SCORM Package. The hierarchical structure reflects the organisation of the content. Clicking the 'Run SCORM Package' button will launch a web browser to display the SCORM Package as it would be seen by a learner within a typical LMS (see page 6), with a navigation frame (reflecting the organization) and a content frame. In addition, the LMS view provides three navigation buttons, prev, next and quit which may also be used for navigation.



It will also show the currently selected item's title on the left hand side. Clicking on the items in the navigation tree, you will notice that whilst the first (References and Lesson Objective) is available, subsequent content (Conduct of Vessels in any Condition of Visibility) fails to load - instead, a message is displayed reporting that '*This item has prerequisites you have not yet completed.*'. This is because the SCORM package has embedded information about the structure of the material that the SCORM Player is using to control access. The prerequisite for access to 'Conduct of Vessels in any Condition of Visibility' is that the student should have completed the section entitled 'References and Lesson Objective'. Clicking back to that page, you will see that there is a 'Done' button at the end of the page.



Clicking this button tells the LMS that this first section has been completed - and access to the next piece of content will be granted. Carry on through the rest of the course, clicking 'Done' or answering questions to progress.

We have now seen how the availability of the content changes as the student moves through the content (becoming available once prerequisites have been met). What is happening in the CMI Datamodel?

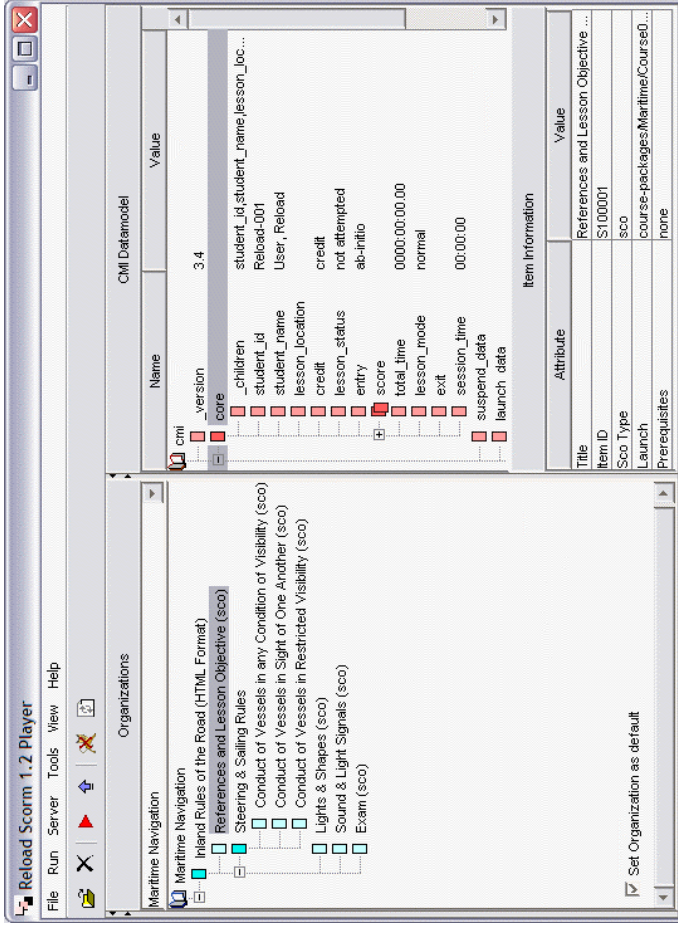
The CMI Datamodel

Now go back to the RELOAD SCORM 1.2 Player Workspace (and close your web browser window - you should do this whenever you finish playing a package). To see what is happening in the CMI DataModel it is probably sensible to start at the beginning - as we have gone through the course, we have been collecting information in the background which may be confusing.

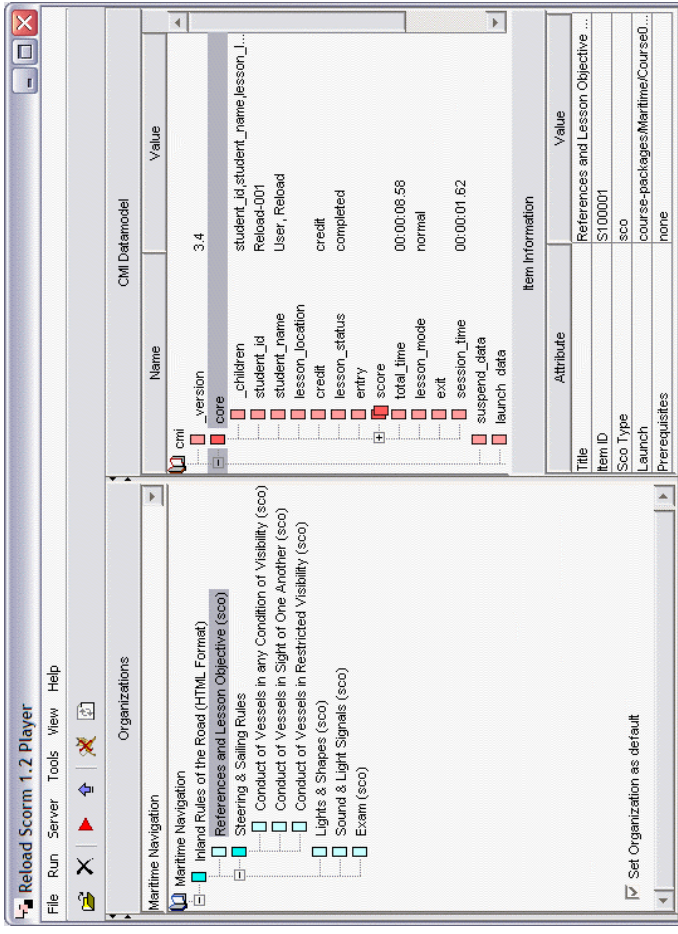


Click the Reset SCORM Package button on the toolbar

A dialogue box is displayed which asks 'Are you Sure', click 'Yes'. If the CMI Datamodel pane is not shown, click the arrow at the right hand side of the Organization pane. Initially, the CMI Datamodel pane shows a message which reads 'No sco currently selected' and indeed it is the root of the Maritime Navigation branch which is selected in the Organization pane. Now click on one of the sco enabled items in the organization. They have sco after their name. When you select an Item, another tree structure appears in the CMI Datamodel pane. This has a number of nodes and branches of name-value pairs, some of which have data in, and some of which are empty. Click on the 'core' node. This node will expand to show further name-value pairs. One in particular is interesting, it is entitled 'lesson_status', and has the value 'not attempted'.



Click Run SCORM Package and go to the browser. Click the References and Lesson Objective item and click 'Done', then 'next' to navigate to the next item. Now come back to the Player and refresh the player window (click on the Refresh Window icon, or click a different node - the information is updated in real time, but the screen is not refreshed until you select something new).. Re-select the References and Lesson Objective icon and click to expand the 'core' node. Now, look at the name value pairs. The value for 'lesson_status' has been changed to 'completed' and in addition, there are now entries (times) for the two variables representing 'total_time' and 'session_time'.



The CMI Datamodel reflects the activity of the student in the LMS, recording their actions for tracking and analysis. Whilst we have collected the relatively trivial 'completed' status, we could just as easily have collected a test score, or other information. The information passed between the sco and the Datamodel is fine-grained: if a user quits before pressing done, then the Datamodel shows 'not completed'. If the user subsequently replays the package (without pressing reset) then they are taken to the point where they left off.

By default, each time the user reads a page, they have to press 'Done' to indicate that they have read it, and they must click 'Next' to navigate through to the page of content. By clicking on 'Tools > Options > Appearance, and clicking the 'enable Auto Progression of Items in player' option, the user can set the player to automatically find and load the next sco. (Note: This is designed for specific SCORM

packages and may not be suitable for packages without user interaction - unlike sco's containing a 'done' button)

The Maritime Navigation example is simple, with most of the data recorded pertaining to the user progression through the content. However, the final sco is an exam. This item sends a great deal of information back to the Datamodel and is worth looking at.

In the Reload SCORM 1.2 workspace, click into the Organization pane and highlight the last item in the tree, entitled "Exam". Once highlighted click in the CMI Datamodel tree and expand the "interactions" tree item and notice how it has only two fields. The interactions section of the CMI Datamodel can be used to store information relating to specific user interaction, such as a student's answer to a question or test. To see this in action, we will take the exam and see the changes it has made to the CMI Datamodel. Click play from the Reload SCORM 1.2 Workspace. (the red triangle in the toolbar). Take the course sequentially, clicking on "done" as you progress through it. When you reach the last item "Exam", notice how there are 5 questions. Take this exam and get at least half of the question wrong. (Hint - the answers are in brackets next to each question). Once you have answered all of the 5 questions, click "Submit answers". Now click "quit" in the navigation frame and then

close the browser window to end your session. Go back to the Reload Scorm 1.2 Workspace and either click "refresh" or deselect and then reselect the "exam" item in the Organizations pane (this updates the view). Next click the CMI Datamodel tree and expand the interactions item. You will now see that the Interactions node contains 5 interactions, one for each question in the test. This time the information held by the CMI Datamodel is far richer. Among other things it has recorded the student response, whether the response was correct, what the right response should have been and the score achieved. If you answered at least half of the questions incorrectly, then if you expand the "core" item in the CMI Datamodel for "exam", then you should see that the "lesson_status" has been set to "failed". We can "retake" this exam, by clicking the red "Play" button again, which should now open the browser at the "Exam". Complete the exam, this time trying to get all of the answers correct. Once finished click "submit answers". Next click "quit" and then once again close the browser window. Go back to the Reload SCORM 1.2 workspace and re-examine the CMI Datamodel for "Exam". If you have answered enough questions correctly, the "lesson_status" should now read "passed". Once again, click "play" from the toolbar. A browser window should now open, informing you that the course has been completed.

