



## UD2

# Strumenti e metodi per l'e-learning

**Filippo Sciarrone**

- Obiettivi della UD2
- Learning Object
- Utilizzo di un LOM Editor
- SCO
- Esercitazione di creazione di un oggetto SCO
- Reload SCORM editor
- IWT e Moodle
- eXeLearning

- **Conoscenze**
  - Struttura IEEE LOM dei metadati associati ad un LO
  - LOMEditor
  - SCO
  - Reload
  - Authoring Open Source: eXeLearning
  
- **Competenze**
  - Saper utilizzare un LOM editor
  - Saper utilizzare Reload
  - Saper caricare un corso SCORM su Moodle e IWT
  - Saper orientarsi nell'utilizzo di eXeLearning

- Ripasso LO
- Metadata dei LO (IEEE)
- Esercitazione: uso di LOM Editor
- LMS e oggetti SCO: standard SCORM
- Reload Editor e SCORM Player
- Esercitazione: uso di reload con Moodle e IWT
- eXe Learning project
- Esempi

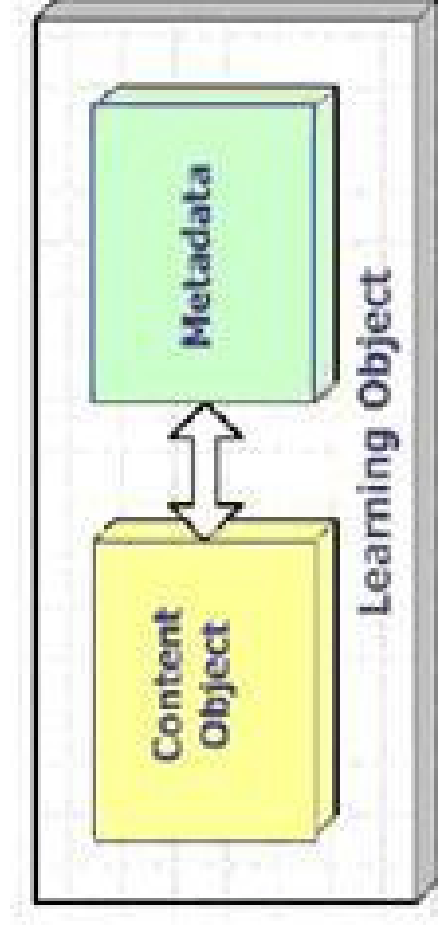
# Learning Object

**A learning object is defined as any entity - digital or non-digital - that may be used for learning, education or training**

<http://www.adlnet.org>

Un LO è logicamente composto da due elementi:

- il contenuto
- i metadata



- **Condivisibile**
- **Riusabile**
- **Modulare**
- **Accessibile**
- **Facilmente recuperabile**



IEEE LOM Editor

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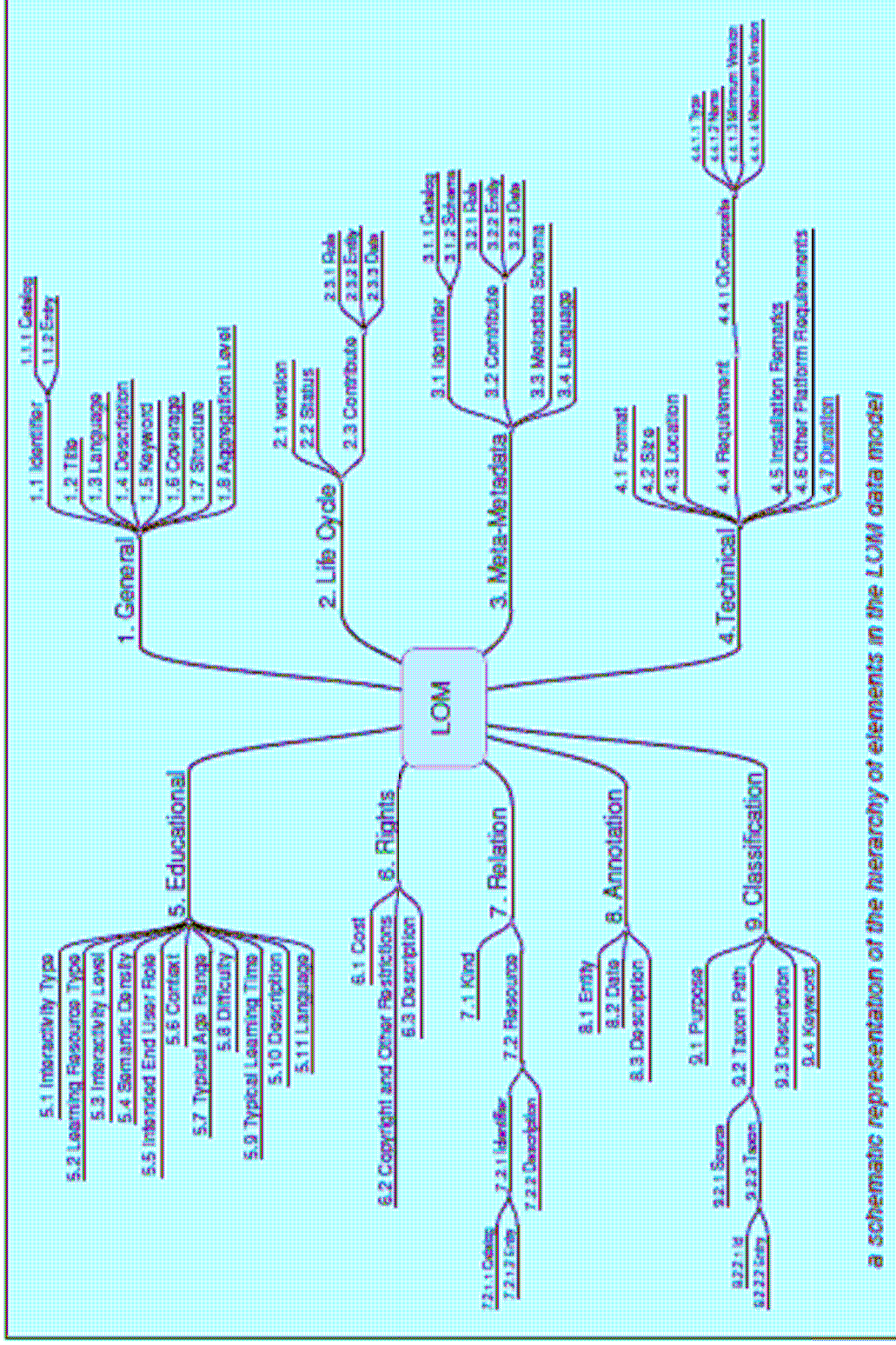
LOM-EDITOR  
IEEE-LOM  
LEARNING OBJECT METADATA  
EDITOR

RWTH AACHEN UNIVERSITY

PROLEARN  
Information Society

LOM Editor is the Learning Object Metadata editor complying with the [IEEE Learning Object Metadata \(LOM\)](#)

Completato



- Scaricare il LOM Editor
- Lanciare il programma (java -jar lomeditor.jar)
- Creare un LO con i suoi metadati
- Salvare il LO
- Analizzare la struttura XML

- **SCORM** (Sharable Content Object Reference Model ): Advanced Distributed Learning (ADL) Iniziative
- **LTSC** : IEEE Learning Technology Standards Committee
- **IMS** (Instructional Management System) Global Learning Consortium
- **AICC** - Aviation Industry CBT Committee
- **PROMETEUS**
- **The Dublin Core Metadata Initiative**



**Advanced Distributed Learning Initiative**

Sharable Content Object  
Reference Model (SCORM™)

Version 1.2

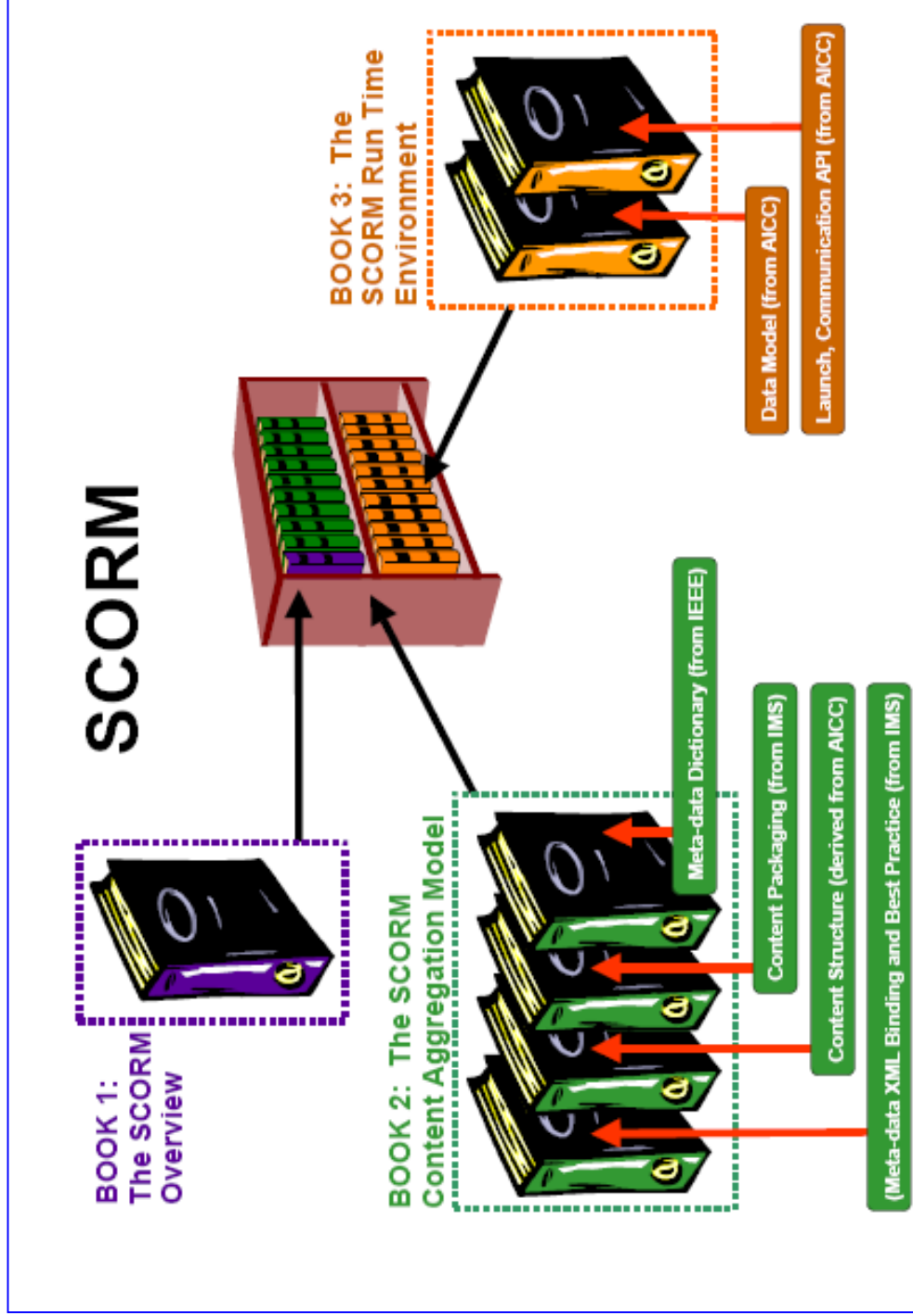
## The SCORM Overview

October 1, 2001

Organization	Contact Information	World Wide Web
Alliance of Remote Instructional Authoring & Distribution Networks for Europe (ARIADNE) <sup>12</sup>	Mme M. Rittmeyer or M. E. Forte Phone: +41-21 693 6658 / 4755 Fax: +41-21 693 4770 <a href="mailto:ariadne@ariadne-eu.org">ariadne@ariadne-eu.org</a>	<a href="http://www.ariadne.eu-org/">http://www.ariadne.eu-org/</a>
Aviation Industry CBT (Computer-Based Training) Committee (AICC) <sup>1</sup>	Dr. Scott Bergstrom, AICC Administrator Phone: (208) 356-1136 <a href="mailto:admin@aicc.org">admin@aicc.org</a>	<a href="http://www.aicc.org/">http://www.aicc.org/</a>
IEEE Learning Technology Standards Committee (LTSC) <sup>2</sup>	Robby Robson, Chair, IEEE LTSC Phone: (541) 754-1215 <a href="mailto:rrobson@saba.com">rrobson@saba.com</a>	<a href="http://ltsc.ieee.org/">http://ltsc.ieee.org/</a>
IMS Global Learning Consortium, Inc. <sup>3</sup>	For questions regarding Developers Network Membership: Marcia Rockwood, Director Operations Phone: (617) 571-7274 <a href="mailto:mrockwood@imsproject.org">mrockwood@imsproject.org</a>	<a href="http://www.imsglobal.org/">http://www.imsglobal.org/</a>

[www.adlnet.org](http://www.adlnet.org)

# SCORM-struttura



- **Assets:** rappresentazioni elettroniche di media, testi, immagini, suoni, pagine web
- **SCO:** Sharable Content Objects. Collezione di uno o più assets. Rappresenta l'unità minima trattata da un LMS
- **Content Aggregation:** mappa che unisce più entità SCO/Assets

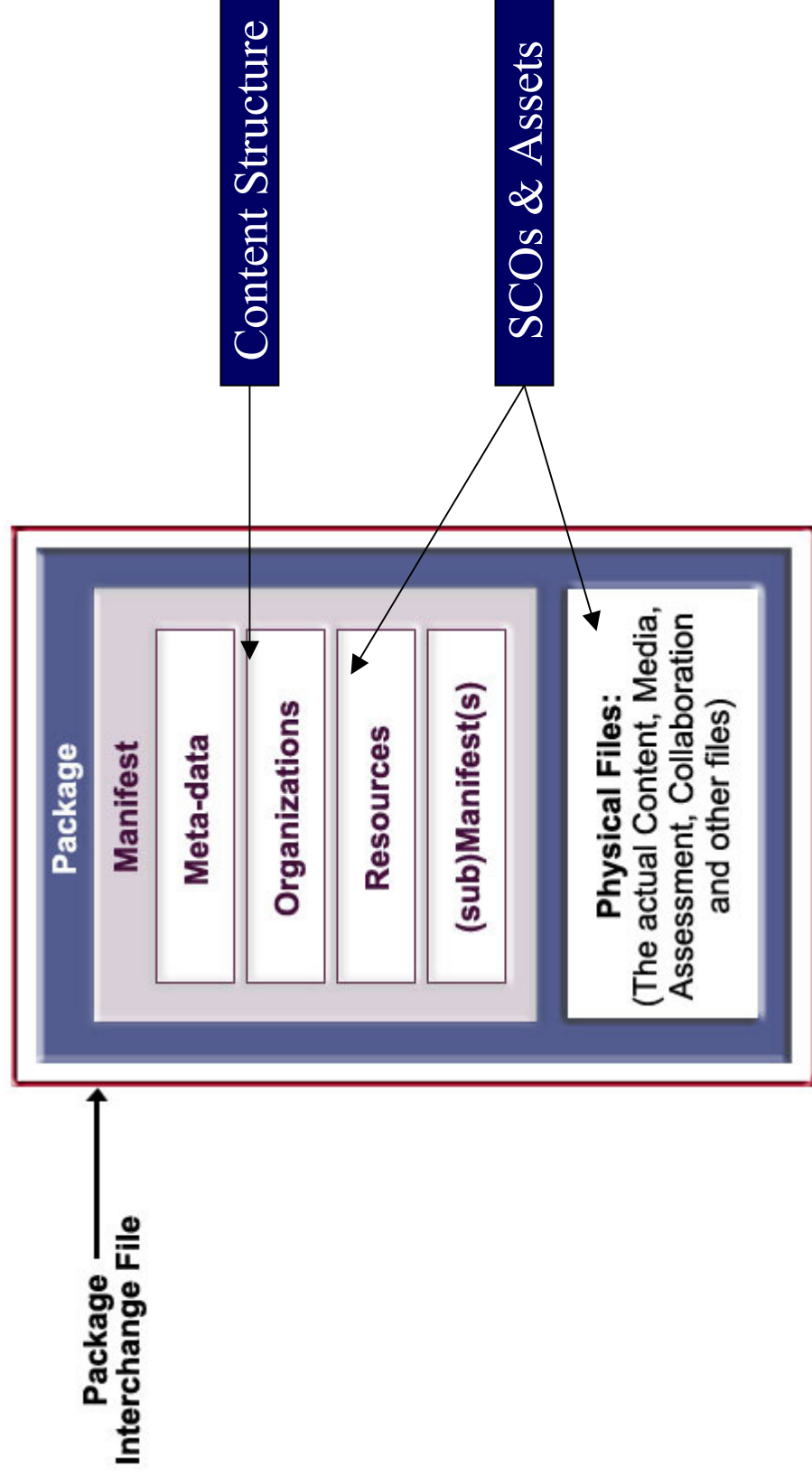
- Packaging
- Metadata
- Communication
- Sequencing



The SCORM Meta-data Information Model				
Nr	Name	Explanation	Multiplicity	Data Type
1	General	This category groups the general information that describes the resource as a whole.	1 and only 1	Container
1.1	Identifier	A globally unique label that identifies the resource. This is reserved and shall not be used, as there is no uniformly accepted method for the creation and distribution of globally unique identifiers.  This element can be transparent to the meta-data creator. It can be created by the meta-data management system.	RESERVED	String
1.2	Title	Name given to this resource.  The title can be an already existing one or it may be created by the indexer ad hoc.	1 and only 1	LangString Type (smallest permitted maximum: 1000 characters)

- Definisce un file *Manifest* contenente:
  - Meta-data sul package
  - Una sezione opzionale che definisce la struttura del contenuto ed il comportamento
  - Una lista di riferimenti al package.
- Definisce come creare il Manifest
- Include direttive sul come effettuare il packaging del manifest e delle learning resources
  - Esempio: The manifest stesso è “zippato” insieme alle learning resources per essere importato in una LMS

# Componenti del package



The screenshot shows a web browser displaying an IMS Manifest XML file. The XML content is as follows:

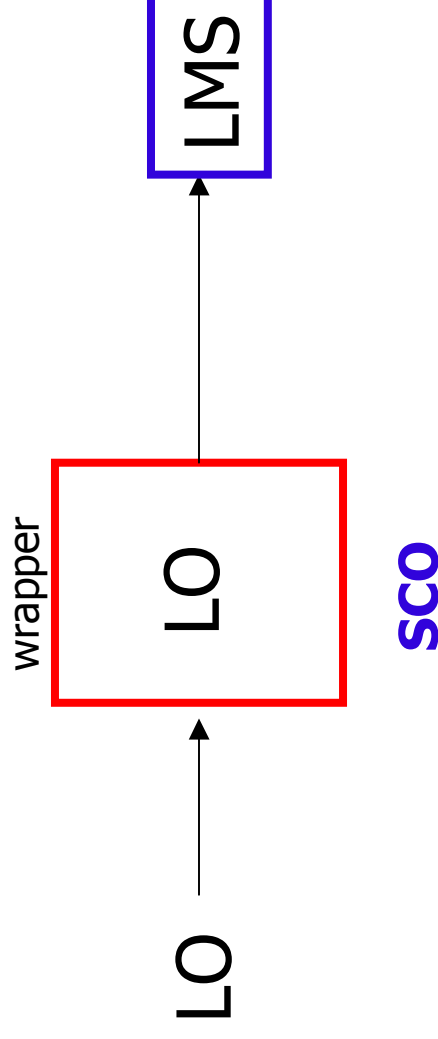
```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- SCORM 1.2 Content Package document generated by HotPotatoes: iQuiz Version 6.2 Release 5 Build 0. -->
<!-- manifest xmlns="http://www.imscp.org/xsd/imsmanifest.xml" xmlns:imsmd="http://www.adlnet.org/xsd/adlcp_rootv1p2.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:adlcp="http://www.adlnet.org/xsd/adlcp_rootv1p2.xsd" identifier="MANIFEST-DCA26C31-03AD-463D-B2AA-F2445A15B072" xsi:schemaLocation="http://www.imscp.org/xsd/imsmanifest.xml http://www.adlnet.org/xsd/adlcp_rootv1p2.xsd http://www.adlnet.org/xsd/adlcp_rootv1p2.xsd" />
<metadata>
  <imsmd:lom>
    <imsmd:general>
      <imsmd:identifier />
      <imsmd:title>
        <imsmd:langstring xml:lang="en">test di prova</imsmd:langstring>
      </imsmd:title>
    </imsmd:general>
  </imsmd:lom>
</metadata>
<organizations default="ORG-CDFA2BC6-442F-4581-9B2F-BC818BDC64DA">
  <organization identifier="ORG-CDFA2BC6-442F-4581-9B2F-BC818BDC64DA" structure="hierarchical">
    <title>Organization</title>
    <item identifier="ITEM-8A859258-B8B1-4AF3-A889-1A728467728F" identifierref="RES-655E4">
      <title>test di prova</title>
    </item>
  </organization>
</organizations>
<resources>
  <resource identifier="RES-655E4F89-ABE1-4962-B17B-5A102E096275" type="webcontent" adlcp:file href="testprova.htm" />
</resources>
</manifest>
```

The WinZip window shows the following files:

Name	Type	Modif
imsmanifest.xml	Documento XML	22/09
adlcp_rootv1p2.xsd	File XSD	05/07
adlcp_rootv1p1p2.xsd	File XSD	05/07
imsmanifest.xml	File XSD	05/07
imsmanifest.xml	File XSD	05/07
testprova.htm	Firefox Document	22/09

## Manifest generato da un quiz SCORM

Un LO non può essere fruito su una LMS  
direttamente: ha bisogno di un wrapper  
che gli aggiunga le funzionalità di dialogo  
con la LMS



**Si incapsula il LO in un wrapper  
utilizzando uno SCO editor oppure uno  
strumento di authoring**

- Il docente prende diversi LO da diversi repositories
- Rende i singoli LO SCO
- Costruisce un corso SCORM con gli SCO attraverso un editor SCORM che permette di assemblare i singoli SCO
- Carica sulla LMS lo SCORM



**RELOAD Editor**  
**Introductory Manual**

**July 2004**



- Lanciare Reload
- Inserire le risorse del proprio corso
- Creare uno SCORM
- Caricarlo sulle piattaforme IWT e Moodle

# Fine UD2