The CD-Lomas project: an RCP-based Collaborative Distributed Learning Object Management System

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E-learning industry and actors
(Don Morrison, E-Learning strategies)
E-learning demand: focus on content

EC call eContentplus focused on *digital content* requiring:

- Accessibility
- Exploitability
- Reusability

... Critical mass of contents
E-learning@Scienze.Salerno

• SAKAI (Blended)
• Moodle
  ✓ Plug-in developing

No reuse of contents, each teacher is LO Author and owner

• LON CAPA (experimenting)
• Second Life: SLMeeeting, SLJigsaw, SLJubox
CD-LOMAS: quick overview

- Collaborative LO Composition
- Content Distribution
- Context awareness
- Hierarchical LO versioning
- Integration in Moodle
- Two kind of nodes LLOR and GLOR
Global LOR subsystem

**LO Management subsystem** controls LO lifecycle (access to shared information, check-in, check-out, locking and versioning).

**Event Engine** collects and dispatches events.

**User Manager** manages Users and roles

The **Administration subsystem** manages LLORs, security and reporting.

The **Database Broker** receives/send queries from/to each LLOR
Local LOR subsystem

The *Event Handler* generates and dispatches events about LOs.

The *Course Handler* provides simple LMS features.

The *Extended Weload* hosts user workspaces. Users can compose SCORM LOs using local assets, local LOs or existing LOs spread through the network.

The *RCP Extended Reload* actually connects to the system invoking the web-servers exposed by the GLOR and one LLOR.
CDLOMAS in action

1. Client A logs in the GLOR;
2. the GLOR gives to it the access to workspace on the LLOR A;
3. the user composes a LO and asks to access to a LO on a selected subject;
4. the LLOR address the query to the GLOR Database Broker;
5. the GLOR Database Broker forwards the query;
6. the GLOR Database Broker collects the results;
7. GLOR Database Broker returns a ranked list to the user LLOR;
8. the user selects a LO hosted on LLOR C;
9. the user plays the selected LO;
10. The user download the LO in LLORA workspace.
LO, users & permissions

• Two kinds of LOs: public and private
• Four kinds of access permission: locked reuse (read only) and derivative reuse (read and write), play, entry catalogue only,
• Contact list controlled by each user
• Subscription to events
Collaboration

• Course project associated to LOR workspace shared among authors
• LO lifecycle and versioning
• Same rights on produced LO
• Group contact list
• Feedbacks help keeping track of group work
• Locking, branching and merging if collaboration is on the same asset.
CD-LOMAS ongoing RCP plug-in development

- **My Workspace**, allowing each user to compose his/her LO using assets locally provided or composing LOs taken from the repository;
- **GroupSpace**, aiming at grouping LOs corresponding to a specific learning group. It is a common space where several users can collaborate in the development of the material of a course or can share information interesting for their group. Each group has at its disposal a chat, a forum and a wiki.
- **My LOs**, showing the catalogue of the LOs owned by the user. Search can be performed on the LO metadata and the owner of a LO can define the user permissions on it;
- **Request of Other Users**, showing the requests of access permissions on the LOs owned by the user;
- **Global Learning Object Catalogue**, showing the catalogue of all the LOs available in CD-LOMAS. Each objects is described by some significant metadata and a brief explanation. For any content in the repository, when allowed, users can view reports displaying every course and people in the system that is currently using the selected item;
- **User Feedbacks**, enabling the user to require feedback on events concerning specific LOs, LOs belonging to a given subject or LOs produced by a given user.
RCP: Reload SCORM viewer
Event handling

A publish-subscribe paradigm about:
- events having a direct impact on the LOs on which the user has a locked reuse permission or on which (s)he is working on;
- events concerning all the LOs referring to a specific topic;
- events concerning specific LOs;
- events generated by a specific teacher on a specific topic. In this case the interested user sends a request module to the teacher that can accept or refuse the subscription.
Context awareness: Subscription to event

Users must explicitly subscribe an event to obtain feedbacks

Four sets avoid notify saturation

• Contact lists
• Argument
• Area of application
• Kind of event
RCP subscription to events and the Reload RCP editor
Feedbacks: RCP extension

CD-LOMAS project is evolving towards a client application.

RCP nature of current release of Reload integrated with the access permissions and feedbacks widget.
Conclusion and Future Work

• **CD-LOMAS**
  – Collaborative LO Management
  – Content Distribution (LLOR and GLOR)
  – Context awareness

• **Ongoing RCP porting**
  – LO Management and Search
  – Access control management
  – Groupspace management
Thank you for your attention!

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