

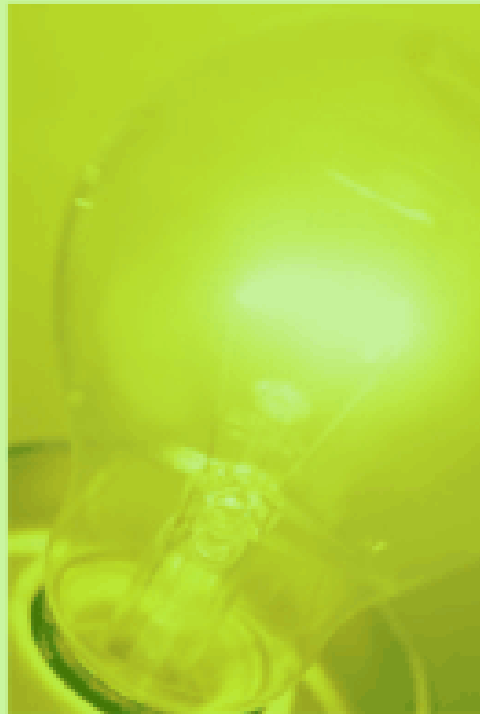
# Metadata – its contribution to e-learning



Tertiary IT Conference  
9 September 2005

# Introduction

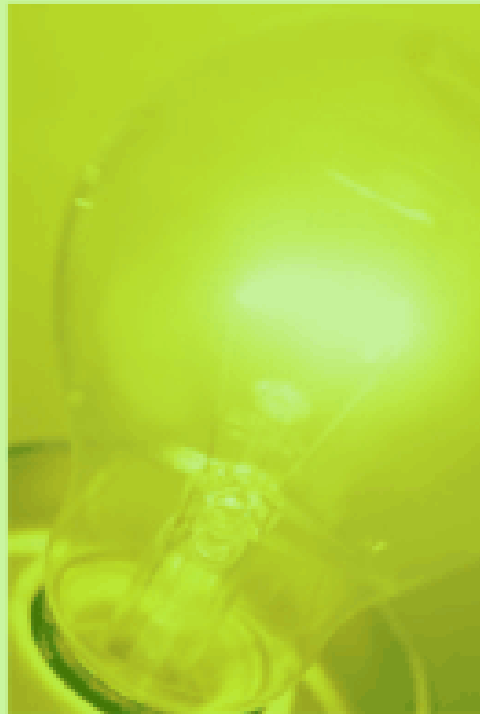
*Purpose of presentation*



# Information

The world is awash with data and information  
How is it :

- Managed
- Located
- Exchanged



# The Hidden Sleuth - Metadata



- “data about data”
- identifies, describes, locates, maintains, displays
- Dublin Core Metadata Element Set – 15 descriptive data elements

# Types of metadata

- Resource discovery/descriptive



- Administrative/Technical

- Structural

- Preservation

# Resource Description Framework

- RDF document expressed in XML
- <http://www.schemas-forum.org/registry/schemas/DCMI-Education/dced-ap>

# Selection of mark-up languages

Constantly evolving developments

- SGML
- HTML
- XML
- XHTML
- SVG

and, finally, DTDs

# ISO Catalogue

- Search under entry “metadata”
- <http://www.iso.org/iso/en/StandardsQueryFormHandler.StandardsQueryFormHandler?scope=CATALOGUE&sortOrder=ISO&committee=ALL&isoDocType=ALL&title=true&keyword=metadata>



# Dublin Core Element Sets

- Dublin Core Metadata Element Set, Version 1.1: Reference Description
- <http://dublincore.org/documents/dces/>

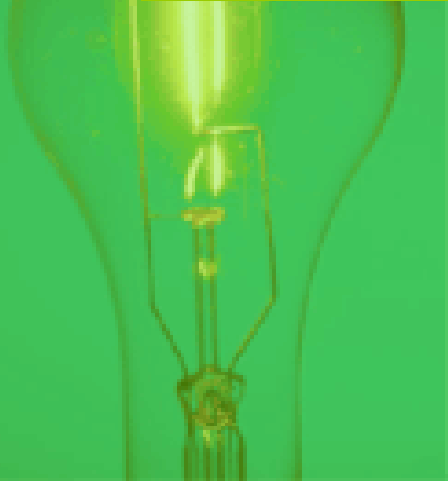


# DC Information Categories

Content	Intellectual Property	Instantiation
Title	Creator	Date
Subject	Publisher	Type
Description	Contributor	Format
Source	Rights	Identifier
Language		
Relation		
Coverage		

# DC Education Application Profile

- [http://www.ischool.washington.edu/sasutton/dcmi/ed/04-05/DC-Education\\_AP\\_06-20-05.html](http://www.ischool.washington.edu/sasutton/dcmi/ed/04-05/DC-Education_AP_06-20-05.html)



# DCMI Education Metadata Set

- <http://www.schemas-forum.org/registry/schemas/DCMI-Education/>
- DCMI Application Profile
- <http://www.schemas-forum.org/registry/schemas/DCMI-Education/dced-ap>

# IEEE P1484 Learning Technology Standards Committee

- **IEEE [P1484.12](#) Learning Objects And Metadata Study Group**
- **Scope:** learning object metadata, including multimedia content, instructional content, learning objectives, instructional software/tools, persons, organizations, events. Also pedagogical attributes such as teaching/interaction style, grade level, mastery level, prerequisites.
- **Purpose:** (a) enable learners or instructors to search, evaluate, acquire, and utilize learning objects, (b) sharing and exchange of learning objects, (c) decomposability of learning objects, (d) automated composition of personalized lessons, (e) to complement distributed object computing standards, (f) to capture milestone completion, (g) to support a learning object economy, (h) to enable expression of educational content and performance standards in a standardized format, (i) to support collection and sharing of applicability/ effectiveness data, (j) simplicity and extensibility, (k) security and authentication for distribution and use.

# IEEE LOM Categories



**General  
Lifecycle  
Meta-metadata  
Technical  
Educational  
Rights  
Relation  
Annotation  
Classification**

# Metadata schemes and educational resources

- The GEM (Gateway to Educational Material) Element Set
- IMS (Instructional Management Systems) Metadata Specification
- IEEE Learning Technology Standards Committee (LTSC) Learning Object Metadata (LOM)
- EUN European School Net metadata scheme
- EdNA (Education Network Australia) metadata scheme

# Use of LOM

- CanCore <http://www.cancore.ca/>
- CELEBRATE  
[http://www.eun.org/eun.org2/eun/en/index\\_celebrate.cfm](http://www.eun.org/eun.org2/eun/en/index_celebrate.cfm)
- CETIS Metadata and Digital Repositories SIG  
<http://metadata.cetis.ac.uk/>
- European Treasury Browser  
[http://www.eun.org/eun.org2/eun/en/etb/sub\\_area.cfm?sa=441](http://www.eun.org/eun.org2/eun/en/etb/sub_area.cfm?sa=441)
- The Le@rning Federation  
[http://www.thelearningfederation.edu.au/repo/cms2/tlf/published/8519/Metadata\\_Application\\_Profile\\_1\\_3.pdf](http://www.thelearningfederation.edu.au/repo/cms2/tlf/published/8519/Metadata_Application_Profile_1_3.pdf)
- MERLOT <http://www.merlot.org/>
- SCORM <http://www.adlnet.org/>
- UK LOM Core <http://www.cetis.ac.uk/profiles/uklomcore>



# Getting along with each other

- Application profiles
- Crosswalks
- SCORM
- Interoperability



# Crosswalks

- Mapping of the elements, semantics and syntax from one metadata scheme to those of another
- <http://www.ukoln.ac.uk/metadata/int interoperability/>

# MARC

Point to a MARC element to view its definition.

```
LDR      *****cam a22***** a 4500
001
005      20050715091159.0
008      030711s2003 enka b 001 0 eng
020      ‡a0714842230 (hbk.)
010      ‡o8488130
025      ‡aAAI-6037
099      ‡a770.92 GOL
100 1    ‡aGoldin, Nan, ‡d1953-
245 1 4  ‡aThe devil's playground.
260      ‡aLondon ; ‡aNew York : ‡bPhaidon, ‡c2003.
300      ‡a503 p. : ‡bcol. ill. ; ‡c31 cm.
504      ‡aIncludes bibliographical references (p. [500]) and index.
600 1 0  ‡aGoldin, Nan, ‡d1953-
650 0    ‡aPhotography, Artistic.
650 0    ‡aPortrait photography.
650 0    ‡aPhotography of the nude.
650 0    ‡aPhotography, Erotic.
700 1    ‡aJenkinson, John.
```

# Digital Libraries Initiative Programme

- The six funded institutions with their primary focus were:
- The University of Michigan for research on agent technology and mechanisms for improving secondary education;
- Stanford University for the investigation of interoperability among heterogeneous digital libraries and the exploration of distributed object technology;
- The University of California-Berkeley for imaging technologies, government environmental information resources, and database technologies;
- The University of California-Santa Barbara for the Alexandria Project to develop GIS (Geographical Information Systems) and earth modeling distributed libraries;
- Carnegie Mellon University for the study of integrated speech, image, video, and language understanding software under its Infromedia system; and
- The University of Illinois at Urbana-Champaign for the development of document representation, processing, indexing, search and discovery, and delivery and rendering protocols for full-text physics, computer science, and engineering journals.

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# The Digital Strategy – creating our digital future

- Final version released May 2005
- <http://www.digitalstrategy.govt.nz>



# Mataphihi database

- Image database containing some 50,000 images of New Zealand places, events and people
- <http://www.matapihi.org.nz/>



# E-Learning Framework

## 7 action areas

- Developing a 'community of practice
- e-Learning research
- Professional development
- Adopting common technical and design standards
- Electronic rights management
- Developing frameworks for recognizing flexible learning
- Improving access to e-learning for marginalized learners

# eCDF funded projects

- Projects funded in 2003 round
- <http://www.tec.govt.nz/funding/strategic/ecdf/extended-overview.htm>







# Metadata Standards Framework - principles

- Electronic Access
- Integrated Access
- Interoperability
- Development
- Gaps in Standards
- Permitted Standards
- Preservation
- Language



# Te Kete Ipurangi

The repository

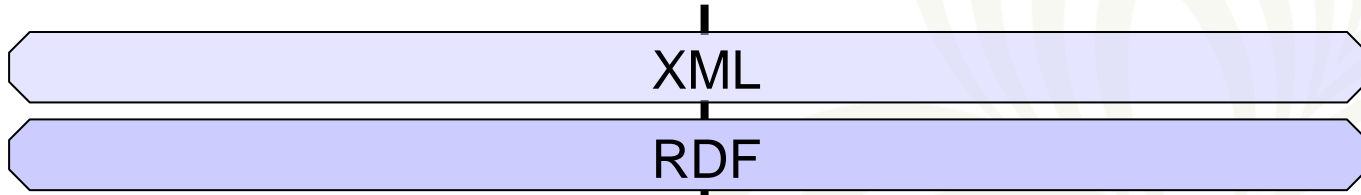
- <http://www.tki.org.nz/>

The metadata record

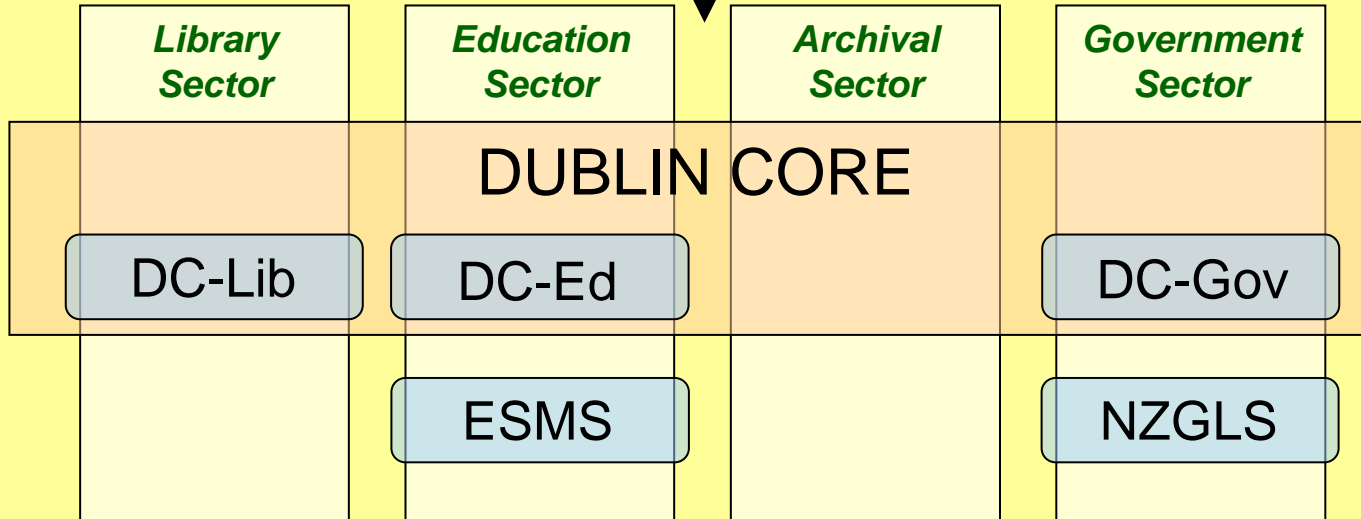
- <http://www.tki.org.nz/e/tki/help/metadata.php>

# Metadata Standards Framework

Syntax

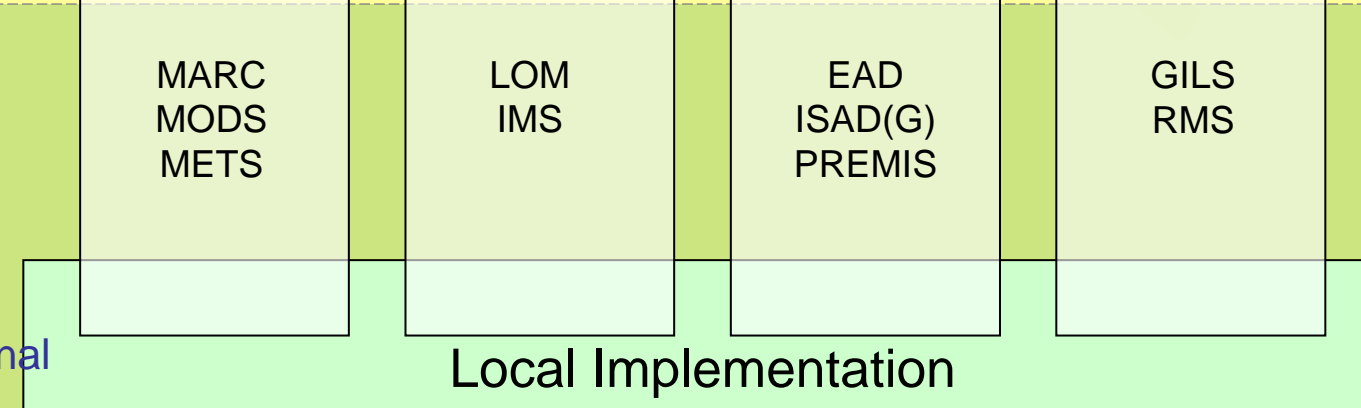


Discovery

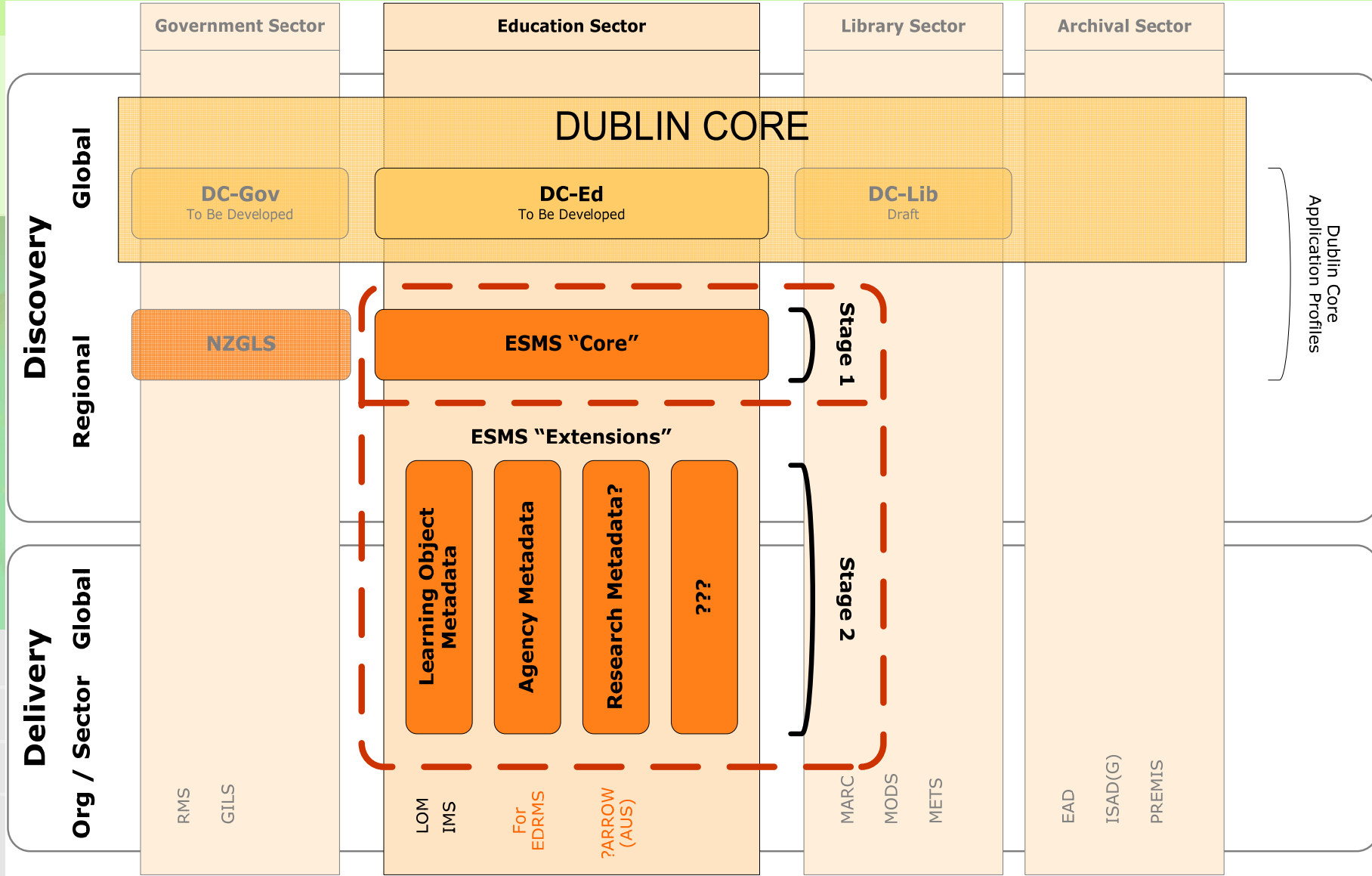


Dublin Core  
Application Profiles

Delivery

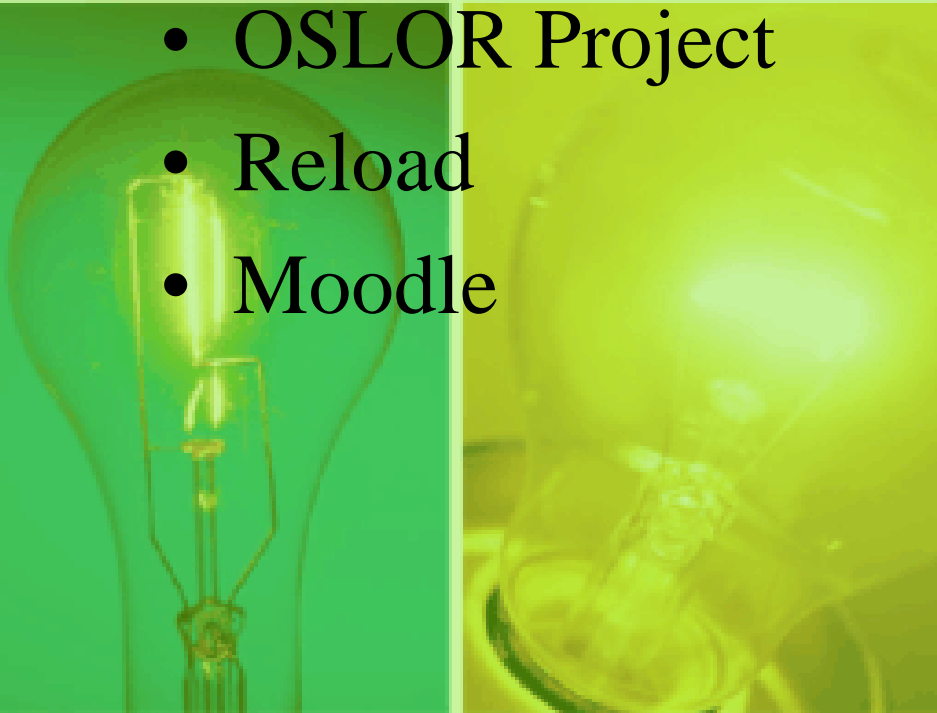


# Metadata Schema - Conceptual Model

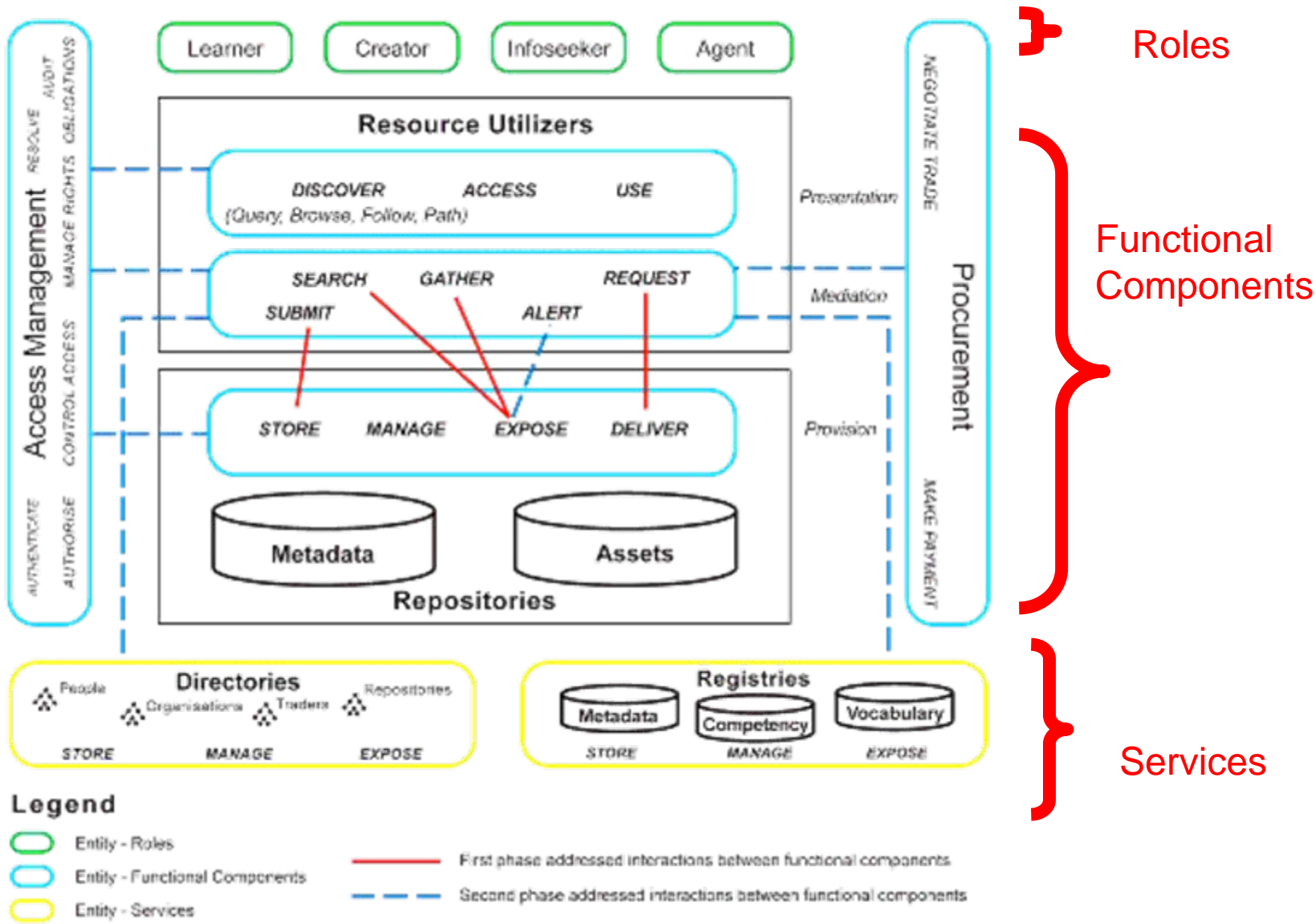


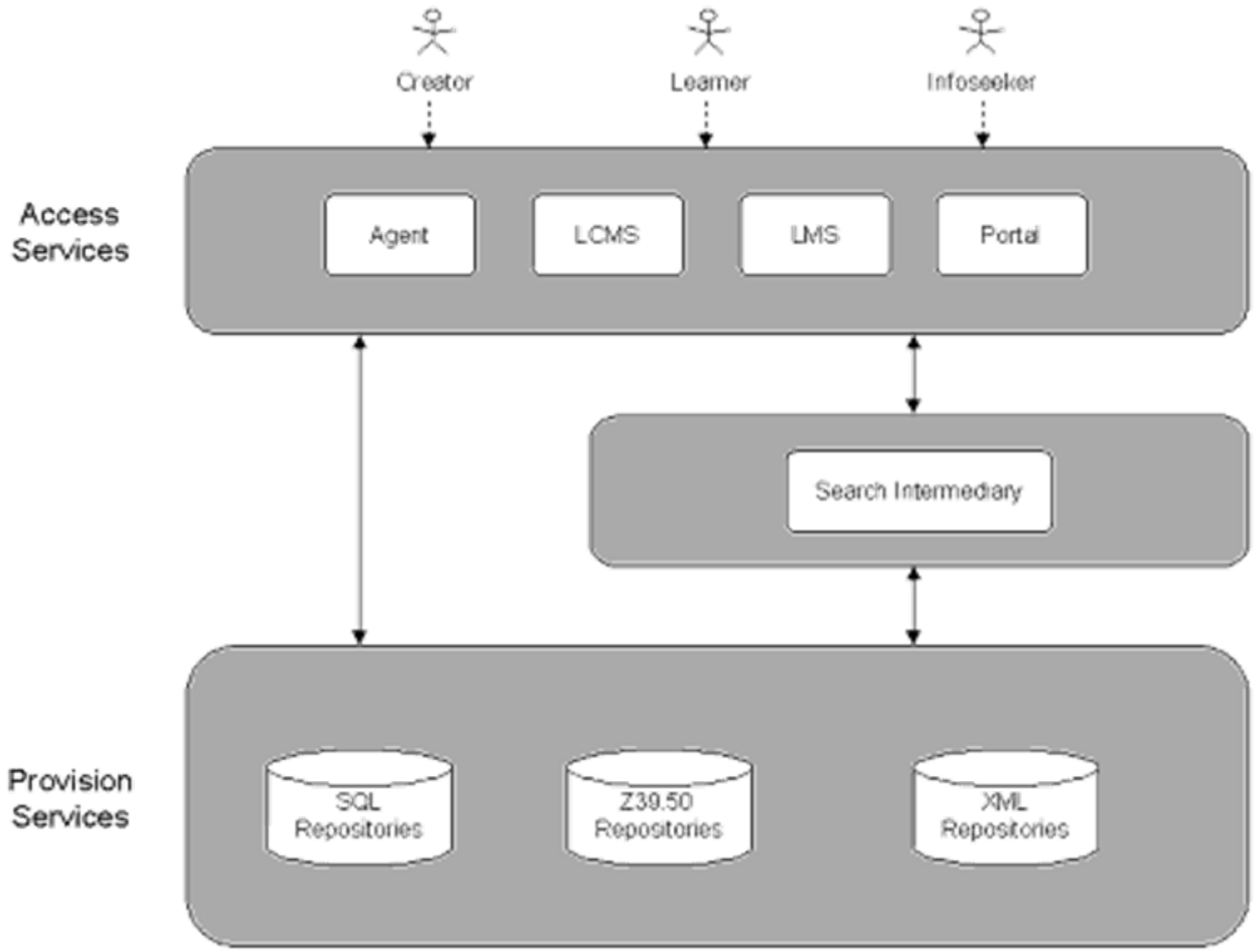
# Using Metadata

- Learning Object Repositories
- OSLOR Project
- Reload
- Moodle

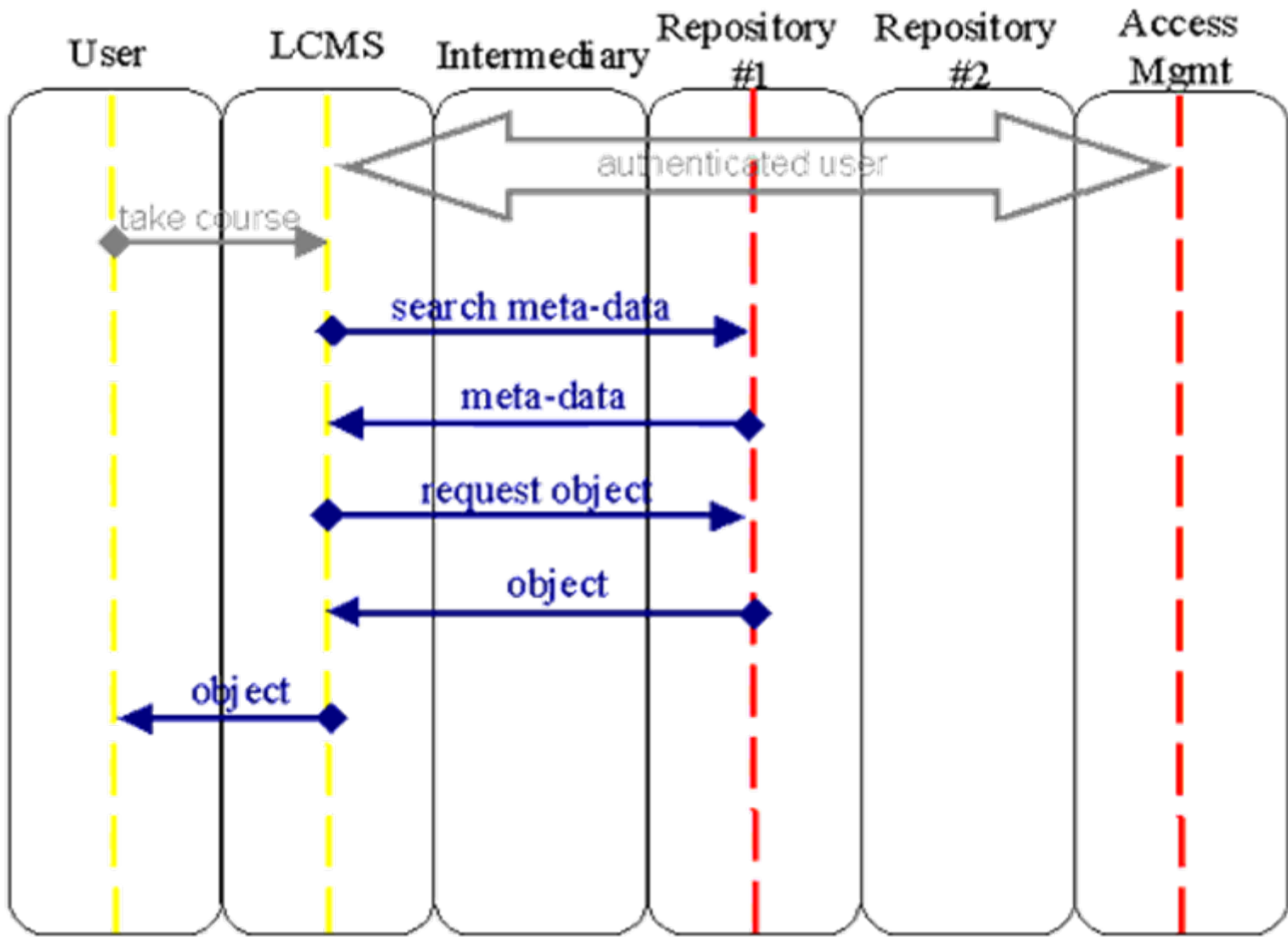








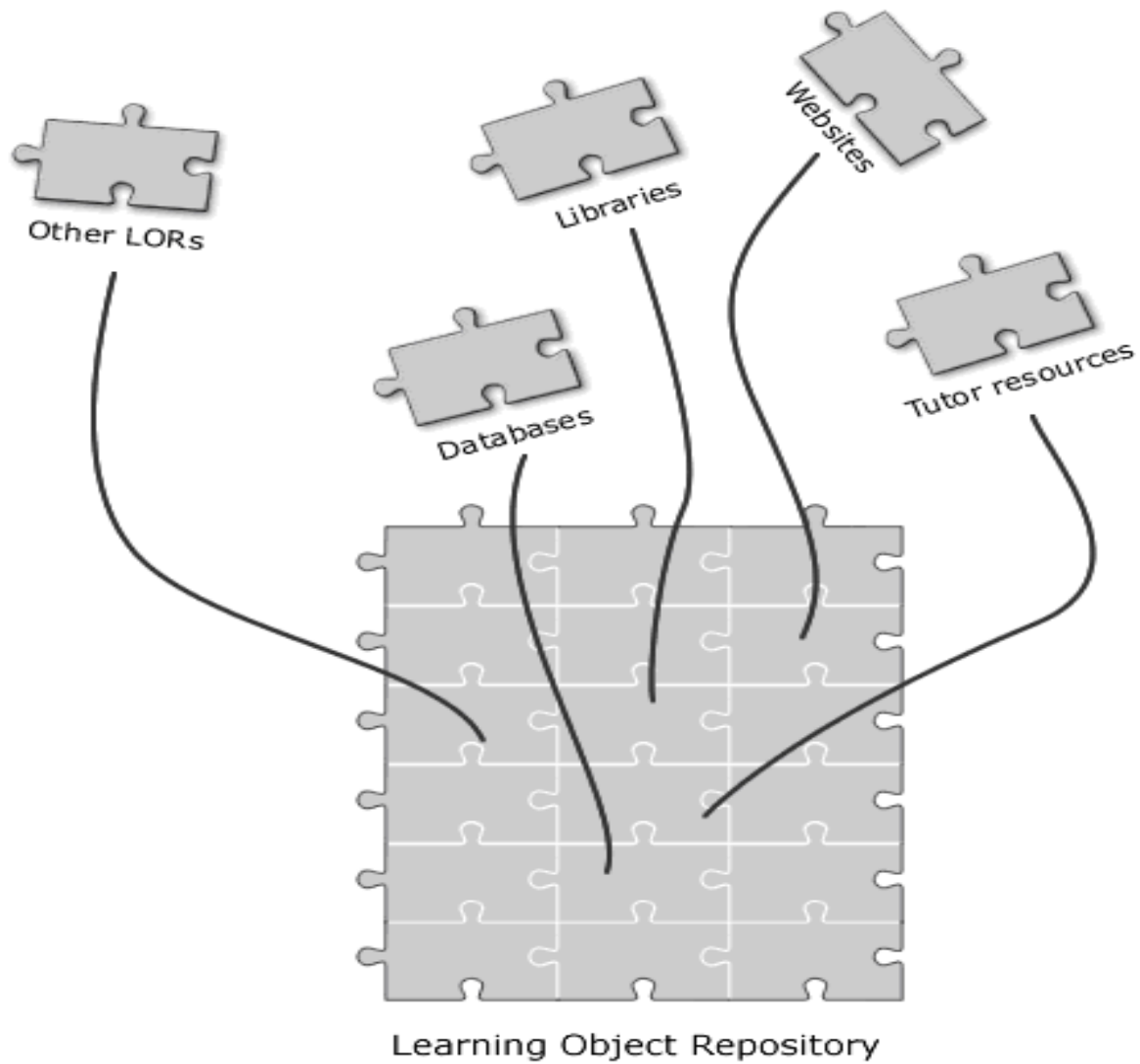




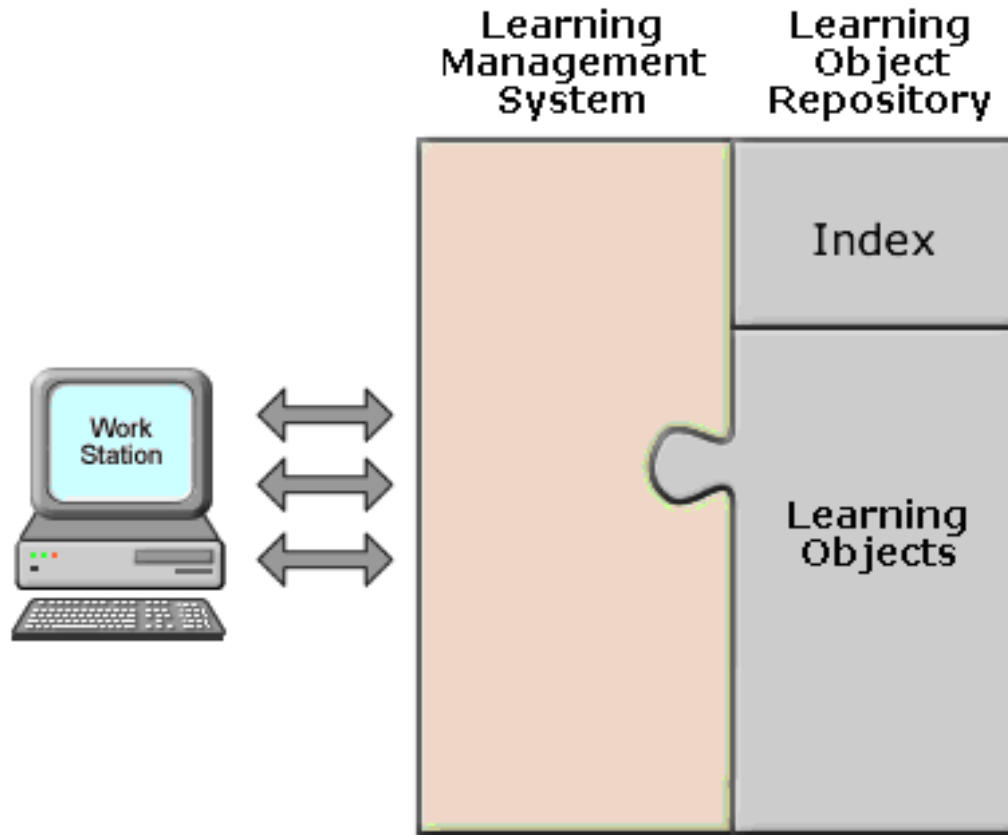
# OSLOR



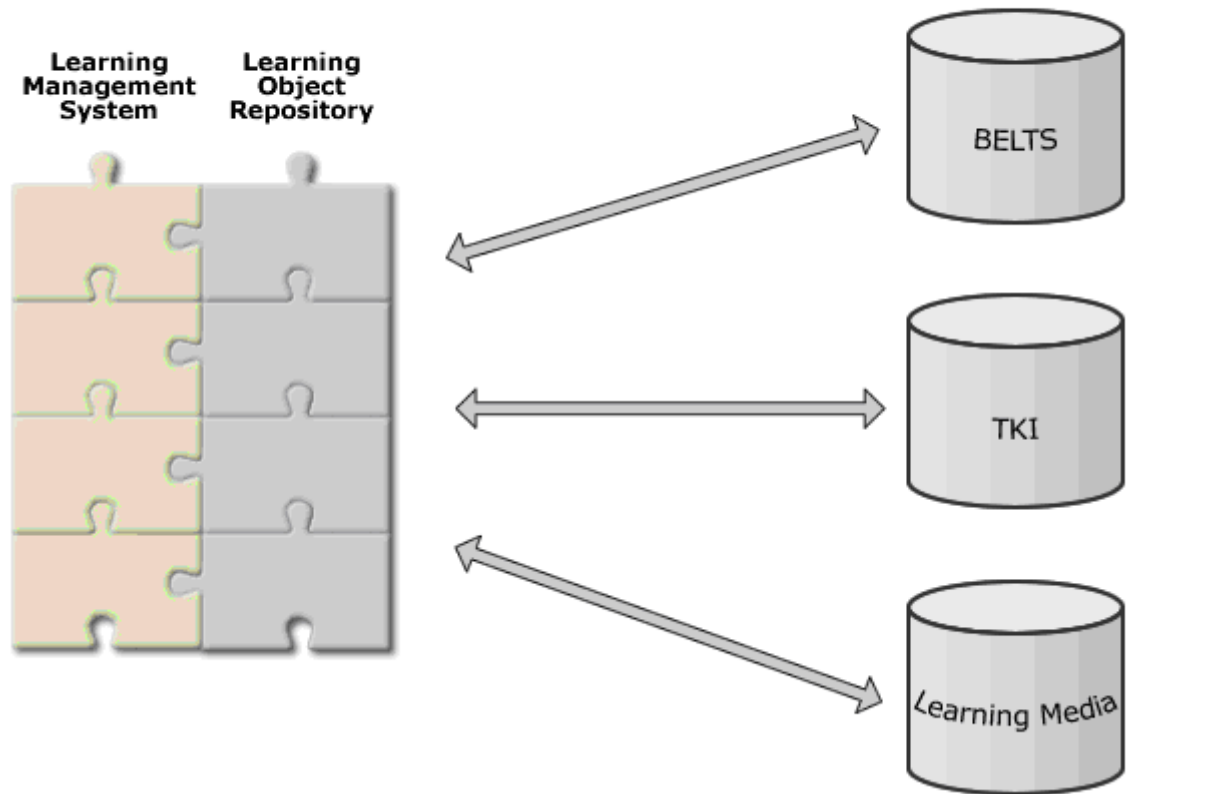
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# Regional Course Delivery System



# Central Course Delivery System



- <http://www.reload.ac.uk/index.html>



<http://www.elearning.ac.nz/>

