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Repository Services for Outcome-based Learning

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ICOPER objectives

Outcome-based learning

- Analyse and facilitate the adoption of standards and specifications
- Make learning resources accessible
- Validate standards and specifications and condense them into the ICOPER Reference Model (IRM).
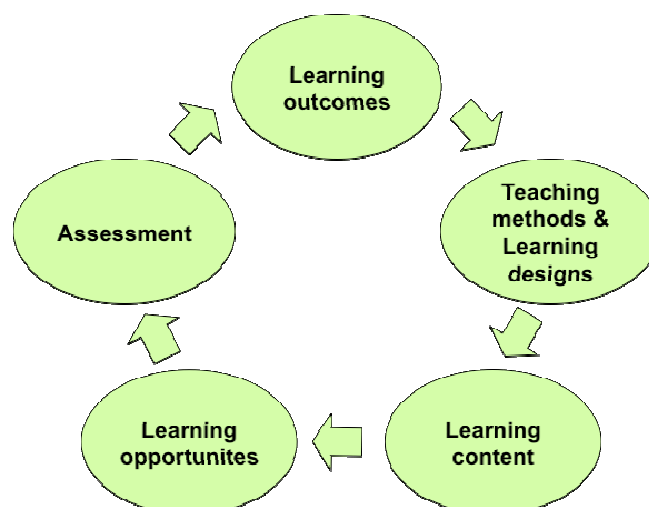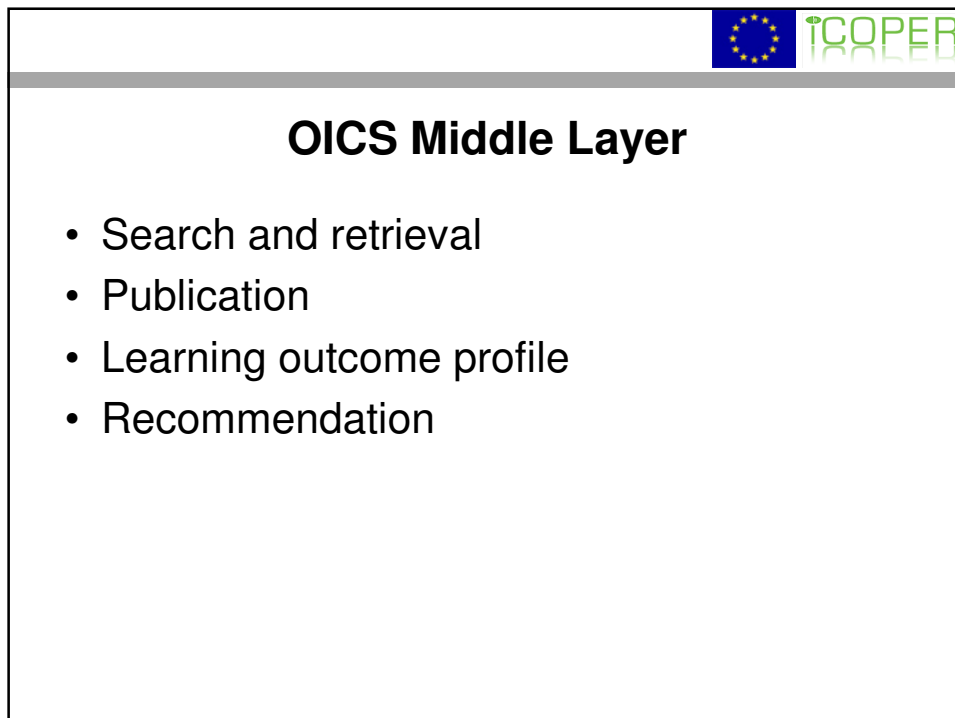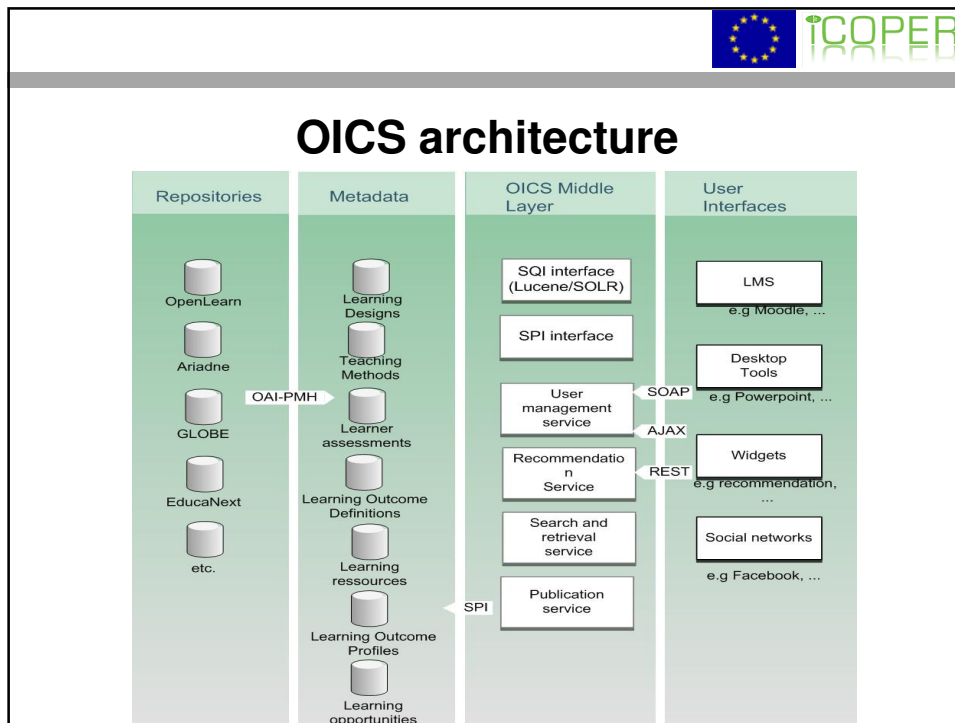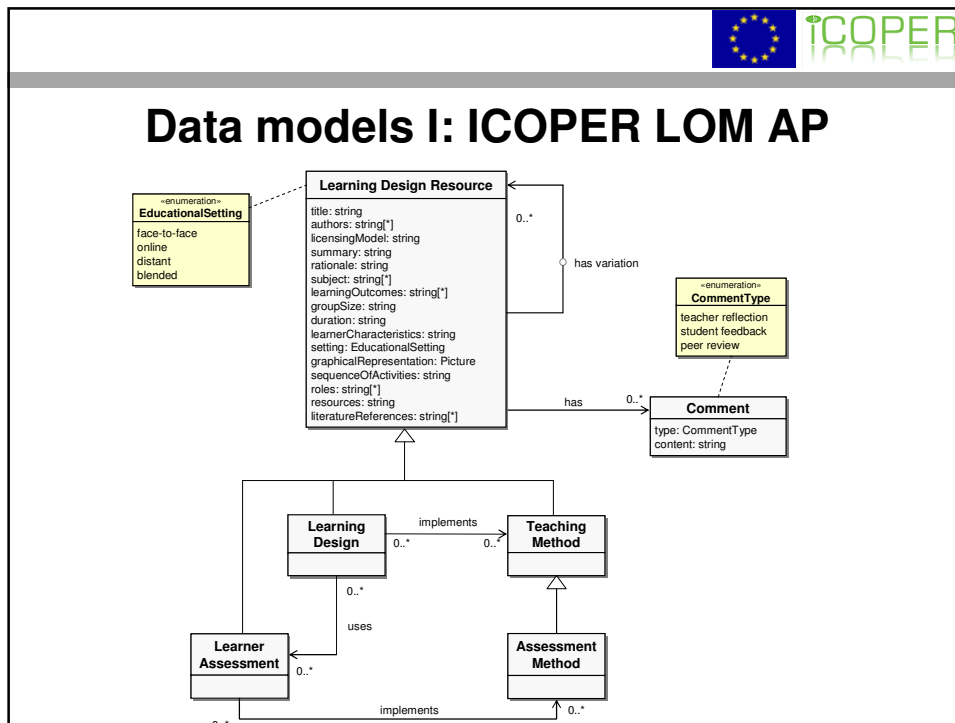
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Open ICOPER Content Space

- umbrella combining a set of specialized interconnected repositories, content and tools, as a test bed for the specifications and standards that become part of the ICOPER Reference Model (IRM).
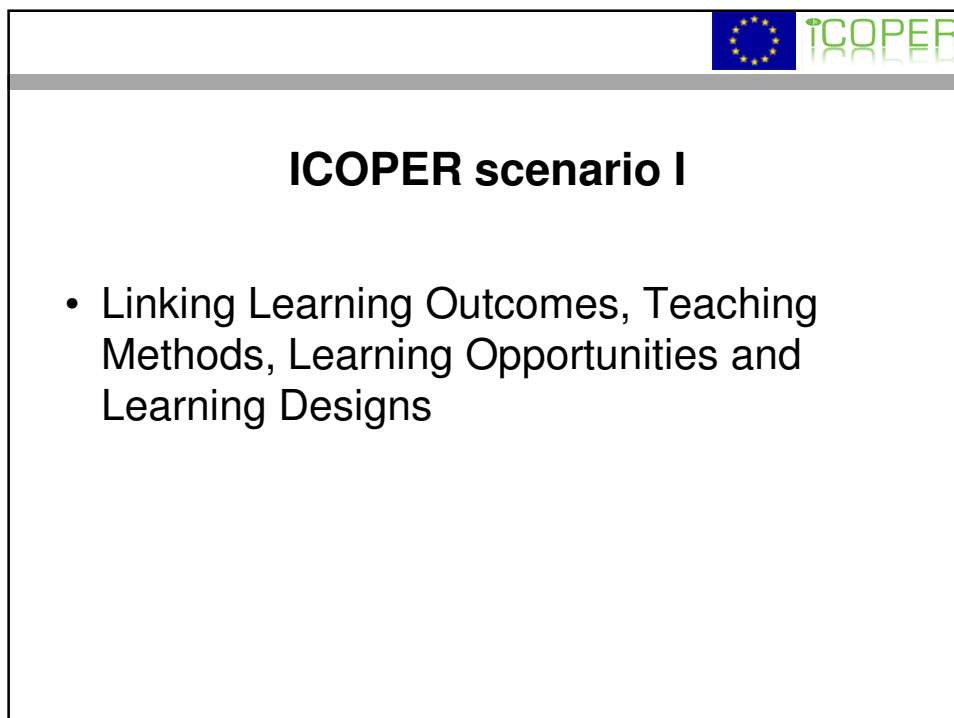
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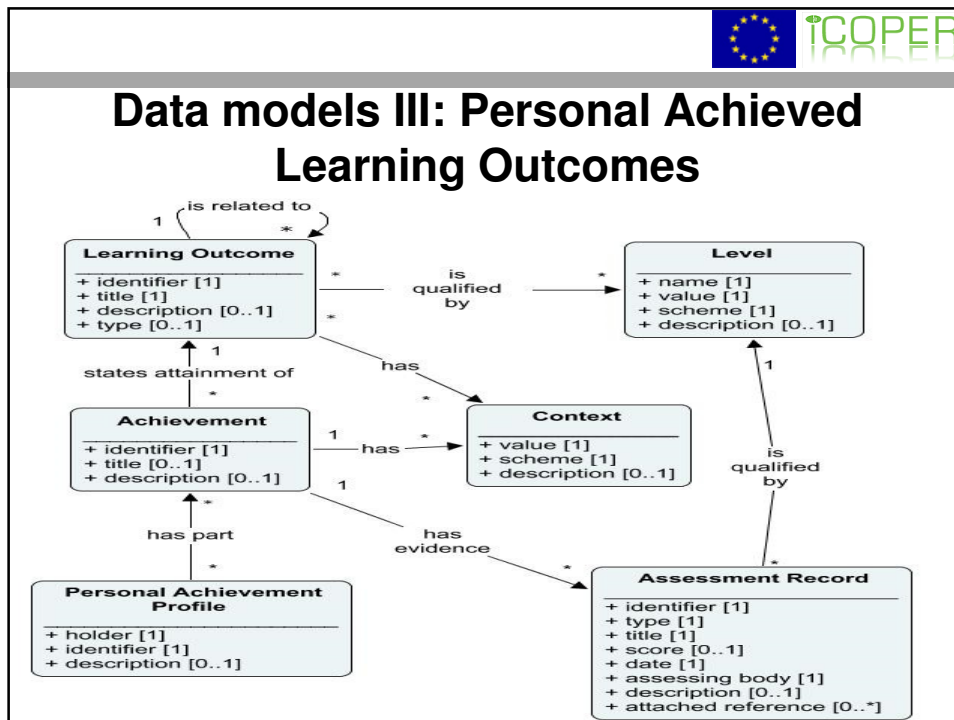# Key processes in outcome-based education

OICS architecture

Repositories	Metadata	OICS Middle Layer	User Interfaces
OpenLearn	Learning Designs	SQI interface (Lucene/SOLR)	LMS e.g Moodle, ...
Ariadne	Teaching Methods	SPI interface	Desktop Tools e.g Powerpoint, ...
GLOBE	Learner assessments	User management service	
EducaNext	Learning Outcome Definitions	Recommendation Service	Widgets e.g recommendation, ...
etc.	Learning ressources	Search and retrieval service	Social networks e.g Facebook, ...
	Learning Outcome Profiles	Publication service	
	Learning opportunities		

OAI-PMH · SOAP · AJAX · REST · SPI

OICS Middle Layer

- Search and retrieval
- Publication
- Learning outcome profile
- Recommendation

Data models I: ICOPER LOM AP

Data models II: Learning outcome definitions

Name	Data type
Identifier	CharString
Title	LangString
Description	LangString
Type	Vocab (knowledge, skill, competence)

Data models III: Personal Achieved Learning Outcomes

ICOPER scenario I

- Linking Learning Outcomes, Teaching Methods, Learning Opportunities and Learning Designs

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ICOPER scenario II
Storing learning outcome definitions

Open ICOPER content space Welcome, Jad Najjar | 1 Member Online | Your Account | Logout
Main Site : ICOPER learning outcome repository : ACM-IEEE-CS : View

ACM-IEEE-CS

| Up one level | Edit | New ˅ | Import ˅ | Permissions | Attachments |
| Tags ˅ | Notifications ˅ | Search ˅ | Weblog | Configuration | |

|◀ ◀ Page 1 out of 4 ▶ ▶|

☐		**Public**		**Title**	actions
		--			
☐	▪			human centered design	📝 🔩 🔖 ☁
☐	▪			interactive environments	📝 🔩 🔖 ☁
☐	▪			localization	📝 🔩 🔖 ☁
☐	▪			interaction style	📝 🔩 🔖 ☁
☐	▪			design methodologies	📝 🔩 🔖 ☁
☐	▪			usability	📝 🔩 🔖 ☁
☐	▪			disability	📝 🔩 🔖 ☁
☐	▪			domain expertise	📝 🔩 🔖 ☁
☐	▪			access control	📝 🔩 🔖 ☁
☐	▪			Develop a rubric-based assessment	📝 🔩 🔖 ☁

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ICOPER scenario III
Editing Teaching Methods and
Learning Design: OpenGLM

Specify learning outcomes, prerequisites, and the subject classifications of the Learning Design

| Learning Outcomes | Prerequisites | Subject Classifications |

Add learning outcomes to this learning design. Start by clicking "Add" at the bottom.

| | Resource: | **writing skills** [LOD] |
| | Category: | Pre-defined GLM Resources > Learning Objectives |

| | Resource: | **careful interpretation** [LOD] |
| | Category: | Pre-defined GLM Resources > Learning Objectives |

| | Resource: | **analytical techniques** [LOD] |
| | Category: | Pre-defined GLM Resources > Learning Objectives |

| | Resource: | **science communication** [LOD] |
| | Category: | Pre-defined GLM Resources > Learning Objectives |

| ⊕ Add | ⊕ Edit | ⬆ Move Up | ⬇ Move Down | ⊖ Remove |

ICOPER scenario IV
OICS Roundtrip Authoring Re-use
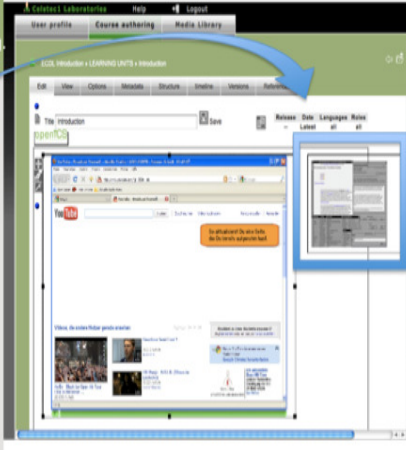
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Managing learning opportunities

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ICOPER scenario VI
Learner assessment

1. **Outcome-based search of assessment resources**

2. **Sharing annotations about assessment resources.**

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ICOPER scenario VII
Tools publishing achievements

- UC3M .LRN
- Umeå University, Moodle block
- IMC, Clix
- eXact enterprise LCMS.
- AGH, display of PALO profiles in Facebook
- Tallinn University, Elgg

http://www.icoper.org