A SCORM Interface for ILIAS

Agenda

- Market Demand for Standardization
- SCORM 1.2 Overview
- Status Quo of Interface Implementation for ILIAS
- Next Steps in the Implementation Process
- Outlook
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Some samples for standards as main enabling factor for industry Development:

- WWW
- Railway Industry
- Video Industry
- ......

→ Standards help to cover invests in online learning
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Goals of Standardizations

- Reuse of methods and contents in different learning environments
- Flexibility
- Portability, use of content applications in different system environments
- Ease of use, to reassure acceptance of stakeholders (teacher, developer, administrator, learner....)
- Economicalness --> covering the invests in e-Learning
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Web-based Scenario in e-Learning

- Server Side
  - LMS Server
  - Data Model for user tracking
- Client Side
  - Browser
  - Learning Object
    - API Adapter
    - API (Communication Link between learning object and LMS)
  - Launch
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Status Quo of Standardization for Web-Based Scenarios

- SCORM and AICC are widely adopted in industry > 80%
- Developments are driven by American organizations
- Lack of possibilities to support didactical aspects while technological and economical needs can be satisfied
- In the mid-term SCORM will become most likely the standard that matters most cause of its extensibility and its widely accepted concepts
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- SCORM --> Sharable Content Object Reference Model
- Part of the Advanced Distributed Learning Initiative (ADL) founded by the American Department of Defense (DoD) 1997
- Level of possibilities to contribute to the developments in SCORM is based on high fees --> closed shop strategy
- SCORM is not a standard itself but a framework for integration of several standard bodies
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1. **IMS Content Packaging**: XML-based description of course structures with references to the needed resources to start the single learning objects + information to exchange content applications (file format)

2. **Runtime Environment**: Definition of a data model as common vocabulary for information exchange between content application and learning servers + Sequencing + API (Application Programming Interface → AICC)

3. **IMS Meta Data**: XML-based specification for meta data description of learning resources (optional)
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Standards of the SCORM Reference Model

- AICC Content Sequencing
- AICC Communication API
- AICC Data Model (CMI)

SCORM

- IMS Learning Resource Metadata
- IMS Content Packaging
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Scenario SCORM Communication

Learning Management System (LMS)

Data Model
Vocabulary for exchange of data

API Adapter

JavaScript

SCO

Asset

API (Communication between LMS and SCO)

Server

Client

Launch

Browser
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<table>
<thead>
<tr>
<th>Function</th>
<th>Yes</th>
<th>Requirements</th>
<th>Version</th>
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<tr>
<td>Import of Content Packages</td>
<td>X</td>
<td>Java Extension on Server</td>
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<tr>
<td>Runtime Environment</td>
<td>X</td>
<td>Client needs Java Applet</td>
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<td>Meta Data</td>
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<td>Reporting module</td>
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<td></td>
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</table>
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Trouble Spots

- API Implementation in JavaScript → use of Java Applet
- JavaScript API raises security issues when remote content is used
- Java Extension for server side XML validation
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Outlook

- SCORM 1.3 will offer extended possibilities for creating adaptive content through new sequencing specification
- Integration of further API Implementations (SOAP) still open
- Several didactical models are under development → Implementation is complex
- More European initiatives and efforts concerning standardization would be desirable