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EdReNe

**Expert workshop 1 on standards and interoperability:
program, list of participants and proceedings**

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Author(s)	<i>Tommy Byskov Lund and Michael Viskum</i>



eContentplus

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¹ OJ L 79, 24.3.2005, p. 1.

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Introduction

The workshop took place at Strand Palace Hotel, London, UK, 8 – 9 January 2008.

The agenda for all expert workshops is settled on the basis of input from network members. An initial list of issues to give priority was established at the first strategic seminar. The issues with highest priority for the first workshop in the series concerning *Standards and Interoperability* were:

- Metadata standards (application profiles, strategies for vocabularies, curriculum mapping)
- Providing best practice examples of the use of standards with proven benefits – and examples not to follow
- Facilitating exchange of metadata across repositories
- Facilitating exchange between repositories and Virtual Learning Environments (VLE)/Learning Management Systems (LMS)

Similarly, members have expressed the wish that all workshops have a focus on a high level of participation and group sessions, in order to involve all participants as much as possible and underpin the networking aspect of the project.

Although the EdReNe network hosts a number of technical experts, many participants to the workshop were expected to have different angles on the issue of interoperability (representing e.g. the educational content industry etc.). Some attention was thus given to exploring current state-of-the-art tools during the more explorative group sessions of the workshop. This was deemed relevant in order to focus on practical application of standards – development of standards is handled better in a number of other forums.

Conclusions

From the presentations and group sessions during this workshop it is evident that by now many European countries have established a national IEEE LOM application profile. The use is not always widespread, and defining vocabularies and mapping to curriculum is work in progress in most countries. The current version of LOM does not solve all needs and several examples of application profiles mapping different specifications are emerging.

Simplifying the process of metadata creation by automatic tools has high priority. The tools for (semi-) automatic creation can however still be improved. The content of a number of “simple” elements are already automatically generated in many instances – the biggest potential to be realized in the near future probably evolving around title, keywords and description elements.

The task of unlocking the content currently stored in VLE/LMS mandates better standard support by these systems – or alternatively that educators will move completely towards open systems instead. Sharing and remixing between different platforms is still not an easily achieved goal for the average teacher.

Members of the network would like to have a more general mapping of the landscape of standards (with a special focus on repositories; supplementing the work done by a number of other organizations) – both envisioned use and actual (good practice) use cases.

The evaluation session also identified a few new suggestions to upcoming workshops:

- Authentication / Identity management
- Statistics on repository use (workshops on engagement of users)

Agenda

Tuesday, January 8th 2008		
09.00	Welcome	Michael Viskum, UNI-C
09.30	Reporting from Expert workshop 3.1	Tommy Byskov Lund, UNI-C
10.00	A presentation of the work done in the IMS Learning Object Discovery and Exchange group	David Massart, EUN
10.45	Introduction to the Metadata creation group sessions	Michael Viskum, UNI-C
11.00	Coffee break	
11.30	Creating metadata - group session 1	EdReNe members
13.00	Lunch	
14.00	Creating metadata - group session 2	EdReNe members
16.00	Coffee break	
16.15	Metadata application profile: Lithuanian approach The origins of UK LOM Core A Dutch LOM application profile - and the road to vocabularies	Eugenius Kurilovas, ITC Charles Duncan, Intrallect Jan Kees Meindersmaa, Kennisnet
18.00	First day finishes	

Wednesday, January 9th 2008		
09.00	Administrative issues and questions	Leo Højsholt-Poulsen, UNI-C
09.15	Defining an interoperability standard for educational content for Interactive Whiteboards? Last 15 minutes: Discussion	Will Ellis, BECTA
10.00	Enhancing the LOM application profiles using the DOI Connecting Different German Metadata Communities (Towards a National LOM) New Associated member: Intrallect Charles Duncan will talk about the work done at Intrallect (including an example of integration between a content repository and LMS - www.diglib.com)	Giulia Marangoni, AIE Friedhelm Schumacher, FWU Charles Duncan; Intrallect
11.00	Coffee break	
11.30	Repositories and VLEs – group session 1	EdReNe members
13.00	Lunch	
14.00	The Merlí project: An open-standards metadata catalogue for online educational resources	Francesc Busquets from XTEC, Spain
14.30	Repositories and VLEs – group session 2	EdReNe members
15.30	Workshop evaluation - Input for next workshops	Michael Viskum / Tommy Byskov Lund, UNI-C
16.00	Workshop finishes	

Session summaries

Welcome and reporting from expert workshop 3.1

The workshop started with a brief introduction of how the agenda came about - mentioning both input from the strategic seminar in Naples and the input from the first expert workshop on engaging users. New participants were introduced to the Members Zone - especially the tools and functionalities that were to be used intensively during this workshop.

A presentation of the work done in the IMS Learning Object Discovery and Exchange group

David Massart presented the work initiated by the IMS LODS project group. Within this group the focus is to move from individual specifications to describing practice of combining these specifications into complete solutions solving important scenarios (use cases), thereby supporting the overall aim of facilitating the discovery and retrieval of learning content stored in repositories.

The expected benefits for different user groups include:

- *Educators*
 - Easy way to discover learning content that addresses students' needs
 - Maximization of re-use
 - Minimization of material re-invention costs
- *Students*
 - Access to the highest-quality learning resources available
 - Significant impact on the quality of learning experience and learning outcomes
- *Content providers*
 - Ability to advertise products by making them globally discoverable
- *System vendors*
 - Limited set of specifications to support to make systems compliant with major federations of learning resources
- *Federation builders*
 - Secure investment by developing infrastructures based on standard specifications

The discussion following the presentation supported the need for an initiative like this, and most participants focused on the scenarios of federated search and/or harvesting.

Relevant links:

- [Download presentation](#)
- [IMS Global Learning Consortium – Learning Object Discovery and Exchange project group](#)

Metadata application profile: Lithuanian approach

Eugenius Kurilovas, ITC – Lithuania, presented the experimental implementation of a Lithuanian LOM application profile based on a localization of the EUN LOM profile 2.0 and subsequent description of 1200 learning resources in a central national repository. This included the disaggregation of complete distance learning courses into smaller SCORM 2004 packages.

Relevant links:

- [Download presentation](#)
- [Lithuanian repository](#)

The origins of UK LOM Core - how and why it came about

Charles Duncan, Intrallect, gave an overview of the history behind the UK Learning Object Metadata application profile and the educational metadata initiatives that have followed since in the UK (a timeline ranging from April 2002 to November 2007). Moving from a situation where the successful implementation of a LOM application profile came from satisfying a need not by mandating to a new situation where the recognition of LOM insufficiencies in some areas means that the future is likely to bring application profiles based on multiple schemas (illustrated through the *Learning Materials Application Profile: Scoping study for application profile extending beyond IEEE LOM*).

The subsequent discussions revealed somewhat parallel situations in a number of other countries, although the general picture was that adoption of existing national LOM profiles where perhaps less widespread (with the Netherlands as an exception).

Relevant links:

- [Download presentation](#)
- [Learning Materials Application Profile Scoping Study](#)

A Dutch LOM application profile - and the road to vocabularies

Jan Kees Meindersma, Kennisnet, presented the Dutch history of developing and implementing a LOM application profile. Key lessons learned from the process included:

- invite all parties (schools, publishers, software vendors)
.... but not everybody has to participate
- involve management, teachers+ as technology specialists
.... but make sure who talks about what, when and with who
- short cycles in the beginning: development, test and act
.... but freeze a stable version for a longer period
- agree first on elements and then on vocabularies,
..... balance between mandatory and optional in time
- stimulate the development of (competing) vocabularies
..... but decide upfront which organization is the logical owner of the vocabulary and where it's derived from

One interesting feature about the Dutch situation was the establishment of an independent organisation (outside national standardization bodies) with members from all parts of the educational content chain which is specifically engaged in the development and implementation of educational standards (EduStandaards).

Relevant links:

- [Download presentation](#)
- [EduStandaards](#) (in Dutch)

Administrative issues and questions

A short session devoted to project administrative issues - describing current status and answering questions relating to financial and/or other project related matters.

The presentation is available to network members from the Members Zone.

Defining an interoperability standard for educational content for Interactive Whiteboards?

Will Ellis from Becta lead a discussion concerning interoperability issues for content produced for different types of interactive whiteboards. As boards have their own authoring tools content can often not easily be used by others. This poses problems to both teachers who can not easily share resources across formats and content providers that can only produce for a range of boards at additional cost.

The discussion was put on the agenda as several members now also see more widespread use of interactive whiteboards and a similar increase in the amount of content produced for them.

Relevant links:

- [Download presentation](#)
- [Becta press release](#) on development of a common interactive whiteboard format

Enhancing the LOM application profiles using the DOI

Giulia Marangoni, AIE, presented the potential benefits of employing Digital Object Identifiers in the area of learning resources. More specifically a multiple resolution service was presented, allowing DOI registrants (content producers, repositories):

- to associate multiple information resources and services (i.e. URIs) to each object identified with a DOI
- to aggregate information/services according to specific thematic areas
- to make information/services available to end users with a single mouse click

The subsequent discussion revealed different opinions on the possible strategies chosen for persistent digital identifiers – with the main conclusion that none of the currently employed strategies provided an ideal solution (for example due to economical or technical reasons).

Relevant links:

- [Download presentation](#)
- Multiple resolution service: medra.org

Connecting Different German Metadata Communities (Towards a National LOM)

Friedhelm Schumacher, FWU, presented the complex German situation where no national LOM application profile currently exists. There is however a rich tradition for educational metadata and a number of activities and initial results relating to the mapping of the different existing metadata schemes were presented.

- [Download presentation](#)

New Associated member: Intrallect

Charles Duncan from Intrallect presented the company and gave input on how they expect to contribute to and benefit from the EdReNe network. Apart from the general presentation a Norwegian case study (www.diglib.com) showing the tight integration of an educational repository (intraLibrary) with a learning management system (it's learning) allowing for easy addition of commercially available digital content to teachers' building online classes was presented as an introduction to the group hands-on sessions focusing on interoperability between educational repositories and learning management systems.

Relevant links:

- [Intrallect presentation](#)
- [DigLib presentation](#)

The Merlí project: An open-standards metadata catalogue for online educational resources

Francesc Busquets from XTEC, Spain (Catalonia), presented the Merlí project which aims to:

- define a basic LOM Application Profile for the Catalan educational system, including a structured vocabulary mapping the official curriculum
- start the process of cataloguing the Catalan on-line learning objects with LOM metadata
- connect the LOM repository with equivalent Spanish and European networks
- make the retrieval of learning objects easier
- build an on-line resource organizer allowing teachers to annotate, organize and use digital content easily
- enrich the LOM metadata with comments, ratings and keywords (tags) written by teachers.

The first phase of development is now finished with more than 3.000 digital objects already catalogued and testing beginning at schools in February 2008. The next step will be to invite Catalan publishers and teachers to add records.

The connection to federated networks (LRE and Agrega) is still in development.

- [Download presentation](#)

Metadata group sessions

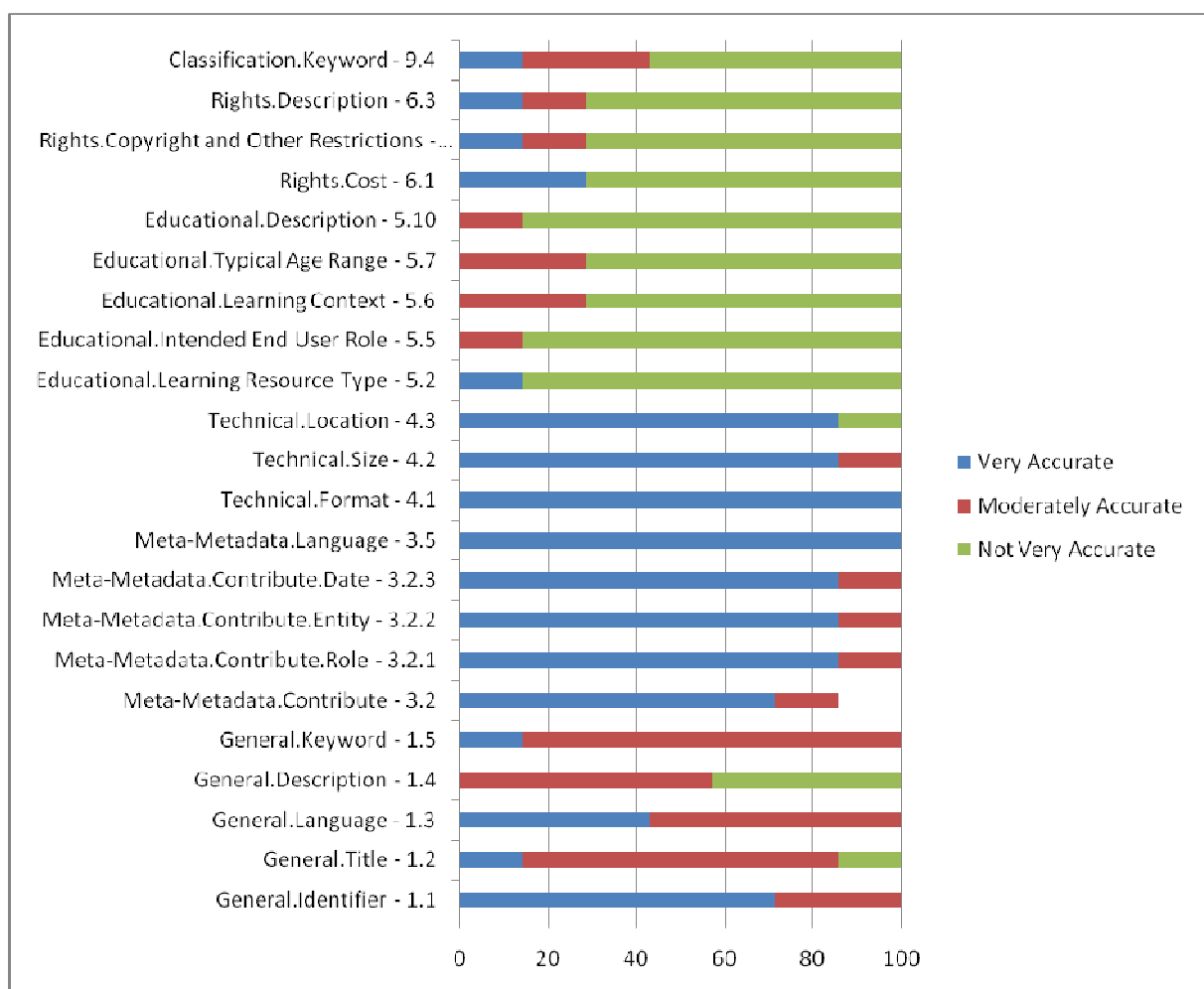
The intention of this session was to initiate group discussions on *automatic versus manual* metadata creation for digital learning resources.

The participants made the important points of their group discussions available to all members by filling in a survey in the EdReNe Members Zone. The results of the survey was subsequently discussed in plenum, and made available to all members for further comments.

The full survey results are available from the Members Zone. It should be noted that many of the answers naturally only consists of draft comments and examples which will need further editing, but will still serve as valuable input for the following workshop and the metadata section in the upcoming *Thematic Synthesis Report on Interoperability and Standards (D4.3)*.

Some of the already evident conclusions from the survey are:

- Metadata creation by professional indexers is too expensive – quality of metadata produced by authors often not sufficient: Better solutions needed (tagging; (semi-) automatic metadata creation; integration into authoring tools; context aware metadata creation...).
- Most repositories currently do some sort of validation/moderation of teacher produced metadata
- Many repositories have implemented automatic generation of a number of metadata elements (most notably: file type/size; user details; dates). Current developments/experiments are targeting elements such as: title, keywords, description
- Default element values are in some repositories implemented by use of profiles/templates.
- OAI-PMH is *the* protocol for metadata harvesting (extent needs further analysis though)
- The perception among workshop participants is that quite many of the mandatory/recommended elements included in the “typical LOM application profile” can be generated automatically with reasonable confidence. The figure indicates the percentages where automatic metadata would be considered *very*, *moderately* or *not very* accurate:



- This should be seen in connection with the following answers:
 - Top elements deemed suitable for fully automatic metadata creation:
 - Meta-Metadata.Contribute.Role - 3.2.1
 - Meta-Metadata.Contribute.Entity - 3.2.2
 - Meta-Metadata.Contribute.Date - 3.2.3
 - Meta-Metadata.Language - 3.5
 - Technical.Format - 4.1
 - Technical.Size - 4.2
 - Technical.Location - 4.3
 - General.Identifier - 1.1
 - General.Language - 1.3
 - Top elements deemed suitable for semi-automatic metadata creation:
 - General.Description - 1.4
 - Classification.Keyword - 9.4
 - General.Title - 1.2
 - General.Keyword - 1.5
 - Educational.Intended End User Role - 5.5
 - Educational.Description - 5.10
 - Top elements deemed suitable for manual metadata creation:
 - Educational.Learning Resource Type - 5.2
 - Educational.Learning Context - 5.6
 - Educational.Typical Age Range - 5.7
 - Educational.Intended End User Role - 5.5
 - Educational.Description - 5.10
 - Rights.Cost - 6.1
 - Rights.Copyright and Other Restrictions - 6.2
- Almost all workshop participants see the most suitable workflow to be initial metadata representation automatically generated, then edited by a person

The subsequent group session allowed workshop participants to experiment with two tools for automatic metadata creation and exchange experiences from their own repositories. Groups were asked to compare the results achieved with the automatic tools to manually created metadata.

The following tools for automatic metadata generation were used:

SAMgI (Simple AMG Interface)

This is the second generation tool from the KU Leuven group, Belgium lead by Professor Erik Duval.

URL: www.cs.kuleuven.be/~hmdb/joomla/index.php

Dublin Core metadata editor

From UKOLN, University of Bath.

The tool takes a web page and automatically generates Dublin Core metadata, either as HTML tags or as RDF/XML.

URL: <http://www.ukoln.ac.uk/metadata/dcdot/>

The comments deposited in the Members Zone suggest that the preferred workflow with subsequent manual editing is indeed still necessary – and that current tools for automatic metadata creation still are heavily dependent on structured output from authoring tools. The

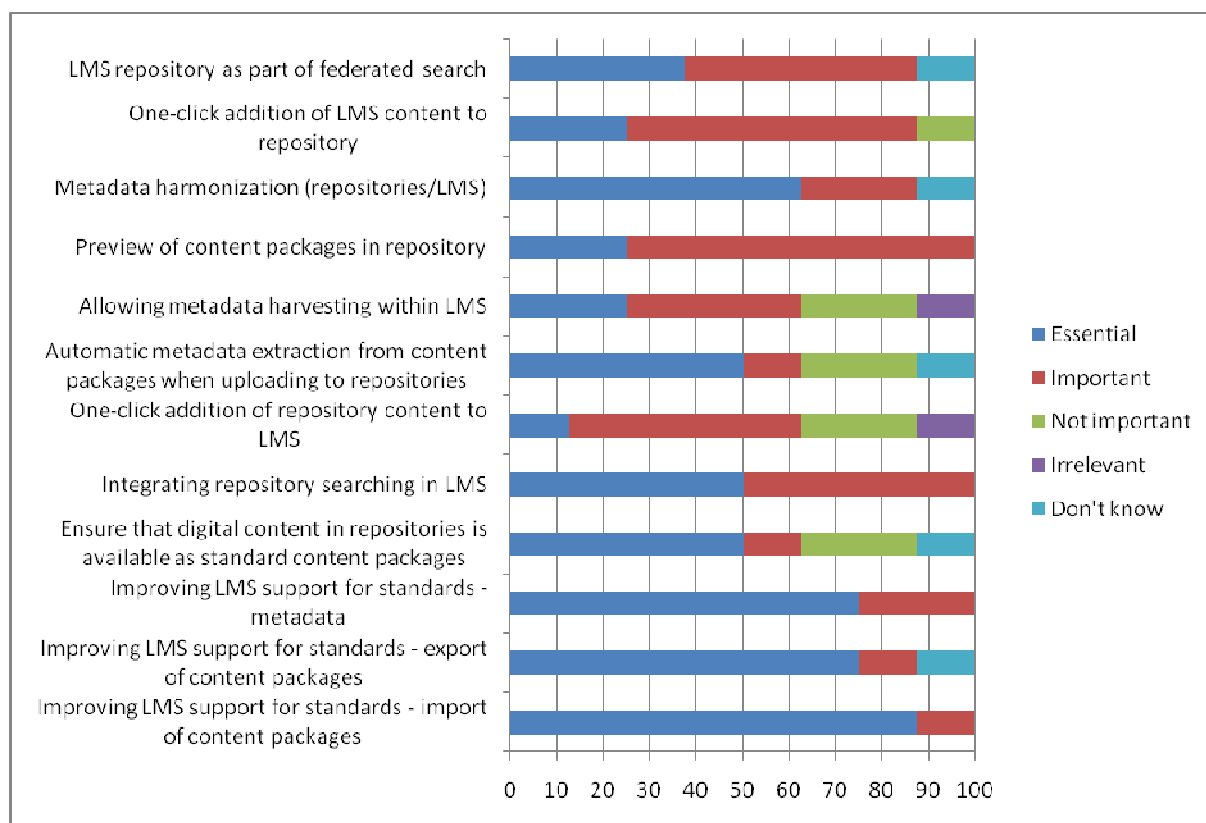
comments will be further analysed for the next standards workshop and provide input for a more extensive mapping of current metadata creation practices.

Repository and VLE group sessions

The session addressed the issue about facilitating exchange between repositories and Virtual Learning Environments (VLE)/Learning Management Systems (LMS).

The groups used a survey as the basis for their discussion about how repositories and virtual learning environments / learning management systems link together, how they don't, why they should or should not. The survey also took the participants through some of the issues concerning standardized digital content packages.

The following figure shows a rating (in percentages) of the importance of different interoperability scenarios according to the workshop participants:



Here are the perceived top barriers for producing standardized digital content packages according to workshop participants:

- Content publishers:
 - Rights management issues
 - Bad return of investment on digital content
 - Teachers:
 - Lack of support for standards in traditional authoring tools (Office etc.)
 - Content sharing is easier using other tools (traditional web sites, wikis, blogs?)
- and the perceived top barriers for teachers to **use** standardized digital content packages according to workshop participants:

- Content sharing is easier using other tools (traditional web sites, wikis, blogs?)
- It is easier to link to a web page than import a content package - and often sufficient for the use

In this following session the groups were asked to :

1. add content from a repository to a Learning Management System (the LMS used were: Blackboard, Moodle and It's Learning)
2. export content from a learning management system in the form of a content package
3. reimport the content package to another LMS

The groups reported their experiences performing the tasks by filling out a template questionnaire (filled in questionnaires are available within the Members Zone).

The session suffered somewhat from limited time and bandwidth but the general impression was that this was not an easy task using the currently available tools – and in many cases not something an average teacher could be expected to accomplish within the available time. The exercise did support the scenarios indicated as the most important to focus on when considering interoperability between LMS and repositories to be highly relevant.

Workshop evaluation

The workshop ended with a short informal evaluation session. Discussions centred on the form of the workshop. Participants expressed that interactivity within smaller groups was still an important component. Some of the exercises however suffered from a lack of bandwidth (and time) in order to be completed in a way that could give qualified output/answers. In addition to presentations, members would like to have a more general mapping of the landscape of standards – both envisioned use and actual (good practice) use cases. Suggestions to upcoming workshops were:

- Authentication / Identity management
- Statistics on repository use (workshops on engagement of users)

Participants

20 of 23 founding members were represented. In addition two associated members participated – giving a total of 43 participants.

Name	Organisation	Country
Maria Loi	AIE	Italy
Cristina Mussinelli	AIE	Italy
Giulia Marangoni	AIE	Italy
Will Ellis	Becta	U.K.
Andrew Kitchen	Becta	U.K.
Jens Viggo Moesmand	BFU	Denmark
Christine Champion-Bibard	CNDP	France
Rosa Maria Gómez de Regil	CNDP	France
Orland Cardona Perez	EAPC	Spain
Astrid Leeb	Education Highway	Austria
Diana Neves	Eduweb	Portugal
Sara Petiz	Eduweb	Portugal
Dr. Günter Oberleitner	ENIS	Austria
Bernhard Racz	ENIS	Austria
Jim Ayre	EUN	European Schoolnet
David Massart	EUN	European Schoolnet
Friedhelm Schumacher	FWU	Germany
David Fuschi	GIUNTI Labs	Italy
Eugenijus Kurilovas	ICT	Lithuania
Svetlana Kubilinskiene	ICT	Lithuania
Brian Hudson	IML	Sweden
Alison Hudson	IML	Sweden
Charles Duncan	Intrallect Ltd	U.K.
Jeroen Hamers	Kennisnet	Netherlands
Jan Kees Meindersma	Kennisnet	Netherlands
Henk Nijstad	Kennisnet	Netherlands
Alma Taawo	MSU	Sweden
Christina Szekely	MSU	Sweden
Peter Karlberg	MSU	Sweden
Mike O'Byrne	NCTE	Ireland
Paul Sire	sDae	Spain
Martin Sillaots	TLF	Estonia
Ave Lauringson	TLF	Estonia
Tommy Byskov Lund	UNI-C	Denmark
Michael Viskum	UNI-C	Denmark
Leo Højsholt-Poulsen	UNI-C	Denmark
Vladimir Batagelj	UNI-LJ-FMF	Slovenia
Iztok Kavkler	UNI-LJ-FMF	Slovenia
Matija Lokar	UNI-LJ-FMF	Slovenia
Trond Hanssen	Utdanning.no	Norway
Stian Berger	Utdanning.no	Norway
Francesc Busquets	XTEC (invited external expert)	Spain