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UNFOLD Deliverable D5. Establishment of CoPs report.

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<td>Abstract</td>
<td>This report describes the work carried out by the UNFOLD project in providing support for three Communities of Practice (CoPs) related to IMS Learning Design. The structure of the CoPs is outlined, and the user needs identified. The two implementations developed, using the Plone and PHP Nuke systems, are described.</td>
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Executive Summary

This document provides a description of the infrastructure put into place to support the UNFOLD Communities of Practice (CoP). The work which is reported in this deliverable corresponds to Workpackage 3: Community of practice formation, which is intended to result in an effective infrastructure for the support of the UNFOLD CoPs. The report focuses on the telematic infrastructure put in place to support the activities of the CoPs, and on the protocols for running and maintaining them.

This document has been structured to provide a concise description of the work carried out, while greater detail is provided in the appendices, which take up more than half of the document. It should be read in conjunction with two other deliverables. Firstly, the deliverable D2 Awareness raising resources describes the resources developed to raise awareness of both the IMS LD Specification and the activities of the project. Secondly D4 Awareness raising report describes the actions taken to raise awareness of the UNFOLD project, the results which were obtained, and the initial membership of the CoPs.

A short introduction is provided to the UNFOLD CoPs, and their structure, the UNFOLD user group is defined, and the nature of the users participation is outlined. These elements led to the definition of a Web site specification.

The Web site specification was used as the basis for the development of the UNFOLD project Web at www.unfold-project.net. This Web was developed using the Free Open Source Plone server software, and it provides support for two of the Communities of Practice: Teachers and Learning Providers, and Systems Developers. A second system was developed to support the Learning Designers CoP. This system, developed using PHP Nuke, also corresponds to the UNFOLD Web Specification, but goes beyond the specification in defining an additional layer of focused learning resources. This dual development provides added value for the project, enabling us to leverage the full range of resources available in the project team.

Project policy for managing user information is described. This is largely carried out by using the built in database in the Plone server, in combination with mailing lists and a small database.

Synchronous interaction is a secondary but important part of CoP infrastructure, and a Chat application has been created using, building on pre-existing components, which provides support for the moderated panel sessions planned by the project.

The CoP support described in this deliverable was launched on schedule in July 2004. The August break was inevitably a low period as regards project activity, and so it was appropriate to use the first two months of activity as an opportunity to examine the effectiveness of the solutions developed. They have so far proved to be stable, and have had no difficulty in handling the more than 150 members who have joined.

The infrastructure described in this deliverable, is not, however definitive. Indeed this would not be desirable in a project whose function is to respond to the emerging needs of the user group. The infrastructure will be reviewed at the project and CoP meetings in September 2004. In particular the degree to which the two systems have been successfully integrated will be examined, together with their internal consistency.
Introduction

The aim of the UNFOLD Project is to promote the adoption of open eLearning standards which support multiple learners and flexible pedagogies. Its focus is on IMS Learning Design, and its principal action is facilitation and support for Communities of Practice (CoPs) of those involved in implementing and using the specification. There are three UNFOLD CoPs:

- Systems Developers
- Learning Designers
- Teachers and Learning Providers

as shown in the following diagram.

The work which is reported in this deliverable corresponds to Workpackage 3: Community of practice formation, which is intended to result in an effective infrastructure for the support of the UNFOLD CoPs. The report focuses on the telematic infrastructure put in place to support the activities of the CoPs, and on the protocols for running and maintaining them. It should be read in conjunction with two other deliverables. Firstly, the deliverable D2 Awareness raising resources describes the resources developed to raise awareness of both the IMS LD Specification and the activities of the project. Secondly D4 Awareness raising report describes the actions taken to
raise awareness of the UNFOLD project, the results which were obtained, and the initial membership of the CoPs. This deliverable should be read having the other ones in mind.

Workpackage 3 is structured by three Milestones:
M3.1 Establishment of CoP telematic infrastructure
M3.2 Document of participation, privacy and maintenance policy for the CoPs
M3.3 Implementation of user group database.
Included in the contents of this deliverable are chapters with full documentation of each of these Milestones.

**UNFOLD Users**

The UNFOLD user group

The UNFOLD user group consists of all those involved in implementing or using the IMS Learning Design specification, or considering doing so. The group is articulated in three dimensions:

1. **Area of activity**

The UNFOLD user group is divided into three sections
   - Systems Developers. This group consists of all those developing authoring tools, players applications, administration systems and integration with other specifications and systems.
   - Learning designers. This group uses IMS Learning Design to create Units of Learning. These define the way in which roles, activities and resources are coordinated when IMS Learning Design is used with learners.
   - Teachers and Learning Providers. These include both the teachers who use Units of Learning with learners, and those responsible for the institutional framework in which they work.

It had originally been planned to have four groups, the additional group being Specifications Developers. It was decided, however that this was not practicable at this stage of the project, as very few people are involved in this activity. Most of these, moreover, are also involved in implementation, so it was a logical move to merge the groups. The evolution of the number of people involved in the CoPs might require a re-evaluation of the situation later. UNFOLD has excellent links with both IMS and CEN/ISSS and the outcomes of the CoP activities will be reported directly to these bodies by the project team.

2. **Geographical distribution**

Potential users may be located anywhere in the world. At present the majority of are from Europe, in particular the UK and the Netherlands, because of the history of the specification’s development. It is an aspiration of UNFOLD to increase interest in IMS Learning Design in those areas of the community where it is at present low.

There are also significant numbers of potential users in Canada, Australia and the United States, and a smaller number scattered around the world. To some extent this distribution mirrors the distribution of the existing Valkenburg Group of IMS Learning Design systems developers, although there are also other people involved.

3. **Sectors**

The UNFOLD is also divided into three sectors
What participation in an UNFOLD CoP involves

In order to plan the establishment of the CoPs it was necessary to define what participation would involve. This is set out in Project Milestone M3.2 Participation, Privacy and Maintenance Policy for the CoPs, which provides the framework for explaining the nature of the CoPs to potential participants. The Milestone addresses the character of each CoP, privacy policy, and provides facilitation guidelines for both face to face events and on-line interactions. Below is a summary of some aspects of the milestone which are relevant to user roles.

The UNFOLD Communities of Practice (CoPs) have a practical, problem solving focus, both within and across Communities. They work in a collaborative and open way in order to:

- identify and address the problems and barriers to successful implementation, effective user and adoption of the Learning Design specification.
- agree consistent interpretations and usage of specifications to establish working interoperability
- identify shortcomings and unmet needs in the specification and propose extensions.
- clarify how LD should work with other specifications, (such as QTI, SCORM, LIP, Enterprise etc.) and if appropriate define a reference model to integrate these.
- exchange and disseminate examples of good practices
- provide a focus for the study and resolution of issues raised by the specification, implementation and use of eLearning educational standards, in the context of enhancing learning and better pedagogy.

In addition, however, each CoP has its own characteristics, and the issues to be addressed in CoP activities are different for each. For each CoP a focus statement was prepared, available in Appendix 1. These outline the significance of the specification, and describe the focus of the CoP. They also define the way in which the CoP can support members of the CoP in their activities, as follows:

The Systems Developers CoP supports systems developers in:
- implementing LD successfully in interoperable tools and systems that meet the needs of practitioners as represented by the other CoPs.
- obtaining guidance on the intended implementations of the specifications.
- examining open source reference implementations
- testing the interoperability of your products
- providing feedback to specification developers about problems and unmet needs.

The Learning Designers CoP supports Learning Designers in:
- effectively using LD authoring tools to create innovative pedagogically diverse Units of Learning.
- obtaining guidance on expressing different pedagogical approaches in LD.
- exploring and learn how to use different authoring tools.
- sharing and develop good practices in authoring LD.
- exploring and develop the use of LD aware repositories
- evaluating the effectiveness of authoring tools and repositories
- providing requirements and feedback to tool and system developers

The Teachers and Learning Providers CoP supports its members in:
- effectively using the tools, systems and learning designs in learning activities.
- obtaining guidance on setting up learning designs on LD Players
- obtaining guidance on and develop good practices on integrating systems
- developing good practices for effective teaching when participating in an LD Unit of Learning.
- evaluating the effectiveness of specific Units of Learning.
- evaluating the effectiveness of LD players and repositories.
- providing requirements and feedback to learning designers and system and tool developers.

User needs

Given the above specification of the purpose of the CoPs, together with UNFOLDs stated aim of resolving these issues identified by promoting communication between the actors involved, a concise statement of user needs was prepared, for three categories of users:

Members of the public

Members of the public who are interested in IMS Learning Design former group need to have access to information about the project, and about IMS Learning Design, and this is described in detail in D2 Awareness Raising Resources. In addition to these resources they also need information about the activities of the Communities of Practice, and the ability to provide feedback to the project about its activities.

The members of each CoP

The members of each CoP need to be able to:
- view and edit their preferences for the infrastructure
- view and edit their home page, providing information about themselves
- find information about Learning Design appropriate to their professional profile
- submit new resources and links to be shared with the other members of the CoP
- find information about the nature and norms of the group
- find information about the activities of the group
- respond to messages from other members of the CoP
- initiate new topics for discussion
- communicate with the facilitator for the group
- participate in discussions with members of other CoPs on topics which bridge both CoPs interests
Facilitators

Each CoP has a facilitator, who is a project worker with overall responsible for all aspects of CoP activity. This person needs to be able to perform all the actions available to members, and in addition
- delete inappropriate discussion topics or postings to a forum
- approve and publish resources submitted by members, so that they are visible to all members.
- edit the CoP pages, describing CoP activities and norms
- receive a list of all members and their eMail addresses
- send a mail message to all members
- receive summarised log file information on the use of the CoP infrastructure

Establishment of CoP telematic infrastructure (M3.1)

Web site specification

On the basis of the user roles and the activities to be carried out by the CoPs a specification was produced which guided the creation of the telematic infrastructure for the CoPs. This was developed principally by Bolton Institute, who are coordinators of CETIS, the Centre for Technology Interoperability Standards, funded by JISC in the UK.. CETIS provides information about eLearning standards in general, and runs special interest groups for educational professionals in the UK, and consequently the CETIS team was seen to be in the best position to develop the specification. Following consultation with CETIS staff from around the UK the document provided in Appendix 2 to this deliverable was developed. This was accepted by the project partners as the basis for the first iteration of infrastructure development.

Platforms

Each of the UNFOLD CoPs is designed to be instrumental in the further development and implementation of the IMS Learning Design specification through the exchange of information and ideas from professionals in the respective fields of System Development, Learning Provision and Learning Design. To this end, a virtual space is provided for each CoP where these activities can be carried out. The criteria used to decide on the telematic infrastructure of the various communities of practice included: extensibility, ease of management and the prospect of a large development community. A number of platforms (Groove, Colloquia and FLE3) were evaluated in this regard but were subsequently rejected. In the first instance, Groove proved too expensive and, as a single platform, was considered to be unsuited to the project needs. Colloquia was also rejected due to it’s lack of support and incompatibility at the level of customisation. Moreover, Colloquia does not provide the repository facilities required to meet the demands of a knowledge based community. Finally, as a virtual learning environment, FLE3 was considered to be not matched to the nature of the project.

It was decided to use Plone 2.01, an industrial strength content management system (CMS), as the principal platform for UNFOLD. This decision was made on a number of counts not least of which is the open-source nature of the product which is licensed under the GNU General Public License. As an open-source product, Plone comes free of charge and the program source code can be freely accessed and modified by programmers. One of the valuable features of PLONE is the combination of an easy to use authoring interface (which can be made available to facilitators and
users) with a powerful web development framework and the Python scripting language (which provides the necessary tools for programmers. Plone also has extensive customisation options available to the user registration and management functions. The need to be able to customize the project site weighed heavily in the decision to employ Plone, and the bulk of the work to create the UNFOLD site was carried out over a six week period, resulting in a portal tailored to the project’s needs.

As a server application, Plone is considered to be technology neutral making it easy to deploy across a number of operating systems including Windows, Mac OS and Linux and it is based on the ZOPE Content Management System already in use on other related projects. A further feature contributing to the decision to employ Plone 2.0 is its extensibility. For example CMFBoard can be added as an external product to provide an easily integrated discussion forum, (as has been done in the UNFOLD implementation, see Tools). In terms of usability and accessibility, pages produced by Plone 2.0 conform to W3C’s accessibility standards whilst XHTML and CSS web standards are also adhered to.

In the light of the above, a virtual space has been created using Plone 2, which covers the principal infrastructure needs of the project. It is used by two of the CoPs, namely System Developers and Teaching and Learning Providers. This is available at www.unfold-project.net, where the UNFOLD Awareness Raising Resources can also be accessed.

The third CoP, Learning Designers, has a separate space hosted by Learning Networks, available at http://ln4ld.learningnetworks.org/, and called Learning Networks for Learning Design. The use of this additional infrastructure enables the project to leverage existing OUNL resources for the support of Learning Design, providing information, tutorials, worked examples of learning designs, and a growing repository of learning design units. Telematic support for the three CoPs has not converged for two reasons. Firstly, while there is a degree of additional effort involved in maintaining and integrating two systems, there are also advantages. The UNFOLD project sets out to support open standards and collaboration, and in using two systems in conjunction we are modelling interoperability. The use of two systems also enables us to compare the effectiveness of the two different implementations, and to converge on the most effective solutions. Secondly, there were operational difficulties in converging on a single system. As the project commenced OUNL were developing Learning Networks for Learning Design as an in-house system. As OUNL did not start participating fully in the project until month six, when the telematic infrastructure was due to be completed, they were not in a position either to guarantee the readiness of the system, or to provide support for additional CoPs. The other partners did not have expertise in the PHP authoring environment to take on this task, and so it was necessary to develop the PLONE system, which provides support for both the Awareness Raising Web, and for as many Communities of Practice as may be necessary.

Thus the Learning Networks for Learning Design site may be considered as added value for the project, as it enables additional resources to be made available, and the evaluation and comparison of two different infrastructures. At the same time we are aware that there are potential challenges in achieving effective integration of the systems. For example, if UNFOLD participants want to belong to more than one CoP this may involve them in learning two different systems, with different log-ins. However, special attention has been paid to keep user interface and structure as consistent as possible to minimise the user impact. Anyway, it is essential to keep the CoP infrastructure under review, to monitor and evaluate usage and to discuss it with participants. Any problems or opportunities to improve the systems will be addressed as they arise. The following section provides a detailed overview of the two CoP servers.

www.unfold-project.net
This is the principal Web for the Project, and it houses both the Awareness Raising site and CoP infrastructure.

**Navigation**

The window of the UNFOLD site is divided into a number of frames, as shown in the following cropped screen shot.

The principal features are as follows:

- **Log in:** A frame at the bottom left. Once the user has logged in this frame disappears. A link is also provided for new members to join, and a link for users to request forgotten passwords. Feedback on Log-in status is provided in the yellow bar to the top of the page, together with an alternative access to the log-in and join functions.

- **Navigation:** Immediately above the log-in frame is the navigation tree. This is the principal mechanism for navigating the site, and as the user navigates nested folders are displayed. There is also a clickable breadcrumb trail below the yellow bar, above the navigation tree. This provides additional feedback to the user as to their location in the site, and an easy way to backtrack. When the user moves into the site from the home page (shown in the screen shot below), a back button is also provided at the top of the content frame.

- **Content frame:** the main frame of the page is the central content frame. This displays either the contents of a folder (i.e. a list of links) or the content of a page. The content can be any HTML compatible file, and may contain links which lead to other parts of the site, or external sites. Within UNFOLD the policy is to open links within the site in the same browser window, and to open external sites in a new browser window.

- **Upcoming events:** To the right of the page is a dynamically created Upcoming Events frame. This gathers together objects of type “event” from all parts of the site, and displays them until they have passed. They are linked to a description of the event.

- **Calendar:** Below the Upcoming Events is a calendar. This also automatically gathers information from objects of type event, and displays them as hilited dates in the calendar, with roll-over text describing the event. The dates corresponding to an event are clickable and lead to a description of the event.

- **News tab:** Above the yellow bar at the top of the page is a tab marked news. This gathers together objects of type “news” from all parts of the site, and displays them in a dynamically generated page.

- **Search:** To the top right of the page is a search box, which provides a simple search mechanism returning results from the entire contents of the site. The results also provide access to a more sophisticated research interface, with Boolean queries and the ability to specify keywords and types of content in requests.
Users, Roles and States

Unregistered users are able to access read-only content providing it is made available to them by the portal managers. This includes both the public Awareness Raising Resources, and limited access to the top level of the CoP sites, providing them with information about CoP activities and registration.

Registered members of CoPs have the facilities to create content within their own CoP area. They are also provided with the means to communicate with other members, a feature which is integral to the ethos of any community of practice. (See Tools) Administrators are able to assign access privileges to members by way of validating content and controlling who sees what and when. This is made possible through the Plone workflow options which allow for role attribution and “state” setting.

Authoring by facilitators and users

Given the nature of the UNFOLD project, the portal was designed with a strong emphasis on user ownership. The ability for users to quickly create, edit and publish content is thought to encourage participation and motivation whilst reducing time spent and resources used in the production of content. Plone 2 provides an array of tools to support this level of production.

For the purposes of a limited period project like UNFOLD, it was considered that users should be able to learn to use the tools available with a minimum of effort. With the integration of Web-based Distributed Authoring and Versioning (WebDAV) capability, Plone 2 affords facilitators

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and registered UNFOLD users the opportunity to create their own web content quickly and easily. The materials created can be saved without being published, enabling users to work on their pages as they wish. When they are satisfied the pages can be published, or submitted for approval, depending on the privileges of the author on the system. Users can add a range of content including simple text documents, images and files. The ease with which this kind of content can be added enables members to share resources easily whilst facilitators are able to add fuel to the knowledge building process by creating a repository of resources for each of the UNFOLD CoPs.

Access to a WYSIWYG editor, EPOZ, (pictured above) further facilitates the process of content creation by precluding the need for users to possess any knowledge of HTML to create web-based documents. This is a particularly useful feature given the composition of CoP members, some of whom may not possess the technical knowledge required to produce a web page using raw html coding.

Fora

Plone is designed for extensibility, enabling developers to create components which can easily be integrated with the core Plone project. UNFOLD is using a forum facility, CMFBoard, which enables members to post messages or announcements on any given topic with the option of flat, nested or threaded discussion capability. Push of messages to members external mail accounts is also possible. Details of CMFBoard are available at [http://www.cmfboard.org/](http://www.cmfboard.org/). The fora provide a focal point for discussion, question raising and the exchange of ideas and suggestions all of which are indispensable to the aims of the project and the development of the UNFOLD communities. This is complemented by a moderated chat facility which serves as a platform for experts and guests to debate issues and to give presentations to a live audience, described below.
Resources

Resources can be easily sorted and attributed to their intended target audience through the application of keywords. These are used in stored searches, which can be used to create dynamically updated pages of resources. The UNFOLD site currently includes a range of public resources about Learning Design many of which are also valuable for the members of the Communities of Practice. System Developer’s and Teaching and Learning Provider CoPs in the form of text and image based documents and files created by experts in the field of Learning Design. Registered members are also free to add appropriate resources to the collections in their own CoP, which can include files uploaded to the site, links to resources elsewhere on the web, or documents created within Plone itself.

The Learning Networks platform

As described above, the Learning Designers CoP is hosted by the Open University of the Netherlands on a separate network: Learning Networks. The particular implementation used to suppor the Learning Designers CoP is Learning Networks for Learning Design (LN4LD). This has been set up as part of the Learning Networks programme being carried out at the Educational Technology Expertise Centre of The Open University of The Netherlands. The system largely corresponds to the UNFOLD Web Site Specification in Appendix 2, but in certain respects goes beyond it by defining two layers, the Learning Network (LN) which handles the communicative requirements of the CoP, and Activity Nodes (AN). ANs can be anything that is available to support learning, such as a course, a workshop, a conference, a lesson, an internet learning resource, etc. All participants can create new ANs, can adapt existing ANs or can delete ANs, subject to the constraints of the policies which are operation for the learning network. The system has been seeded with some activity nodes created using Moodle. During the lifetime of the UNFOLD project new activity nodes will be created using Moodle, and perhaps also other
technologies, to address IMS LD topics as they arise. The two layer LN and AN approach will be reviewed by the project team with a view to being extended to the other two CoPs.

User functionality

The basic functionality of the Learning Designers CoP is similar to that of the two CoPs supported by the Plone site. Like them, registered and unregistered users are distinguished, with registered users having access to the UNFOLD Learning Designers Community of Practice (CoP) and able to place new postings in the LN4LD forums and reply to existing ones as seen in the following screenshot.

Furthermore, registered users can cooperate on solving problems and answering questions concerning IMD Learning Design. Activity Nodes are dedicated to IMS LD topics (for example “IMS LD and meta-data” or “IMS LD and SCORM”), and groups of interested parties investigate issues in the area and develop learning activities and materials.

It is anticipated that shared topics will emerge through multiple postings in the dedicated forum. When interest in a topic has crystallised, an Activity Node will be created (by those in the appropriate role) and a link to the AN will be posted in the forum to direct ongoing collaboration towards the new AN. At the launch of LN4LD, the creation of ANs is being handled by a few members of OUNL staff. However, access to this role will be extended as participation in the learning network grows.

The level of functionality available to unregistered users is limited to read-only access to content and forums in which topics involving the spec are discussed. News items may also be browsed and an FAQ list is available. Furthermore, unregistered users are able to view site statistics and various “Top 10” lists (although access to the items in the lists will require registration).

Extensive details of the Learning Networks are provided in Appendix 3 “Participating in LN4LD”

Synchronous interaction

The infrastructure described above is all related to asynchronous communication. It is anticipated that this will cover the bulk of the projects communication needs, in particular as the members of the community served are not restricted to Europe and work in a range of time zones. It was also felt, however, that an element of synchronous communication would be valuable, partly because this adds to a sense that participants are present together on the server, and partly to be able to run
live on-line events. In these events it is envisaged that invited experts will share be available on-line at a specified time to interact with members. These events will attract users to UNFOLD, and provide the basis for further discussions once the event has finished.

Some potential commercial solutions were examined, in particular HorizonLive (http://www.horizonwimba.com/horizon/) which has an excellent set of features for holding live educational events over the internet. We were, however, quoted a minimum price for their services, of US$2,000 for 50 participants for one hour, which is clearly way beyond the available UNFOLD budget. We therefore examined the free and/or low tech options. The minimum requirement for holding an on-line event is:

a) that the speaker can post a discussion document or a presentation, perhaps with a sound recording of the speaker, which can be accessed by participants.

b) that there is a suitable infrastructure available for synchronous on-line interaction during the event. Text chat is sufficient for this, and indeed has advantages, because the same medium which is used in the event is also the source for the documentation of the event.

The Plone site covers the requirement for a distributing the pre-event documents, and we explored the options for using existing free chat servers as basis for interaction with the speaker. They have two major disadvantages, however:

a) the speaker can be drowned in requests from participants, making it difficult to maintain a coherent discussion.

b) the chat generates multiple threads, with each participant able to respond to the issues which they personally think are important at the time.

To resolve this issue we looked for a chat application which could model a panel situation. In this scenario the panel member(s) can both listen to the discussion and speak, but the audience can only listen, unless they are invited to participate by a moderator. No suitable application was found, and so it was decided to put a small proportion of development effort into creating one, using existing chat servers as a basis. An initial proof of concept was carried out with a Pearl script, which was then implemented as a simple Java application. The application has three roles:

- Panel member (can post and read contributions of other panel members and moderator)
- Audience member (can read contributions of panel members and moderator, and send questions for the panel to the moderator)
- Moderator (can post, read contributions of panel members, and receive questions from audience)

A first trial with these roles proved that this was an effective solution for managing a chat with about 40 participants, and the results are available at http://www.unfold-project.net:8085/UNFOLD/about_folder/events/billjuly04/ It is intended to establish an on-going programme of such on-line events.

Maintaining contacts

A key aspect of supporting the UNFOLD CoPs is effective management of user information and project contacts, and aspect of work is described in Milestone M3.3, available in Appendix ?? to this deliverable. It had originally been intended to establish a database to manage both project contacts and user information, but this approach was rejected, for two reasons:

a) the Plone server system has a powerful built in database for managing user information

b) most project contents are already members of lists administered by project members, or in which they participate. It is not ethical to pass on these contacts to the UNFOLD project, even if they are involved in projects which are closely linked to the activities of UNFOLD.

Consequently management of users of UNFOLD is handled by the Plone server. A self registration form has been developed, in which users can provide basic information about themselves and assign themselves to a CoP, or simply request eMail updates about the project. Two tools have been developed for facilitators and administrators, extending the built in capabilities of PLONE.
a) a list of the names and email addresses of all members can be requested, classified according to the CoPs which they have chosen.
b) coordinators of the CoPs can send mail to all the members of specified CoPs, or to the entire membership.

As bulk mailings to raise the profile of the project are being carried out through existing lists, there is no need for an UNFOLD database to carry out this task. It was however noted that in addition to these two groups of contacts, partners also had additional personal contacts which could also be valuable for the project, and that these should be gathered together by the coordinator. Consequently a simple flat file database was created using Filemaker with which to manage these contacts. It is anticipated that these will not total more than the low hundreds by the end of the project, so a more sophisticated database is not required.

Evaluation

Evaluation of the CoPs and their infrastructure is analysed in D3, The UNFOLD Evaluation Plan. The Plan has been structured as a set of scenarios, defining the area to be evaluated, the actors involved, questions to be answered, evaluation methods, etc. The scenarios relevant to this deliverable are as follows, with their associated questions shown.

**Scenario 1: Effectiveness of awareness raising material and Web**
Specifically, the question “Are the resources and Web well designed and easy to navigate?”, as some of these resources, and the navigation mechanisms, are shared by the CoP members.

**Scenario 2: Resources for each CoP**
- Are the resources appropriate to the needs of members of the CoP?
- Are the resources of good quality and clearly presented?
- What additional resources would be valuable?
- How should they be created?

**Scenario 3: Infrastructure provided for interactions**
- Do the online facilities provided to the CoPs meet the needs of the CoP participants in their online activities?
- Is the system easy to use?
- Is the system hard to learn?
- Is the system consistent?
- Is the system well integrated?
- What improvements could be made to the system?
- How effective and usable is the technology used to support the CoPs

**Scenario 4: Information flows in CoP**
- How many people is the project reaching?
- What is the geographic spread of participants?
- What sectors do the participants come from?
- What proportion of the participants are active, and to what extent?
- How can the flows of information be characterised in terms of their social function and content?
- How do changes in the structure of the infrastructure and facilitation interventions change the levels of information flows and their character?

For further information about how these evaluation actions will be carried out, see the UNFOLD Evaluation Plan, and the subsequent action plans and evaluation reports produced by the project.
Conclusions

The CoP infrastructure was launched on schedule, shortly after the close of month six. The implementations developed have proved to be stable, and are built using scalable technology. The development team is therefore confident that CoP framework and infrastructure described in this deliverable will prove to be a solid base for project activities. This initial perception will be superseded by a more objective evaluation once the evaluation programme gets underway from September 2004.

By the time date of submission of this report 150 members had joined (more or less evenly distributed between the three CoPs), and some initial activities had been carried out. The timing of the launch of the CoP infrastructure, coming at month 6, just before the summer break was in some respects unfortunate, as it made it difficult to maintain momentum. To turn this circumstance to our advantage it was decided to treat the first months of the use of the infrastructure as a trial to ensure that support for the CoPs was satisfactory. Some teething problems were identified in this period, but the basic structure was shown to be sound, and user management satisfactory.

The first CoPs face to face is in the second week of September, and it has been structured to establish a programme of activities for the CoPs. This meeting will be swiftly followed by the official launch of the project at the AltC conference in September, and the Industry launch at the eLIG /EADTU in the Netherlands in October. It is planned to use the impetus from these events to establish a full level of activity in the CoPs.

The infrastructure described in this deliverable is not definitive. The structure of the CoPs and their activities will respond to the needs of the user group, and this may require changes in the structure of project activities, and also to the infrastructure provided to support them. The technology selected makes it relatively easy to make such changes. There are two issues which need to be addressed in the coming months. Firstly, at present the messages are only accessible on the forum. The desirability and practicability of implementing a push mechanism delivering all new postings to members of the CoP by mail. Secondly, the need to implement support for exchanges between CoPs will be monitored, and possible solutions identified.
Appendices

Appendix 1. Participation, privacy and maintenance policy for the CoPs (M3.2)

COP organisation and activities

Many different professional groups have to be involved if the IMS Learning Design specification is to be successful in providing better learning opportunities, but often these groups are not in contact with each other. Those developing specifications do not usually work with authors of learning materials, and tools developers do not usually work with teachers and learners. If progress is to be made on these aims, then information needs to flow between these disparate groups of people. To meet this need UNFOLD has created three Communities of Practice

- Teachers and Learning Providers
- Learning designers
- Systems implementers (with participation of Specification Developers)

The diagram on the following page shows how the UNFOLD Communities of Practice relate to each other, all contributing to taking the Learning Design specification and reaching the goal of using it with learners. Each community has its own domain and research activities, but also provides outputs and feedback for other groups, as described in the column to the right. The UNFOLD Communities of Practice (CoPs) have a practical, problem solving focus, both within and across Communities. They work in a collaborative and open way in order to:

- identify and address the problems and barriers to successful implementation, effective user and adoption of the Learning Design specification.
- agree consistent interpretations and usage of specifications to establish working interoperability
- identify shortcomings and unmet needs in the specification and propose extensions.
- clarify how LD should work with other specifications, (such as QTI, SCORM, LIP, Enterprise etc.) and if appropriate define a reference model to integrate these.
- exchange and disseminate examples of good practices
- provide a focus for the study and resolution of issues raised by the specification, implementation and use of eLearning educational standards, in the context of enhancing learning and better pedagogy.
The **Teachers and Learning Providers CoP** includes teachers and trainers, educationalists and administrators. They give feedback to the content authors whose materials they use.

The **Learning Designers CoP** provides Units of Learning (or their components) to Learning Providers. They give feedback to the Systems Developers whose tools they use.

The **Systems Developers CoP** produce the tools and other applications used to create Units of Learning. They work with the specification, provide standard interpretations, and give feedback to the specification developers.

The **Standards Developers** identify needs and provide specifications. They are small in number, and so are included in the Systems Developers CoP.
Focus of the Communities of practice
Each Community of Practice not only addresses a different user group, but also has a focus appropriate to the concerns of that user group.

Focus of the Systems Developers CoP

The significance of IMS Learning Design for systems developers
The IMS Learning Design is a substantial advance in Learning Technology, because it enables standards compliant systems to be created which go beyond the model of a single user carrying out read and test activities, such as those typically provided on CD ROM learning resources. It is a modelling language which enables learning designers to define a wide range of learning activities (in principle unlimited) and deliver them to learners. This new functionality has the potential to transform eLearning practice, and make it attractive to many learners and teachers who have until now found it too restrictive. For systems developers this means that a whole new range of standards based applications can be developed which will support valuable new educational functionalities, with a consequent increase in the number of potential users. Blackboard Inc, for example, have recognised the importance of this development, and in April 2004 established an alliance with the Open University of the Netherlands to implement Learning Design support.

The focus of the System Developers CoP
In essence the IMS Learning Design specification coordinates learners in multiple roles (individually, in groups, and in interaction with a teacher), as they carry out multiple evolving activities with specified resources. It is a challenging specification to work with, as it is not only more extensive and complex than most other eLearning specifications, it also requires applications to maintain individuals’ activity lists as acts and activities complete, properties are changed and their consequences propagated through conditions, as time limits expire, etc, in both single user and multi-role, multi-user situations.
Since the specification was approved, in January 2003, a lot of progress has been made. The Valkenburg Group of developers has been established, and they have produced a reference architecture. A number of authoring tools have been developed or are in the pipeline, and open source resources for developers have been developed, in particular the Coppercore Learning Design Engine. Best practice in developing for the specification is beginning to emerge, together with agreed interpretations. The system Developers CoP enables members to stay up to date with available tooling, to participate in establishing reference interpretations, and to benefit from shared knowledge and expertise.
Problems which are encountered in developing for the specification, and unmet needs which are identified are fed back to the specifications developers, who are also invited to participate in this community of practice.

The Systems Developers CoP supports systems developers in:
- implementing LD successfully in interoperable tools and systems that meet the needs of practitioners as represented by the other CoPs.
- obtaining guidance on the intended implementations of the specifications.
- examining open source reference implementations
- testing the interoperability of your products
- providing feedback to specification developers about problems and unmet needs.
Focus of the Learning Designers CoP

The significance of IMS Learning Design for Learning Designers
Learning Designers who produce eLearning standards compliant software, learning resources and activities obtain undoubted benefits in terms of interoperability and standard search criteria. This gain has, however, come at a cost, as they have found that their choice of pedagogy has been restricted. The standards available only support a single learner working in isolation, the role of the teacher is minimised, and the activities available are largely restricted to a relatively simple 'deliver-and-test' approach.

IMS Learning Design provides the opportunity to overcome these limitations. The specification is itself a modelling language which can be used to define and implement a wide (and in principal unlimited) range of pedagogies. Learners can work in groups, alone, and with teachers in activities which evolve over time.

The role of the Learning Designers CoP
If Learning Design is to fulfil its promise of enabling better learning, a critical mass of useful and effective Units of Learning (UoLs) needs to be available to be used by teachers and learners. In achieving this the role of Learning Designers and authors of learning materials is clearly essential, and one of the roles of the CoP is to support the development of these UoLs. They cannot, however, be achieved in isolation. Links need to be maintained with the teachers who use the UoLs, and through them feedback obtained from learners, and this process is facilitated through the CoP.

Learning Designers also need authoring tools, and platforms for playing their designs. The CoP provides up to date information on available tools, and, perhaps more importantly, provides feedback to developers on the effectiveness of available applications, and outstanding user needs. This process will support the production of multiple authoring tools, and multiple platforms capable of playing their designs, and so improve the outcomes which Learning Designers can achieve.

The Learning Designers CoP supports Learning Designers in:
- effectively using LD authoring tools to create innovative pedagogically diverse Units of Learning.
- obtaining guidance on expressing different pedagogical approaches in LD.
- exploring and learn how to use different authoring tools.
- sharing and develop good practices in authoring LD.
- exploring and develop the use of LD aware repositories
- evaluating the effectiveness of authoring tools and repositories
- providing requirements and feedback to tool and system developers
Teachers and Learning Providers CoP focus

The significance of IMS Learning Design for Teachers and Learning Providers

eLearning specifications and standards have had the effect of restricting eLearning to a relatively simple, single learner, 'deliver-and-test' approach, and so the benefits which standards bring are achieved at the cost of pedagogic flexibility. The learning systems which can be built using these standards simply deliver chunks of content, and do not integrate the role of the teacher, except, at best, in an ad hoc way which needs to be manually set up for each learning session. The overheads involved in setting up learning activities tend to constrain them to being simple and unadventurous. IMS Learning Design opens up exciting new opportunities to create learning activities mediated by online systems in which learners and teachers work together, taking on a variety of roles and working with learning resources in a wide range of ways.

The role of the Teachers and Learning Providers CoP

Teachers and learning providers have a key role, because only they can establish the effectiveness of IMS Learning Design in supporting learning, which in the final analysis is the only meaningful measurement of its success. The authors of the specification make the bold claim that it can be used to describe any learning activity, and this claim needs to be tested by teachers and learners, and any shortcomings identified and reported.

In the Teachers and Learning Providers CoP we are mapping out the future of on-line learning by understanding how our practice is being transformed as IMS Learning Design becomes more widely adopted. We are also evaluating the progress made so far towards the goal of a choice of Learning Design systems and learning designs from multiple sources. A shared resource base of useful Units of Learning and effective practice is being developed, so that these insights can be shared and adoption becomes easier for newcomers.

The Teachers and Learning Providers CoP supports its members in:
- effectively using the tools, systems and learning designs in learning activities.
- obtaining guidance on setting up learning designs on LD Players
- obtaining guidance on and develop good practices on integrating systems
- developing good practices for effective teaching when participating in an LD Unit of Learning.
- evaluating the effectiveness of specific Units of Learning.
- evaluating the effectiveness of LD players and repositories.
- providing requirements and feedback to learning designers and system and tool developers.
Privacy and IPR

The purpose of the CoPs is to provide a space where people can collaborate to support open standards. You should put forward things that you are prepared to freely exchange with other people. You have no obligation to participate in the discussions (although this is, of course, very welcome!).

The discussions will only be open to people who have joined, but you should be aware that membership is open to anyone. Consequently protection of your IPR is your own responsibility, and you should not publish information which you are not willing to make public.

UNFOLD will post public quarterly edited versions of the on-line interactions. There will be a set period for suggestions and corrections prior to publication. In all other respects you retain full copyright on any postings which you make to the UNFOLD forums.

UNFOLD will send you occasional eMails with updates about project activities and related news. but we will not pass your details on to any other organisation without your explicit permission.

Maintenance policy

Review of this document
This milestone will be reviewed at the project meeting in Barcelona on 7th September. It will be reviewed again at the first project meeting to be held in 2004. This review will, together with evaluation results, inform revision of the project infrastructure, and, if appropriate publication of a revised infrastructure.

Day to day maintenance
The facilitators for each CoP are primarily responsible for maintenance of good interactions within the CoP, and maintenance of the infrastructure which supports it.

Facilitation Guidelines

The UNFOLD project seeks to promote interaction between CoP participants on both an online and offine basis by way of furthering exchanges relating to the development of the IMS Learning Design specification. To ensure the success of the UNFOLD project at the level of the communities of practice, it is important that CoP events are supported by an appropriate level of facilitation. This document aims to provide guidelines of good practice to UNFOLD facilitators. It consists of three sections the first of which is in the form of a checklist that charts the various stages in the lifecycle of a project event. The second section provides information on issues peculiar to online facilitation whilst the third and final section highlights some of the social and cultural concerns that come into play on a project of this scope.

Section One - UNFOLD event facilitator checklist

The following checklist consists of the three stages commonly associated with events procedure: preliminaries, event design and the event itself.

Stage One: Preliminaries
Before beginning an event of the kind envisaged by UNFOLD, it is crucial that the following points be addressed to ensure its success.
What is the purpose of the event?
In any medium to large scale project, it is possible that those responsible for organising and facilitating events do not always share the same vision and understanding of the proceedings. To avoid any confusion and subsequent error, it is important that organisers reach a common understanding of the event and its goals. A one or two sentence summary of the event can help to achieve this.

What are the major challenges and potential problems for the various CoPs?
Identification of salient points in relation to the CoP subject matter will ensure that events are both topical and relevant, providing a valuable resource to the community members. To this end it is important to survey participant’s needs and expectations. By the same token, it is good practice to anticipate the difficulties the participants may have in relation to both the content and the organisation of the event. By addressing problems from the offset, the work of the CoP can continue unhindered and motivation levels maintained.

Are there any plans to open a virtual space prior to online events?
In order to ensure that participants are familiar with the technology provided for online events, “practice” spaces should be provided wherever possible to prevent the need for prolonged explanations from eating into time allocated for discussion etc.

Is there scope for a dry run?
A dry run prior to an event will allow facilitators to anticipate prepare for and deal with potential problems, technical or otherwise that might arise during the course of the event.

Stage Two: Design Factors
To a large degree, the way in which an event is conceived and subsequently set up will determine the extent of its success. The following list offers pointers on the design of the event.

Is there an agenda for the event?
The creation of an agenda is crucial to any event to help in establishing its composite parts. Moreover, it provides participants with a menu of the proceedings from which he or she can choose according to their needs and interests. The agenda also provides a schedule and should be pre-circulated to ensure that the attendees know where and when a particular presentation will take place.

Does the facilitator know enough about the subject matter to be able to facilitate effectively?
The facilitator’s role is integral to the success of the CoP events. Whilst he or she need not be an expert in the field under discussion, total ignorance of the subject matter will flaw attempts at effective facilitation.

Do the participants know enough about the subject matter?
To ensure that community events are as constructive as possible, participants should, wherever possible, be provided with resources relevant to the program prior to the event. Such provision will mean a reduction in time spent digesting information during the actual event, leaving the way clear for productive exchanges and discussion.

What tools will be available to the facilitators?

Who belongs to the CoP?
Adhering to the adage that to be forewarned is to be forearmed, knowledge of the various participants, both personal and professional, can help facilitators to “manage” the dynamics of the group efficiently and effectively. Other important questions in relation to this point include:
- How many participants will there be?
- What are their backgrounds and nationalities?
- How well do group members know each other?
- Is there any pre work to be done?
- Will there be a limit to the number of participants? Is large group discussion preferable to small group discussion?

The answer to the above depends in part on the nature of the subject/task, the desired outcome and the choice of medium.

**How many tasks should be set in any one event and how much time should be attributed to them?**

The facilitator should be aware of the need to strike a balance between “active” and “passive” activities during the course of the event. Equally, he or she should be careful not to provide too much information as this may overwhelm some participants and ultimately be counter-productive.

**What tools will be used for the various activities?**

Consideration should be given to any tools intended to support proceedings in terms of how they are deployed. Moreover, facilitators should be in a position to provide support to inexperienced users.

**Stage 3: The Event**

**Include a strong introductory piece to position the event.**

Each event should be opened with an introduction to the rest of the proceedings by way of situating the event.

**Is a co-facilitator required?**

In some cases events might require more than one facilitator. Due consideration should be given to this eventuality based on participant numbers and the nature of the subject matter.

**Is there a logging and report procedure? If so, what is it?**

Facilitators are responsible for recording and logging the proceedings. To ensure all relevant data is logged for subsequent processing, facilitators should be clear on how and when to log information.

Prepare summaries and feedback on events
Subsequent to the logging procedure, all relevant information should be summarised and made available to participants. This will help to refresh and consolidate participant’s understanding of the proceedings as well as providing a resource for absentee.

**Section 2 – Online facilitation**

Whilst technology poses few or no difficulties to the offline facilitator, the following issues have been identified in relation to online facilitation:

1. **Computer Mediated Communication (CMC) - a relatively new phenomenon**

Although many expected UNFOLD participants will be familiar with the use of digital technology, the concept of online interaction will be foreign to some and the facilitator may be required to help users negotiate the technology.

2. **Lack of physical clues**

The lack of kinesics can be disadvantageous. Without actually seeing the interlocutor, it is difficult to gauge his or her mood and expressive intentions. Consequently, users of a text based
environment are required to be as explicit as possible to convey their meaning. The facilitator should be aware of this issue and should encourage users to be as clear and as careful in their wording as they can. The use of humour and sarcasm should also be kept to a minimum as they do not travel well through text based mediums and are often open to misinterpretation.

3. Text Based Communication
Another issue relating to text based environments concerns the skills required to type quickly, efficiently and legibly. Not all participants will have fluent word processing skills which might put them at a disadvantage in terms of the speed with which they are able to ask or answer questions. Moreover, spelling and grammar skills, or a user’s lack of them, might deter some from participating as fully as they would otherwise do. This is particularly relevant to the UNFOLD project which seeks to draw contributions from members located throughout Europe, some of whom will not be fluent English speakers. In view of this, the facilitator should put the emphasis on content by making it clear to the community that good spelling and grammar are not prerequisite to making a contribution.
It should also be noted that a number of participants may not be able to digest information displayed on a VDU as easily as they would on paper. As a result, information should be captured and made available for download and printing where possible.

4. Synchronicity
CMC as used by the UNFOLD project includes both synchronous and asynchronous modes of communicating. Both methods require facilitators to be vigilant on a number of scores:
Asynchronous CMC can result in delays between exchanges. The facilitator must exercise a degree of patience in his or her handling of apparent delays without losing sight of the need to encourage timely responses. Moreover, it is incumbent on the facilitator to answer all queries as quickly and as efficiently as possible.
In the context of a pan-European project, synchronous communication raises the question of time differences between participants of different countries in different time zones which should be accounted for accordingly.
Facilitators should also be mindful of the fact that synchronous chat can result in a chaotic string of exchanges that render discussions impossible to follow. To prevent this eventuality, limits can be set on the number of people directly participating in the chat; whilst indirect participation can be encouraged through the use of moderators who feed participant’s questions into the chat as and when appropriate.

5. Anonymity
Because users of CMC are to all intents and purposes anonymous, facilitator’s should be aware of the possibility for disruptive or abusive behaviour among participants. In the unlikely event of such an outcome, the facilitator should be prepared to approach the offending party via email or, in extreme cases, sanction such behaviour by banning the offending parties from forums and chat systems

Section three - Social, management and cultural aspects

Social Aspects of Facilitation
By definition, a community of practice is a social entity and its success is dependent on the interaction of its members. The following provides information intended to ensure sustained development and nurturing of the community.

Accept “lurkers” as legitimate participants regardless of the extent to which they participate. whilst it is imperative that members of the community interact with one another, a significant number will prefer to observe proceedings from a distance. whilst it would prove counter-productive to encourage “lurking”, it is often considered a legitimate means of participation.
Nevertheless, if lurking is endemic to a particular community, the facilitator should act on his or her discretion to elicit contributions.

Ensure participants are kept at ease by refraining from the use of humour or comments which might be misconstrued.
This is particularly true in the context of a European project such as UNFOLD where many of its community members will not be native English speakers.

Ensure introductions are made to help build a sense of community
As with any social event, personal introductions are integral to interaction between participants.
The facilitator should ensure that participants become acquainted with their counterparts and that all members can be identified in terms of their working interests and expertise.

Praise valuable participation to help promote the right kind of input
Praise of this sort acts as an implicit signal to other members of the group to provide similar contributions and ensures that proceedings do not digress to the detriment of the event.

Be tactful when dealing with unacceptable behaviour
In the unlikely event that participants deviate from accepted norms, facilitators should be prepared to intervene tactfully. Establishing ground rules prior to the event should help to pre-empt any unwanted behaviour and can be referred to by the facilitator as and when necessary.

Management Aspects of Facilitation
Whilst facilitation generally precludes any of the aspects more commonly associated with management, the following should help to establish an environment that is conducive to effective exchanges and interaction:

Adopt an informal approach to the task of facilitating: don’t be authoritative
Contrary to most management techniques, facilitation requires a more relaxed approach in order to obtain the best results from the community. Free of the constraints of hierarchy, people feel more inclined to participate.

Respond to requests for information and contributions as quickly as possible.
The rationale for the above is obvious, but it is also good practice to exercise a degree of patience when awaiting contributions.

Beware of monopolising proceedings.
Because the nature of the project requires input from community members, facilitators should beware of dominating proceedings whilst remaining alert to the needs of the community and acting as a conduit for discussion as and when it is required.

Beware of introducing too many topics too quickly as participants may feel overwhelmed.
As previously mentioned, facilitators should be careful not to overload participants with information. Topics should be introduced at a steady rate at the facilitator’s discretion.

Ensure that some kind of closure is reached in relation to discussions
It is important that a conclusion is reached in order to mark the end of one topic and the beginning of another. Without closure of this kind, participants may become confused and disoriented.
Cross-cultural considerations

Because the CoP’s will be made up of participants from all over Europe it is important to take into account factors such as cultural differences and language barriers when facilitating an event. To this end, the following points should be kept in mind:

Language should be kept simple and as free of jargon as possible.
Culturally specific metaphors/images should be avoided where possible to avoid confusion.
Be aware that in some cultures participation in meetings events etc. is expected to be passive.
Appendix 2. UNFOLD CoP web site specification

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<td>Author</td>
<td>O.Liber</td>
</tr>
<tr>
<td>Date</td>
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Principal areas to be supported

The project plan requires the development of two websites:
- Public information about the project and the IMS Learning Design Specification
- Support for the UNFOLD Communities of practice

In order to make effective use of resources, the public information site and support for the Communities of Practice will be integrated as far as possible.

The public area will comprise:
- *information on the project*
  - *aims*
  - *partners*
  - *activities*
    - *description of CoPs*
    - *public LD resources*
  - *Regularly updated features:*
    - *Papers and articles on learning design*
    - *News of developments*
    - *Events*

The Communities of Practice area will have three separate CoPs, each with
- Registration forms
- Resource areas for contributions and sharing
- Discussion forum(s)
- Other tools depending on CoP area (e.g. code bash tools for developers)

Membership and access rights

Access
- In order to create awareness of the CoPs, without providing access, it is important that the public can see the CoP areas on the navigation tree, but on clicking can only see an update on the CoP activities, plus the registration form
- CoP members can always see the public area and have access to those CoPs which they belong to, for easy navigation and to maintain the overall coherence of UNFOLD

Membership
- Membership should be of a CoP, not the whole site
- Members should be given their own folder, where they can create web resources.

Contributions from members
- Contributions to resources should be stored in their folder while submitted for review
- After review, the resources should be tagged by the reviewer to appear in the relevant topic, and moved to the general resource folder for the whole site
- Trusted members can be given reviewer status
- Contributions to the forums are un-moderated, but facilitators follow activity and remove anything which is inappropriate.
Integrating the CoPs

It is important that CoP members can see the progress of other CoPs.
- An update of progress should be made at frequent intervals, accessible to the public
- A forum should be established at the top level which permits all 3 CoP members to discuss their work, but which can be viewed by the public, or if the public is allowed to contribute, is moderated (all contributions viewed by the moderator before publishing)

Navigation

Log in
A log in panel under the Navigation Tree.
- log in
- forgot your password?
- Become a member

Links to a log in page and membership form next to the feedback on log in status (see below)

The main navigation tree and sub-folders

Home
   About this site (opens default document)

   About UNFOLD
      An introduction to Learning Design
      About the Communities of Practice
      What is UNFOLD?
      News
      UNFOLD events
      UNFOLD handouts and posters

   IMS LD Resources
      Webs related to IMS LD
      Architecture and tools
      Introductory material
      Papers and articles
      Implementing IMS-LD

   Members (provides interface to search for member details)

   System developers CoP
      Update on Actions (public)
      Forums
      Initial CoP activities
      Teachers and Learning Providers' Resources
      About this CoP

   Learning Designers CoP
      Link to OUNL server

   Teachers and Learning Providers CoP
      Update on Actions (public)
Forums
Initial CoP activities
Teachers and Learning Providers' Resources
About this CoP

**Feedback to user indicating their position in the site.**
A permanently visible breadcrumb trail, which shows the path to the user’s present location in the site, enabling them to check their position at any time.
Log in status, informing the user if they are logged in or not, immediately above the breadcrumb trail

**Upcoming events**
A panel with links to upcoming UNFOLD events

**Calendar**
A calendar with UNFOLD events marked and links provided.
Appendix 3. Participating in LN4LD

Introduction

This short document is a guide to LN4LD, the Learning Network for Learning Design, designed to provide the infrastructure for the Learning Designers Community of Practice (CoP) in EU UNFOLD project.

LN4LD can be found at http://ln4ld.learningnetworks.org/.

LN4LD has been set up as part of the Learning Networks programme being carried out at the Educational Technology Expertise Centre of The Open University of The Netherlands. For background reading on the objectives and approach of the programme, please read the overview document which can be found at http://learningnetworks.org/downloads/LTD%20Programme%20Learning%20Networks%202003-2008.pdf

LN4LD is a pilot learning network for those interested in finding, applying and exchanging information about the IMS Learning Design specification (IMS LD).

We have created LN4LD to gain early feedback on functional, technical and organisational aspects of creating and maintaining a learning network and to help meet the demand for further information on IMS Learning Design. Moreover, we are planning to use LN4LD investigate mechanisms which stimulate learners to move beyond mere consumption of learning material towards active participation in the creation of learning experiences (one of the ambitions of the overall learning networks programme);

LN4LD is an R&D concept. It is not yet a production level system, and we ask those interested in participating to approach LN4LD with this in mind. As a participant, you will be required to deal with various technologies and you will be faced with multiple logons, different user interfaces and an evolving set of functionality and content. We aim to avoid centralised development of LN4LD and we will encourage participants to improve and extend the learning network, not only in the role of reviewer but preferably as co-creator. The (initial) mechanisms through which active participation will be stimulated are described below. Additional functionality will be introduced as we go.
Two important concepts

A **Learning Network** (LN) is a distributed set of people who interact to create and share learning events while developing their competence in a particular discipline. A learning event, which we refer to as an **Activity Node** (AN), can be anything that is available to support learning, such as a course, a workshop, a conference, a lesson, an internet learning resource, etc. All participants can create new ANs, can adapt existing ANs or can delete ANs, subject to the constraints of the policies which are operation for the learning network.

The overall architecture of a learning network

LN4LD is built upon the second generation of IT support we have developed for learning networks (for a description of the first generation, see [http://hdl.handle.net/1820/32](http://hdl.handle.net/1820/32)). The following figure shows the overall architecture and technological choices used in LN4LD:

![LN Layer; technology= PHP-Nuke](Image)

![AN Layer; various technologies](Image)

We distinguish between the Learning Network layer and an underlying Activity Node Layer. The former, realised using PHP-Nuke (see [www.phpnuke.org](http://www.phpnuke.org)), offers access to different learning networks. Currently, we are running one learning network, LN4LD – others will be launched in due course. Each learning network is realised as a separate PHP-Nuke site.

A Learning Network contains information about each of its associated Activity Nodes, together with a link to the actual activity node.

In the Activity Node layer, various types of technology can be used to create learning events. The above diagram shows three possibilities:

- **Moodle** ([www.moodle.org](http://www.moodle.org)), an open source learning environment;  
- **LD Player**, which represents an abstract software component capable of running Units of Learning created according to rules of the IMS LD specification. In the future we hope to be able to make this abstraction a reality;  
- **Blackboard**, a commercial learning environment.  

However, any technology can be used to realise an activity node, and a link can be made from the Learning Network layer.

We have seeded LN4LD with some activity nodes created using Moodle. During the lifetime of LN4LD we will create new activity nodes using Moodle, and perhaps also other technologies, to address IMS LD topics as they arise. Moreover, we encourage other participants to contribute Activity Nodes, in the spirit of a learning network.
We support two different levels of participation in LN4LD, and an understanding of these levels will help you get the most out of LN4LD.

Levels of participation in LN4LD

We distinguish between two types of participants in LN4LD:
Unregistered users
Registered users
These types of participants are linked to increasing levels of access and functionality, and progress between the types revolves around increasing levels of participation in the community.

Facilities for unregistered users

Unregistered users are those who access the LN4LD anonymously, that is, without logging in. For these users, LN4LD offers read-only access to content and forums in which topics involving the spec are discussed.

The functionality available to unregistered users is shown in the following sequence of screenshots:
Browsing the home page with news items:
Accessing the LN4LD Frequently Asked Questions list:

Viewing the Downloads area:

(Read-only) Access to the forums
Furthermore, unregistered users are able to view site statistics and various “Top 10” lists (although access to the items in the lists will require your registration).

Facilities for registered users
Access to the UNFOLD Learning Designers Community of Practice (CoP) comes with self-registration. Registering for the site is done through standard PHP-Nuke functionality and requires email confirmation.

Once registered, participants are able to place new postings in the LN4LD forums and reply to existing ones. This comes in addition to the functionality available as an unregistered user. Furthermore, registered users can cooperate on solving problems and answering questions concerning IMD Learning Design. Activity Nodes are dedicated to IMS LD topics (for example “IMS LD and meta-data” or “IMS LD and SCORM”), and groups of interested parties investigate issues in the area and develop learning activities and materials.

The following screenshots show the additional functionality available to registered users:
Posting to LN4LD forums:

Using the PHP-Nuke journal functionality:
Accessing the topic list:

We anticipate that shared topics will emerge through multiple postings in the dedicated forum. When interest in a topic has crystallised, an Activity Node will be created (by those in the appropriate role) and a link to the AN will be posted in the forum to direct ongoing collaboration towards the new AN. At the launch of LN4LD, the creation of ANs is being handled by a few members of OUNL staff. However, access to this role will be extended as participation in the learning network grows.

The seed Activity Nodes

Four seed Activity Nodes are available at the launch of LN4LD:

- Getting started with the IMS LD Specification
- Understanding the basics of IMS Learning Design
- Experience a representative collection of running Units of Learning
- Learn how to modify a Unit of Learning

Clicking on the title one of the ANs in the LN4LD topic list will reveal some descriptive information about it, together with a hyperlink to the actual Activity Node and a rating capability:
Clicking on the hyperlink moves the participant to Moodle, which may require logging in:

... and may also require enrolling for the course:
Once enrolled, you will see various learning activities and (collaborative) facilities:

We hope LN4LD helps you in understanding and using IMS Learning Design. Please participate and help us extend and improve the learning network.
Appendix 4. Managing user information and project contacts (M3.3)

The User Group Database as originally conceived

The project workplan indicates that a database to maintain details of the user group will be created. In the early stages of the project it was envisaged that this would be a standalone database with two functions. It would support:

a) Membership of the Communities of Practice (CoPs), maintaining details of the UNFOLD membership, their affiliations, CoPs to which they belong, and other details.
b) The UNFOLD mailing list, storing contacts of those interested in UNFOLD who are to be mailed with updates about the project.

Why a standalone database was not used

A proposal was prepared for the required fields, and a first prototype prepared which were discussed at the project meeting in 19th May 2004. These discussions made it clear that the original plan for a stand alone database implementation was not an optimal solution. Two principal factors led to this conclusion.

a) The adoption of PLONE as the principal platform for project infrastructure changed the situation. PLONE has a powerful and extensible database incorporated into the server. This made it unnecessary to maintain a database of the CoP members.
b) Regarding maintenance of the UNFOLD mailing list. It became clear in discussions that for all partners the great majority of contacts who could be mailed to raise awareness of UNFOLD were best reached through existing eMail lists which are either run by the partners or with which they are closely associated. It would not be practical, or an effective use of project resources, to reproduce these lists in a new database. It would, moreover, be unethical to pass on the information about the list members to the UNFOLD project, no matter how closely linked it may be to the administrators of the previous lists.

Maintaining details of UNFOLD membership

Joining the project

A form have been provided at [www.unfold-project.web](http://www.unfold-project.web) which enable visitors to join UNFOLD. They can use the form to join the Systems Developers and the Teachers and Learning Providers CoPs, and a link is provided to a similar form on the Learning Designers CoP site. Users who register as members, but do not select a Community of Practice are included in UNFOLD mailings, but do not have access to the CoP restricted areas.
The registration form is shown on the following page.
### UNFOLD Registration Form

**What is your job title?** e.g. Professor, Dr., Director of Human Resources...

**Full Name** Enter full name, e.g. John Smith.

**User Name** Enter a user name, usually something like 'jsmith'. No spaces or special characters. Usernames and passwords are case sensitive, make sure the caps lock key is not enabled. This is the name used to log in.

**E-mail** Enter an email address. This is necessary in case the password is lost. We respect your privacy, and will not give the address away to any third parties or expose it anywhere.

**Community of Practice** Please choose the communities you would like to join. If you leave this blank, you will be added to our list for eMail updates on project activities
- [ ] Systems and tools developers
- [ ] Teachers and Learning Providers

If you would like to join the Learning Designers Community of Practice, go to the [Learning Designers Community of Practice site](#)

**Organisation** What organisation do you work for, or study at?

**Organisation website** Does your organisation have a website? If so, please give the URL.

**Personal website** Do you have a personal website? If so, please give the address.
Monitoring and contacting the membership
In order to monitor the UNFOLD membership, and to facilitate communication within the project, two tools have been developed for administrators of www.unfold-project.net, extending the built in capabilities of PLONE.
a) a list of the names and email addresses of all members can be requested, classified according to the CoPs which they have chosen.
b) coordinators of the CoPs can send mail to all the members of specified CoPs, or to the entire membership.

Managing additional contact
For the reasons provided above it was decided that the bulk mailings to raise awareness of UNFOLD would be conducted through the existing mailing lists run by UNFOLD partners, or to which they were closely affiliated. Details of these lists are available in D4, Awareness Raising Report.
As described in the previous section, mail to registered members of UNFOLD is handled by the PLONE server at www.unfold-project.net.
It was however noted that in addition to these two groups of contacts, partners also had additional personal contacts which could also be valuable for the project, and that these should be gathered together by the coordinator. Consequently a simple flat file database was created using Filemaker with which to manage these contacts. It is anticipated that these will not total more than the low hundreds by the end of the project, so a more sophisticated database is not required.
The fields of the database are shown in the following table
<table>
<thead>
<tr>
<th>FIELD</th>
<th>PURPOSE</th>
<th>FIELD FORMAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Surname</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Title (Prof, Ms, etc...)</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>eMail</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Organisation</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Job title</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Telephone</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Web address</td>
<td></td>
<td>Free text</td>
</tr>
<tr>
<td>Sector</td>
<td>The economic sector in which the contact works</td>
<td>Select from menu University teacher Educationalist Distance Education School Administrator Industry Government Media Publishing Unknown Other</td>
</tr>
<tr>
<td>Area of interest</td>
<td>Area in which the contact might be interested in participating in UNFOLD activities</td>
<td>Select from menu Developers</td>
</tr>
<tr>
<td>Thought leader</td>
<td>Is the contact a key player in one of the Communities of Practice, who could help to stimulate and lead activities</td>
<td>Yes / no</td>
</tr>
<tr>
<td>Dissemination only</td>
<td>Is the contact only interested in the results of the project, rather than a potential participant</td>
<td>Yes / no</td>
</tr>
<tr>
<td>Valkenburg member</td>
<td>Is the contact a member of the Valkenburg Group?</td>
<td>Yes / no</td>
</tr>
<tr>
<td>Supporter of bid</td>
<td>Did the contact sign the letter of support for the project?</td>
<td>Yes / no</td>
</tr>
<tr>
<td>Date of record</td>
<td>When was this record entered into the database</td>
<td>date</td>
</tr>
<tr>
<td>Who to contact</td>
<td>The project participant who is best placed to communicate with this contact</td>
<td>Free text</td>
</tr>
<tr>
<td>Notes</td>
<td>Any other relevant information</td>
<td>Free text</td>
</tr>
</tbody>
</table>

A layout is provided with only names and email addresses, facilitating the integration of the database with a mail merge program.