

**Financial / Administrative co-ordinator**

Name: Dipl.-Math. Maria Oelinger  
 Address: Lotharstr. 63/65, D-47057 Duisburg  
 Phone Numbers: +49-203-379-1329 Fax Numbers: +49-203-379-3557  
 E-mail: oelinger@collide.info Project website: <http://www.coldex.info>

**Executive Summary**

The present report refers to work progress that took place during  
 M31-M33, i.e. December 2004 to February 2005

**1- Overview**

**Objectives**

<i>Objectives</i>	<i>Progress towards achieving objectives</i>
WP 4: Remote scenarios	<p><b>USB</b>                      Experimentation with different applications for using the generator which produces protocol handler from specification.</p>
WP 5: Local scenarios	<p><b>VXU</b></p> <ul style="list-style-type: none"> <li>• Improvement and refinement of technical aspects related to the Biotube.</li> <li>• Installation and calibration of sensors for the Biotube.</li> </ul>
WP 6: Communication and pedagogical networking <ul style="list-style-type: none"> <li>• Dissemination of results (Task 6.5)</li> </ul>	<p><b>UDUI</b>                      Preparation of LOR usage in the Open User Scheme, first tests with the OUS participants.                      Lasting usability tests of the web interface of the LOR.</p> <p><b>UCH</b>                      On-going co-operation with the German School in Chile. Unfortunately, this version of the seismology tool used in Chile is not yet compatible to the LOR. This will be changed as soon as possible.</p> <p><b>UNED (Leader in WP6)</b></p> <ul style="list-style-type: none"> <li>• Defining the LOR web services, so that it could be accessed by external tools (a first proposal based on the use of servlets, and the final one using a SOAP standard)</li> </ul>

<i>Objectives</i>	<i>Progress towards achieving objectives</i>
	<p><b>UNED (Leader in WP6)</b></p> <ul style="list-style-type: none"> <li>• Database: optimising the access to the objects in order to improve speed and scalability (dynamic and lazy retrieval of objects).</li> <li>• Reimplementing the distributed version.</li> </ul>
<p>WP 7: Open User Scheme</p> <ul style="list-style-type: none"> <li>• Dissemination: Establishing of learning communities Organisation of Workshops (Task 7.4)</li> </ul>	<p><b>UDUI (Leader)</b></p> <p>Organisation of the second OUS workshop in Cercedilla near Madrid, Spain. Coordination of the OUS guests and collection of OUS groups' registrations for the activities which are shown and discussed at this workshop.</p> <p>Finalisation of the COLDEX video in order to give the OUS participants a deeper understanding of the project and for further usage.</p> <p><b>UCH</b></p> <p>Further enlargement of the OUS user group: contact and on-going co-operation with the "German School" in Chile. Thus implementation of the OUS idea. Recently first session with the DSSantiago (German School Santiago de Chile – Deutsche Schule Santiago de Chile) with impressive success in students' work with the system dynamics approach. More sessions are planned with other scenarios, for example stochastics.</p> <p>Activities in the seismology scenario have been hold in Japan.</p> <p><b>VXU</b></p> <ul style="list-style-type: none"> <li>• Meetings with teachers from a local school. The aim of the meetings was to inform and to present the different tools and material from the COLDEX project. Future activities within the OUS were also discussed.</li> <li>• Working with and at a local school and at the science centre within the biodiversity scenario.</li> <li>• Preparation and discussion about the LOR for the OUS in Sweden.</li> </ul> <p><b>UNED</b></p> <p>LOR refinement:</p> <ul style="list-style-type: none"> <li>• Multilingual version of the web portal of the LOR (English and Spanish)</li> <li>• Contextualised online help</li> <li>• Including new metadata in the LOR</li> <li>• Extending the ontology with inference rules</li> <li>• Carrying out an experience of use with Vaxjö</li> <li>• Documentation for users</li> </ul>

<i>Objectives</i>	<i>Progress towards achieving objectives</i>
	<p><b>UPM</b></p> <p>Task 7.3: Pre-evaluation of the system considering the established user group</p> <ul style="list-style-type: none"> <li>• Evaluation tests of all remote scenarios developed by UPM.</li> </ul> <p>Task 7.4</p> <ul style="list-style-type: none"> <li>• UPM has been in contact with some Latin-American learning communities in order to organise the OUS workshop in Cercedilla / Madrid, March 2005.</li> </ul>
<p>WP 8: Evaluation</p> <ul style="list-style-type: none"> <li>• Evaluation with user communities established by WP7 (Task 8.3)</li> </ul>	<p><b>UDUI</b></p> <p>Implementation of the OUS activities to be evaluated and general evaluation instruments</p> <ul style="list-style-type: none"> <li>• Preparation of the questionnaires which will be used in the OUS activities.</li> <li>• New contacts to several interested teachers and schools.</li> </ul> <p><b>UCH</b></p> <p>The students' sessions will be evaluated. The evaluation results will be presented at the 2<sup>nd</sup> OUS workshop in Spain (March/April 2005).</p> <p><b>VXU (Leader)</b></p> <ul style="list-style-type: none"> <li>• Field study at a local school.</li> <li>• Preparation for the presentation of the evaluation plan at COLDEX project workshop in Portugal.</li> <li>• Planning and preparation of evaluation instruments.</li> <li>• Planning for and initial work with the final evaluation report</li> </ul> <p><b>UNED</b></p> <p>Contribution to the evaluation discussion.</p> <p><b>UPM</b></p> <p>Task 8.1: Testing of the functionality of the first prototype with pre-defined users</p> <ul style="list-style-type: none"> <li>• Tests of the first prototype of the robot arm and the ciclope part of the astronomy scenario and contribution to the evaluation.</li> </ul> <p><b>INESC-ID</b></p> <p>Initial evaluation of BeLife with corresponding changes and further development of the system. This task was developed at Colégio Manuel Bernardes in Lisbon, Porgual.</p>

**1.1 Milestones**

<i>Milestone</i>	<i>Planned date</i>	<i>Actual date</i>	<i>Comments</i>
MilestoneNo13 – Continuous enlargement of the user group WP7	30 Nov 2003 to 28 Feb 2005		on-going
MilestoneNo10/16 System Prototype	30 Nov 2003	end of 2004	
MilestoneNo18/19/20/22/24 Workshop on dissemination and evaluation / WP4/5/6/7/8	31 Aug 2004	December 2004, Lisbon, Portugal	
MilestoneNo23 Pre-evaluation done / WP 8	31 Aug 2004	December 2004	

**1.2 Deliverables**

<i>Deliverable Code &amp; Name</i>	<i>Planned delivery date</i>	<i>Actual delivery date</i>	<i>Comments</i>
D1.2.1 – Project presentation (brochure, website, video)	30 Nov 2002 30 Nov 2003 30 Nov 2004		<ul style="list-style-type: none"> <li>• Additional materials, revised deliverables within the deliverables area</li> <li>• COLDEX video with examples of several scenarios has been collected and is currently being finalised</li> <li>• Additional video material within the website</li> </ul>
D4.2.1/D5.2.1/D4.3.1/D5.3.1 – System Prototype	31 Jan 2004	finals will come 7 Apr 2005	<p>A draft of the deliverable D4.3.1 System Prototype is finished. Some changes and corrections are pending.</p> <p>D5.3.1 System Prototype is pending.</p>
D6.3.1 – System Prototype	30 Jun 2004	05 Oct 2004	Has been supplemented 11 Feb 2005
D7.2.2 – Functional Documentation	30 Jun 2004	16 Nov 2004	Has been supplemented 8 Feb 2005
D7.3.1 – System Report	30 Nov 2004	draft	
D8.3.1 – Evaluation Report	31 May 2005	draft	
Technology Implementation Plan / Exploitation Plan	28 Feb 2005	not yet	

**1.3 Deviations from Plan**

<i>Causes and Description</i>	<i>Corrective actions</i>
Some deliverables are not yet finalised	The partners will contribute to the finalisation of these deliverables.

**2 - Contractual Arrangements**

-
---

**3 - Project Meetings (held and foreseen)**

<i>Title</i>	<i>Date and Place</i>	<i>Main conclusions</i>
Project meeting	13 – 14 Dec 2004 in Lisbon, Portugal	<p>Topics</p> <ul style="list-style-type: none"> <li>• Progress reports on applications (school trials) and OUS activities</li> <li>• Reports/discussion of ongoing evaluation activities in accordance with the new version of the second evaluation deliverable; Evaluation plan presentation by VXU</li> <li>• Report on experience with the LOR based on a complete of specificatios of learning objects from the different scenarios</li> <li>• Tools: focus on BeLife</li> </ul> <p>Participants</p> <p><b>UDUI</b> Hoppe, Ulrich; Hoeksema, Kay; Kuhn, Markus (OUS expert); Wichmann, Astrid (evaluation expert)</p> <p><b>UNED</b> Barros, Beatriz; Verdejo, Felisa</p> <p><b>INESC-ID</b> Paiva, Ana; Otero, Nuno</p> <p><b>USB</b> none</p> <p><b>UPM</b> Francisco M. Sanchez Moreno</p>

<i>Title</i>	<i>Date and Place</i>	<i>Main conclusions</i>
2 <sup>nd</sup> OUS workshop, Madrid, Spain	31 March – 2 April, Cercedilla, Spain	Second COLDEX-OUS workshop with invited participants, reporting on cooperative OUS activities
Final review	15 April, Duisburg, Germany	

#### **4 - Dissemination / Promotional Information**

##### **4.1 Conferences and / or Workshops organised / foreseen by the project**

<i>Date</i>	<i>Title</i>	<i>Number of persons attended + other information</i>
14 – 18 Dec 2004	14. – 18.12.2004 CELDA, Lisbon, Portugal	Cognition and Exploratory Learning in Digital Age (IADIS International Conference) Hoeksema, K., Hoppe, U. "Combining Interactive Modelling and Scientific Discovery in the classroom"
14 – 18 Dec 2004	14. – 18.12.2004 CELDA, Lisbon, Portugal	Kuhn, M., Hoppe, U., Lingnau, A., Fendrich, M. "Evaluation of exploratory approaches in learning probability based on computational modelling and simulation" Kuhn, M.: Presentation of results from didactic sequences according to COLDEX scenarios
14 – 18 Dec 2004	CELDA, Lisbon, Portugal	Poster. Nuno Otero, André Vala, Ana Paiva, Marcelo Milrad. "Learning with the BeLife simulation tool: the effects of Manipulating the time scale of events and Collaboration mode"
7 Jan 2005	MPUS, Hamilton, New Zealand	Seminar on Metadata and Personalised User Services. Oelinger, M. Invited Talk at the University of Waikato "Handling of Metadata in a Collaborative Modelling Environment"
22 – 25 Feb 2005	IADIS 2005, Portugal	A metamodel for defining and managing learning web communities. – IADIS International Conference on Web Based Communities, February 2005
31 March – 2 April	OUS workshop, Cercedilla, Spain	Second COLDEX-OUS workshop with invited participants, reporting on cooperative OUS activities
	CSCL 2005	submitted to CSCL 2005  Hoppe, U., Pinkwart, N., Oelinger, M., Zeini, S., Verdejo, F., Barros, B., Mayorga, J. I. "Building bridges within Learning Communities through thematic objects and navigation support"
	AI-Ed 2005	submitted to AI-Ed 2005  Otero, N.; Vala, A.; Paiva, A.; Milrad, M. "BeLife: a simulation tool to support teaching and learning about photosynthesis and greenhouse management"

**4.2 Articles Published, Press coverage etc.**

<i>Date and Type</i>	<i>Details</i>
MSc thesis	Vala, A. (2005) BeLife: A Collaborative Learning Tool. Instituto Superior Técnico, Lisboa.

**5 - Main results**

<i>Description</i>	<i>Details</i>
Scenarios	Evaluation of the robot arm, the chemistry scenario and the Spanish part of the astronomy scenario are being done. The telescope laboratory prototype has been modified for storing the images in the LOR.
Evaluation	Elaboration of evaluation instruments and on-going activities in the Open User Scheme.
OUS	Enlargement of the user group; preparation of getting over the "cold start problem" of the common repository.
LOR	Software delivered: upgraded versions of multilingual version of the COLDEX portal, i.e. <ul style="list-style-type: none"> <li>• a LOR service able to process and generate metadata from external tools and the portal context</li> <li>• a chat service</li> <li>• social and project manager</li> <li>• a knowledge manager handling the ontology.</li> </ul> As well the LOR is available through web services.

## **6 - Project Effort**

The effort for the reporting period and the cumulative effort to-day is presented as an Excel sheet which is attached to this management report.

### **Summary**

The most important work from November 2004 until February 2005 has been done in the workpackages 7 and 8, Open User Scheme and Evaluation.

### ***Overall assessment of the main milestones achieved, or results delivered***

The main milestone within this reporting period is the elaboration of the evaluation instruments. The questionnaires used in the first activities have been refined and validated in order to get comparable results of all COLDEX scenarios.

### ***Problems encountered and decisions taken***

Some of the deliverables are really delayed. They will be finalised until the final review. The LOR usage faces the "cold start problem". To get over this break-even point of the repository is now just a question of time. The users will benefit not only from archiving their own learning objects, but will also be able to retrieve and exchange artefacts after the next few activities, estimated in April or May at the latest.

### ***Conclusive statement on correspondence between planned project progress (as detailed in the Project Programme) and actual accomplishments***

Although the LOR has been published quite late and although there are still some delays, the scenarios have been established, and the evaluation of OUS activities is currently being analysed. Continuously new user communities ask for the learning materials and guidelines to use COLDEX tools and approaches. The COLDEX aim of initiate the OUS learning community has been achieved. Even if there are some tools pending, the overall outcome of activities around the COLDEX scenarios is really positive. This can be seen from the requests of OUS partners and schools as well as the lively interest of the science centre in Sweden.

## **Work progress overview**

### ***Specific objectives (for the reporting period)***

The specific objectives for this reporting period have been dissemination of results in the communication and pedagogical networking part, establishing of learning communities (organisation of workshops) and evaluation with OUS user communities.

### ***Achievements***

#### **List of Deliverables**

The detailed deliverables list can be seen above, section 1.2. All deliverables will be available at the final review, some as drafts (since some are due at the end of the project in May 2005).



### **Progress by Workpackage / task**

In the scenario workpackages some refinements have been implemented, e.g. in the biodiversity scenario. In workpackage 6 – communication and pedagogical networking – the LOR has been the main point of interest in this reporting period. Implementation, elaboration, usability tests and technical evaluation as well as adaptation of the system concerning the users' needs have been continued. Also the activities in the OUS workpackage have been supported by the work in WP 6. The Open User Scheme – workpackage 7 – has succeeded in enlargement of the user group, conducting activities and beginning with establishing of the learning communities.

Finally, the evaluation in workpackage 8 has had a focus on the evaluation with user communities set up by WP 7. The elaboration and application of evaluation instruments as well as planning of future activities has been part of this last (but not least) workpackage.

### **Deviations if any and corrective action**

In the biodiversity scenario the BeLife tool had to be finalised. Before the second OUS workshop an activity with users will be conducted. The delay in reporting will be caught up. Nevertheless, the work done in the practical usage of scenarios and the other implementable parts of the project is now quite sophisticated and the basis is established to ensure a longer lasting environment for COLDEX activities.

### ***Project reviews***

#### **Follow-up of recommendations from previous review and / or preparation of inputs to upcoming review**

The second review in September 2004 in Växjö, Sweden, brought up some recommendations for improving, mainly, the evaluation part of the project.

#### ***Work planned for the next reporting period***

(all partners)

- Contact to interested groups for the Open User Scheme and support of the submitted projects.
- Preparation and conducting of the second OUS workshop and of the final review.
- Improvement of the LOR usability and tool-to-tool interoperability.

### **Project Management**

Concerning the project management, the following issues clarify the actions taken in this reporting period.

#### ***Contractual issues***

A reinforcement of the budget is foreseen. The specific procedure for this has been started following this approach:

- Consult all partners if they need to make adjustments.
- Transfers must not exceed 20% of the budget of the concerned partners.
- Preparation of a table showing the current situation (budget contractually agreed) and the budget distribution needed to have after implementing all changes
- Submission of a formal request accompanying the final cost statement annexing the described table.

***Co-operation within the consortium, including project meetings***

The discussions and remarks at the review and the previous project meeting in September resulted as follows:

- The concrete evaluation planning has been improved and submitted.
- Report "pre-validation" and "testing" activities: details can be found in the above report.
- Dissemination activities: a broadening of the events list addressing other audiences (e.g. "science education") has been done.

***Contribution to clustering, concertation and standardisation***

Web Services, a standard technology, have been elaborated; the connection to the LOR can now be taken on from other applications to extend the range of learning objects and thus enable the further enlargement not only of the user community, but also of the variety of scientific learning material and objects.

Furthermore, the evaluation instruments which are currently been developed, will be usable for heterogeneous scenarios. The methodology developed for the translation of the questionnaires, for example, can be implemented and used in other evaluation activities, not only in COLDEX.

***Participation in workshops and / or conferences, publications, etc.***

The participation in workshops, conferences and the publications can be seen from section 4.1 above. Similar to the recent reporting period, some of these are not paid by the COLDEX project, but have been hold along other scientific activities. Again, a tight connection to other projects and scientific backgrounds have been used to discuss and exchange experiences of COLDEX activities and ideas. Thus the final refinements within the scenarios and all other parts of the projects can benefit from this exchange. Please note that the biodiversity scenario has also been described in a master thesis.

***Effort breakdown***

The evaluation of the OUS activities in schools, universities and science centres has been continued using validated instruments. These instruments will also be useful in foreseen and following projects. The enlargement of the user community within the Open User Scheme is the up-and-coming basis for the longer lasting usage of the repository of learning objects as a focal point for social navigation: the loosely coupled heterogeneous tool environments which are used to create the learning objects allow for local evolution without dealing with one big system; the COLDEX approach aims at co-existing with other specialised or standard tools and thus is scalable and supports an open-ended variety of learning objects. On the pedagogical level, this fosters the scientific working mode which is the core of the challenge-based learning approach.