

**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  
 M16-M18, i.e. September to November 2003

**1- Overview**

**Objectives**

<i>Objectives</i>	<i>Progress towards achieving objectives</i>
<b>Project-wide</b>	
COLDEX brochure	Design and contributions from several partners
<b>UDUI</b>	
Integration of Smart Devices into Java Applications (Sep 2003)	Development of integrating smart devices, a factory that allows to build classes for data exchange devices from XML files. Furthermore a documentation of the classes and interfaces implemented and a Java typical documentation based on HTML are available.
Astro scenario	Specification "The Lifecycle of an Astronomy Experiment - From a Description to the result"
Metadata Mechanism in Cool Modes	Finalising of a prototype for metadata generation within Cool Modes: <ul style="list-style-type: none"> <li>• Upload to database</li> <li>• Retrieval of database via web browser incl. view and download possibility</li> </ul>
<b>UCH</b>	
Remote scenarios	<ul style="list-style-type: none"> <li>• Further development for the telescope                             <ul style="list-style-type: none"> <li>○ Server-client architecture</li> <li>○ Remote control of the telescope</li> </ul> </li> <li>• Multicasting of learning objects</li> </ul>
Local scenarios	<ul style="list-style-type: none"> <li>• Use of didactic networks in a CiC</li> <li>• Implementation of java palette for Cool Modes / Freestyler</li> </ul>
Communication and pedagogical network	Implementation
<b>VXU</b>	
Evaluation Plan	<ul style="list-style-type: none"> <li>• Elaboration of ideas and methods for the evaluation plan</li> <li>• Initial Draft for the preliminary evaluation plan</li> </ul>

<i>Objectives</i>	<i>Progress towards achieving objectives</i>
Local experiments	Implementation and technical development of the local experiments in Växjö, Sweden
<b>USB</b>	
Seismic scenario	<ul style="list-style-type: none"> <li>• Continued work on first prototype of seismic scenario (construction of realities, started work on moon crater scenario)</li> <li>• Development of Framework for capture and replay of data with Lego Mindstorms (potential basis for experiment protocol)</li> </ul>
Project presentation	Preparation of video and other materials for COLDEX brochure
<b>UNED</b>	
Chemistry Scenario	<p>The chemistry scenario was revisited to include new tasks and remote access to professional instrumentation (a chromatographer).</p> <p>This instrument is completely closed, so we have to develop a keyboard interface for the data input and the control and a camera to capture the monitor output. UPM will develop the technical infrastructure to interface with this instrument.</p>
Open User Scheme: Software Internationalisation	A considerable amount of effort has been dedicated to matters of software internationalisation (relating to both the actual system and the installation process). Furthermore, the scenario contents and related documentation have been updated to ensure that the software is suitable for dissemination in the European context of this project.
Ontology and Project Portal	<p>Design and development of the ontology and project portal. Initially a lot of effort was dedicated to the selection of a suitable tool for the management of the ontology, KAON looking like a suitable candidate. However, after working with it for sometime it became evident that it was still very much "work in progress" and would not be suitable for this project. At that point we changed to <i>Protegé</i>. This has proved to be a lot more solid and an initial development of the structure of the ontology has been undertaken. Subsequently the ontology has begun to be populated with object instantiations, something that has proved to be useful to check the initial structure.</p>

<b>Objectives</b>	<b>Progress towards achieving objectives</b>
Ontology and Project Portal	<p>Furthermore, the interface for the portal has been designed and a prototype is working. Before undertaking this work a technical decision had to be taken regarding the interface technology to be used. There were two alternatives, STRUTS which is a defacto standard and Java FaceS (JFS), which is a new technology that has been designed especially for the purpose, and will become the standard shortly. However, due to the stability of JFS, and the syntactic similarity of the two mark-up languages, it was decided that STRUTS was more appropriate. Hence, once the interface of the portal was designed in STRUTS a Java API was developed to enable the portal to access the ontology.</p> <p>Finally, the Metadata Synchronisation Service was further designed and a new section to deliverable 6.1.1 was added. D6.1.1 will be finalised after the metadata workshop in December 2003.</p>
<b>UPM</b>	
Remote scenario	<p>Task 4.1 Analysis of technical requirements at different remote experiment sites</p> <ul style="list-style-type: none"> <li>• Study of the chemical scenario in the UNED</li> </ul>
Methodology for connecting experiments	<p>Task 4.2: Development of methodology for connecting experiments to the network</p> <ul style="list-style-type: none"> <li>• Work in new servers of video, evaluating which one is the most suitable for the project. We have also been evaluating the protocol RTP (Real Time Protocol) as an alternative to the TCP (Transmission Control Protocol) for the transmission of video in Real Time via web.</li> <li>• We have started to design the chemical scenario for the UNED</li> </ul>
COLDEX client API	<p>Task 4.2: Development of COLDEX client API</p> <ul style="list-style-type: none"> <li>• We have started developing the API for the chemical scenario at the UNED</li> <li>• We have improved the API for the UPM-Telescope, implementing some of its functionality via "Web services"</li> </ul>
Prototype test	<p>Task 4.3: Test the prototypes</p> <ul style="list-style-type: none"> <li>• We have tested the Telescope scenario several times at the laboratory and during one night observing Mars</li> <li>• We have performed many tests with the chemical scenario at the UNED</li> </ul>
System Prototype	<ul style="list-style-type: none"> <li>• The telescope could be working, however we don't have a dome and we can't use it in the laboratory. However we can control it completely via web and we manage the images from it</li> <li>• The chemical laboratory prototype will be finished in the next four months</li> </ul>
<b>INESC-ID</b>	

<i>Objectives</i>	<i>Progress towards achieving objectives</i>
Local scenarios	<ul style="list-style-type: none"> <li>• Coordination and technical definition of BeLife</li> <li>• BeLife: Use of ION-Framework and definitions of the agents (plants, spiders, etc), i.e. development of the BeLife simulation world and integration with ION-Framework</li> <li>• Definition of a small initial application (kind of a game) that uses the simulation world of BeLife</li> <li>• Identification of potential design issues that can be further investigated with specific experiments</li> </ul>
Pedagogical evaluation	<ul style="list-style-type: none"> <li>• Contacts with teachers and students in order to involve them in the design activity.</li> <li>• Discussions on the collaboration aspect of the applications of BeLife</li> </ul>

### 1.1 Milestones

<i>Milestone</i>	<i>Planned date</i>	<i>Actual date</i>	<i>Comments</i>
Milestone08 - System Prototype I	30 Nov 2003	30 Nov 2003	(see the list of prototypes in 5. Main results)
Milestone09 - Initial user community established and users trained	30 Nov 2003		
Milestone10 - Continuous enlargement of the user group	30 Nov 2003 to 29 Feb 2004		

### 1.2 Deliverables

<i>Deliverable Code &amp; Name</i>	<i>Planned delivery date</i>	<i>Actual delivery date</i>	<i>Comments</i>
D1.3.1 – Quality Plan	30 Nov 2002		
D1.4.1 Dissemination and Use Plan	30 Nov 2002	2 Jul 2003	The DUP will be elaborated
D2.2.1 – Learning Requirements	30 Nov 2002	22 Jan 2004	Preliminary version was available at first review (Jul 2003)
D2.2.2 – Collaborative Scenarios	31 May 2003		Preliminary version was available at first review (Jul 2003)
D2.3.1 - Learning Activity Design	31 May 2003	22 Jan 2004	Preliminary version was available at first review (Jul 2003)
D3.2.1 / D3.2.2 – COLDEX Toolbox and Toolbox documentation	31 May 2003	22 Jan 2004	Preliminary version was available at first review (Jul 2003)
D6.1.1 – Network Specification	31 May 2003		Preliminary version was available at first review (Jul 2003)

D4.2.1 / D5.2.1 / D6.2.1 – System Prototype I (implementation of the network servers, remote experiments and local scenarios)	31 Jan 2004	30 Nov 2003	<p>Work in progress:</p> <ul style="list-style-type: none"> <li>• Prototypes of Web services for the telescope in Chile are implemented</li> <li>• Implementation of Web services at UPM, Madrid, has been started</li> <li>• Implementation and technical development of the local experiments in Våxjö, Sweden</li> </ul>
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### 1.3 Deviations from Plan

<i>Causes and Description</i>	<i>Corrective actions</i>
D1.2.1 – brochure, web site, video	Brochure and videos are currently being elaborated; poster and flyer are planned (for Feb 2004)
D1.3.1 – Quality Plan (to come)	This is the very next thing we will do
D1.4.1 Dissemination and Use Plan	The DUP will be elaborated
D6.1.1 – Network Specification (Draft 2 July 2003)	A new section on Metadata Synchronisation Service has been added to D6.1.1
D2.3.2 / D8.1.1 – Evaluation Plan	Will be elaborated at the beginning of 2004

## 2 - Contractual Arrangements

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## 3 - Project Meetings (held and foreseen)

<i>Title</i>	<i>Date and Place</i>	<i>Main conclusions</i>
COLDEX meeting	30 October - 31 October 2003, Våxjö, Sweden	<ul style="list-style-type: none"> <li>• Merge of seismic scenario (meeting in Dagstuhl, see below)</li> <li>• Metadata workshop topics (LOR and experiment ontology)</li> </ul>
Chile: Programming session (UDUI/UCH)	December 2003, Santiago, Chile	Foreseen
COLDEX metadata workshop	December 2003, Madrid, Spain	Foreseen
Dagstuhl: Project meeting – discussion about technical aspects of the astro scenario (UDUI/USB)	Jan 2004, Dagstuhl, Germany	Foreseen
Next COLDEX meeting	Begin of 2004	Foreseen

## 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>
16 Sep 2003	KI 2003, Hamburg, Germany	<p>German Conference on Artificial Intelligence</p> <ul style="list-style-type: none"> <li>• Workshop "Expressive Media and Intelligent Tools for Learning"</li> <li>• Marc Jansen; Kunal Sachdeva; Harrer, Andreas: About a Framework for Integrating Smart Devices in Java Applications, In: A. Harrer, K. Gaßner (eds.), / Proceedings of the Workshop on Expressive Media and Intelligent Tools for Learning / . German Conference on Artificial Intelligence KI-2003, Hamburg, 2003</li> </ul>
10 - 12 Sep2003	XXIV Jornadas de Automatica, Spain	Francisco M. Sánchez, A. Pinazo, R. Martinez, J.M. Sebastian. Paper and presentation "Teleoperación de un telescopio Vía web", Leon, Spain
30 – 31 Oct 2003	Project meeting, Växjö, Sweden	Presentation of Seismic scenario prototype and ideas for moon crater scenario at project meeting
6 - 8 Nov 2003	EADTU 2003, Madrid, Spain	A presentation was given at the EADTU Annual Conference "E-Bologna: progressing the European learning space" celebrated 6-8 November in Madrid.
11 - 14 November 2003	CAEPIA 2003, San Sebastián, Spain	<p>Paper and workshop</p> <ul style="list-style-type: none"> <li>• Diseño de un portal semántico para comunidades de aprendizaje colaborativo. Verdejo, M.F., Mayorga, J.I., Read, T. &amp; Barros, B. En Actas de la X Conferencia de la Asociación Española para la Inteligencia Artificial. ISBN 84-8373-654-4, pg 329-338, 2003</li> <li>• A workshop "Trabajo en grupo y aprendizaje colaborativo: experiencias y perspectivas" was co-organized by B. Barros, in the framework of CAEPIA, where the project was also presented</li> </ul>

**5 - Main results**

<i>Description</i>	<i>Details</i>
Telescope laboratory prototype	The telescope laboratory prototype at UPM, Madrid, is almost finished. However we can't use it in a real situation because we don't have a dome or budget for purchasing it.
Metadata mechanism for Cool Modes documents	First prototype incl. repository for Cool Modes documents is working
Project Portal	A prototype for the portal interface is working
Telescope control and data processing	Remote control for the telescope and image processing is available
Local scenario	Integration of the BeLife simulation world with ION-Framework

## **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**

List of technical, business and administrative highlights

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

Meanwhile several prototypes are working, ideas and methods for the evaluation are elaborated, local and remote scenarios are improved. A framework for capture and replay of data with Lego Mindstorms is developed. There is a delay in coordination and management, since the Quality Plan is still missing and the Dissemination and Use Plan has to be elaborated. The reporting has been already restructured.

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

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

### **Work progress overview**

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

The development of the prototypes is the focal point of this reporting period. There are several working prototypes now. Field testing has taken place, some will follow in the next reporting periods.

#### ***Achievements***

##### **List of Deliverables**

Preliminary versions of the deliverables have been sent and are available in the COLDEX website; the finalised versions will come soon.

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

WP 1

The coordination needs refinement

WP 2

Pedagogical models and scenarios, namely activity design, have been refined.

WP 4

Remote scenarios have been elaborated; technical analysis, methodology for connecting experiments, client API and test prototypes have been done.

WP 5

Implementation of several local scenarios

WP 6

Prototypes for the network are working

WP 7

Software internationalisation has taken place and is currently improved

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

We are aware of the deviations and will as soon as possible finalise the open tasks.

### ***Project reviews***

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

The first review has taken place in July 2003. The restructuring of the reporting is currently refined. All fo the missing finals for the deliverables are elaborated. There are some dissemination activities in Europe planned, e.g. for the EU presentation of an E-Learning Trade Fair in Germany.

The next review is envisaged for 2004 likely to be held in Växjö.

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

(UDUI, VXU, UNED)

Metadata workshop concerning ontology of experiments and LOR

(UDUI)

- Programming sessions in Santiago, Chile, and Dagstuhl, Germany (telescope and tools for astro scenario)
- Metadata mechanism retrieval of the stored documents (further development of refined retrieval in the web client)
- Further discussion concerning the metadata mechanism within COLDEX metadata context
- Elaborating the framework for integration of smart devices

(INESC-ID)

a) Aims

- Conclusion of the validation of the BeLife model by an expert.
- Continuation of the definition of the user interface and learning requirements and corresponding specifications.
- Development of first prototype of BeLife with ION-Framework.

b) Potential Issues



We do envision some challenges concerning the development of a user interface for blind learners as well as develop strategies to foster collaboration between blind and sighted learners.

## **Project Management**

### ***Contractual issues***

The change of the amendment concerning the new name of the Coordinator university is in process.

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

We are keeping the consortium up-to-date concerning the deliverables to come; we hand these in as soon as there are the demanded versions.

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

There was a project meeting in October in Växjö where clustering and concertation were discussed. The brochure is under construction with the help of the project partners. Standardisation is enforced in most of the prototypes.

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

The partners joint an AI conference and several (partly) national conferences in Spain. Furthermore there have been hold some presentations during the project meeting in Sweden.

### ***Effort breakdown***

- The metadata generation system and the prototype of the project portal are now working as the foundations of the Open User Scheme which will realise the intercultural connection of learning communities. Furthermore the amount of scenarios now enables various learning contents – and this is available for all interested users all over the world.
- Now we want to refine the scenarios, especially the astronomy scenario will be very rich concerning the contained experiments. These foster the space topic in a very motivating way. We plan refinements for other scenarios, too. Especially the aspect of low-cost physical equipment will be addressed.