

COLDEX aims at developing and using new IT approaches and computational tools to foster scientific experimentation, modelling and simulation in distributed collaborative settings in an intercultural (European-Latin American) community of learners. Our efforts will result in the creation of innovative pedagogical scenarios. A common denominator for the learning domain is the study of visual and other perceptual phenomena, including astronomical and seismic measurements, from both a scientific and a subjective experiential perspective. The project will start with local learning communities sharing a rich everyday context. The target groups will range from higher secondary education to academic beginners. Computer-mediated collaboration tools will contribute to forming integrated synchronous / asynchronous access to a "group memory" on different levels.

<http://www.coldex.info>

**Project Partners:**

University of Duisburg-Essen,  
Germany

Universidad Nacional de  
Educación a Distancia (Spanisch  
Open University), Spain

Universidad Politécnica de  
Madrid, Spain

Instituto de Engenharia de  
Sistemas e Computadores,  
Portugal

Universidad de Chile, Chile

Universita Catolica del Norte,  
Chile

Xperiment Huset, Sweden

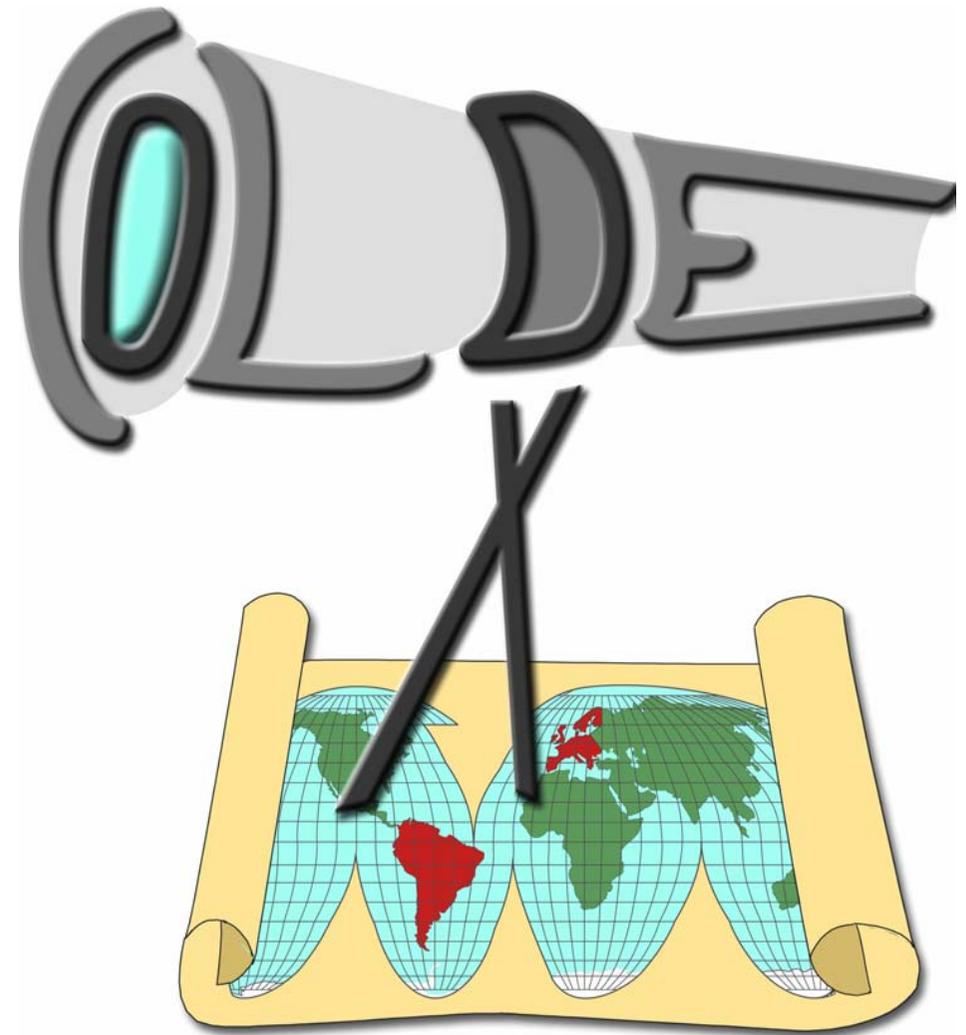
University of Växjö, Sweden

University of Saarland, Germany

For further information  
please contact:

Prof. Dr. H. U. Hoppe  
University of Duisburg-Essen  
Faculty of Engineering  
Lotharstr. 63  
47057 Duisburg  
Germany  
Phone: +49 (0)203 / 379 3553  
Fax: +49 (0)203 / 379 3557  
Email: [hoppe@collide.info](mailto:hoppe@collide.info)

# Collaborative Learning and Distributed Experimentation



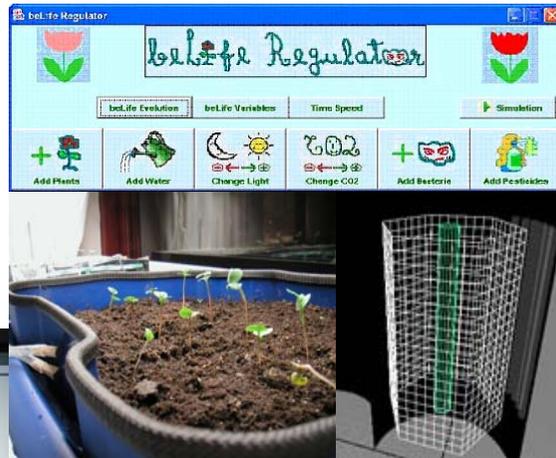
Work partially supported by European Community under the Information Society Technology (IST) RTD programme, project COLDEX contract IST-2001-32327

The project partners are solely responsible for the content of this flyer. It does not represent the opinion of the European Community, and the European Community is not responsible for any use that might be made of data appearing therein

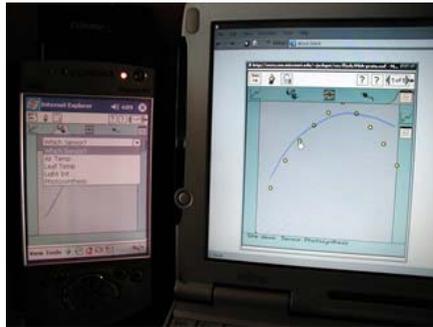
# Collaborative Learning and Distributed Experimentation



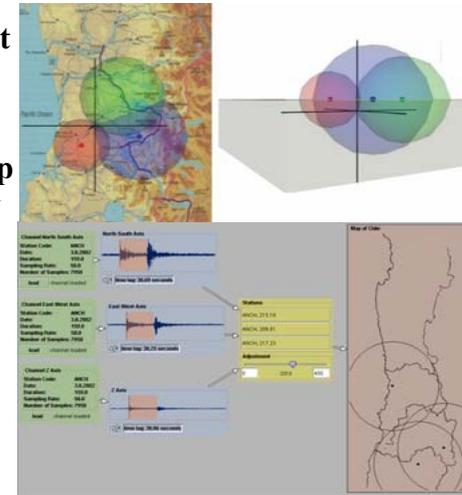
Students' strategy discussion



The space planting scenario enables students to experiment with computer and robotic controlled plant growth chambers in the context of Advanced Life Support Systems



Finding epicenter and hypocenter of earthquakes is the main task in the seismo scenario



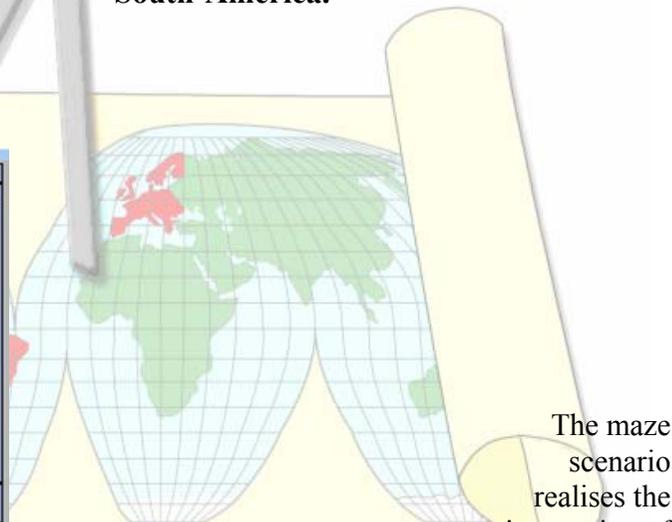
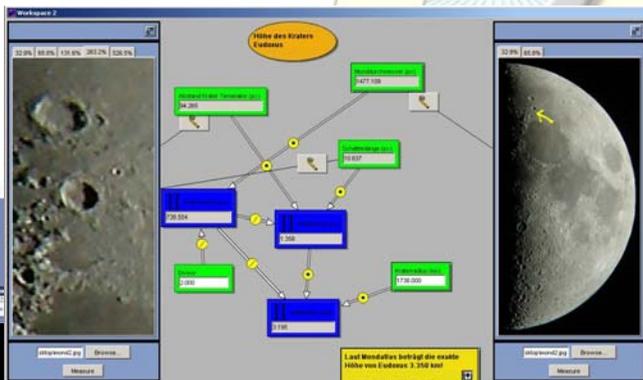
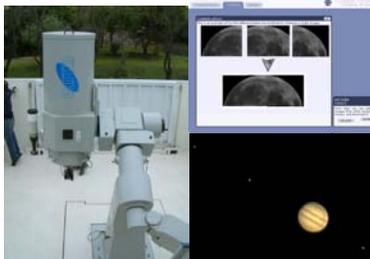
Chemistry, biodiversity, seismology, astronomy ... these are the scientific topics which are combined in the COLDEX project

Originating from the pedagogical idea of "challenge based learning", we support student groups – from face-to-face groups up to international learning communities; they can have a realistic look inside scientific work. Various "digital experimentation toolkits" containing virtual and physical tools enable open-ended learning activities.

By using a synchronised "learning object repository" (LOR) learners can find people with similar interests. The LOR supports retrieval in a big pool of models and data, re-use of learning objects and building of learning communities between Europe and South-America.

## Scenarios for Challenge Based Learning

The astro scenario contains remote control of telescopes, image processing and calculating moon crater heights



The maze scenario realises the integration of smart devices

