

# Large Scale Experimentation Scenario to Mainstream e-Learning in Science

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# Overview <sup>(1)</sup>

CIP Programme: Competitive and Innovation Framework - ICT  
Policy Support Programme: Objective e-Learning

DURATION: 36 MONTHS (April 2013 - March 2016)

TOTAL BUDGET: 9.800.000.00

Inspiring Science Education aims to motivate and stimulate teachers to attract students to the world of scientific discoveries, natural and scientific phenomena and much more by providing them within their classrooms with access to the latest, interactive tools and digital resources.



# Overview (2)

A World of eLearning tools and resources for Scientific Disciplines  
just a click away with...



INSPIRING SCIENCE EDUCATION

**Coordinator**  
Menon (Belgium)

**Partners**  
32 European partners:  
Ministeries  
Universities  
Research Centers and Institutes  
European Research Associations

# ISE Background

ISE will:

- contribute to the implementation of the **Digital Agenda for Europe**, in particular Action 68 *“Mainstreaming e-Learning in national policies for the modernization of education and training”*
- foster the adoption of the recommendations of the Rocard Report: *“A new Pedagogy for the Future of Europe”* (2007) for the introduction of the **Inquiry Based approach in the science curricula**
- expand the resources for teaching science in schools providing students with more challenging learning experiences



# ISE Target Group

ISE will create and open web-based community of students, teachers, educators, scientists, offering:

- **To the students** the opportunity to work collaboratively in learning projects and even perform personalized scientific experiments with the use of e-Learning tools
- **To the teachers** a web-based pedagogical interface and a community framework to disseminate best practices and find mutual support



# ISE Objective <sup>(1)</sup>

ISE wants to highlight the importance and many advantages of good and inspirational science education

Providing teachers and students with tools to make science education

- more challenging,
- more playful and above all
- more imaginative and inspiring for the new generation



# ISE Objective <sup>(2)</sup>

The ISE project will explore how various learning applications, such as interactive simulations, educational games and e-Science applications, can be applied in the everyday school practice, integrating them with extra-curricular activities, such as visits to museums, research centres and field trips.

ISE aims to design, plan and implement large-scale pilots to stimulate an innovative use of existing e-Learning tools and resources.

The selection and integration of the e-Learning tools will aim to support the best possible practices of learning, teaching, and assessment.



# ISE Objective <sup>(3)</sup>

## ISE

- explores how various learning applications (interactive simulations, educational games and e-Science applications) can be apply in the everyday school practice, integrating them with extra-curricular activities (visits to museums, research centres and field trips..)
- Creates and facilitates teaching methods for science teachers providing them with a platform that allows the integration of the tools in the extra-curricular teaching programme
- Excites students about the world of science with a long term objective of increasing the number of students enrolled
- Mainstreams e-Learning in national policies for the modernization of education and training, and the professional development of teachers and trainers.



# ISE Methodology

The project will use the proposed e-Learning tools and resources, coupled with an evaluation framework, evaluating progress on learning achievements, based on the PISA 2012 Framework for the assessment of the problem solving competence of the students, teacher professional development and school organization change.

This approach will offer the basis for the validation of the introduction of technology-supported educational innovation in European schools, so that piloting and field testing results can be collected and analyzed systematically and then disseminated widely, thus ensuring real impact and widespread uptake.



# The Service Portfolio

The consortium will bring together tools, which have a very limited penetration in school communities, but they are able to shape the future of educational practices.

These tools cover a wide range in terms of complexity, varying from:

- simple easy to use web applications and
- applets that have been already experimented used in some schools
- online labs and experimentations that are partially used mainly from existing teachers communities

The existing e-Learning tools apply latest technology - including tablets, active surfaces, mobile phones and mixed reality environments – and numerous software applications (simulations, visualization, educational games).



# ISE online Labs (Remote & Virtual) & Applications

**Online Laboratoires (CERNland, MINERVA, HYPATIA, Meteosat Discovery Space Portal,** are software to conduct scientific experiments. Remote when the real experiment is performed in a separate geographical location from the labs, virtual when the experiments are just simulated.



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# ISE Advanced Technological Applications

**CONNECT** and **EXPRLOAR**, **AR Environments**, **Science Center To Go**, **KLIC-Kicking Life into Classroom**, **SimAULA** are Softwares through which the technology is applied to develop and test models and simulators for future practical use.



# ISE Educational repositories and portals

Online repositories which collect a number of tools related to specific educational matters, where teachers can interact and exchange best practises in the use of ICT tools for teaching sciences. They may contain also OER to be used by both teachers and students: **SINUS International Repository for Mathematics**, **PATHWAY Repository for Inquiry Based Activities**, **ESERO**, **Sum for all**



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# ISE Challenges<sup>(1)</sup>

To achieve its ambitious objectives and to offer the expected benefits to its users ISE has to meet four main challenges:

## **Challenge 1. Implementation of large scale pilots**

The ISE implementation (involving 5,000 schools in 14 countries) aims to generate a showcase of sufficient scale across borders, languages, different educational systems.

## **Challenge 2: Developing self-sustained teacher communities**

To implement the proposed activities and to allow the exchanged of experiences enhancing the debate across different methodologies applied in science education.

## **Challenge 3: Demonstration of impact on the achievement levels in science**

ISE will design and implement a systematic evaluation approach which will offer the reference for validating the introduction of innovation in schools, so that piloting and testing results can be collected and analyzed systematically and then disseminated widely, thus ensuring rapid impact and widespread uptake.



# ISE Challenges <sup>(2)</sup>

## Challenge 4: Benchmarking activities on the use of e-Learning

ISE aims to optimize the use of learning content by linking supply-side (digital content and applications) with the demand-side (teachers, students and parents). The work will be distributed according to **3 main axes**:

- a) the development of data framework that can drive the deployment of services to help users discover, discuss and improve e-Learning resources
- b) the development of social navigation and visualization services that will guide users through the abundance of content resources within the ISE Inventory in order to find the ones that match their educational needs;
- c) the implementation of a mapping process between the user needs and the available approaches and tools that the project consortium brings together.



# ISE Community

The project will be implemented in a network of 5.000 schools in Europe.

The focus of the project team is to assess the impact of the proposed scheme to the school community in order to demonstrate the potential of the use of eLearning tools in everyday practice.

The 5,000 pilot schools will be selected and will enter the project activities **in 3 phases**:

**Phase A (Year 1)** – involvement of 500 schools to support the development of the Inspiring Science Education Demonstrators (WP3),

**Phase B (Year 2)** – involvement of 2,000 additional schools that will be involved in the pilots (WP7), 9 months duration and

**Phase C – (Year 3)** involvement of additional 2,500 schools in the framework of the large scale validation activities (WP7), 9 months duration.



# Number of school per country

Country	Total Number of Schools	National Coordinator
The Netherlands	100	UTWENTE
Greece	420	IEP/EA
Croatia	313	CARNet
Finland	313	UHELSINKI
France	417	EPS/EA
Ireland	207	DCU
Romania	417	SIVECO
Belgium	103	ATIT
Italy	417	CNR-ITD/ USGM
Germany	521	UBER
Spain	521	UNIR
Bulgaria	313	BREN
UK	521	Cardiff
Portugal	417	NUCLIO



***Be INSPIRED ...Join us!***

For more info:

ISE website

<http://ise.atit.be/home>

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**THANK YOU**

