

# EPIKH



**Summary:** The “knowledge triangle” refers to the interaction between research & development, education and innovation, which are key drivers of a knowledge-based society. In the European Union, it also refers to an attempt to better link together these key concepts with research and innovation already highlighted by the development of the Lisbon Strategy. The EPIKH project aims to “connect”, through the adoption and use of Grid training infrastructures, along with that of e-Infrastructures, research & development and innovation with education in order to increase the number of users and scientific applications of these platforms.

**Objectives and actions:** The strategic objectives of the EPIKH project are to:

- O1) Reinforce the impact of e-Infrastructures in scientific research defining and delivering stimulating programme of thematic educational events, including Grid Schools and High Performance Computing courses;
- O2) Broaden the engagement in e-Science activities and collaborations both geographically and across disciplines.

These ambitious goals translate into the following specific actions:

- A1) Spreading the knowledge about the “*Grid Paradigm*” to all potential users: both system administrators and application developers through an extensive training programme;
- A2) Easing the access of the trained people to the e-Infrastructures existing in the areas of action of the project;
- A3) Fostering the establishment of scientific collaborations among the countries/continents involved in the project.

**Exchange and training program:** The exchange programme is implemented in phases that alternate between each other along the time span of the project. First, a selected team of brilliant young researchers is invited to visit the EU partners of EPIKH for periods in the order of 1 month to get trained as trainers of Grid technology for what concerns both administration of Grid sites and application support (“gridification”).

Then, at least 2 Grid educational events per year and per continent (Africa, Asia, and Latin America) are organized and run.

Each of them consists of the following phases:

1. Organization phase (2-3 months):
  - Based on available *ex-ante* analysis, 1 or 2 complementary scientific disciplines, strategic for the region of the world where the EPIKH educational event are expected to take place, are selected;
  - A “call for applications”, belonging to the scientific domains chosen, is open and largely advertised; interested users and communities are requested to fill the questionnaire <http://applications.epikh.eu/survey> providing scientific and technical details of the applications they want to propose;
  - Received applications are selected against public and well described criteria by a Selection Committee that is appointed by the management of EPIKH;
  - Authors of selected applications are then invited to come to the EPIKH Grid school to “gridify” them;
2. Execution phase (1 month):
  - The school to port the selected applications on a Grid environment is preceded by a school for Grid system administrators; the school has a duration of 7-10 days has the objective to form skilled people and set-up the Grid training infrastructure (t-Infrastructure) to be used for the subsequent school for application porting;

**Project acronym:**  
EPIKH

**Contract n°:** 230842

**Project type:** Marie Curie Action

**Start date:** 01/03/2009

**Duration:** 48 months

**Total budget:**  
1,188,000 €

**Funding from the EC:**  
1,188,000 €

**Total funded effort in person-month:**  
650

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[www.epikh.eu](http://www.epikh.eu)

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**Project participants:**

COMETA	IT
MTA SZTAKI	HU
CIEMAT	ES
UTFSM	CL
ERI	EG
CSIR	ZA
IHEP	CN
CESNET	CZ
CEFET-RJ	BR
ISI	IN
JUNET	JO
CERIST	DZ
UTIC	TN
PKU	CN
SCS-TAU	IL
BUAA	CN
CNRS	FR
UFRJ	BR
UNAM	MX
INFN	IT
GRNET	GR
UCT	ZA

- In the next 14-16 days, authors of selected applications and tutors (both from EU and non-EU countries participating to EPIKH) wget together and “gridify” the applications; the school has a “theoretical” part, where the Grid principles and applications’ scientific details will be explained, followed by “hands-on” sessions where tutors work together with applications’ experts to adapt their codes to run on the t-Infrastructure; trainees are also taught about how to access the e-Infrastructure present in their continent;
- At the end of the schools, a scientific workshop of 1-2 days are held where the problems of the scientific disciplines chosen as topics of the school are debated and how the adoption of the Grid “paradigm” can represent a big advantage. Decision makers and stakeholder from politics and industry are invited whenever and wherever possible and applications “gridified” during the school are shown as use cases and success stories; this allows to pursue a combined “top-down/”bottom-up” approach for the long-term sustainability of e-Infrastructures in the region.

**Collaboration with other EC funded projects:**  
 CHAIN  
 DEGISCO  
 EGI InSPIRE  
 EU-IndiaGrid2  
 EUMEDGRID-Support  
 GISELA  
 INDICATE

**Expected impact:** The relevance of the proposed joint research programme can be summarized as follows:

- Groups active in strategic scientific domains will be indentified early on and put in contact with colleagues in Europe and other parts of the world widening, at a global scale, the diffusion of scientific (in)formation and best practices;
- Grid technology will be used as a powerful “tool” to impart/improve education on e-Science;
- The t-Infrastructure built during the first school can be left as a seed of a Grid infrastructure in regions where e-Infrastructure sites are not yet present;
- At the end of the second school, more applications will be ready to run on large e-Infrastructures and more users will get aware of the benefits of this technology for the progress of science and society.

In order to implement its work plan and reach its objectives, EPIKH will mobilize about 115 people for a total of over 650 researchers-months, not counting of course the people that will be outreached by the project. These are huge figures, even larger than those of many much richer projects, witness the strong interest of the 4 continents of the world involved in the project in setting up an exchange programme to improve the dissemination of the know-how about Grid and e-Infrastructures.

**Grant opportunities:** People interested in obtaining EPIKH grants for secondments are invited to fill the web form:

[http://wiki.epikh.eu/index.php?option=com\\_wrapper&view=wrapper&Itemid=108](http://wiki.epikh.eu/index.php?option=com_wrapper&view=wrapper&Itemid=108).

**Useful links:**

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