



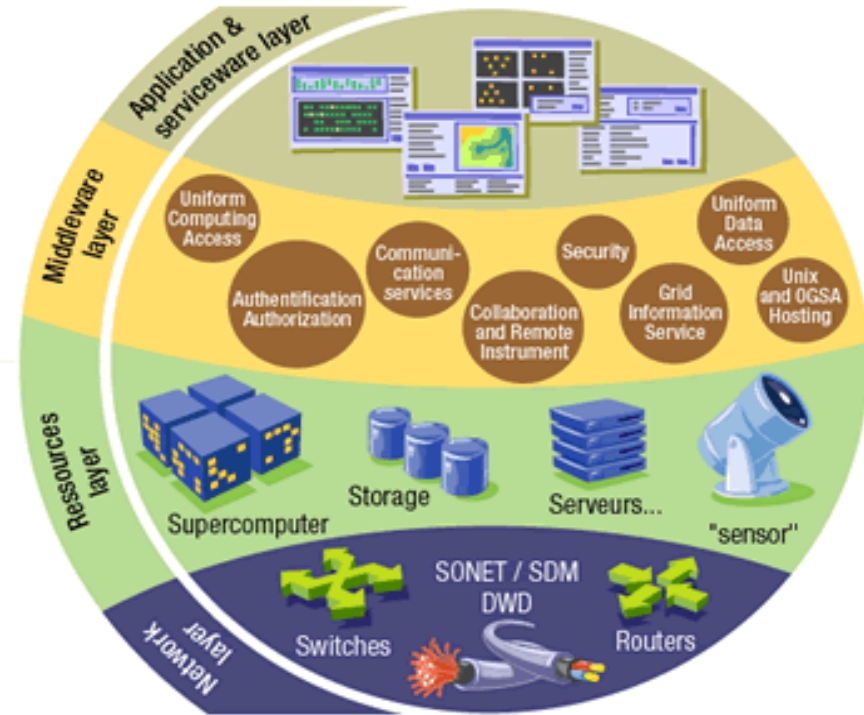
# **Interconnection of Armenian e- Infrastructures with the pan- Europan Integrated Environments**

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[www.grid.am](http://www.grid.am)

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E-Infrastructures provide a new way of doing research.

E-Infrastructures comprise:

- Connectivity
- Grid computing
- Supercomputing
- Scientific data
- Global Virtual Research Communities
- Standards



EUROPEAN COMMISSION

Brussels, 15.2.2012  
COM(2012) 45 final

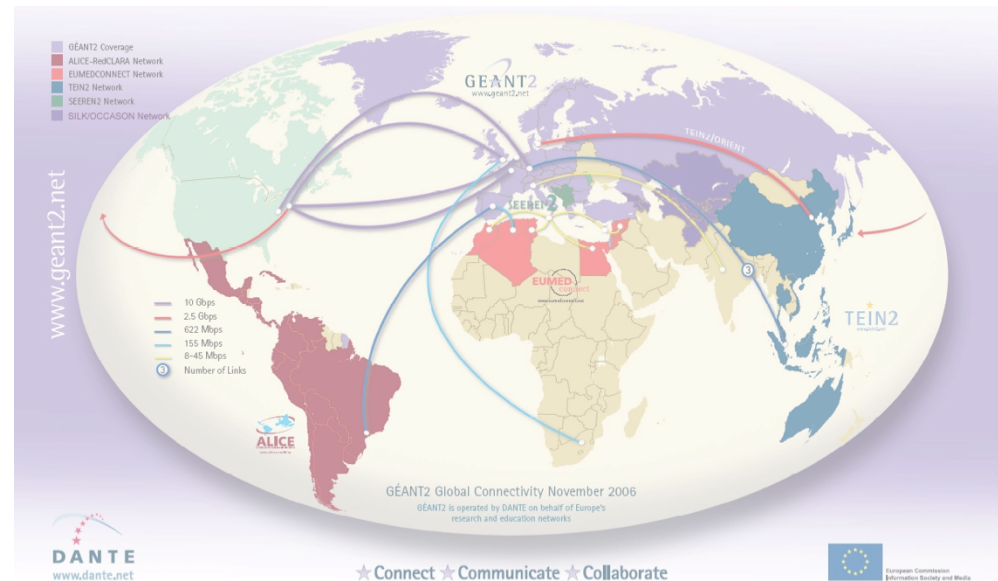
COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

High-Performance Computing: Europe's place in a Global Race

- The Research Network infrastructure provides fast interconnection and advanced services among Research and Education institutes of different countries'
  - GÉANT is the high-bandwidth, academic Internet serving Europe's research and education community. Connecting over 30 million researchers with a multi-domain topology spanning 34 European countries and links to a number of other world regions,
    - TERENA (Trans-European Research and Education Networking Association)
    - DANTE



TERENA Membership Soon



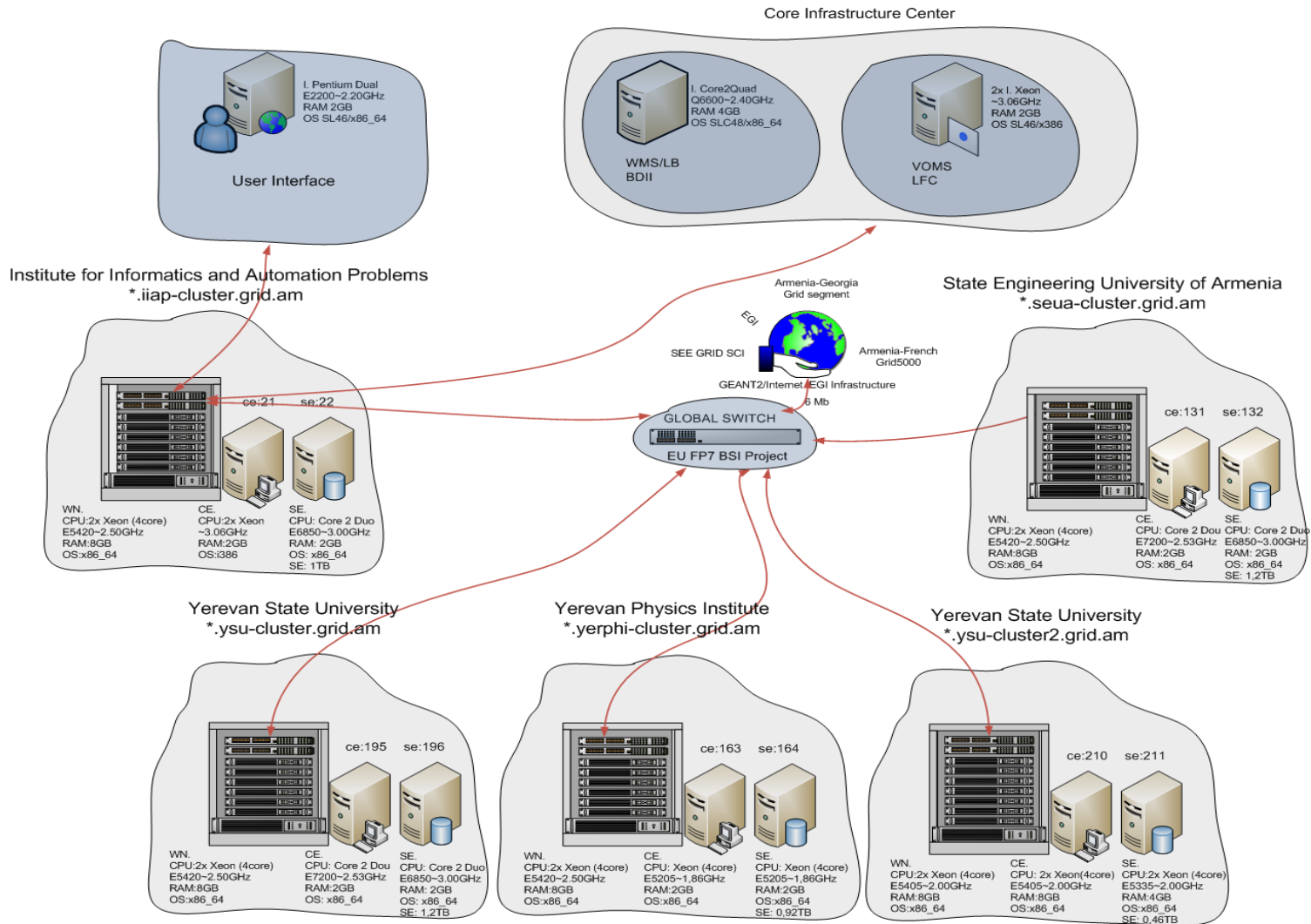
★ Connect ★ Communicate ★ Collaborate



- **Integrated Sustainable Pan-European Infrastructure for Researchers in Europe**
  - **Grid** - EGI.eu, currently, being established in Amsterdam, EGI.eu's focus is coordinating the continued operation and expansion of today's production grid infrastructure that supports over 13,000 researchers, many of them already heavy users of the infrastructure, across diverse disciplines such as Earth Science, Astronomy & Astrophysics, Fusion research, Computational Chemistry, Materials Science, Life Sciences and High Energy Physics.
  - **PRACE (Partnership for Advanced Computing in Europe)** - is to enable high impact European scientific discovery and engineering research and development across all disciplines to enhance European competitiveness for the benefit of society. The PRACE RI seeks to realize this mission through world class computing and data management resources and services open to all European public research through a peer review process. The first production system, a one Petaflop/s IBM Blue Gene/P (JUGENE) is installed at Forschungszentrum Jülich, Germany, a Gauss Centre for Supercomputing member site. The second production system, a 1.6 Petaflop/s BULL system called CURIE is located near Paris and operated in a new computing center, the Très Grand Centre de Calcul.
  - **EIRO (European International Research Organizations)** – CERN, ESA, ESO

## Armenian National Grid Initiative

GRID-AM / 93.187.165/255(Registered in the RIPE Database)



[http://www.e-irg.eu/images/stories/meetings/2009-se/grand\\_challer](http://www.e-irg.eu/images/stories/meetings/2009-se/grand_challer)

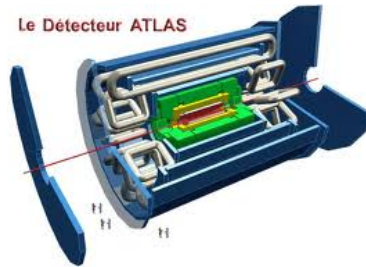
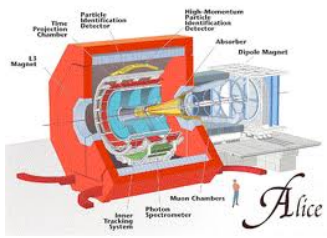
## Overview: scientific data e-Infrastructure

The diagram illustrates the layers of scientific data e-Infrastructure. At the top, various scientific domains (biology, Earth Obs, Climate, astro, Chemistry, fao) are represented by colored circles with arrows pointing down to a central 'scientific data infrastructure' layer. This layer is supported by 'distributed computing/software infrastructure' and 'network infrastructure, GÉANT'. The diagram is surrounded by logos of various research projects and organizations like PESI, IMPACT, VAMDC, 4D4Life, Geo-Seas, GENESI-OR, metafor, EUROVO, HELIO, NMDB, driver, SEAL5, and the European Commission.

e-infrastructure

20

- Integration of local Communities with International Virtual Organizations

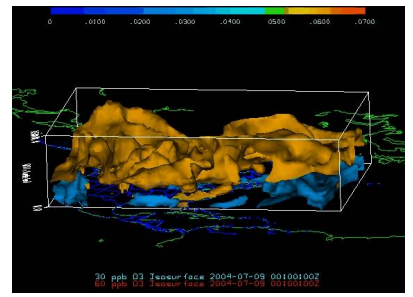
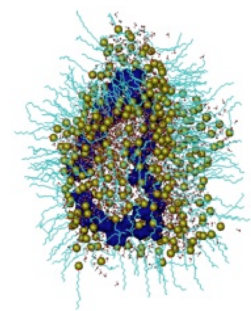
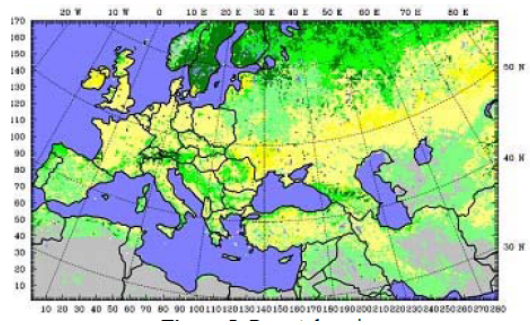


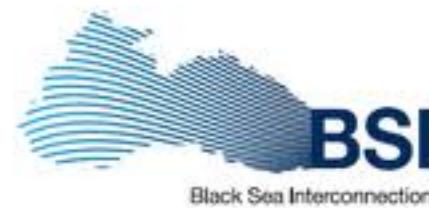
- Investigation and Implementation new types of e-Infrastructures

### GPU Computing



- Application and Service Transfer and Porting





- Pan-European Grid
- South East European Grid
- Russian-Armenian
- Georgian-Armenian
- French National Grid' 5000





HP-SEE focuses on a number of strategic actions. First, it will link existing and upcoming HPC facilities in the region in a common infrastructure, and provide operational solutions for it.

As a complementary action, the project will establish and maintain GEANT link for Caucasus. Second, it will open this HPC infrastructure to a wide range of new user communities, including those of less resourced countries, fostering collaboration and providing advanced capabilities to researchers, with an emphasis on strategic groups in computational physics, chemistry and life sciences.

Finally, it will ensure establishment of national HPC initiatives, and act as a SEE bridge for PRACE.

Coordinator:

GRNET, Greece

Participants:

14 countries

The overall aim of INARMERA-ICT (Integrating Armenia into ERA: Information and Communication Technologies) is to reinforce the cooperation capacity of the Institute for Informatics and Automation Problems of the National Academy of Sciences of the Republic of Armenia in Yerevan by creating the possibilities to improve its research activities in the areas of thematic priorities of FP7. Successful implementation of the INARMERA-ICT Work Programme will have a profound and long lasting impact on the EU-Armenia R&D cooperation.

## Partners:

- Universite Paul Sabatier, Institut de Recherche en Informatique de Toulouse, France
  - Centre National de la Recherche Scientifique
  - Institut National Polytechnique de Toulouse
- Magyar Tudomanyos Akademia Szamitastechnikai es Automatizalasi Kutatointezet, Hungary
- European Centre for Knowledge and Technology Transfer, Belgium

# eduroam = education roaming

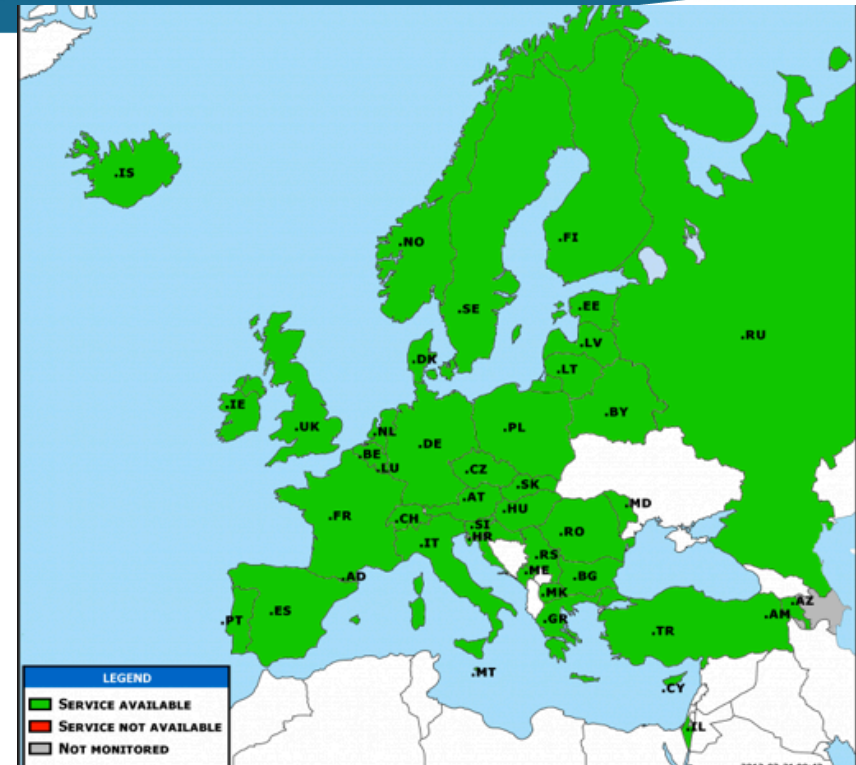


## Globally available service

- Pioneered by European research and education networking community
- Available in 45+ countries

- Enables students, researchers and staff to obtain connectivity across campus
- Gives Internet access at participating universities, colleges, research centres and libraries

Simply open your laptop or activate your smartphone or other portable device!



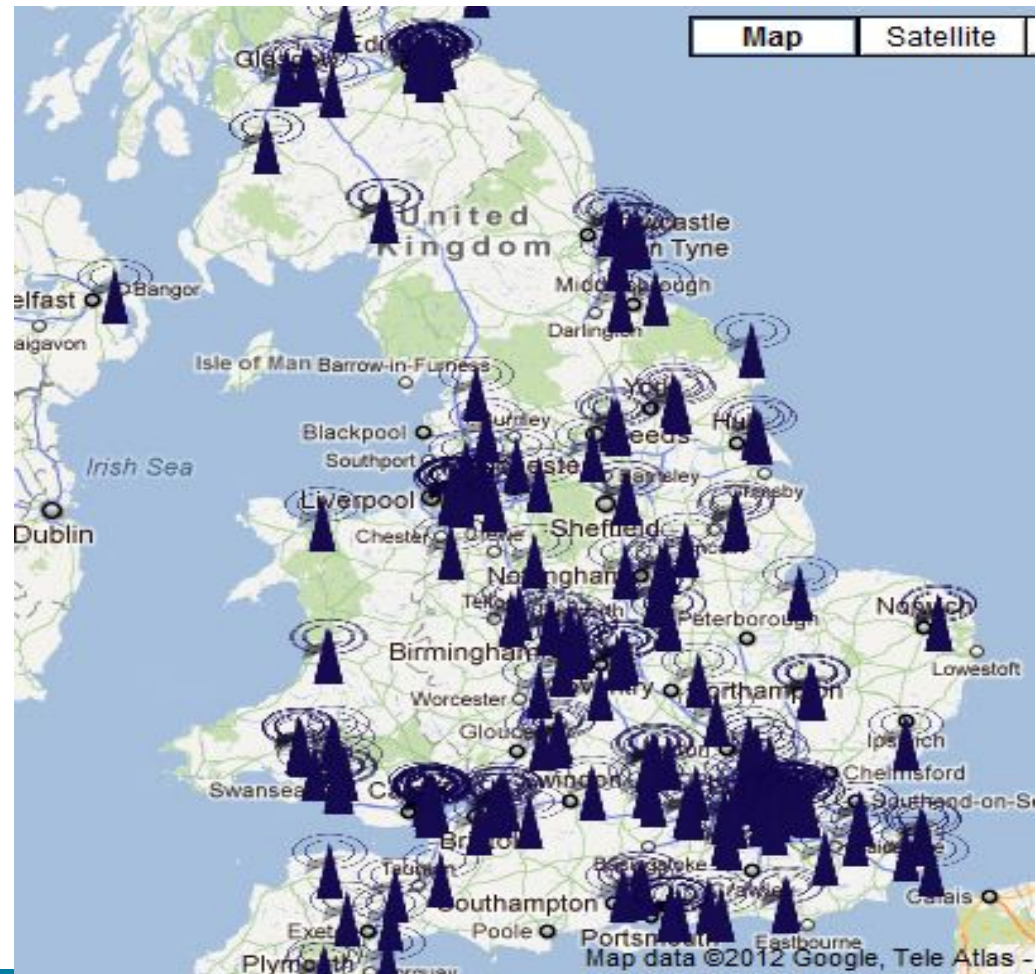
[Interactive map of eduroam in Europe](#)

# eduroam = education roaming



Almost in every  
Institution

- For example in UK there are more than 200 eduroam enabled Institutions and colleges

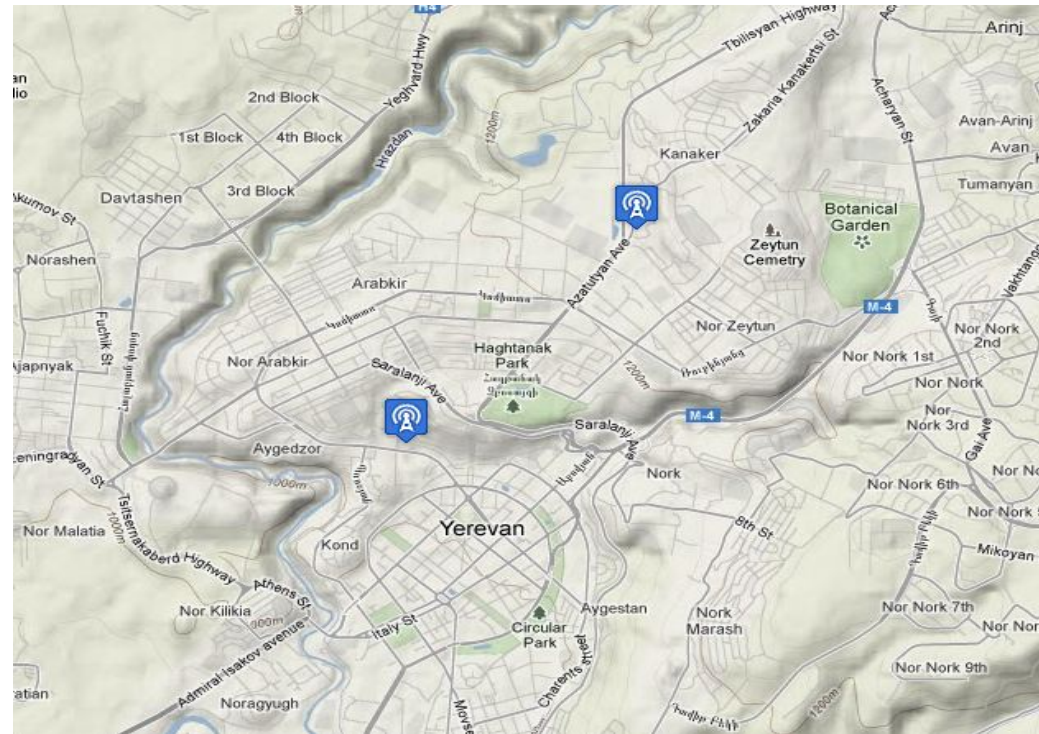


# Armenia has just started participate



## First steps of Armenia

- IIAP NAS RA and NAS RA Presidium Are Participating. Yerphi will join soon!
- Eduroam has great Future in Armenia



## Interactive map of eduroam in Armenia

Thousands of institutions in Asia, North America and Europe. Latin America and Africa joining soon.

- Pass simple registration in [www.eduroam.am](http://www.eduroam.am)
- Configure your device for eduroam via “How to connect”
- Connect to the wireless network with SSID “eduroam”
- If asked, enter your username and password from that you got after registration
- For information and help contact IT support via [www.eduroam.am](http://www.eduroam.am)