

Broadband e-infrastructure development in Moldova for e-science and e-learning services

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Abstract

Europe has invested heavily in e-science programs over the past years both at the National and the European levels with impressive results. Enabling large-scale innovative research through collaboration of distributed teams of scientist across the European Research Area (ERA) paves the way towards a long-term vision of a sustainable, transparent, fast and ubiquitous electronic infrastructure (eInfrastructure) open to a wide range of scientific user communities, providing the development of Information Society in European countries, including Republic of Moldova. What is eInfrastructure:

- The term e-Infrastructure refers to new research environment in which all researchers - whether working in the context of their home institutions or in national or multinational scientific initiatives - have shared access to unique or distributed scientific facilities (including data, instruments, computing and communications), regard-less of their type and location in the world.
- e-Infrastructures developing worldwide provides researchers and economy a common market of electronic resources, accessible on a 24-hour basis, regardless of the place, and a unique tool for the development of collaborating applications.
- Research & Educational networking infrastructures, distributed environment based on modern broadband communications and Grid Computing.

Grid technology is recognized as a fundamental component for e-infrastructures. Moldova, as many countries have launched National Grid Initiative (NGI) to establish National grid infrastructures. NGIs are concentrated efforts taken at National level in order to deploy, operate, and expand grid infrastructures in a coherent and coordinated way. Formation of stable NGIs is easing the digital divide and stimulating eInfrastructure development, adoption by new user communities, thus enabling collaborative high-quality research across target scientific fields. Approaches focused to mature and stabilize the National Grid Initiative of Moldova and in the region are described, allowing joining the new era of longer-term sustainable Grid infrastructure in Europe. In this context, NGI and regional projects activities have the goal to attract local political support for materializing the eInfrastructure vision and consolidation of efforts for forming united European Grid Initiative.

The integration of Grid actions (infrastructures, middleware and applications) with the broadband research and technology network into a standard e-Infrastructure system becomes a priority task. Optimization of exploitation of advanced network resources and services of RENAM association, tha is connected to GEANT can serve the new e-science and e-learning generation and will attract the greater users community of the Information Society to the mass adoption of advanced services provided by Grid architectures. RENAM actively participates in a range of EU-supported broadband networking and grid-related projects, such as: Porta Optica Study, SEE-GRID and SEERA EI.