



## South Eastern European Research & Education Network

Communication Network Development of the Research Infrastructures Work Programme 2004-2006 scheme clearly stresses as one of its core Specific Objectives the creation of **"a denser network between related initiatives, in particular by establishing a high-capacity and high-speed communications network for all researchers in Europe (GÉANT)"**.

Additionally, the CND highlights that the scheme **"will be concerned with the development of eInfrastructures for Research capitalizing on new computing and communication opportunities and will promote a further breadth and depth to the collaboration amongst researchers in Europe and beyond. In this context, broadband communication networks and Grid technologies are key; in general, they are also highly relevant to the political goals set out by the European Research Area and the eEurope/eEurope+ initiative and should be used as a means to enhance scientific cooperation with third countries"**.

Equal opportunities for every citizen in Europe are a goal that needs to be matched, but in Europe today there is a significant digital divide with a real risk of "research and education exclusion".

The current standard of Research and Education (R&E) network provision in new Member States, Candidate Countries and 3<sup>rd</sup> Countries in Europe, varies to a very high degree, from the high-standard research networks of, e.g., Poland, Czech Republic, Slovakia, Hungary, Croatia, to the lack of any effective research network in some Western-Balkan countries (i.e., Albania, Bosnia-Herzegovina), with other countries lying somewhere in between.

The above illustrates the digital divide that exists in R&E networking in Europe and to such a level that, if uncorrected, will prevent the goal of equal opportunities for researchers being attained and will obstruct attempts to build the extended European Research Area (ERA).

The **South East European Research and Education Networking** initiative,

**SEEREN2** will build on cooperative and complementary actions that involve active participation from eight organizations representing the National Research and Education Networks (NRENs) of Albania, Bosnia-Herzegovina, Bulgaria, Former Yugoslav Republic of Macedonia, Greece, Hungary, Serbia-Montenegro, and Romania. Of the eight NRENs, four are connected to GEANT2 (Greece, Hungary, Romania and Bulgaria) and four are not, and consequently are the main beneficiaries of the SEEREN2 Specific Support Action. The consortium is complemented with the vast experience of the pan-European R&E networking bodies DANTE and TERENA.

The **SEEREN2** will build on the success of **SEEREN**, cooperative and complementary actions, aiming at creating the new generation of the SE European segment of GEANT, that intends to make leading-edge technologies and services available to the entire R&E communities and all sectors without discrimination between users and sites in SE Europe, in an attempt to further ease the "digital divide" that still separates most of the SEE countries from the rest of the continent.

The central element of this infrastructure is the SE European R&E backbone network that extends – through the participating NRENs – to the end-users in all participating countries. With respect to its predecessor (**SEEREN**), the infrastructure will be substantially enhanced in its performance but more significantly will add a new key item to its fundamental characteristic, the consolidation of the networking and Grid infrastructures, into an eInfrastructure for SE Europe, fully integrated with the pan-European efforts (GEANT2, EGEE, etc). The latter will be achieved with the support of services and tools empowering the end-user (researchers, professors, students, etc) responding to dynamic bandwidth requirements and guaranteed and seamless service quality.

The **SEEREN2** project will aid the Western Balkan beneficiary partners to join the *eInfrastructures* community in equal terms and will further stimulate the launching of joint RTD

projects, widening the scope of ongoing actions like SEE-GRID and SEEFIRE.

Hence, it will assist collaboration and become a fundamental enabling factor for carrying out research in the *eInfrastructure* era by the establishment of very efficient virtual communities. Last but not least it directly responds to the eEurope/eEurope+ initiative by bringing the Western Balkans closer to the European Research Area and allowing for common endeavors and development of the SEE regional Information Society along the lines of the Western European one.

**SEEREN2** will continue the assistance to the incubating and existing NRENs in SE Europe to establish themselves, to integrate with the European structures (TERENA, CEENet, e-IRG, EUGridPMA, etc) and will provide routes for a sustainable development.

Moreover, the project will promote the cooperation of scientific and educational communities of EU member states with the SE European countries and will provide a platform for dissemination and development of next generation Internet technologies in those states that are on course to joining the EU.

This regional initiative is endorsed by Ministries in beneficiary countries, the GÉANT community, the SE European Grid community and the initiators of the Balkan Action Plan for Scientific and Technological Development Cooperation between the European Union and the Balkan Countries.

Furthermore the initiative is supported by NORDUnet, CEENet, INA, NSF TransPAC2 project, Cisco, Juniper, Siemens, Lucent and Sun. It is expected that it will benefit from additional national funds aiming at the stability and peace in the region by helping the development of the ICT research and education infrastructure.

Last but not least, It is believed that the project will have a positive effect in the area of "brain-drain" prevention by providing better working environment particularly for young academics and professionals and enabling access to the right information and knowledge resources both locally and globally



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For more information on SEEREN visit [www.seeren.org](http://www.seeren.org)

## Project Objectives

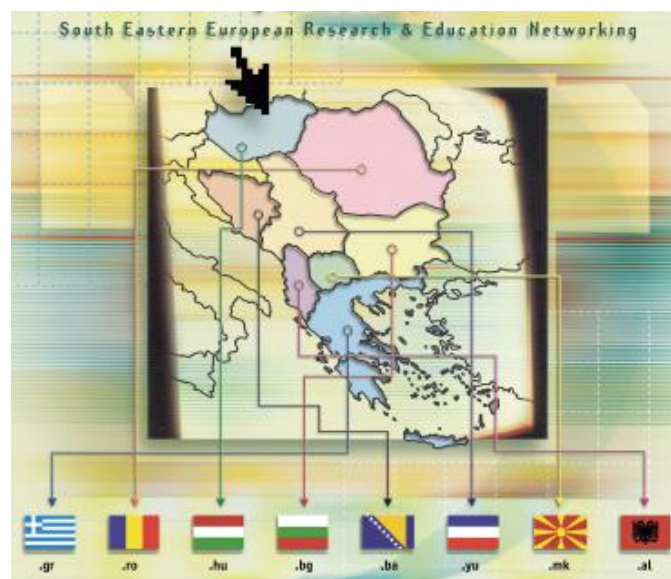
- To build, upon experience and results of high-performance research networking projects such as GEANT2 and SEEREN, the upgrade of the South-East European (SEE) infrastructure interconnecting the National Research and Education Networks (NRENs) of Albania, Bosnia-Herzegovina, Bulgaria, FYR of Macedonia, Greece, Hungary, Serbia-Montenegro, and Romania (called regional NRENs);
- To interconnect the regional NRENs to the major GÉANT Points of Presence (PoPs) in this area and thus to the Pan-European research network and guarantee the stable operation of the networking infrastructure and interoperability with GÉANT. The major GÉANT PoPs in the region are located in Athens, Sofia, Budapest, Bucharest, Ljubljana, Zagreb and Vienna;
- To build, cooperative and complementary actions, aiming at creating the new generation of the SE European segment of GEANT, that intends to make leading-edge technologies and services available to the entire R&E communities and all sectors without discrimination between users and sites in SE Europe.
- To consolidate of the networking and Grid infrastructures, into an eInfrastructure for SE Europe, fully integrated with the pan-European efforts (GEANT2, EGEE, etc) with the support of services and tools empowering the end-users and responding to dynamic bandwidth requirements and guaranteed and seamless service quality.

- To strengthen the human network in the area of eInfrastructures for eScience in SE Europe and promote the cooperation of scientific and educational communities of EU member states with the SE European countries.
- To provide a platform for dissemination and ensure that projects results are appropriately exploited
- To support and assist incubating and existing NRENs in the region and ensure that they will gain from the accumulated experiences of the SEEREN2 participants.
- To assist the participating NRENs in joining the related European structures. All participating NRENs to become permanent observers at the GEANT2 NREN Policy Committee, all participating NRENs join the Trans-European Research & Education Networking Association (TERENA) and the Central & Eastern European Networking Association (CEENet),
- To investigate additional sources of funding from EC, from EU Member States national funds dedicated for assisting development in the region, as well as international organizations that are actively involved in SE Europe, such as UNESCO, NATO, European Investment Bank, etc.

## Work to be done

- Project management and administration including maintaining the management information system, draft acceptable use policy, establish and maintain contractual relationships, organize meetings and prepare periodic reports and access the project deliverables. .
- Requirements specification and baseline design including collection of NREN's requirements, analyze market conditions and supplier capabilities, analyze technical, operational and commercial requirements, design topology options and implementation approaches and conceive a sustainable model
- Procurement and network design, through by conducting connectivity and equipment tender procedures, design of final topology and preparation of supplier contracts.
- Network implementation and operation through the definition of operational procedures, acceptance tests, connections and equipment delivery and configuration adjustments and technical support in stable operation.
- Define architecture and deployment of services and tools, evaluate performance and acceptance of deployed services and configurations.
- Training, dissemination and communication through preparation of promotional packages, trainings of staff and users, organization of conferences and workshops, participation in liaison activities.

## Partnership



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