



# The SEEREN Initiative

## Extending the Network into SE Europe

[www.seeren.org](http://www.seeren.org)

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Zagreb, May 22nd, 2003



Information Society

On behalf of the SEEREN consortium and sponsors



**SEEREN**

SOUTH EASTERN EUROPEAN RESEARCH  
& EDUCATION NETWORKING



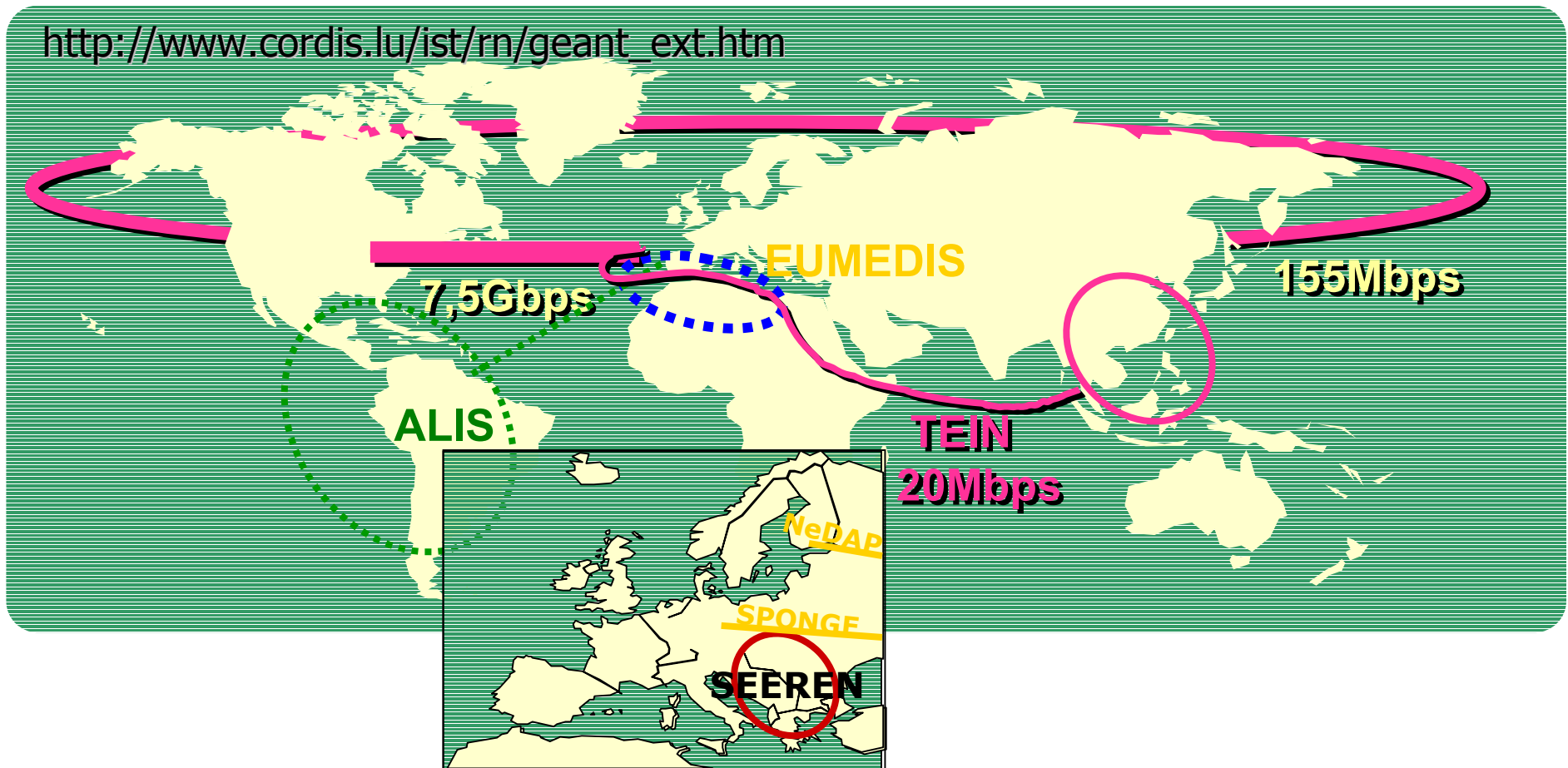


SEEREN

# EC's International Initiatives

## One of the extensions of GEANT

[http://www.cordis.lu/ist/rn/geant\\_ext.htm](http://www.cordis.lu/ist/rn/geant_ext.htm)





# The vision...

# Ease the digital divide in SE Europe

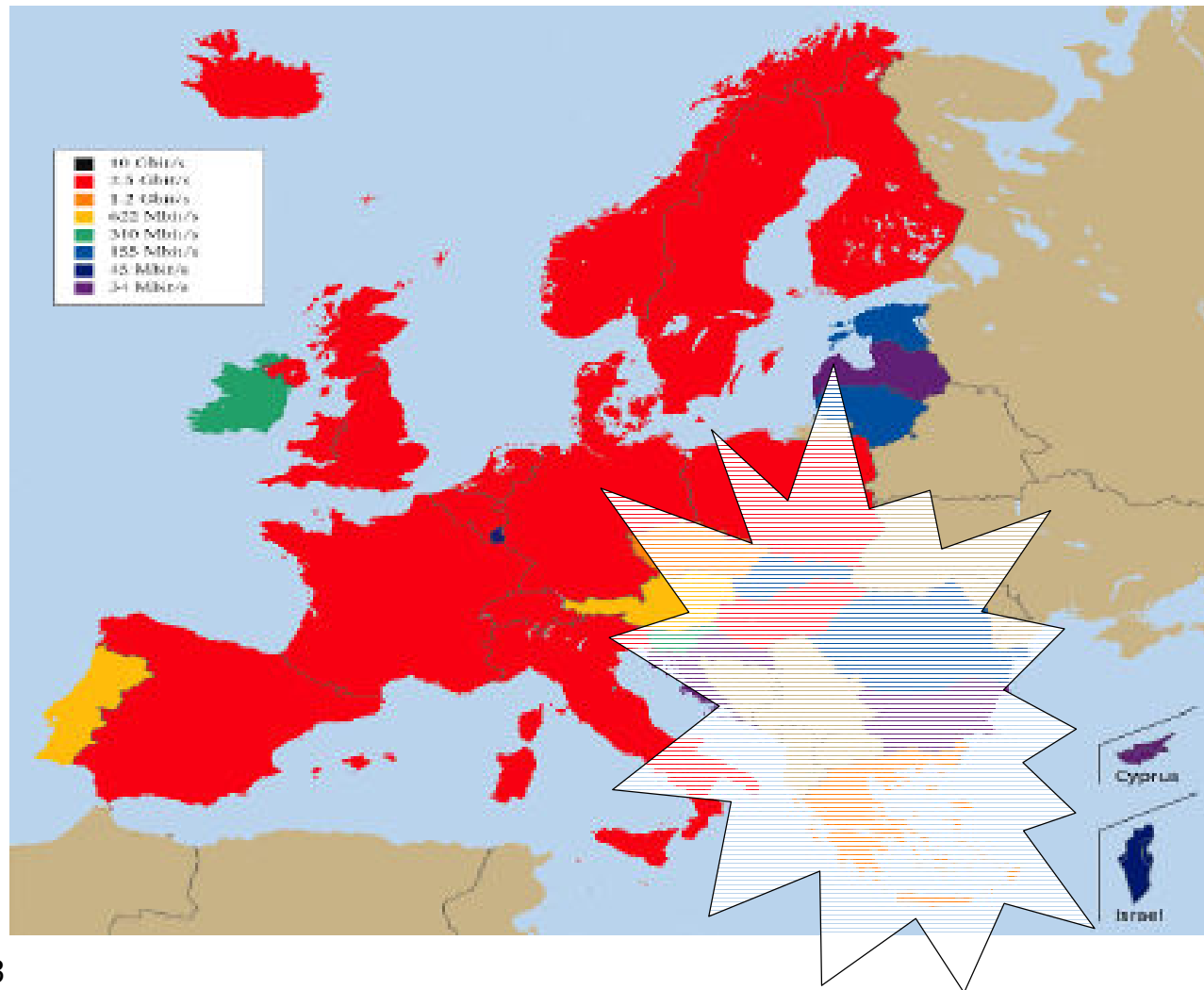




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# The vision...

## Ease the digital divide in SE Europe



Source: GEANT



# Admin Overview

Project Administrative Overview	
<b>Project Full Name</b>	South-Eastern European Research & Education Networking
<b>Project Acronym</b>	SEEREN
<b>Call Identifier</b>	IST-02-8-2B
<b>Contract No</b>	IST-2001-38830
<b>Type of Action</b>	Accompanying Measure
<b>Duration in months</b>	18
<b>Start Date</b>	December 1st, 2002
<b>Programme</b>	IST-2002
<b>Key Action</b>	VIII: IST Support Activities
<b>Thematic Priorities</b>	IST-2002-VIII.1.6 - Enabling RTD co-operation with Newly Associated States IST-2002-VIII.1.7 - Enabling RTD Co-operation with 3rd Countries
<b>Total Eligible Costs in euro</b>	1.297.481
<b>EC Contribution requested in euro</b>	1.297.481
<b>Project web sites</b>	<a href="http://www.seeren.org">www.seeren.org</a> <a href="http://www.cordis.lu/ist/projects/...">www.cordis.lu/ist/projects/...</a>



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# Consortium Members and Sponsors

The image features a central map of the Balkan region, including parts of Hungary, Croatia, Bosnia and Herzegovina, Serbia, and Montenegro. Surrounding the map are various logos of consortium members and sponsors:

- Top Left:** N C E E T logo (National Center for Education and Technology)
- Top Center:** HUNGARNET logo
- Top Right:** CISCO SYSTEMS logo
- Middle Left:** NATO OTAN logo
- Middle Left (Map):** AMREJ Akademski mreža Jugoslavije logo
- Middle Left (Map):** BIHARNET logo
- Middle Right (Map):** RoEduNet logo
- Middle Right (Map):** ICT DEVELOPMENT AGENCY logo
- Middle Right (Map):** Sum logo
- Middle Right (Map):** Juniper NETWORKS logo
- Bottom Left:** UNESCO logo
- Bottom Left (Map):** INIMA Institut Informacije i Matematika logo
- Bottom Left (Map):** GEANT logo
- Bottom Center (Map):** MARNET logo
- Bottom Center (Map):** GRZET EDET logo
- Bottom Right (Map):** SIEMENS logo
- Bottom Right (Map):** DANTE logo
- Bottom Right (Map):** TERENA logo
- Bottom Right:** A photograph of two hands shaking over a map of Europe.



Zagreb, May 22<sup>nd</sup>, 2003

# Technical objectives

- Establish the SEE international R&E network infrastructure by implementing GÉANT connectivity for the regional NRENs of AL, BA, BG, MK, YU via 2-34 Mbps links to the GR, HU, RO, etc. GÉANT PoPs;
- Provide the regional NRENs with access to the Pan-European research network through the major GÉANT PoPs in the area;
- Establish stable networking operation, as well as interoperability with GÉANT, of the international connections serving the NRENs in the SEE region.







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## Objectives

# towards sustainable development

- Serve as a guide and tool for future upgrades
  - enable all regional NRENs to participate in GÉANT(+) and
  - help them to join the European "e-Science" distributed platform.
- Ease the "digital divide" still separating most SEE NRENs from the developed world
  - build awareness of IST in SEE countries;
  - serve as a paradigm for bridging the digital gaps in other areas also;
  - provide infrastructure for scientific and educational cooperation between the SEE NRENs and their partners from the EU Member States, the Newly Associated States (NAS) and 3rd Countries.
- Investigate additional sources of funding and cooperation
  - look for support from EC (INTERREG, PHARE, CARDS), national funds of EU States, NATO, UNDP, WorldBank, USAID, DAC of the OECD, the Stability Pact, etc. and
  - endorse clustering with related EC projects (GÉANT, EUMEDCONNECT, 6NET, COM-REN, DATA-GRID, etc).
- Exploit and disseminate the results





# Major Work Accomplished

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- Analysis of the SEEREN NRENs equipment and upgrade needs and agreement on the SEEREN NOC organization and sustainability model.
- Relations established with organizations that are actively involved in the SEE region, such as UNDP and NATO, in order to work out common visions towards reducing the "digital divide", i.e. the information and technological gaps within the region, as well as between the region and European Member States.
- Around 300 k€ pulled together from sponsors (NATO, Industrial Advisory Board) in various complementary subprojects.
- SEEREN training workshop organized, aimed at providing the SEEREN NRENs with technical know-how, and technical vision.
- Tender Notice 2003/S 37-031914 published in the Official Journal of the European Communities (21/02/2003) following EU legislature.

# The SEEREN Initiative

## Accompanying measures in parallel to SEEREN

Towards sustainable development



# SEEREN

SOUTH EASTERN EUROPEAN RESEARCH  
& EDUCATION NETWORKING





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# SEEREN NRENs

## essential status indicators

	.al	.ba	.bg	.gr	.hu	.mk	.ro	.yu	Source	Year
<b>Geography indicators</b>										
Area (sq km x1000)	28,75	51,13	110,91	131,94	93,03	25,33	237,50	102,17	World Fact Book	2001
Population (millions)	3,44	4,06	8,12	10,58	10,19	2,04	22,40	10,64	WorldBank	2001
Inhabitants per sq km	119,69	79,41	73,25	80,15	109,51	80,67	94,30	104,18		
<b>Economic indicators</b>										
GDP (billion USD)	4,11	4,77	12,71	116,35	52,36	3,44	39,71	10,88	WorldBank	2001
GDP per capita (x1000 USD)	1,20	1,17	1,57	11,00	5,14	1,69	1,77	1,02	WorldBank	2001
GDP growth (annual %)	6,00	6,00	5,00	4,00	4,00	4,40	5,00	5,00	WorldBank	2001
Inflation rate	3,00	5,00	4,80	3,40	9,20	5,30	34,50	40,00	World Fact Book	2001
Unemployment (%)	30,00	40,00	17,50	11,00	6,50	39,00	9,10	30,00	World Fact Book	2001
VAT	20,00	20,00	20,00	18,00	25,00	19,00	19,00	-	Questionnaire	2003
<b>Telecom indicators</b>										
Literacy (%)	93,00	-	98,00	97,00	99,00	93,40	97,00	93,00	World Fact Book	2001
Internet users (x1000)	3,50	20,00	430,00	1000,00	1480,00	50,00	800,00	400,00	WorldBank	2001
% Internet users	0,10	0,49	5,29	9,46	14,53	2,45	3,57	3,76	calculated	
% computers	0,60	-	4,40	7,00	8,50	-	3,20	2,30	WorldBank	2001
% fixed phones	6,70	-	37,00	56,00	48,00	25,00	14,43	24,00	Questionnaire	2002
% cell phones	16,70	-	28,80	64,00	68,00	18,00	20,73	23,00	Questionnaire	2002
Data services market	liberalized	-	liberalized	liberalized	liberalized	monopoly	liberalized	partly lib.	Questionnaire	2003
Fixed phone services market	partly lib.	-	liberalized	liberalized	liberalized	monopoly	liberalized	monopoly	Questionnaire	2003
Cell phone services market	partly lib.	-	liberalized	liberalized	liberalized	partly lib.	liberalized	partly lib.	Questionnaire	2003



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# SEEREN NRENs

## essential status indicators

	.al	.ba	.bg	.gr	.hu	.mk	.ro	.yu	Source	Year
<b>NREN indicators</b>										
Separate legal entity	NO	YES	YES	YES	YES	NO	YES	NO	Questionnaire	2003
Operational (2002)	NO	NO	YES	YES	YES	YES	YES	YES	Questionnaire	2003
GEANT PoP	NO	NO	NO	YES	YES	NO	YES	NO	Questionnaire	2003
No. of persons employed (full)	-	3	4	45	26	3	30	19	Questionnaire	2003
Tot. expenditure '02 (EUR x1000)	-	NA	NA	6000,00	6000,00	51,50	3160,00	470,00	Questionnaire	2003
Proj. funding '03 (EUR x1000)	-	NA	300,00	8700,00	6000,00	316,00	2600,00	1000,00	Questionnaire	2003
Universities connected	0	0	26	21	123	2	38	7	Questionnaire	2003
of	11	7	42	21	123	3	-	-	Questionnaire	2003
Research institutes connected	0	0	76	24	50	7	37	27	Questionnaire	2003
of	45	30	100	24	50	14	-	-	Questionnaire	2003
Schools connected	0	0	10	6551	98	0	350	2	Questionnaire	2003
of	2170	1802	3200	9779	3200	1142	-	-	Questionnaire	2003
Other	7 (*)	0	6	26	409	10	96	13	Questionnaire	2003
End users - Academics (x1000)	45,45	63,00	98,00	265,00	340,00	57,40	200,00	180,00	Questionnaire	2003
End users - Researchers (x1000)	0,80	0,00	5,50	20,00	80,00	3,60	50,00	8,00	Questionnaire	2003
End users - Schools (x1000)	0,00	0,00	0,40	400,00	100,00	0,00	50,00	1,00	Questionnaire	2003
End users - Other (x1000)	0,00	0,00	0,40	3,00	80,00	9,00	8,00	1,00	Questionnaire	2003
End users - Total (x1000)	46,25	63,00	104,30	688,00	600,00	70,00	308,00	190,00	Questionnaire	2003
Tot. traffic through net '02 (TB)	-	-	-	2040,00	1000,00	6,36	-	26,30	Questionnaire	2003
Intern'l incoming traffic '02 (TB)	-	-	-	435,00	600,00	3,34	150,00	13,20	Questionnaire	2003
% to commercial internet	-	-	-	79,00	-	-	67,00	-	Questionnaire	2003
Intern'l outgoing traffic '02 (TB)	-	-	-	620,00	400,00	2,91	90,00	4,40	Questionnaire	2003
% to commercial internet	-	-	-	78,00	-	-	67,00	-	Questionnaire	2003
Intern'l link capacity (Mb)	-	0	6	1240	2500	1	622	8	Questionnaire	2003
Inten'l link congestion level (1-5)	-	-	5	2	1	5	5	5	Questionnaire	2003
Backbone congestion level (1-5)	-	-	-	3	2	5	3	1	Questionnaire	2003
Preferred intern'l link capacity	2	2	34	2500	2500	8	2500	34	Questionnaire	2003
NOC	NO	NO	YES	YES	YES	YES	YES	YES	Questionnaire	2003
NOC availability on weekly basis	-	-	12x6	12x7	24x7	8x5	24x7	24x7	Questionnaire	2003



# SEEREN NRENs

## essential status indicators

	.al	.ba	.bg	.gr	.hu	.mk	.ro	.yu	Source	Year
<b>Services offered to NREN users</b>										
WWW	YES	NO	YES	YES	YES	YES	YES	YES	Questionnaire	2003
FTP	YES	NO	YES	YES	YES	YES	YES	YES	Questionnaire	2003
Email	YES	NO	YES	YES	YES	YES	YES	YES	Questionnaire	2003
News	NO	NO	YES	YES	YES	NO	YES	YES	Questionnaire	2003
DNS	YES	NO	YES	YES	YES	YES	YES	YES	Questionnaire	2003
NTP	NO	NO	YES	YES	YES	NO	YES	YES	Questionnaire	2003
Proxy	YES	NO	YES	YES	YES	NO	YES	YES	Questionnaire	2003
IPv6	NO	NO	NO	YES	YES	NO	YES	NO	Questionnaire	2003
Multicast	NO	NO	NO	YES	YES	NO	YES	NO	Questionnaire	2003
MPLS VPNs	NO	NO	NO	YES	YES	NO	NO	NO	Questionnaire	2003
QoS	NO	NO	NO	YES	NO	NO	YES	YES	Questionnaire	2003
MBS	NO	NO	NO	YES	NO	NO	NO	NO	Questionnaire	2003
RTS	NO	NO	NO	YES	YES	NO	NO	NO	Questionnaire	2003
Monitoring tools	YES	NO	YES	YES	YES	YES	YES	YES	Questionnaire	2003
Statistics	YES	NO	NO	YES	YES	YES	YES	NO	Questionnaire	2003
VoIP	NO	NO	NO	NO	YES	NO	YES	NO	Questionnaire	2003
Video on Demand	NO	NO	NO	YES	NO	NO	NO	NO	Questionnaire	2003
Video conferencing	NO	NO	NO	YES	YES	NO	YES	YES	Questionnaire	2003
Security (CERT)	NO	NO	NO	YES	YES	YES	NO	YES	Questionnaire	2003
Directory Services	NO	NO	NO	YES	YES	NO	NO	YES	Questionnaire	2003
Helpdesk	NO	NO	NO	YES	YES	NO	YES	YES	Questionnaire	2003



# Sustainability model

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- Ease the infrastructure divide
- Ease the access/connectivity divide
- Introduction of advanced services (eScience, Grids)
- Deployment of an integrated & interoperable eInfrastructure

## Conditions

- A. Advantageous, supportive political and legal environment.
- B. Enabling technical and infrastructural background.
- C. Availability of financial resources.
- D. Stable NREN organisation and operation.
- E. Availability of technical expertise within and/or behind the SEE NRENs.

## Ease the infrastructure divide

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- Infrastructure needs are not at the same level for all SEE countries. Actions that need to be fulfilled in parallel for the establishment of the next-generation research network in SE Europe (wherever this is not materialized yet):
  - upgrade and extension of the major intra-campus networks (connectivity based on multimode fiber, horizontal cabling, routing and switching equipment),
  - interconnection of campus networks to form national research and education networks,
  - extend campus networks to the off main campus sites, extend the domain of the NREN by providing the know-how and then by actually connecting to the network all of the community networks that span over primary and secondary education, libraries, museums and other public institutions
  - and last but not least, services, applications and content that can be easily accessed by every party in the SEE region and which offers a sustainable added value, taking care of the special regional requirements.





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## Ease the access divide

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- Achieving full NREN Consortium membership and subscription to GEANT services as soon as possible: by their integration into the GEANT community as GEANT partners (which means that all SEE NRENs are enjoying the same benefits as any European NREN, by taking their proper part of the cost sharing scheme applied among the NREN Consortium members, and also they are involved into the activities of the NREN Consortium, as well as, with full rights and duties, at the NREN Policy Committee).
- Increase gradually the access capacities of the National Research and Academic Networks in a way resulting in a step by step elimination of the gap between their international access bandwidths and the average access bandwidths of the entire European research community.



# Introduction of advanced services

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- Step by step introduction of advanced services and applications so that the network capacities are well utilized in order to support the evolving needs of their academic and research communities in the fields of domestic and international data communications, information access, as well as network based information exchange and co-operation.
- Piloting new & particularly powerful forms of distributed computing (Grids) – boosting the processing of information.

# The SEEREN Initiative

Status of accompanying measures

Towards sustainable development



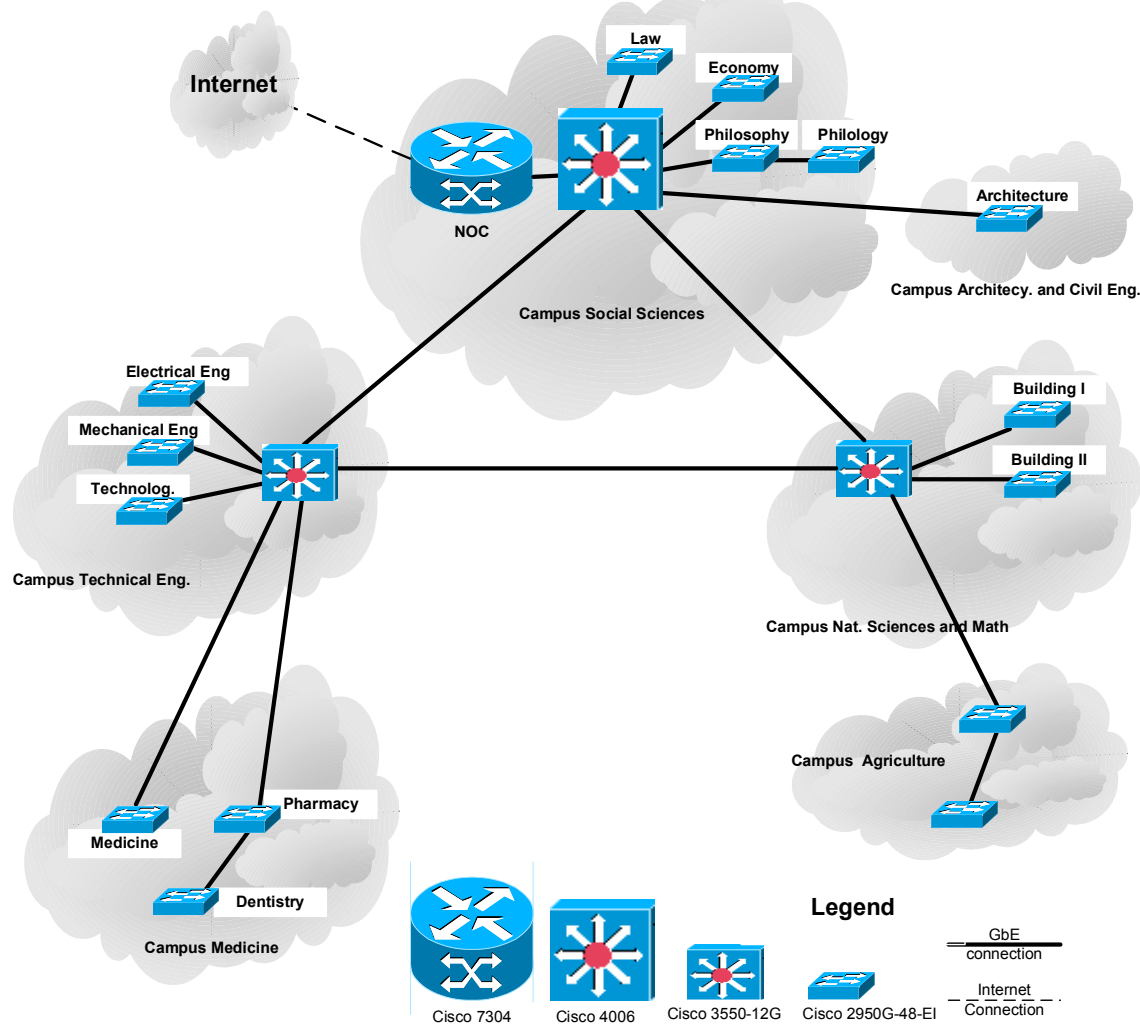
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- Networking Infrastructure Grant (NIG) with Bulgaria
- Networking Infrastructure Grant (NIG) with FYROM
- Networking Infrastructure Grant (NIG) with Albania
- Advanced Networking Workshop (ANW)





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# Industrial Advisory Board

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CISCO SYSTEMS



SIEMENS

TELINDUS.com



# Geant donors programme

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## **GRIDs - 6FP (SEE-Grid+EGEE)**

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- The scope is to provide an operational Grid service over SEE-net
- Proposal to create the SEE human network and deploy the first pilots
- South Eastern Europe is represented in the Executive Committee of the EGEE proposal under 6FP – “Enabling Grids for E-science and industry in Europe” by GRNET.





# Training - 6FP (SEE-Train)

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- Asynchronous and Synchronous Training for the staff of the SEE NOCs



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# INTERREG III + FP6 (SEE-net)

Connecting  
European regions



[http://europa.eu.int/comm/regional\\_policy/interreg3/](http://europa.eu.int/comm/regional_policy/interreg3/)

INTERREG III B CADSES - Programme area 2000 - 2006



- At the **INTERREG** Programme (a Community initiative which aims to stimulate interregional cooperation in the EU between 2000-06 financed by the European Regional Development Fund), the **beSEEN proposal is targeting the Balkans (INTERREG III B – CADSES)**. To be submitted in 1Q2003 ...



# European Investment Bank (EIB)

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- Ongoing discussions for a Programme for the Balkans like the Programme Innovation 2001 based on eEurope+



# EU-Western Balkan Action Plan (SEE-eInfrastructure and SEE-fiber)

- SEE-eInfrastructure:
  - a common market for networking resources
  - a common market for computing cycles, data storage resources
  - “integrator” of National infrastructures, RI-policies
  
- SEE-fiber:
  - plan for laying new regional fiber infrastructure under public-private partnership schemes which could be partly exploited by the research and education communities in the area (among others like public health and government sector).
  - there is a need to use the aggregated public demand of the SE European countries and the fast growing demand for the creation of interconnected NRENs in the region in order to achieve the absolutely needed economies of scale.
  - A detailed feasibility study on the legal and regulatory frameworks in all SE European countries is a prerequisite to any implementations in this direction.



## SEEREN **Lessons learnt**

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- SEEREN networking environment could be potentially used as a working paradigm towards improving the everyday life of the citizens in the region (tele-medicine, tele-teaching, etc.);
- SEEREN enacts a communication channel between the SEE scientific community and the European industry;
- International projects, such as SEEREN, not only help the participants to resolve networking issues, but also serve as a problem solving model, thus positively affecting the Democracy and Equity Cause in the region.



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# SEEREN in the press

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Address: http://www.seeren.org/

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Home About Us Contact

**Menu**  
Overview  
Participants  
The Project  
Related  
Results  
Events  
News  
Brochures

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- Result  
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Information Society

**South Eastern European Research & Education Networking Newsletter No 1, November 2002 IST-2001-38830**

Dear Reader,  
Welcome to the first issue of the SEEREN Newsletter. It will appear on a regular basis to keep you informed about its development. Do not hesitate to visit the SEEREN website or to contact us if you wish more specific information.  
Happy reading,

The **South East European Research and Education Networking** initiative, **SEEREN**, aims at expanding the European research network in SE Europe by providing GEANT connectivity to non-GEANT countries. SEEREN will oversee the design and implementation of 2-34 Mbps interconnections linking the partner NRENs and the regional GEANT points of presence. These international connections will open doors to the many scientific and educational communities of the European Union. However SEEREN will start on December 1st, 2002. Here the consortium is leveraging its impact in the region. Significant technology leaps, for example in the area of IPv6, will be supported. SEEREN is planning to have its kick-off meeting in mid-December. In the most recent period SEEREN:

- organized a successful Information Day on September 16th, 2002 in Brussels,
- was presented at the 3rd CEENet Workshop on Network Management – NATO AWN on 21-25 September in Zagreb,
- was presented at the UniAdriatic's Board of Advisors and General Assembly on October 10th, 2002 in Ravenna,
- was presented at the 2nd EXPO COMM SOUTHEAST EUROPE Conference on October 22nd, 2002 in Athens,
- was promoted in the IST 2002 - Partnerships for the Future event on 4-6 of November 2002 in Copenhagen and the European Research Area and the Framework Programme event on 11-12 of November 2002 in Brussels.
- was included in the IPv6 cluster booklet prepared for the IST2002/IPv6 activities,
- was included in DANTE's updated pamphlet prepared for the IST2002/RN activities,
- will appear in the January 2003 version of the Innovation and Technology Transfer periodical published by the European Commission.

seeren-info@seeren.org <http://www.seeren.org>

SEEREN press releases and forthcoming events will be announced in the News section.  
Links to other related activities can be found on the Related page.

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