



SEEFIRE

**Studies on a South-East European Fibre
Infrastructure for Research and Education**

www.seefire.org

Thanks to J. Sanchez, GRNET and
Dai Davies, DANTE for some
material in this presentation



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South-East Europe Fibre Infrastructure
for Research and Education

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SEEFIRE Goals



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South-East Europe Fibre Infrastructure
for Research and Education

- Specific Support Actions (SSA) project funded by the EC (6th FP)
 - Start date: 1 March 2005
 - End date: 28 February 2006
- Project budget € 416,273 - EC contribution € 350,000
- Main goals
 - **Direct:** study the options available for acquiring an optical fibre network infrastructure and the strategies for the development of research and education networking in southeast Europe
 - **Indirect:** raise awareness among stakeholders of NRENs, governments, users and telecommunication operators, about providing interconnection facilities in SEE to reduce the digital divide

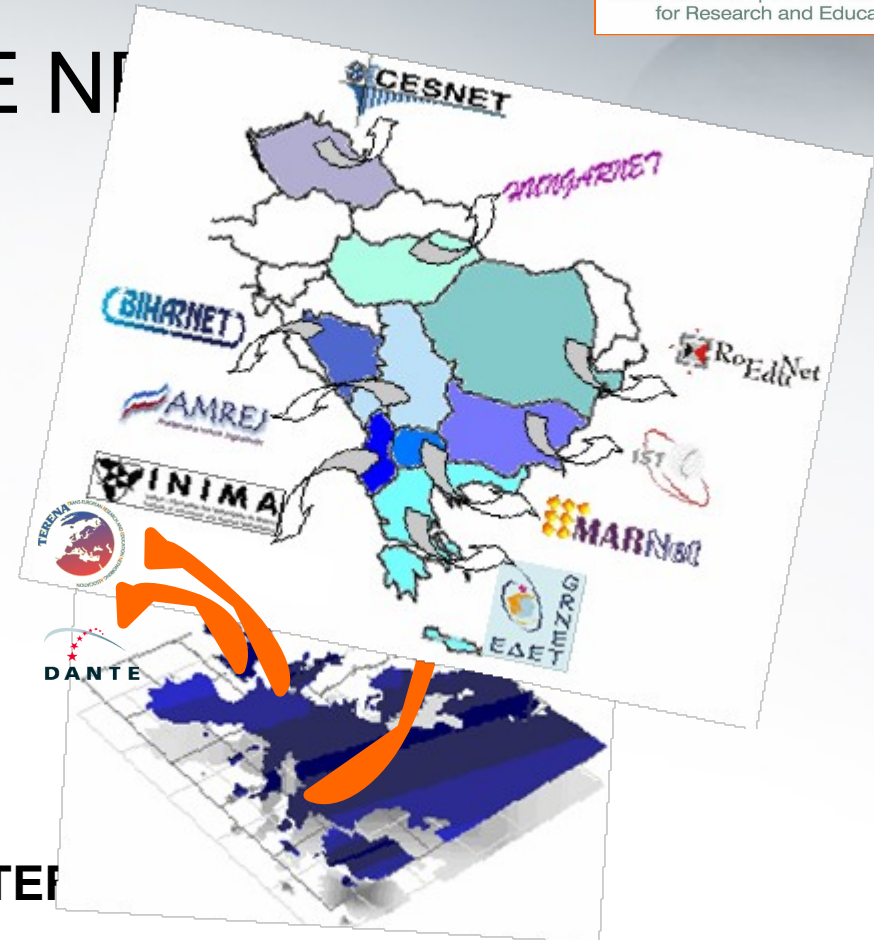


- 11 Partners, of which SEE NET

- GRNET (GR)
- NIIF/HUNGARNET (HU)
- AMREJ (CS)
- RoEduNet (RO)
- ISTF (BG)
- INIMA (AL)
- BIHARNET (BH)
- MARNET (MK)

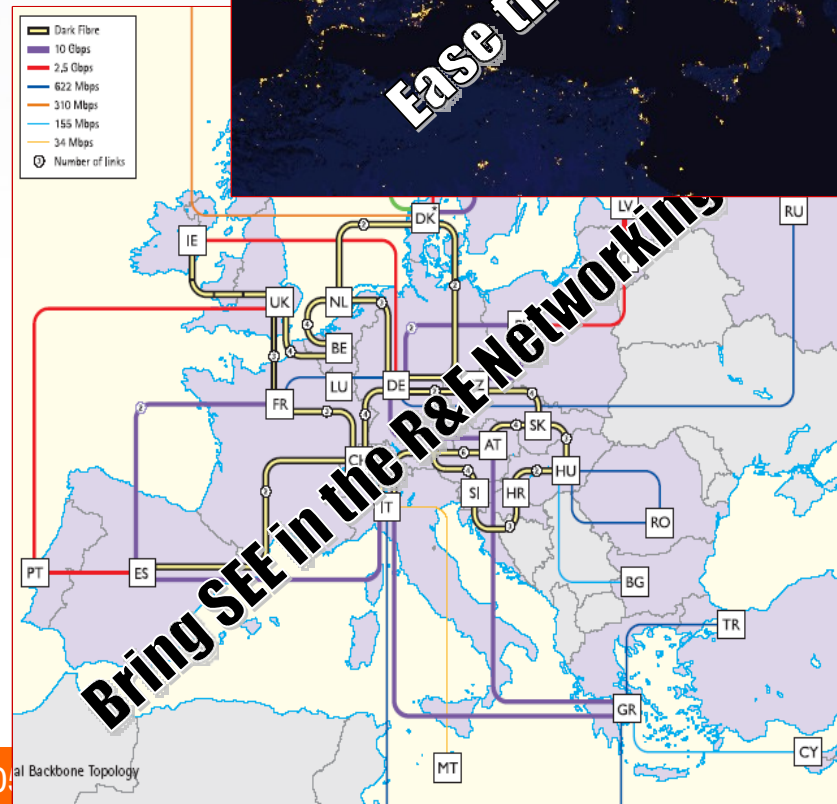
- And

- TERENA (NL) coordinator
 - Claire Milne (Antelope Consulting/TERENA)
- DANTE (UK)
- CESNET (CZ)



The Vision

- Help promote scientific and educational cooperation between EU member states and SEE countries,
- Enable dissemination and development of the next generation of Internet technologies in SEE countries.
- Contribute to the reconstruction and stabilisation of the region.
- **SEEREN SEE-Grid**



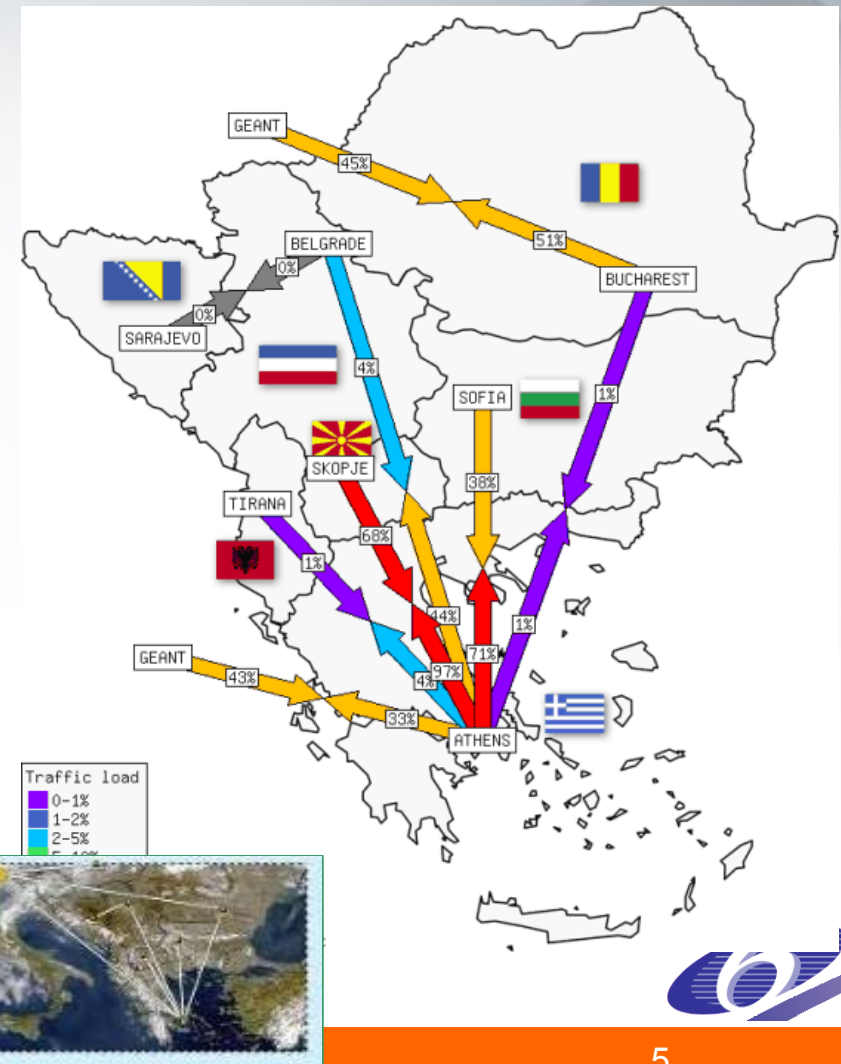
SEEREN: A “small” step for the SEE NRENs, a big leap for the region...



SEEREN

SOUTH EASTERN EUROPEAN RESEARCH & EDUCATION NETWORKING

- Interconnects the Research and Education Networks of AL, BA, BG, MK, CS, HU, RO and GR among them and to GEANT.
- Launched and entered its stable operation in Jan. 2004.
 - in 2005 connectivity is co-funded by GEANT2.
 - SEEREN2 started October 2005.
- Constitutes today the SEE segment of the GEANT network
- Distributes Network Management & Operations to competent Academic Groups in the Region (the VNOC concept developed by GRNET).
- SEEREN capitalized on the growing aspiration of the **SEE countries to integrate to the rest of Europe** and eventually be equal peers with advanced European nations.
- SEEREN established a **communication channel between the SEE scientific community**.
- SEEFIRE can be considered a feasibility study for the continuation and sustainability of SEEREN.

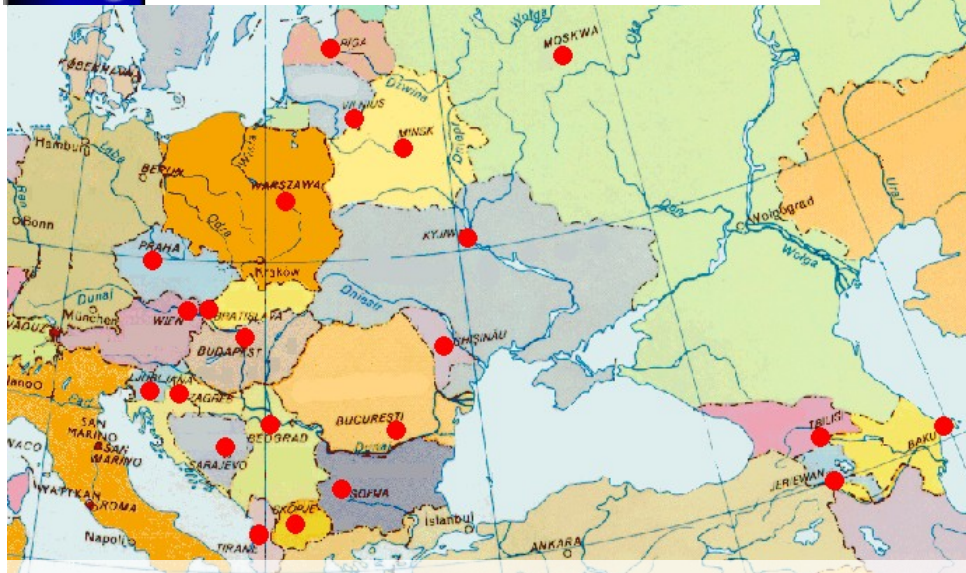


(Re)integrate the SEE R&E community

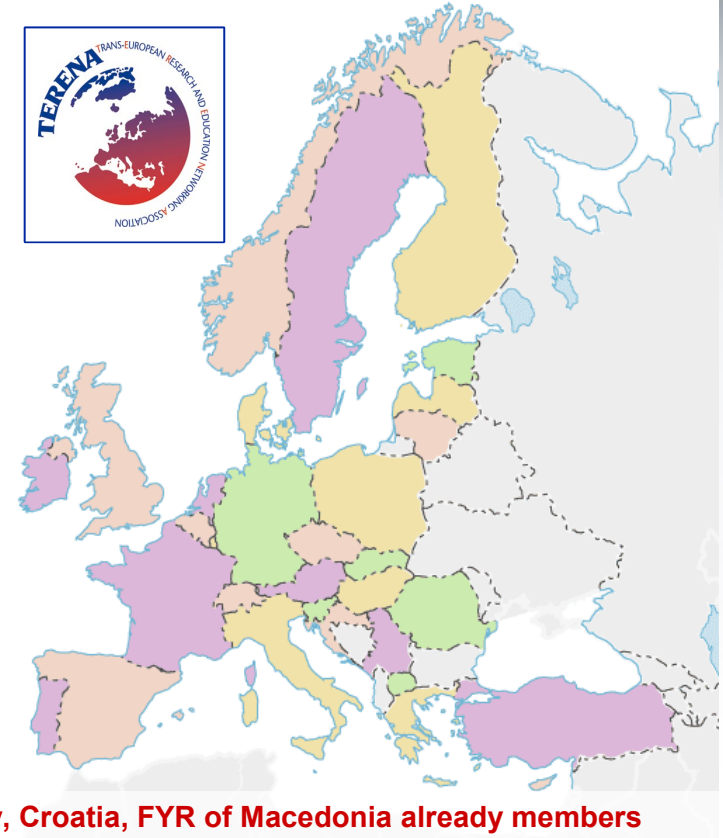


SEEREN

SOUTH EASTERN EUROPEAN RESEARCH
& EDUCATION NETWORKING



- Turkey, Croatia, Albania, FYR of Macedonia already members
- Bulgaria and Serbia-Montenegro joined in October 2004
- Bosnia-Herzegovina?



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- Serbia-Montenegro joined in October 2004
- Bulgaria?, Bosnia-Herzegovina?, Albania?



Market liberalisation/connectivity cost



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International Connectivity Costs in the Differing Market Segments (Dai Davies for the SERENATE project 2003)

Market segment	Number of Countries	Cost Range
Liberal Market with transparent pricing	8	1-1.4
Liberal Market with less transparent pricing structure	7	1.8-3.3
Emerging Market without transparent pricing	3	7.5-7.8
Traditional Monopolist market	9	18-39



Study on (dark) fibre acquisition



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- July 05, Dark Fibre database to identify the fibre availability in the SE region
 - A database of **available (dark) fibre** and **fibre planting projects**
 - Identify **(dark) fibre interconnection points and cross-border connections in SEE** (or determine **which ones should be established** for seamless interconnection) that will assist SEE-NRENs in National and International interconnectivity plans
 - Request for Information issued in summer 2005
- Aug 05, Report on the status of owned national connectivity in SEE
 - Describe and assess the **status of SEE NRENs owned national connectivity** and related **acquisition projects**



Answers to RFI



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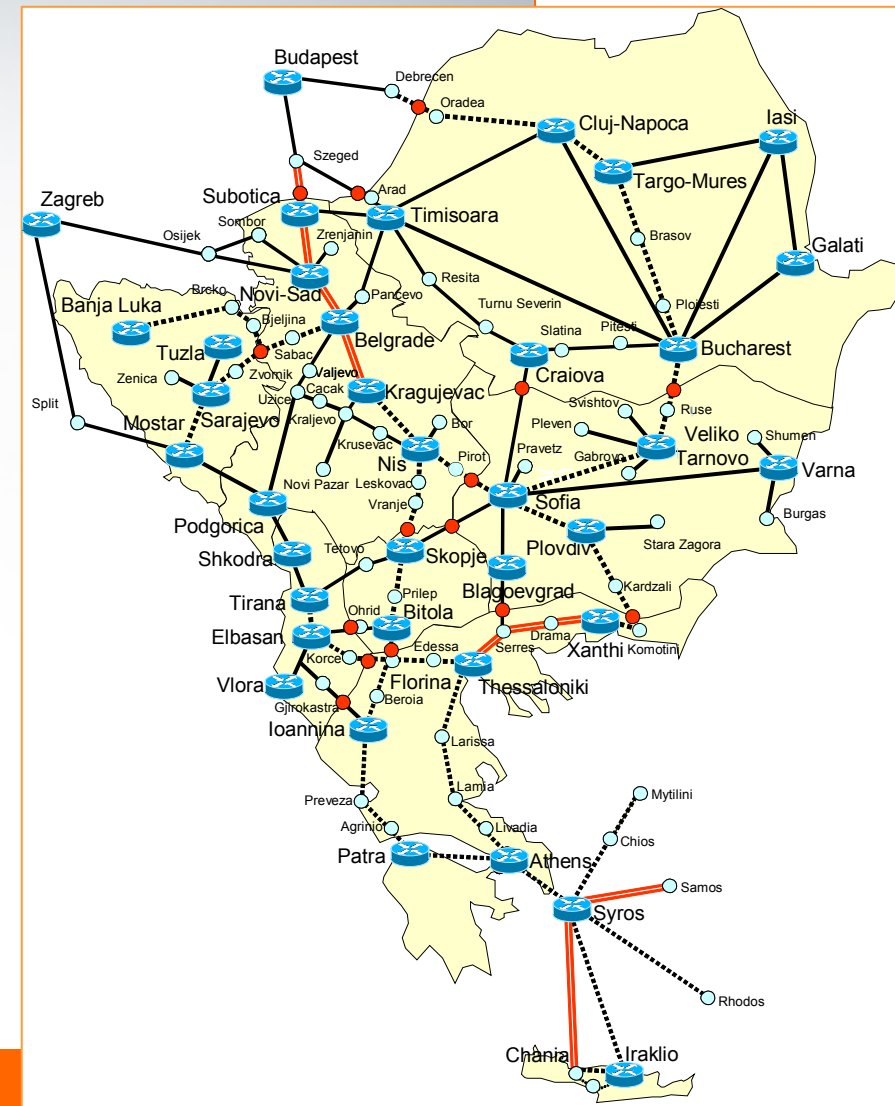
SEELight: the lambda facility for SEE R&E



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- Proposal led by GRNET for the deployment of an advanced regional network infrastructure (lambda network facility) for R&E, under the **Hellenic Plan for the Economic Reconstruction of the Balkans (HiPERB)**.
 - help create a viable **economy-of-scale model** for the region to **reduce networking costs** per country,
 - support the evolving needs of R&E communities in domestic and international data communications,
 - enable network-based information exchange and co-operation towards a SEE Regional Information Society
 - serve as a testbed for development



Latest Developments in the Region



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- AMREJ (CS) owns dark fibre in metro and intercity areas
- MARnet (FYROM) have built a dark fibre MAN in Skopje and is talking with utilities companies about intercity links
- GRNET well ahead in the procurement of ~900km dark fibre
- Investigations all over the region to procure fibre from operators and utility companies
- Cross-border fibre between Subotica (Serbia) and Szeged (Hungary) operational since October 2005
- Collaboration CARNet/BiHARNET: international connection in Mostar launched 22 October 2005
- Plans for more cross-border links in the region



Upcoming SEEFIRE results



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- Just issued, Report on dark-fibre lighting technologies
- Nov 2005, Study on regulatory and legal issues
- Dec 2005, Guidelines for support of deployment of NREN-empowered fibre infrastructure
- 17 January 2006, SEEFIRE Policy workshop, Bucharest, Romania
- Feb 2006, Economical model for the acquisition and operation of dark fibre networks in SE Europe
- Feb 2006, White paper on SEE Fibre Infrastructure for NRENs



Conclusions



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- Set of EU and NRENs initiatives to provide international connectivity and support NRENs in SEE: SEEREN, SEEREN2, SEE-Grid, SEE-Light..
- Integration of the region in the E R&E area
- Imperfection of the market for data communication being liberalised makes traditional connectivity services not easy to afford
- SEEFIRE studied the fibre availability and prepared the way to the creation of an integrated project for a SEE regional (dark) fibre network
- More information @ **www.seefire.org**



• **THANK YOU!**