

PORTA OPTICA STUDY

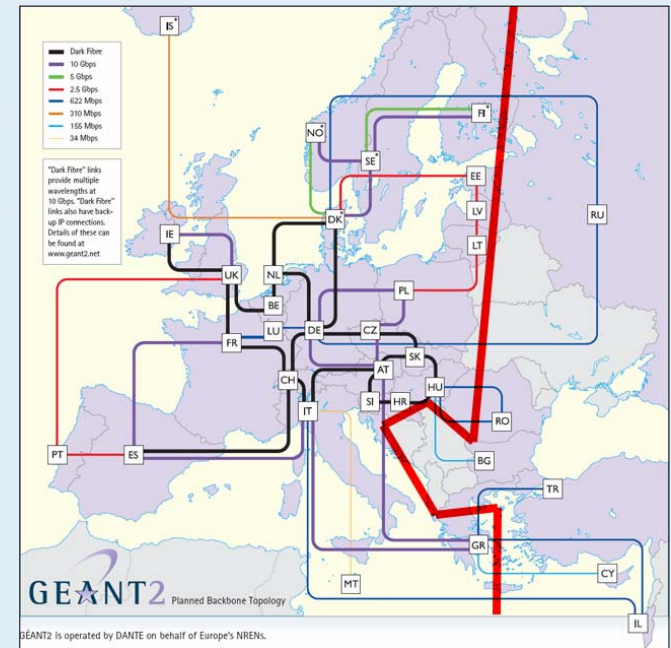
Distributed Optical Gateway to Eastern Europe

www.porta-optica.org

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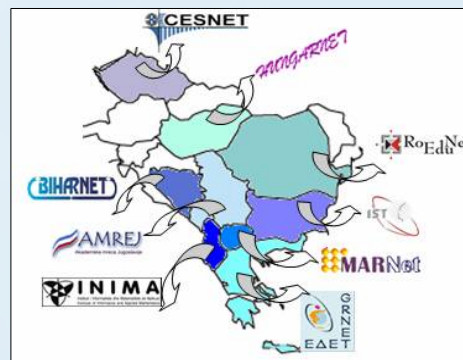
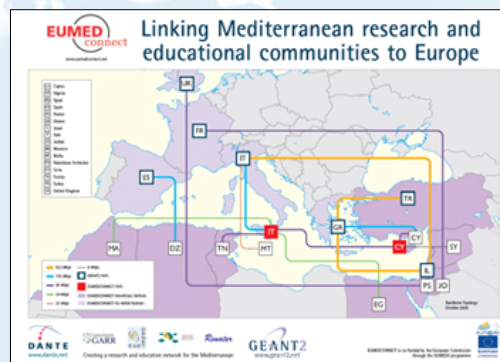
The Digital Divide Issue

- optical networking is appearing and everyone should participate
- very demanding scientific applications need careful attention
- research networks are a national asset
- there is a digital divide inside the European R&E community

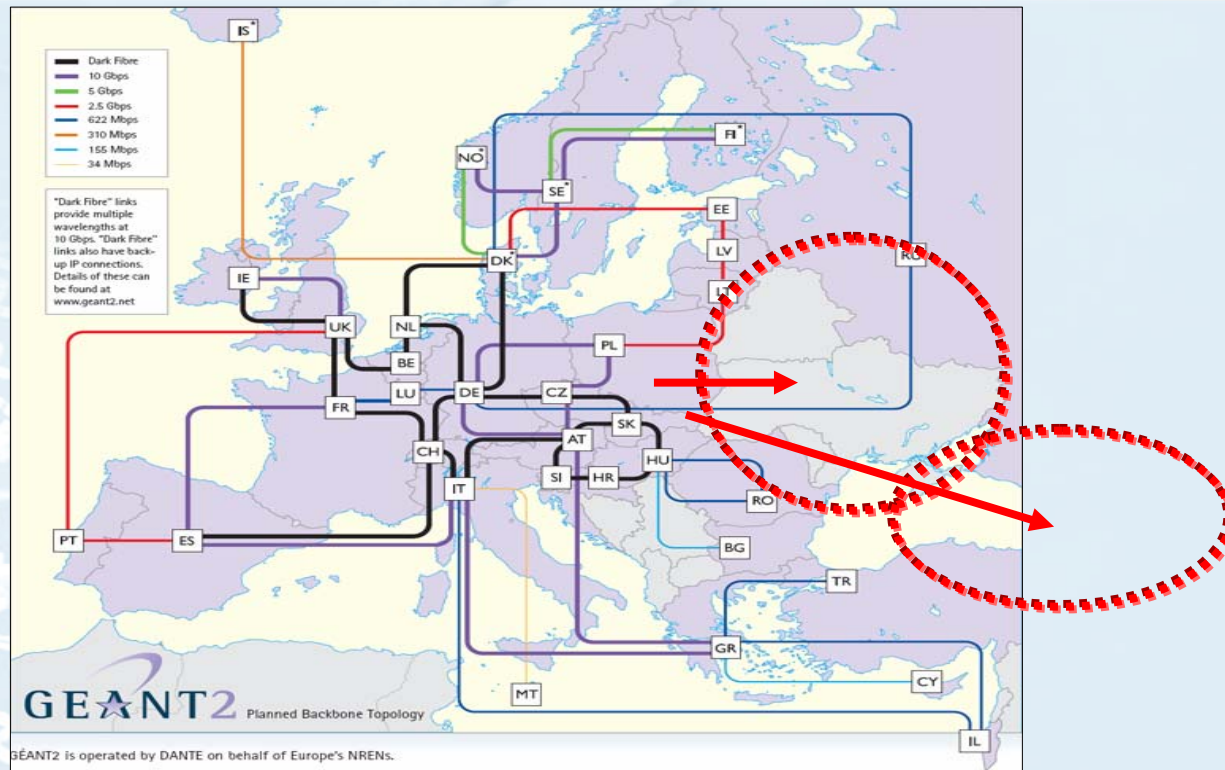


EC networking initiatives

- EUMEDCONNECT (The Mediterranean region)
- SEEFIRE (The South Eastern Europe region)
- PORTA OPTICA STUDY
(the Baltic States, Eastern Europe and Southern
Caucasus regions)
- SILK (NATO ini.) (Southern Caucasus and Central Asia regions)



The Other Objectives



- an easy way to extend GÉANT2 to Eastern Europe and Southern Caucasus regions
- a chance for closer scientific collaboration

- instrument: SSA FP6
- duration: 1 year
 - start: 01/02/2006
 - end: 31/01/2007
- 3 main beneficiary regions:
 - **Baltic States** - Estonia, Latvia, Lithuania
 - **Eastern Europe** - Belarus, Ukraine, Moldova
 - **Southern Caucasus** - Armenia, Azerbaijan, Georgia



Eesti Hariduse ja Teaduse Andmesidevõrk



European Research and Education Networking Association

- identification of user communities and their requirements
- availability of national dark fibre infrastructure
- preparing case studies with economical analysis of fibre network development
- dissemination results and raising awareness

- **GÉANT2 connection:** 1 Gb/s
- leased dark fibre from Tallin to Tartu (1 Gb/s)
- cities connected to Tallin and Tartu using leased lines (2 – 20 Mb/s)

Potential Impact

12 cities

81 scientific institutions

50 higher education institutions

69 114 university students



- **GÉANT2 connection:** 155 Mb/s
- main cities connected using leased lines (less or more than 100 Mb/s)
- last mile connections arranged by the radio links

Potential Impact

26 cities

88 scientific institutions

49 higher education
institutions

123 070 university
students



Lithuania LITNET

- **GÉANT2 connection:** 2.5 Gb/s
- its own dark fibre from Klaipeda to Kaunas and Vilnius
- backbone has capacities of 200 Mb/s and 1 Gb/s
- other intercity links: 4 - 30 Mb/s

Potential Impact

22 cities

109 scientific institutions

25 higher education
institutions

137 732 university
students



Belarus BASNET

- **GÉANT2 connection:** 155 Mb/s through PIONIER
- other cities connected by 2 Mb/s leased lines

Potential Impact

6 cities
194 scientific institutions
44 higher education
institutions
273 000 university
students



- **No GÉANT2 connection** (in progress)
- dark fibre intercity from Kiev to Lviv (155 Mb/s)
- connection from Kiev to Odessa (10 Mb/s)
- other cities (128 Kb/s – 2 Mb/s)

Potential Impact

43 cities

533 scientific institutions

384 higher education
institutions

1 342 000 university
students



- **GÉANT2 connection:** 16 Mb/s through RoEduNet
- dark fibre infrastructure in Chisinau (20 km),
- users connected to NREN using various types of links

Potential Impact

7 cities
50 scientific institutions
35 higher education
institutions
78 500 university
students



- **No GÉANT2 connection**
- dark fibre infrastructure in Tbilisi (15 km), 1 Gb/s
- regional infrastructure based on leased 2 Mb/s channels

Potential Impact

6 cities
48 scientific institutions
23 higher education
institutions
92 900 university
students

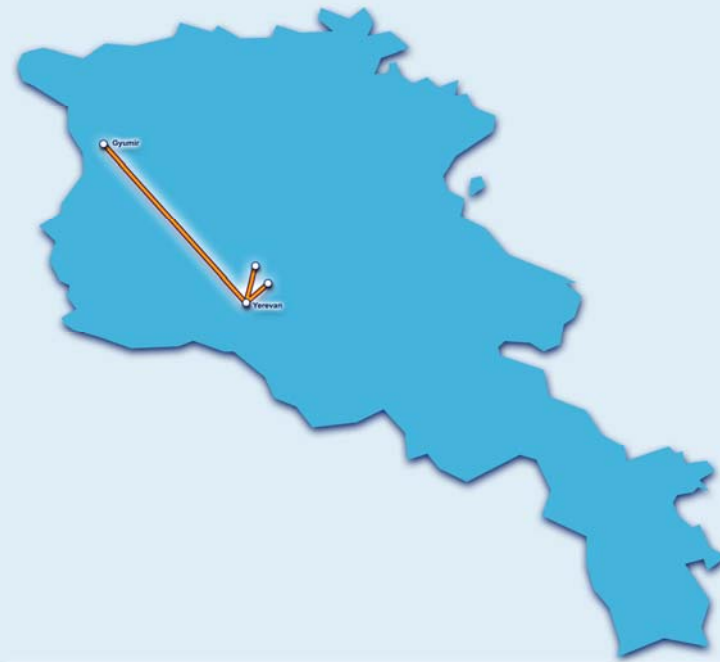


Armenia ASNET/ARENA

- **No GÉANT2 connection**
- fibre optic connections between network nodes (10 Mb/s)
- Internet via satellite and telecom operator

Potential Impact

8 cities
104 scientific institutions
26 higher education
institutions
53 650 university
students

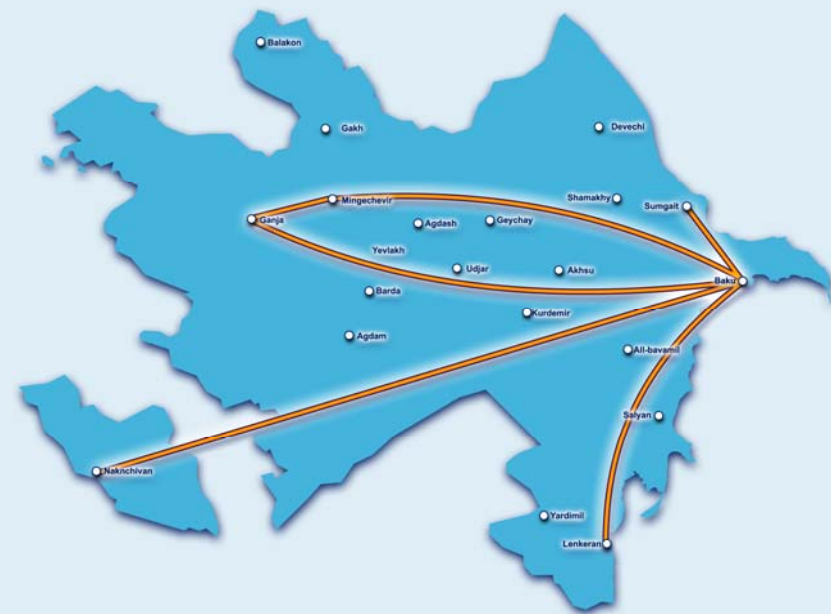


Azerbaijan AzRENA/AzNET

- **No GÉANT2 connection**
- buildings of the Academy of Science in Baku - fibre optic infrastructure
- other institutions connected by radio links or leased lines

Potential Impact

6 cities
186 scientific institutions
44 higher education
institutions
137 184 university
students



- potential impact
 - 9 countries
 - 136 cities
 - 1354 scientific institutions
 - 728 higher education institutions
 - 2 307 150 university students
- tendency to build dark fibre-based NRENs

Potential Beneficiaries

- Minsk, Unitary Enterprise "Geoinformation systems", United Institute of Informatics Problems, Belarus
(development of Belorussian space system of distance land exploration on the base of Belorussian space ship "BelKA")
- Chisinau, Faculty of Radioelectronics and Telecommunications of Technical University of Moldova (First GRID site in Moldova)
- Kiev, V. M. Glushkov Institute of Cybernetics, Ukraine (developing system to control problems within the framework of cluster technologies)
- Tallinn, National Institute of Chemical Physics and Biophysics, Estonia
(development of novel directions in material sciences, gene- and biotechnology, environmental technology, and computer science)
- Ventspils, Ventspils International Radioastronomy Centre (VIRAC), Latvia



Identification of User Communities

- 968 scientific and education institutions
- 129 cities to connect



Network planning



Assessment of Fibre Availability

- gathering all usable information related to the construction of fibre-based NRENs in target countries
 - fibre can be purchased or leased from third party
 - built by NREN

- network nodes and fibre routes
- transmission equipment
- international connectivity
(CBDF connection points)
- GÉANT2 interconnections
- financial rules governing the
procurement and use of the national and
international fibre infrastructure

Results Dissemination

- presentations at local and international conferences and workshops
- beneficiary NRENs staff training events
- raising end users, NREN owners, policy makers awareness of new networking and international research possibilities
- investigating additional sources of funding

**Thank you for
your attention**