

GRNET-2 Update

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Athens, May 2004

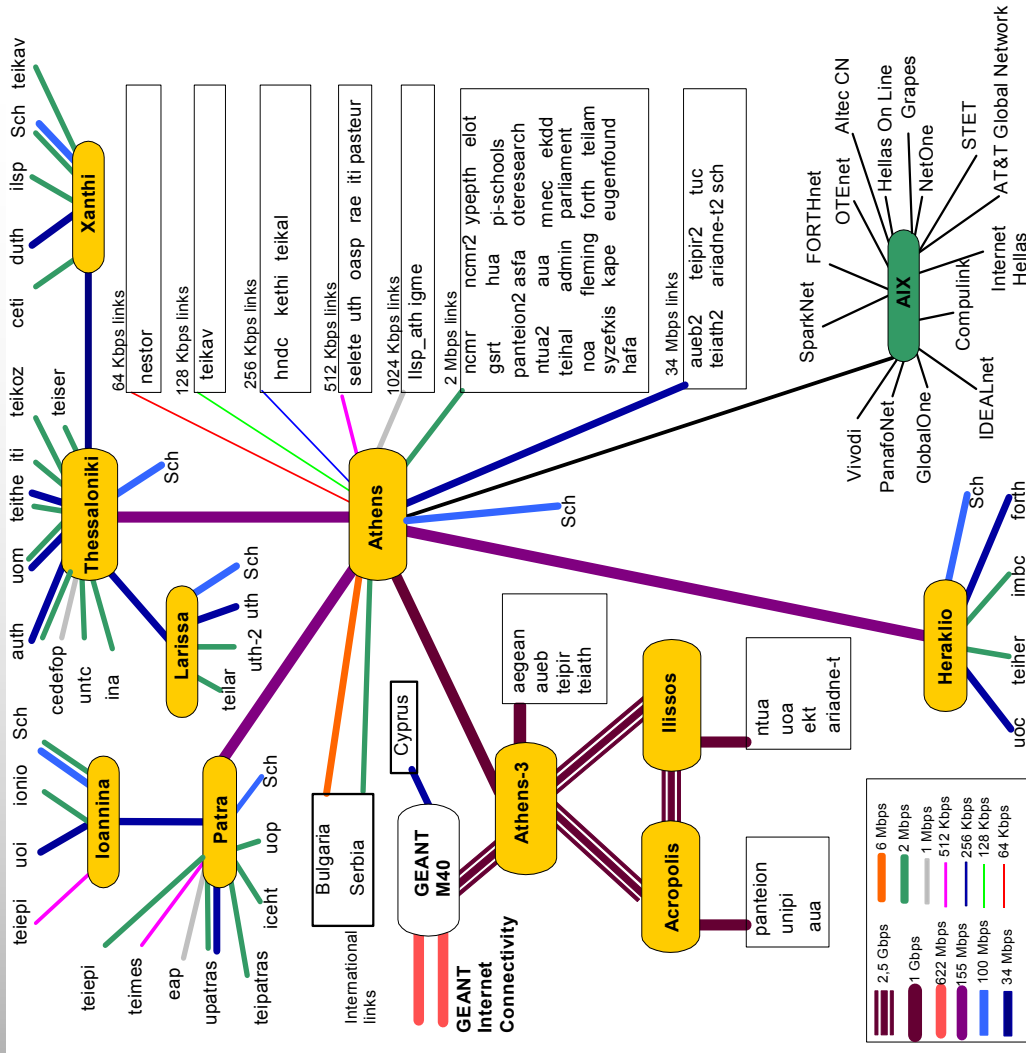


GRNET

- Interconnect academic and research institutions (around 80 today) and primary and secondary schools (around 6.400) strengthening communication and cooperation. A total of up to 1.000.000 end-users
- Continuously upgrade the NREN backbone (currently towards 2.5/10 Gbps), institutions access (currently to Gbps), and schools access (to Mbps)
- Operates the Athens Internet Exchange (AIX), peering of Greek commercial ISPs
- Cooperates with Greek and international research and academic institutions for the development of innovative networking services and tailors them to the needs of the GRNET target group

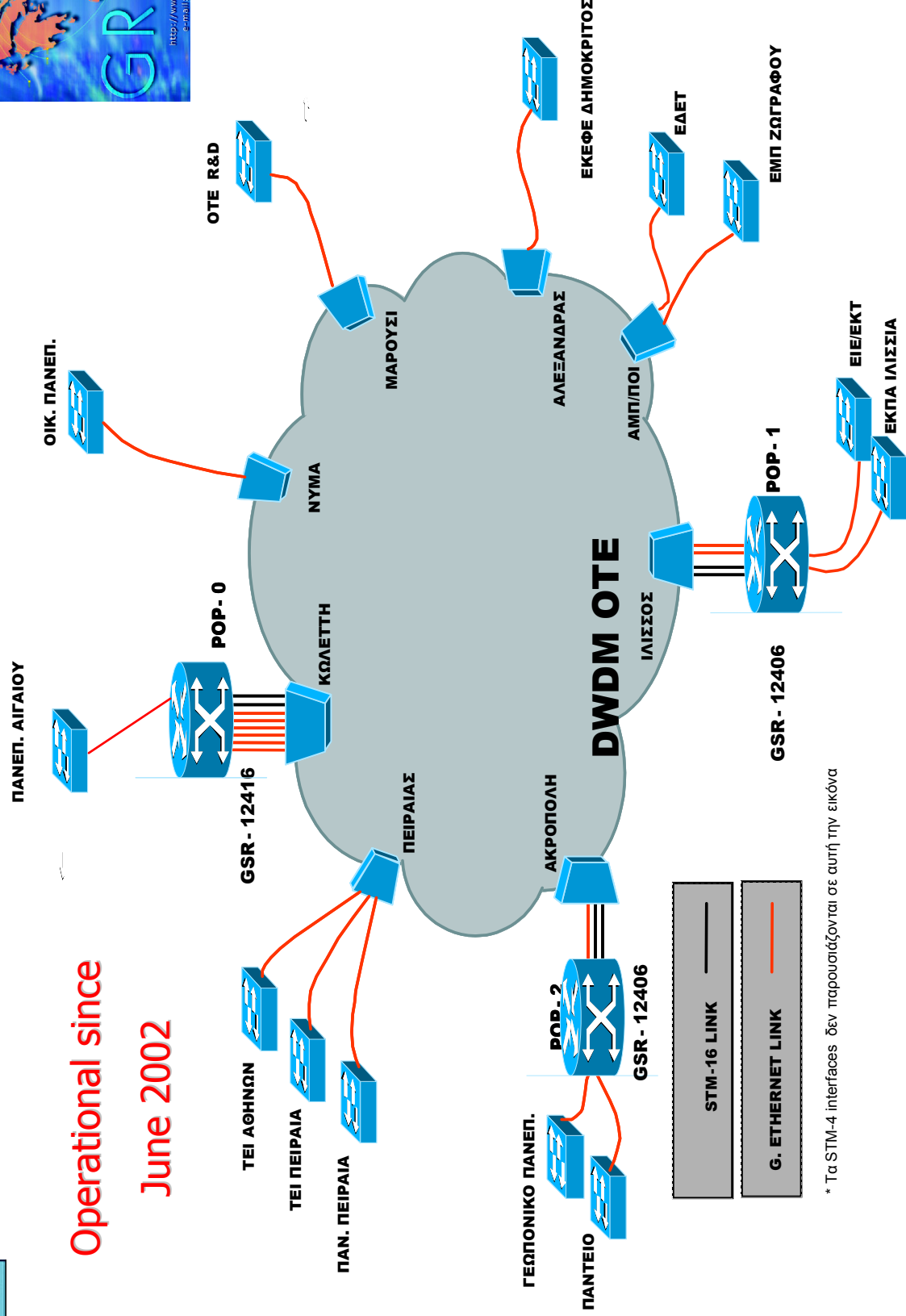
GRNET-1 (EΔEΤ-1)

- Core 155 Mbps
- Access 2/34 Mbps
- International 2x2.5Gbps
- Services
 - Real-time services & VoD
 - Multicast
 - Security – GRNET-CERT
 - Managed Bandwidth Service (MBS)
 - Directory Services (LDAP)
 - IPv6
 - MPLS
 - Development of Monitoring tools



Attica DWDM MAN (physical topology)

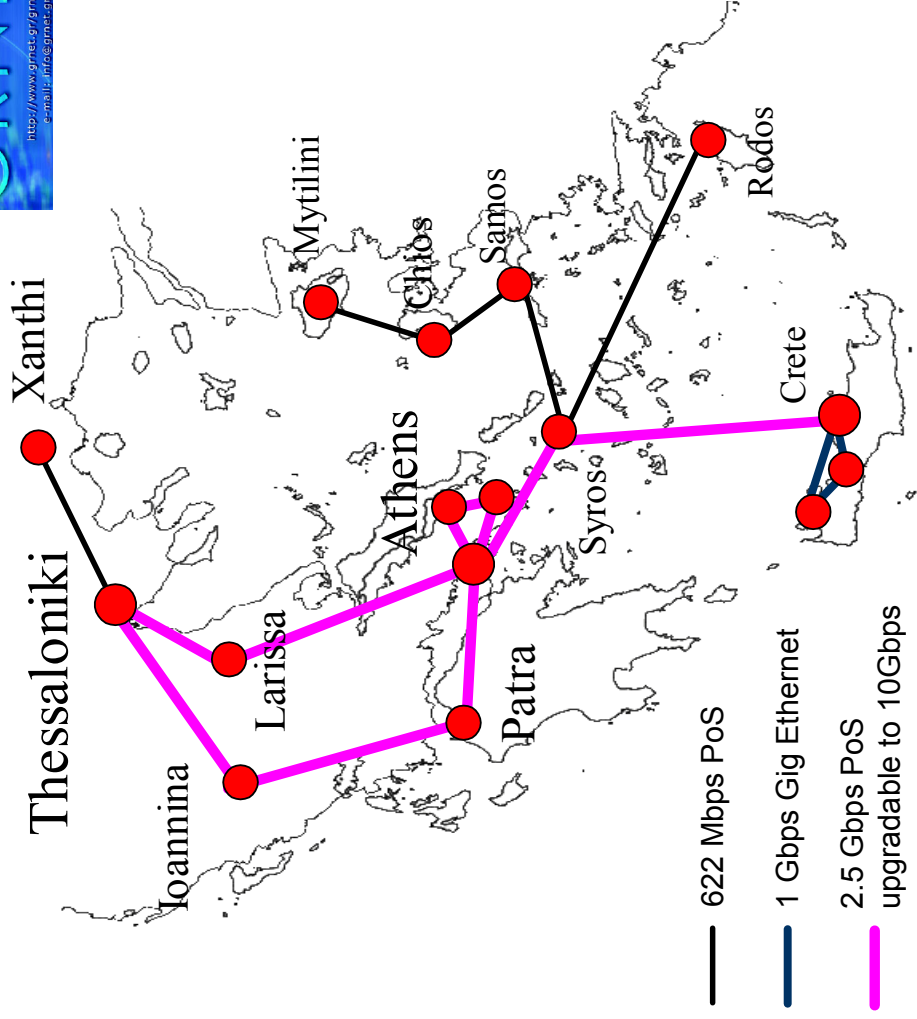
Operational since
June 2002



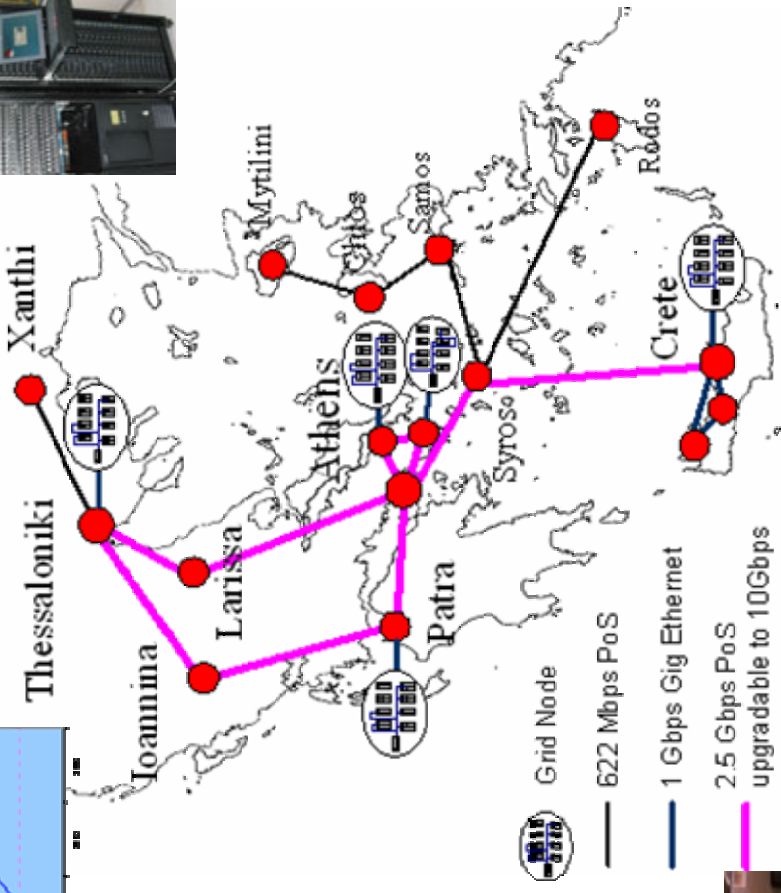
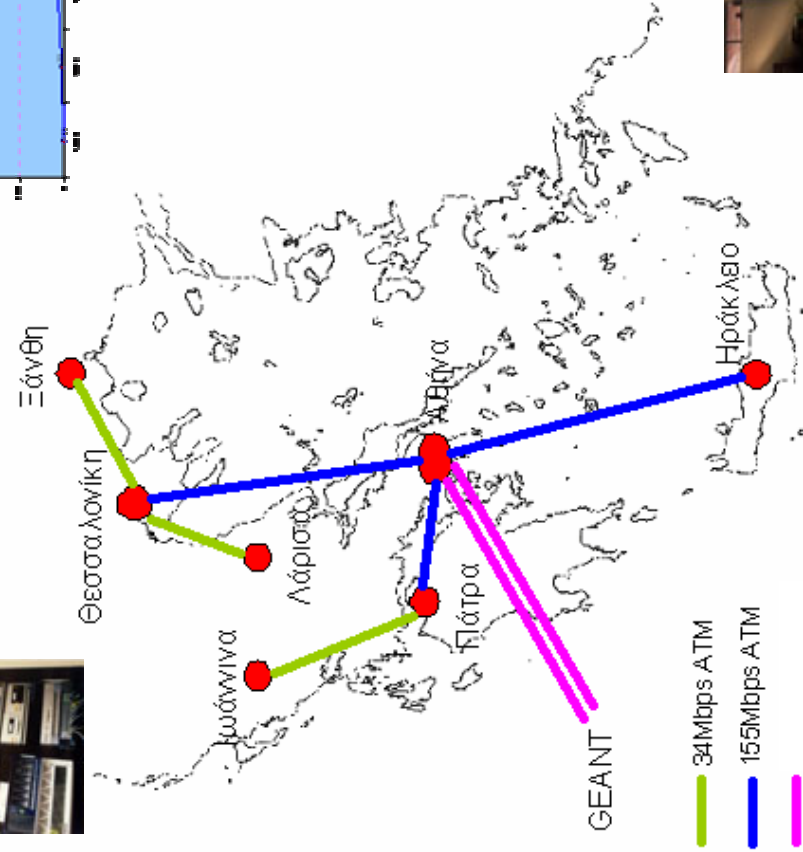
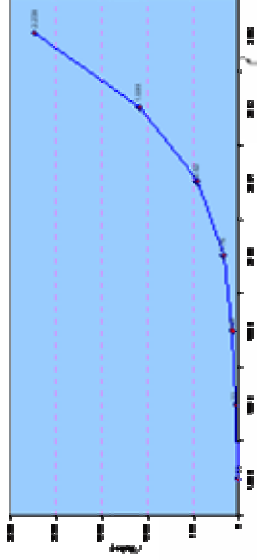
GRNET-2 (EAET-2)

- Design principles:
 - Gigabit Speeds
 - IP over WDM (leased lambda)
 - IP QoS
 - MPLS (VPN, TE)
 - IPv6
 - IP VPNs

■ **July 2004!!!**



National eInfrastructure

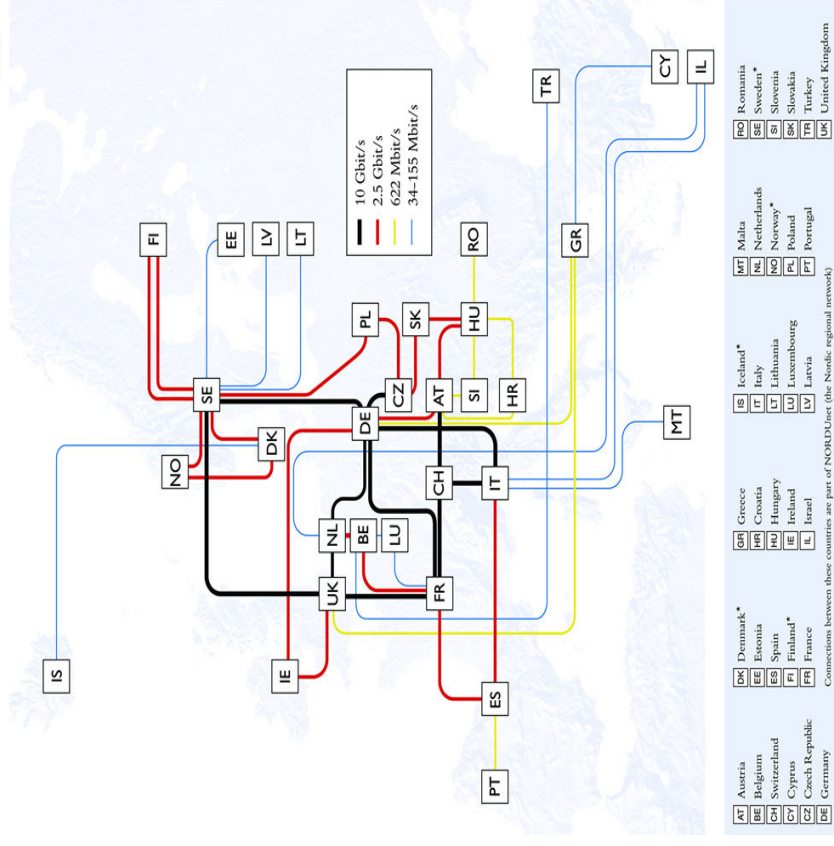


Future Demand

There are two major demand requirements:

- **Serving 'IP traffic'** – the IP traffic is growing at a rate of 100% every 12 months. There are two drivers for this growth in traffic:
 - growth in the size of the community served,
 - continual growth in the average usage per user (which drives the increase in traffic per organisation)
- **Serving research and eScience projects** – the nature of these is much harder to forecast, both in terms of the traffic loading and the timing of when this occurs.
 - Some projects are expected to transfer Terabytes of data at rates of 1Gbit/s and above.

- Pan-European coverage (32 Countries/NRENs)
- Connectivity up to 10 Gb/s
- Linking more than 3100 Universities
- Total 200 MEuro over 4 years (80 MEuro from EU)
- Peer connectivity to North America and Japan
- Extending Mediterranean, Asia Pacific, Latin America, Russia, Balkans, Central Asia



Multi-Gigabit pan-European Research Network Backbone Topology June 2003



GN2

- Proposal submitted to Research Infrastructures action of FP6, Call b.2: Communication Network Development - Géant
- GN2 will create an improved backbone infrastructure for connecting the European NRENs, thus "**the GN2 network**"
- The GN2 project is a consortium of roughly 30 NRENs, led by DANTE as the coordinating partner. The GN2 initiative proposes innovative actions for:
 - supporting the participation of research teams in highly integrated multi-national cooperations with challenging requirements (e.g. support of GRID infrastructures)
 - better integrating European services into a world-wide scope both at the quantitative and the qualitative level.
- Requested funding from the EC: 100 M€
- GRNET involvement: e2e QoS, performance management, security, new services development, foresight studies