



CyNet

Cyprus Research and Academic Network

Andreas Pitsillides, Chairman
Cyprus Research and Academic Network





CyNet

- Founded in 2000 by the Council of Ministers as an Independent Institution.
- Aims:
 - Create an advanced network infrastructure for research & education.
 - Interconnect all academic and research institutions in Cyprus (NREN) and interconnect with the European NRENs and beyond
 - Offer advanced network services to the research and education community.
 - Perform networking and services research.

To support and promote the research and education activities in Cyprus.





Actions in the Med: Pre EUMEDIS program

- Active in the Euromed IS advisory committee since the Rome 1996 Euro-Mediterranean Partnership , MEDA initiative
- Leading role in the so called Aldana group, advising the EU on IS initiatives for the Euromed region
- Came up with the idea and proposed (together with our Greek colleagues) the Interconnection in the Med project (Eumedconnect project)
- Euromednet 1998 conference – great success in promoting actions for EUMEDIS and EUMEDNETCONNECT initiatives





Actions in the Med: CYNET involvement in the EUMEDIS project

- EUMEDIS (Euro-Mediterranean Information Society) project undertaken by the European Commission in the development of the IS in the Med region.
- The participating countries in this program were the 12 Mediterranean partner countries of the Barcelona Political Provide that includes Cyprus.
- CYNET was involved in the EUMEDIS procedures from the very beginning, starting with the Euromednet conference in 1998 and EUMEDIS Preparation meeting in January 2001.
- CYNET was influential in the discussions of the high-level requirements, with the MEDNET proposal which was accepted as the basis for a new proposal which resulted in the EUMEDIS IP Interconnection Initiative (EUMEDCONNECT). The MEDNET proposal was prepared by Cyprus and Greece and submitted to the EC in 1999.
- CYNET is now a major partner of EUMEDCONNECT II project acting as a point of presence in the region for countries of the E. Mediterranean and currently providing interconnection free of charge to the Syrian NREN (SHERN).



Actions in the Med: Q-MED

- CYNET was a member of the European interconnection project Q-MED around 2000 (a supplementary consortium to QUANTUM)
- allowed a high quality network connection of Cyprus and Israel to the rest of European educational community TEN-155.
- Q-MED and QUANTUM collaborated in many ways especially on protocols for real time multimedia services and ATM technology





CyNet current network and future plans

- Infrastructure
 - 17 research and academic institutions
 - 2 external connections
 - Total: 310Mbps soon to upgrade to Gbps
- Network infrastructure connects to:
 - The European Research and Education Backbone, GEANT.
 - The Mediterranean Research and Education Backbone, EUMEDCONNECT (PoP for Syria).
 - The Cyprus Internet Exchange, CYIX.

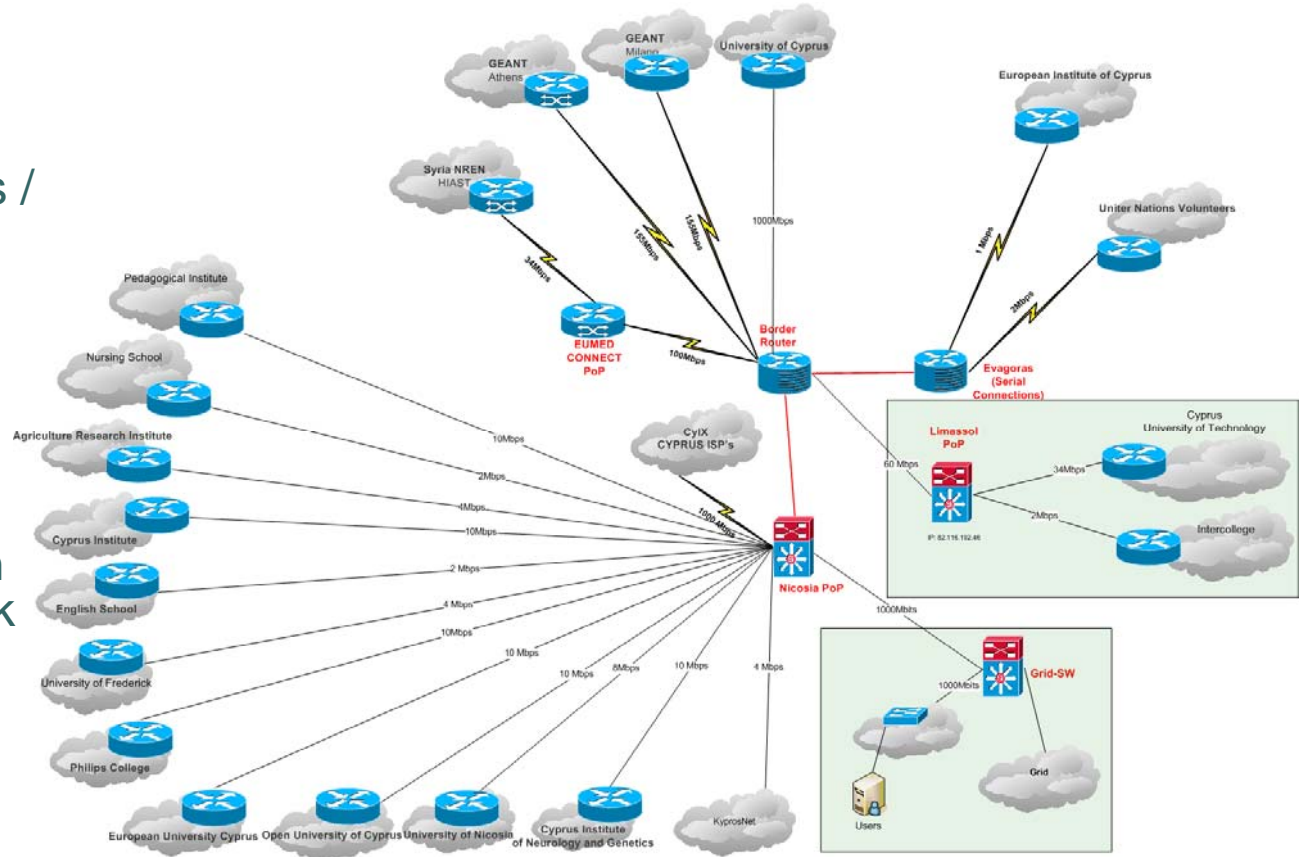
future plans to upgrade external connections to Gbps (GN3), interconnect institutions at very high speeds via a local backbone network with high speed and resiliency, and provide advanced network services.



CyNet network (contd)

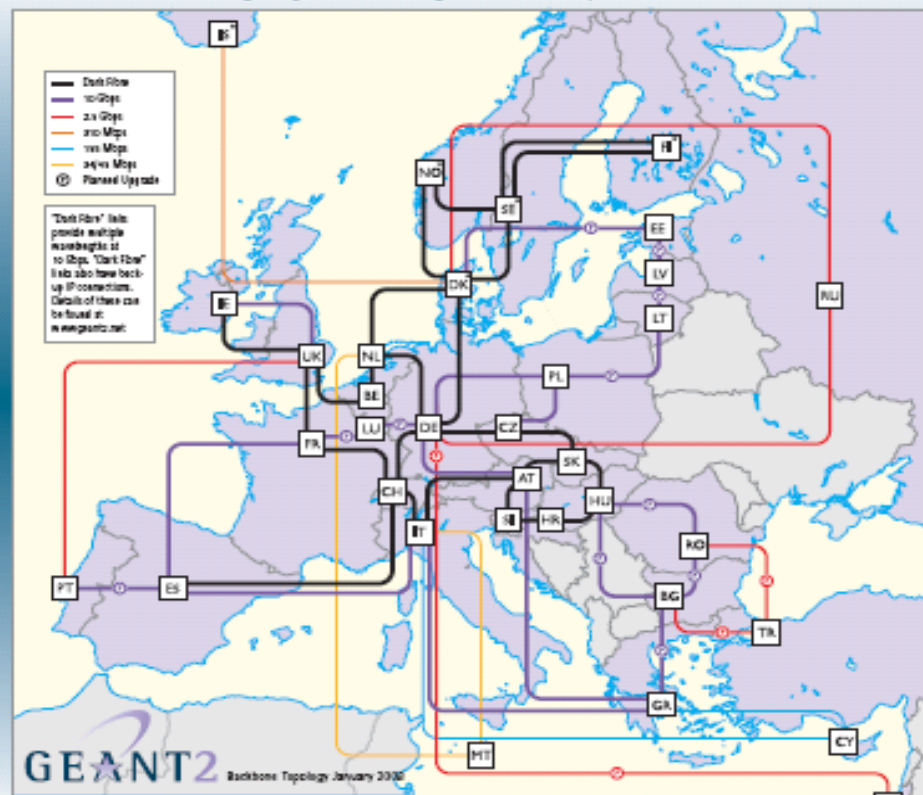
Interconnects all public and private Universities / colleges and major research centers to the Internet (GEANT)

Also, CyNet is collaborating with the Ministry of Education in implementing a network infrastructure for public schools



Lighting the pathway for European Research and Education

The first international hybrid research and education network.
Lighting dark fibre for greater network performance.



GEANT2 is operated by DANTE on behalf of Europe's NRENs.

PT	Avista	GR	Greece	ES	Spain	HR	Croatia	IS	Iceland*	LV	Latvia	PL	Poland	SE	Sweden*
BE	Belgium	DK	Denmark	FR	France	IE	Ireland	IT	Italy	LT	Lithuania	PT	Portugal	SI	Slovenia
ES	Spain	DE	Germany	UK	United Kingdom	FI	Finland*	NL	Netherlands	SK	Slovakia	RO	Romania	CY	Cyprus
CH	Switzerland	IT	Italy	GR	Greece	NO	Norway*	LU	Luxembourg	NO	Norway*	RS	Serbia	TR	Turkey
DK	Denmark	NO	Norway*	NO	Norway*	NO	Norway*	NO	Norway*	NO	Norway*	NO	Norway*	NO	Norway*

*Connections between these countries are part of NORDUnet (the Nordic regional network). *I includes comorbis (back-up)

GEANT2 is co-funded by the European Commission within its 6th R&D Framework Programme.



This document has been prepared with the financial assistance of the European Union. The views and opinions expressed therein are the sole responsibility of GEANT2 and do not constitute a position of the European Union.

Connected to the Research and Education Community of Europe and the rest of the World

CYNET is in the process to secure bandwidth at **2.5Gbps** as per the procurement currently running through the GN3 project





EUMEDCONNECT

- Cynet hosts one of the two Eumedconnect PoPs and provides bandwidth via its 310Mbps to GEANT.
- The Eumedconnect PoP connects at this point Shern (Syria) with a 34Mbps circuit.



CYNET current Activities

- Participate in the following research programs/projects:
 - GEANT
 - TERENA
 - eduROAM
 - eduGain
 - EUMEDGRID
 - EumedConnect II
 - LinkSCEEM +
- involved in E. Mediterranean discussions via several projects like [LinkSCEEM+](#), to interlink via fast connections, Cyprus research and academic institutions with their counterparts in other countries of the region and thus becoming the highway to the European network GEANT.





Challenges for the Med

- expense (due to monopolies ?)
 - despite reasonable capacity in the region, true expenses high
- Political problems
- Both financial and political reasons hinder the regional network connectivity
 - bandwidth cost prohibitively high
 - no policies for providing bandwidth at reasonable cost for academic activities
 - must be socialised at the political level.



Challenges for the Med

- Achieve synergy between e-infrastructure build-up and scientific applications using these
 - In Europe this synergy exists
 - In the Med it is proving difficult to justify that both have to proceed (in parallel) –build infrastructure that will support the research, carry out research, which requires the e-infrastructure
- Need to build scientific case for connectivity at the regional scale
 - Assess needs of scientific community,
 - evaluate possible solutions through interconnectivity study





What next

- CYNET will continue to offer its experiences for the betterment of the region
- CYNET will continue to be a hub/link between GEANT and EUMEDCONNECT in the eastern med, and its successors
- Vision to create the necessary e-infrastructure in the Med, on which collaborative application between EU and the Med can flourish
- Raise awareness
 - Actively promote research and e-infrastructures for the Med.





Finally

- Communicate and collaborate
 - Across borders
 - Across cultures
 - Across scientific disciplines
- This conference is a right step in this direction
- Big thank you to the organisers





LinkSCEEM objective

- develop strong anchors in both the European ICT infrastructure and the Eastern Mediterranean scientific community, and
- helps to build scientific and technological bridges between Europe and the Middle East,
- narrow the digital gap between the Eastern Mediterranean and the Western World.





EUMEDCONNECT CONNECTIVITY MAP



Capacity in the region: plentiful



UGARIT
2.5 Gbit/sec

CADMOS
2.5 Gbit/sec

LEV + CIOS
20Gbit/sec

SEA-ME-WE2
and SEA-ME-WE3
2x20 Gbit/sec

Mednautilus
6x10 Gbit/sec

Minerva
10 Gbit/sec



Prices still prohibitively high

- Eumedconnect2 project tender for regional connectivity
 - offers around Cyprus were at the order of 34-155Mbps and not very cost-effective. Offers were received from Nicosia to Amman, Cairo, Damascus and Ramallah respectively, as well as with other European cities.
 - Prices for 34 Mbps are in the order of few hundred thousand Euros, while 155 Mbps are in the order of a million Euros. – ENCOURAGING: LATER PRICES ARE MUCH LOWER—JORDAN-CYPRUS 155Mb/sec @ 470kEuro/year
 - There were no 622 Mbps offers to or from Cyprus.
 - In addition there are very few other regional offers received, e.g. among Israel, Jordan and Palestine, which were also relatively expensive.

