

Pan European Research Networking in a Liberalising Environment

ENPG Meeting : 3/4 June 1999

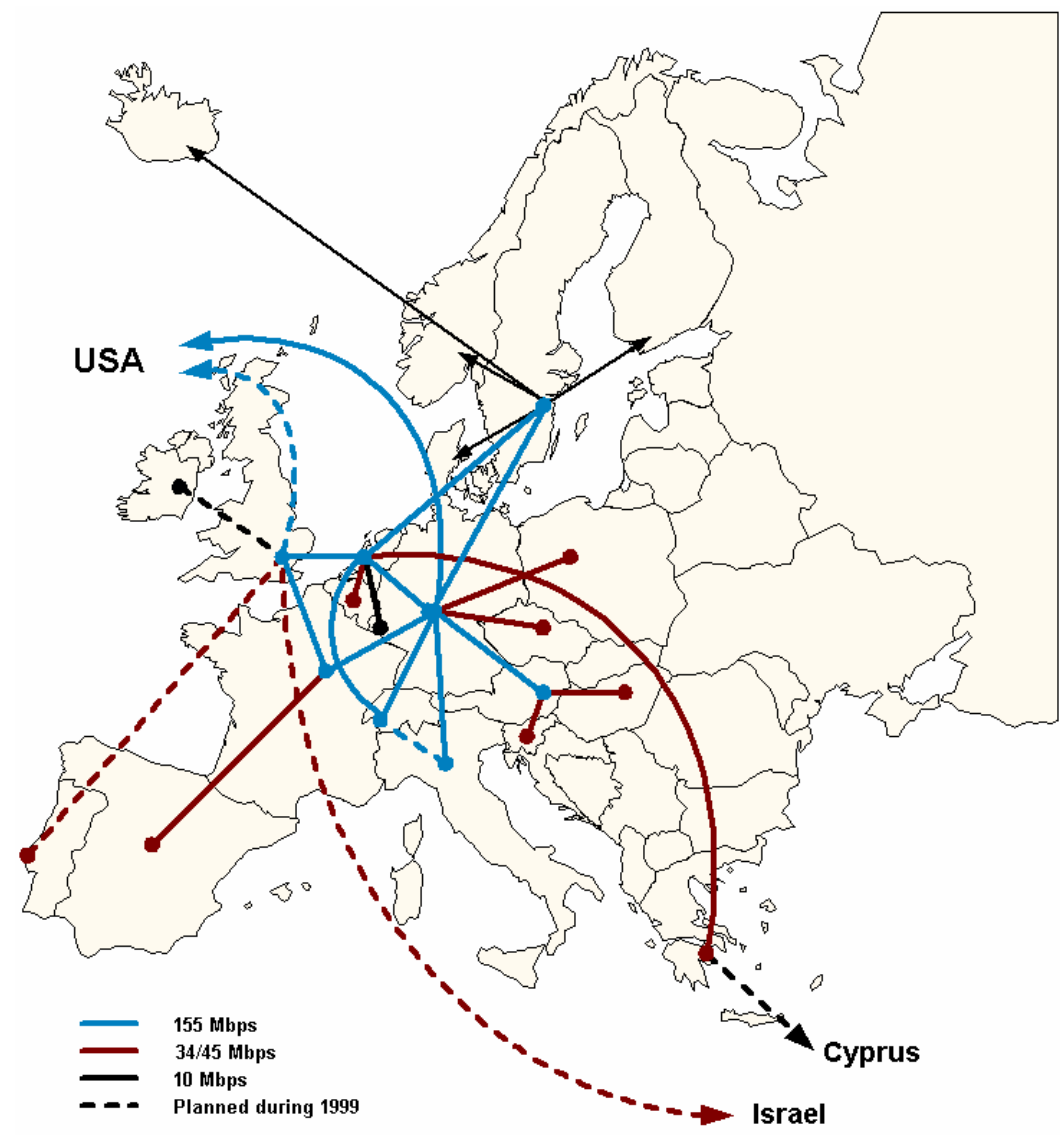
Dai Davies : General Manager, DANTE

www.dante.net

dai.davies@dante.org.uk



April 1999 Topology



Pan-European Research Network Procurement Summary

- **16 Proposals**
- **87 Offers**
 - **45 Multiple Connections**
 - **42 Links**

Summary of Tender Offers

Speed MBp/s	155	45	34	10
Cost Group A	14.7	18.4	22.5	28.4
Cost Group B	34.3	54.1	-	-
Cost Group C	-	-	59.82	-
Cost Portugal	-	-	176.6	-

All costs are in K Euros/Mbit/Year

Pan-European Pricing

- **Three Cost Groups**
 - **GP1 :- Switzerland, Germany, France, Great Britain, Netherlands, Sweden**
 - **GP2 :- Belgium, Spain, Italy, Luxembourg, Austria**
 - **GP3 :- Czech Republic, Greece, Hungary, Slovenia**
- **Portugal**

Liberalisation - The Challenges

- **Diverging Prices**
- **Growth of the Commercial Internet**
- **Provision of “Quality Services”**
- **Co-operative R&D**

Diverging Prices

- **Today - Factor of 4**
- **Next Year - Factor of 10?**
- **Pressure on PNO's**
- **Geographic Solidarity Through Pricing**

Growth of the Commercial Internet

- **Need for Interconnection**
- **Need for Separation**
- **No “Free Rides”**
- **Learn From Our Mistakes**

Provision of Quality Service

- **Single Vendor Single Model - Easy**
- **One Management Domain - Easy**
- **Real World - Very Hard**
- **A Common European Solution**

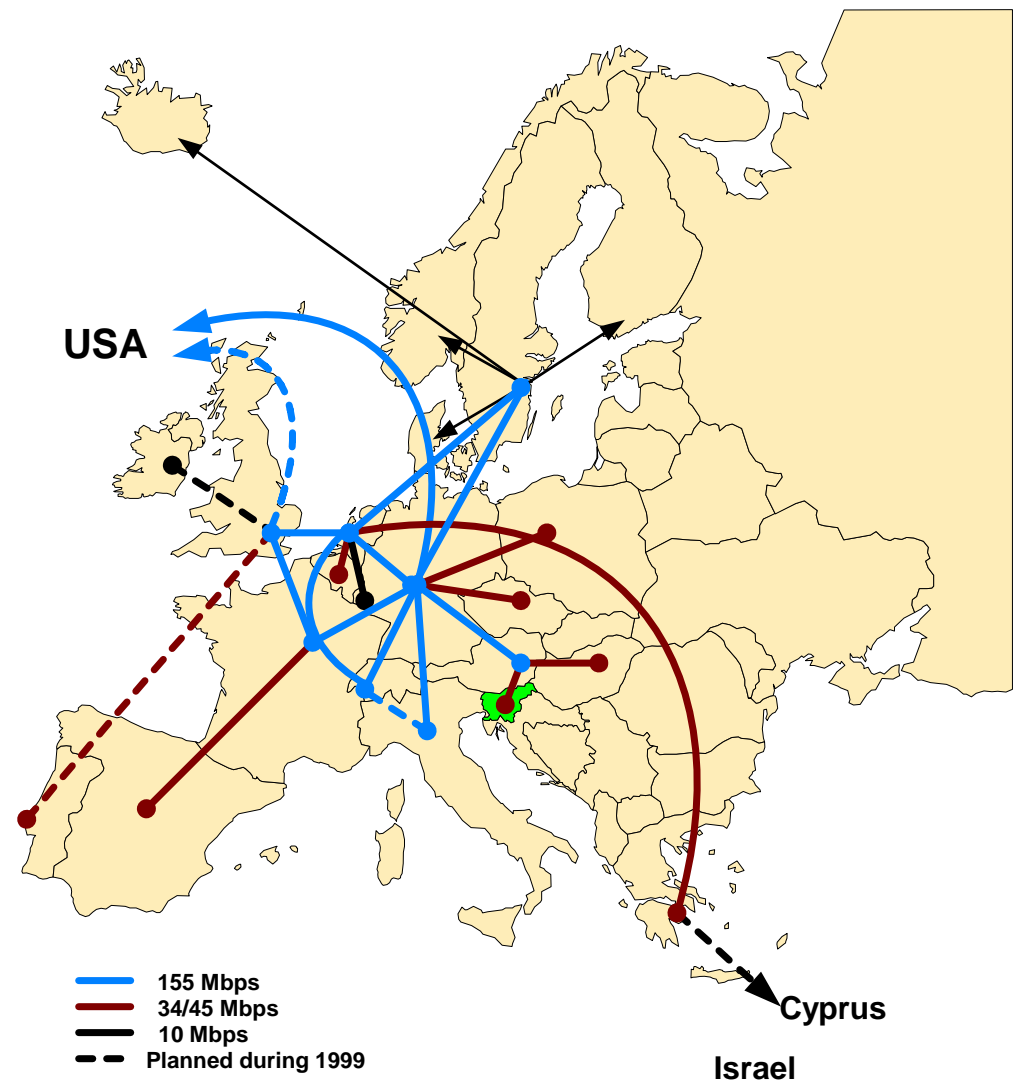
Co-operative R&D

- **Need to have Active European Focus**
- **Single Network Infrastructure**
- **Research Networkers Play a Key Role**

Year	Network Building Block	Network	Arnes Capacity
1991/2	64 KBps	EuropaNET	64 KBps
1993	2 MBps	EuropaNET	192 KBps
1994	2 MBps	EuropaNET	512 KBps
1995	2 MBps	EuropaNET	1 MBPS
1996/7	22 MBps	TEN-34	10 MBps
1998/9	155 MBps	TEN-155	10 MBps



April 1999 Topology



**ENPG Meeting : 7/8 October 1999
The Faculty Club, Leiden.**

Dai Davies
DANTE

<http://www.dante.net>