



## An overall picture of the status of connectivity and deployment of e-infrastructures

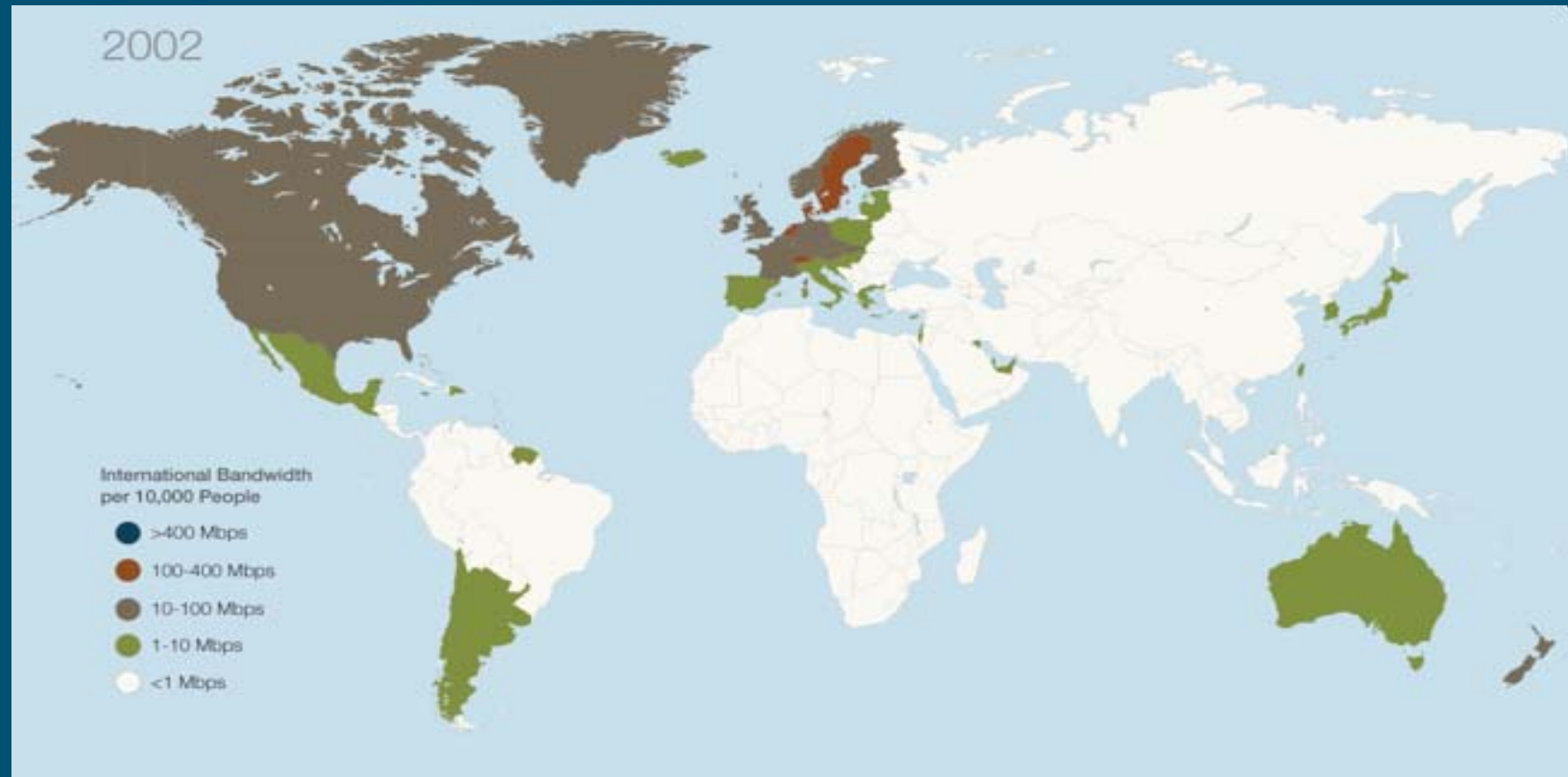
Amman  
4 November 2008  
David West,  
EUMEDCONNECT2 Project Manager,  
DANTE





# The e-World in 2002

International Research Networking



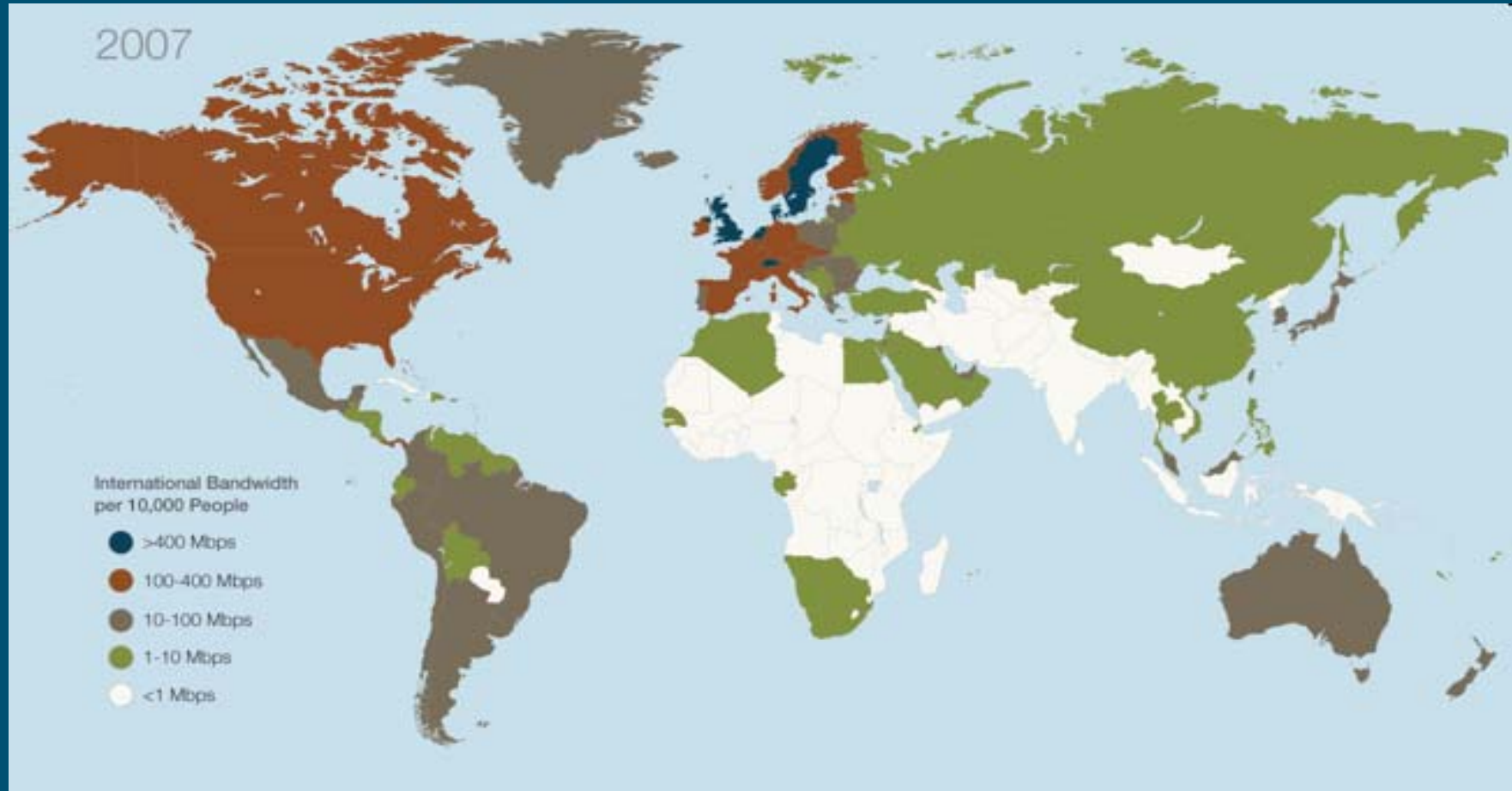
Source: Telegeography Research





# The e-World in 2007

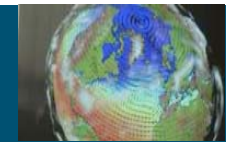
International Research Networking



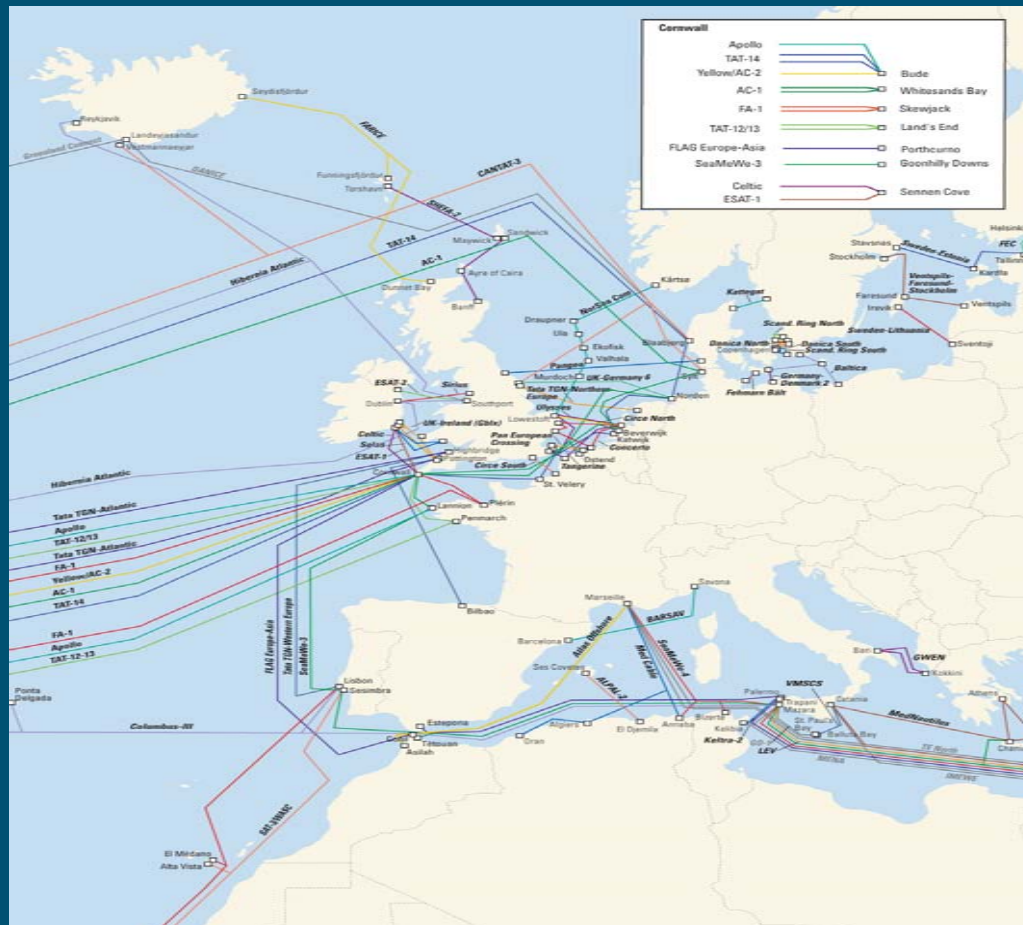
Source: Telegeography Research



# Plenty of MED Cable infrastructure...



International Research Networking



Source: Telegeography Research





## International Research Networking



- ## Limited competition:

- ## Several new cables planned for 2009 and 2010:

- Source: Telegeography Research



# Why are Research and Education networks needed?



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- Provide capacities still not available or affordable from the commercial Internet
- Pioneer advanced services and support innovative network usage
- Enable Mediterranean researchers to collaborate in EU research programmes
- Counter brain drain

... bridge the EU-MED digital divide for science, education and society

....approach proven worldwide



# EUMEDCONNECT – the first regional e-infrastructure for the Mediterranean region



International Research Networking

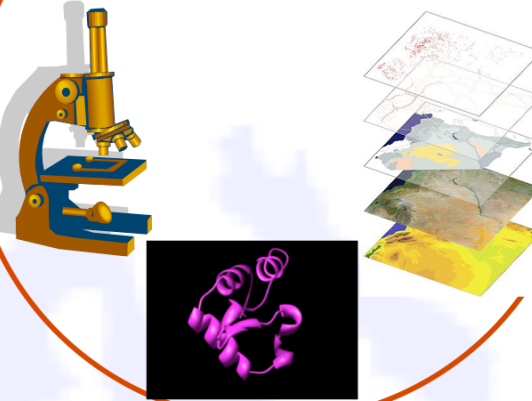
- Operational since 2004
- Sole or main R&E connectivity for Algeria, Egypt, Jordan, Morocco, Palestine, Syria and Tunisia
- 400 academic and research sites connected
- 2M educators and researchers able to access
- EU funded to end 2007
- Spawned regional networks in other world regions
- Key infrastructure for many application projects



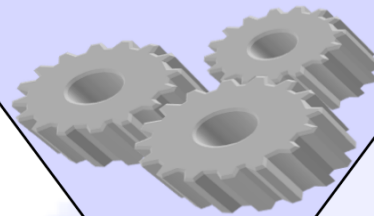
# EUMEDGRID in just one slide

**EUMED**  
Grid

**Seek, identify, and support e-Science communities in the Mediterranean and deploy their applications**



**Set-up and manage a Pilot Grid Infrastructure**



**Disseminate, both “bottom-up” and “top-down”, the e-Infrastructure paradigm for long term sustainability of e-Science**

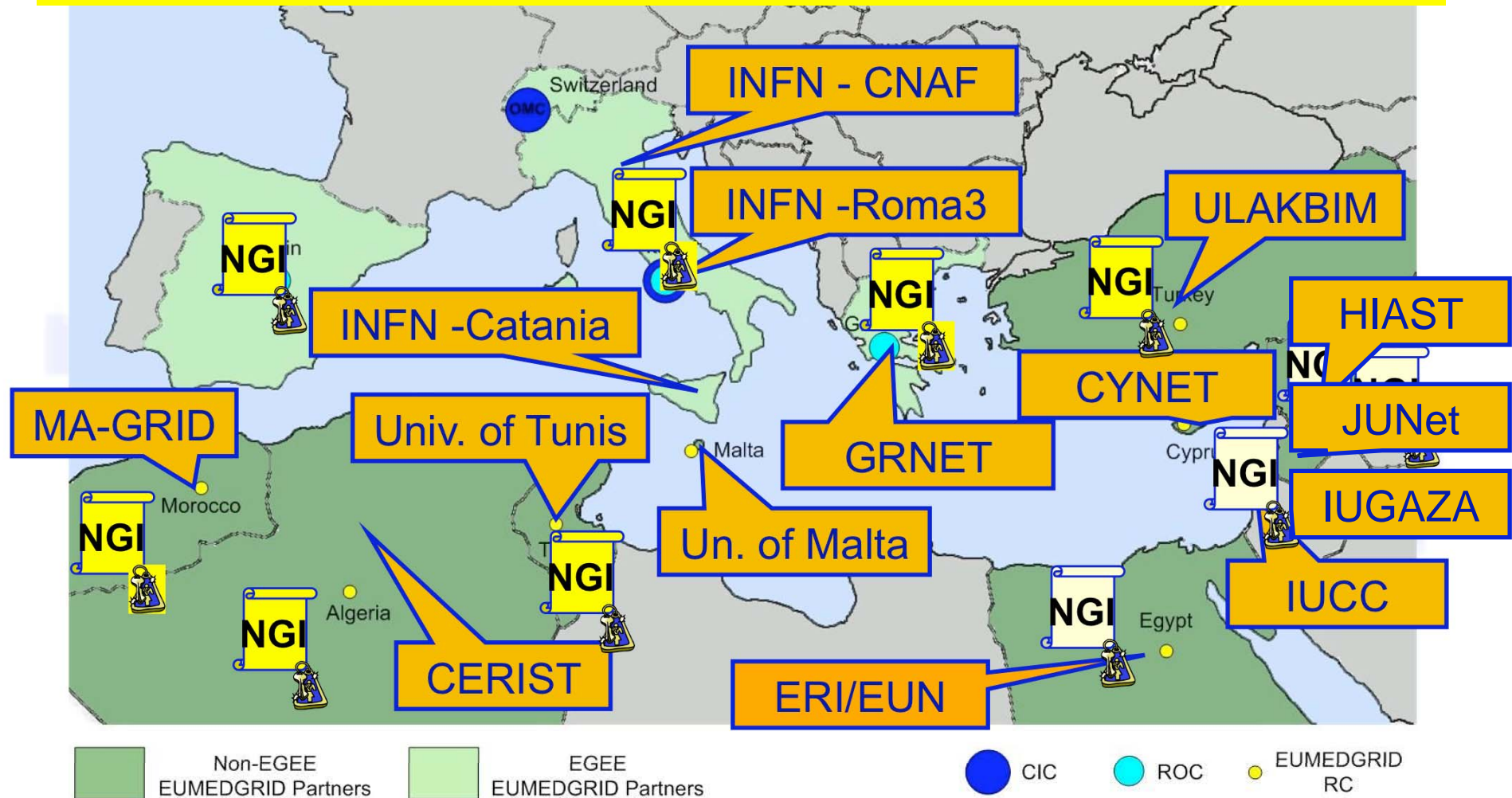


**Train users and site administrators to use and operate an e-Infrastructure based on the EGEE middleware**



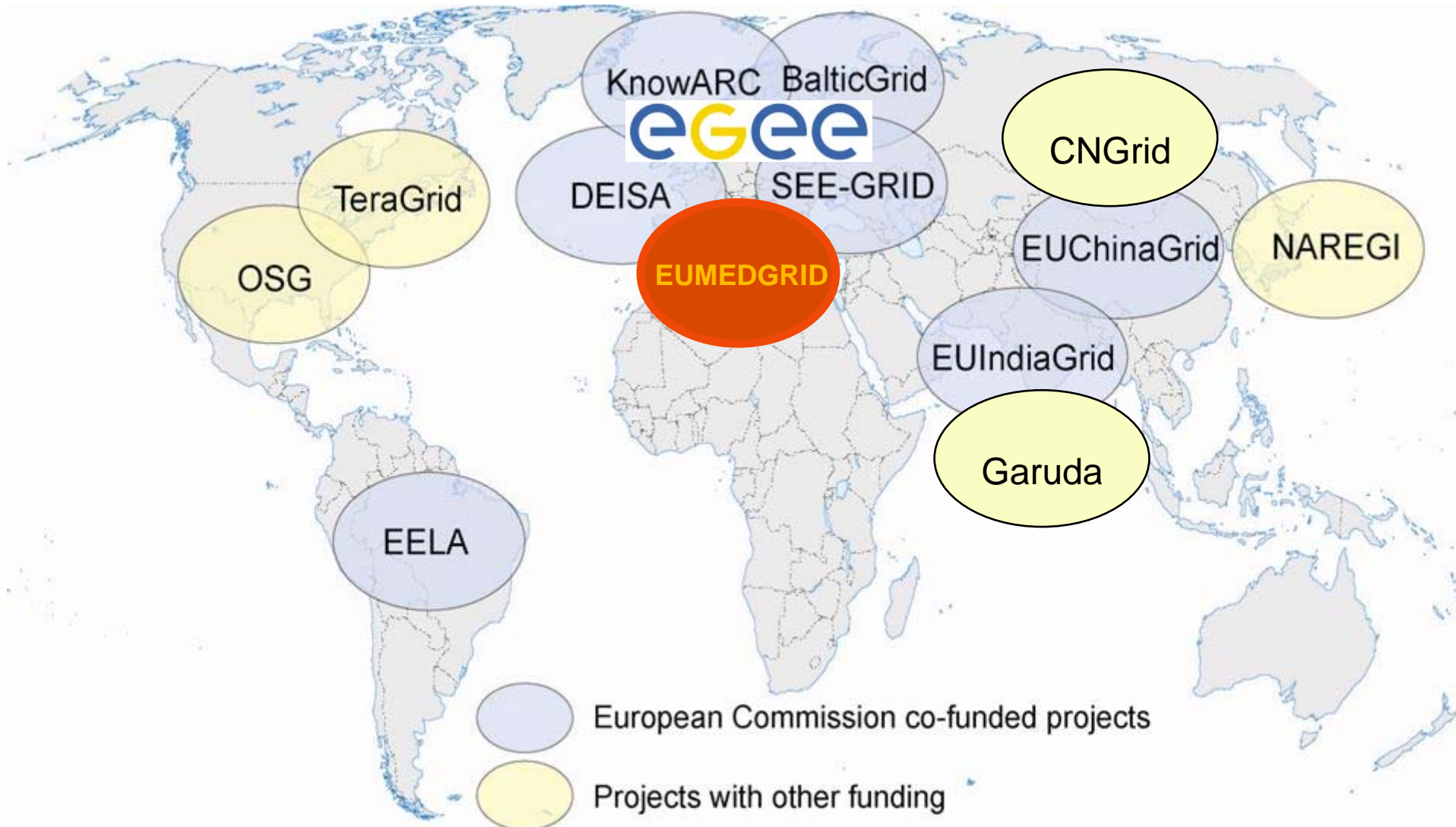
# The EUMEDGRID e-Infrastructure

So far, 24 EUMEDGRID sites have been deployed in 13 countries, giving a total of 575 connected Servers and about 84 TBs of storage capacity

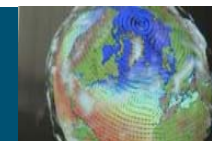




# The Globalisation of Grid Infrastructures

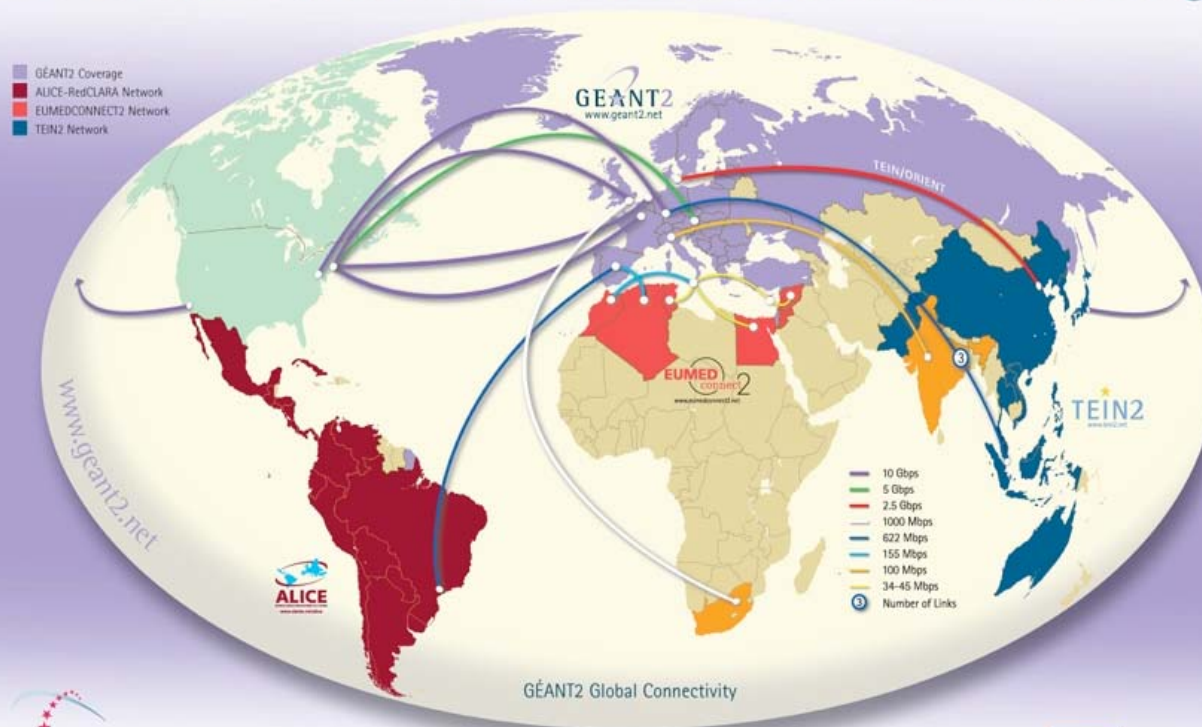


# Global R&E access for the Mediterranean



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## GEANT2 At the Heart of Global Research Networking



DANTE  
[www.dante.net](http://www.dante.net)

★ Connect ★ Communicate ★ Collaborate  
November 2008



\*This document has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of DANTE and can under no circumstances be regarded as reflecting the position of the European Union.



EUMED  
connect2

DANTE



# 85 networks connected in 79 countries



## International Research Networking

### Americas

- CANARIE
- CEDIA
- CUDI
- ESNet
- INNOVA|RED
- Internet2
- NISN (NASA)
- NLR
- RAAP
- RAGIE
- RAICES
- RAU2
- REACCIUN2
- RedCyT
- RENATA
- REUNA
- RNP
- USLHCNet

Canada  
Ecuador  
Mexico  
USA  
Argentina  
USA  
USA  
USA  
Peru  
Guatemala  
El Salvador  
Uruguay  
Venezuela  
Panama  
Colombia  
Chile  
Brazil  
USA

### Europe

- ACONet
- ARNES
- ASA/INIMA
- BELNET
- BIHARNET
- CARNet
- CESNET
- CYNET
- DFN
- EENet
- FCCN
- GARR
- GRNET
- HEAnet
- Holy See Internet Office
- ISTF
- IUCC
- JANET(UK)
- JSCC
- LITNET
- NIIF/HUNGARNET
- NORDUnet
- PSNC

Austria  
Slovenia  
Albania  
Belgium  
Bosnia & Herzegovina  
Croatia  
Czech Republic  
Cyprus  
Germany  
Estonia  
Portugal  
Italy  
Greece  
Ireland  
Vatican City  
Bulgaria  
Israel  
United Kingdom  
Russia  
Lithuania  
Hungary  
Denmark  
Finland  
Iceland  
Norway  
Sweden  
Poland

### Europe (cont.)

- RedIRIS
- RENATER
- RESTENA
- RoEduNet
- SANET
- SigmaNet
- SURFnet
- SWITCH
- UKIM/MARNET
- ULAKBIM
- University of Andorra
- University of Malta
- UoB/AMRES
- UoM/MREN
- URAN

Spain  
France  
Luxembourg  
Romania  
Slovakia  
Latvia  
The Netherlands  
Switzerland  
FYR of Macedonia  
Turkey  
Andorra  
Malta  
Serbia & Montenegro  
Serbia & Montenegro  
Ukraine

### Middle East & Africa

- ANKABUT
- ARN
- Birzeit University/Al Quds Open University
- EUN

United Arab Emirates  
Algeria  
Palestinian Territories  
Egypt

### Asia & Oceania

- AARNet
- CERNET
- CSTNET
- ERNet
- INHERENT/ITB
- JGN2
- KOREN
- KREONET2
- LERNET
- MAFFIN
- MYREN
- NCSFNET
- PERN
- PREGINET
- SINET
- SingAREN
- ThaiSARN
- UniNet
- VINAREN

Australia  
China  
China  
India  
Indonesia  
Japan  
Korea  
Korea  
Laos  
Japan  
Malaysia  
China  
Pakistan  
Philippines  
Japan  
Singapore  
Thailand  
Thailand  
Vietnam



# EuroMed ICT Ministers, Cairo

## 27 February 2008



### International Research Networking



“....recognised the fundamental role that EUMEDCONNECT played....”

“...essential to guarantee the sustainability and promotion of the initiative...”





# EUMEDCONNECT2 Progress since Brussels Oct 2007



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- EUMEDCONNECT expected to end Q2 2008, replacement project (EUMEDCONNECT2) planned ✓
- Tendering for EUMEDCONNECT2 network to start shortly ✓
- EUMEDCONNECT2 plans:
  - Provide higher capacity, more cost effective infrastructure ✓
  - Active promotion of network for FP7 and other research projects, tele-medicine and environmental applications ✓
  - Extended coverage to additional Mediterranean and Gulf NRENs
  - Project managed with the CAMREN consortium
  - Funding from EC, MED partners and others ✓
  - Longer term sustainability plans to be developed
- Long term approach to tackling Digital Divide needed

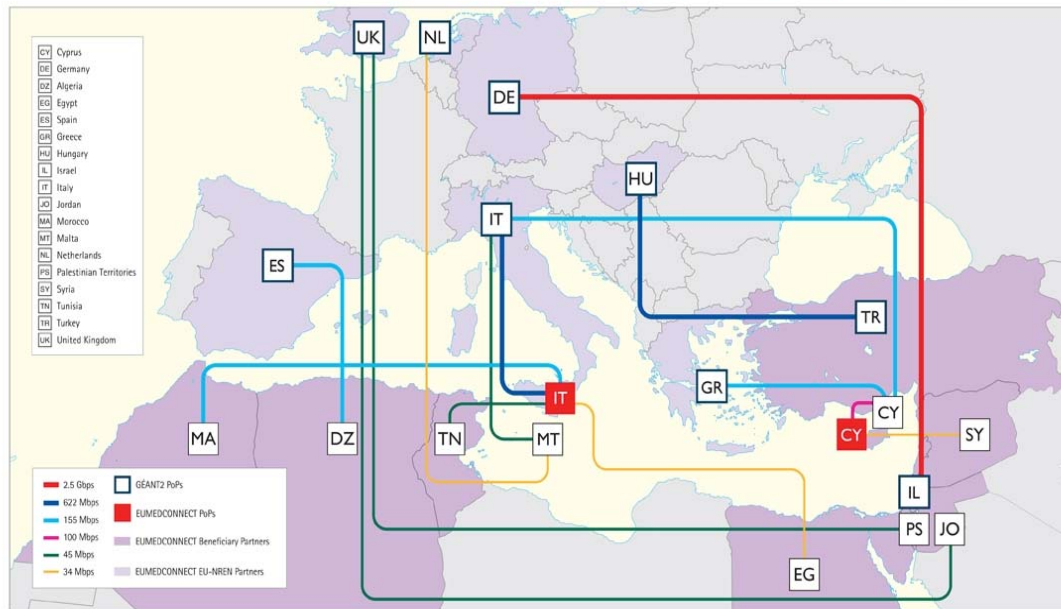


# EUMEDCONNECT2 Network

International Research Networking



## The Research and Education Network for the Mediterranean



Backbone Topology November 2008



EUMEDCONNECT2 is co-funded by the European Commission through the European Neighbourhood and Partnership Instrument



4M EC co-funding

Increased MED partner funding share

Secured to late 2010

Continuity for MED Partners

Continuity for EU/MED User communities



# www.eumedconnect2.net/



## International Research Networking

**EUMEDCONNECT2 : EUMEDCONNECT2 - Mozilla Firefox**

File Edit View History Bookmarks Tools Help

http://www.eumedconnect2.net/?PHPSESSID=9089e62232e5fc2aefe0122547ce5e1a

Most Visited Hotmail - The World's ... Google BBC - BBC - the UK's ... TEIN2 NOC Website :: GÉANT2 Aujaar Sys : DANTE Intranet DANTE diary

**EUMED connect 2**

sitemap Project Network Partners Users Media Centre Contact

**EUMEDCONNECT2**

**Welcome to the EUMEDCONNECT2 Website**

EUMEDCONNECT2 is a high-capacity IP-based data-communications network serving the research and education communities in **seven countries** across the southern Mediterranean, enabling them to participate in **collaborative projects**.

Offering a direct link to GÉANT2, its pan-European counterpart, EUMEDCONNECT2 allows approximately 2 million users in around 700 institutions across North Africa and the Middle East to collaborate with their peers at more than 3000 research and education establishments in Europe.

EUMEDCONNECT2 provides the Mediterranean with a gateway to global research collaboration.

**EUMEDCONNECT2 Media Centre**

PRESS KIT  
NEWS ARCHIVE  
BROCHURES &  
MAPS  
PRESENTATIONS  
ORDER POSTERS AND PUBLICATIONS  
To find out more  
Click here

**EUMEDCONNECT2**  
Connecting the research and education communities across the southern and eastern Mediterranean

**EUMED connect 2**

**DANTE home**  
GEANT2  
GEANT  
TEIN2  
EUMEDCONNECT  
**EUMEDCONNECT2**  
ALICE  
Global Connectivity  
DANTE Web Archive

**LOGIN HERE**  
username  
password  
**LOGIN >**  
[email my password]  
Project partners: register here

**EUMED connect**  
To visit the website of the first EUMEDCONNECT project  
Click here

Done

start Mozilla Firefox Microsoft PowerPoint





# E-infrastructure: critical success factors (EU experiences)

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1. Recognition by national government
  - Long term view
  - Adequate NREN investment in networks and people
  - Competitive telco markets promoted or NREN cushioned
2. Strong NREN organisations
3. Forge close NREN/user community relationships
4. Strong participation in international programmes





International Research Networking

# Thank you!

David West

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[www.dante.net/](http://www.dante.net/)

[www.eumedconnect2.net/](http://www.eumedconnect2.net/)

