

# European Initiatives on IPv6 - Future Perspectives

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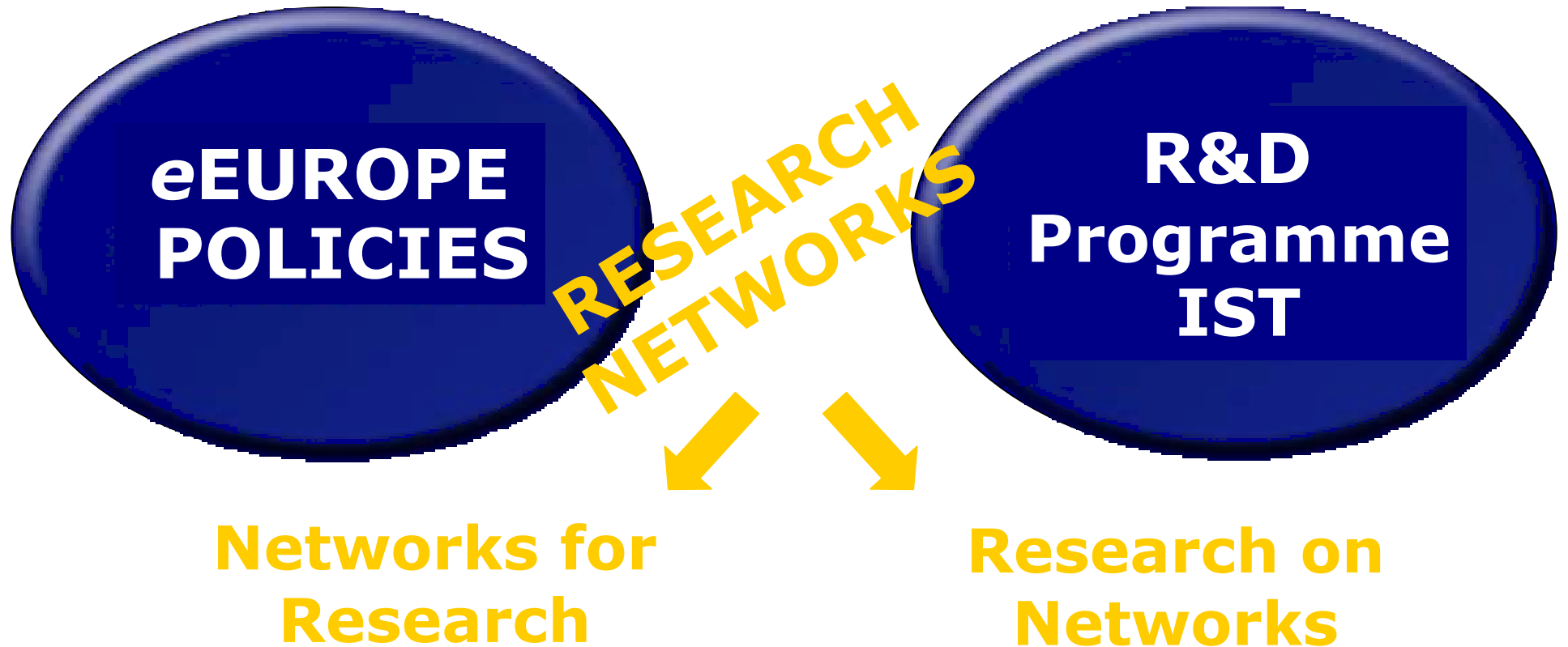


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# Research Networks within EU policies



# GEANT: The Flagship of Networking Activities in Europe

**GÉANT - The Pan-European Research Network infrastructure that explores the latest developments in telecommunications technology**

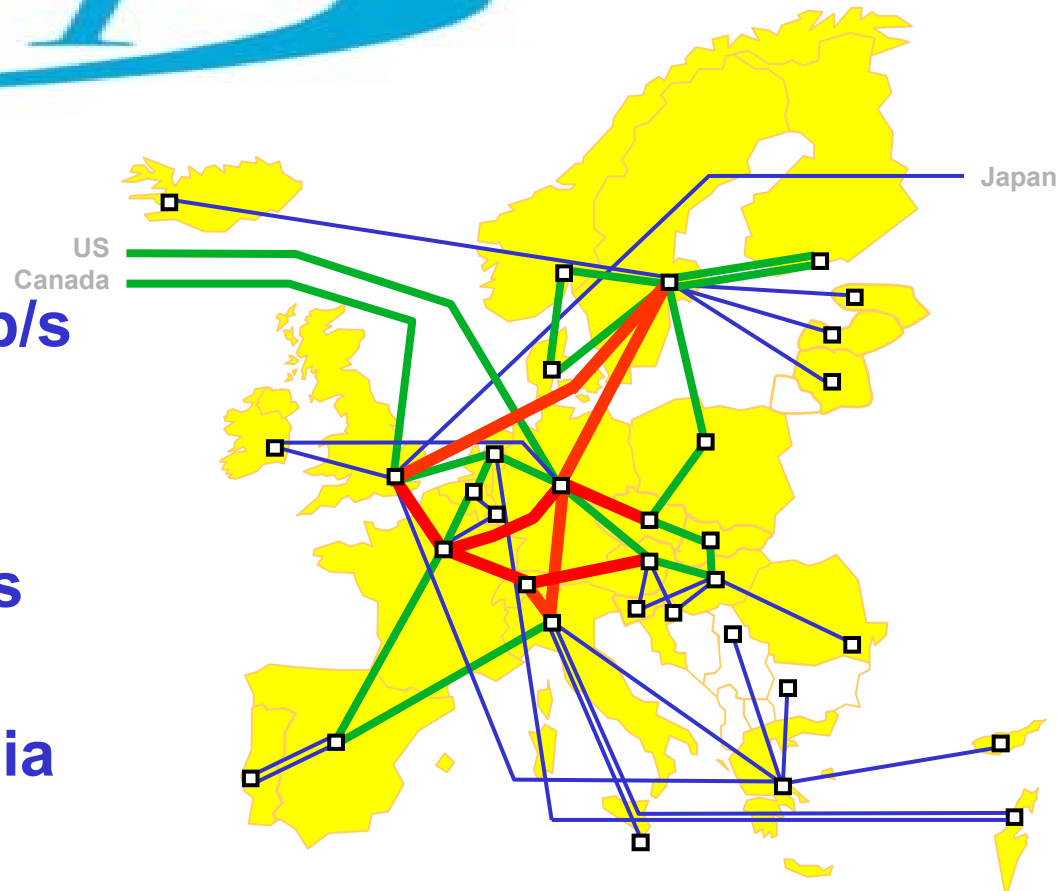
- ➔ **Network Services for National Research and Education Networks (NRENs)**
- ➔ **Platform for testing - GRIDs, IPv6, ...**



# Research Networking



- Pan-European coverage (32 Countries/NRENs)
- Gigabit connectivity at 10 Gb/s
- Linking more than 3000 Universities
- Total 200 MEuro over 4 years (80 MEuro from EU)
- Extend to Mediterranean, Asia Pacific Rim, Latin America...



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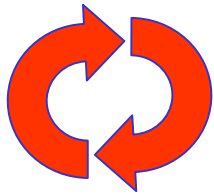
— 10 Gbit/s  
— 2,5Gbit/s  
— <2,5Gbit/s



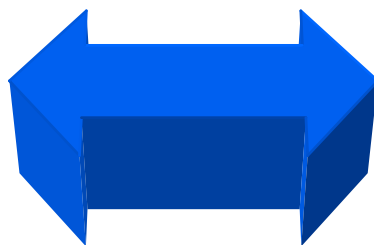
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# Research Networks: The Model

Tesbeds use  
GEANT infrastructure

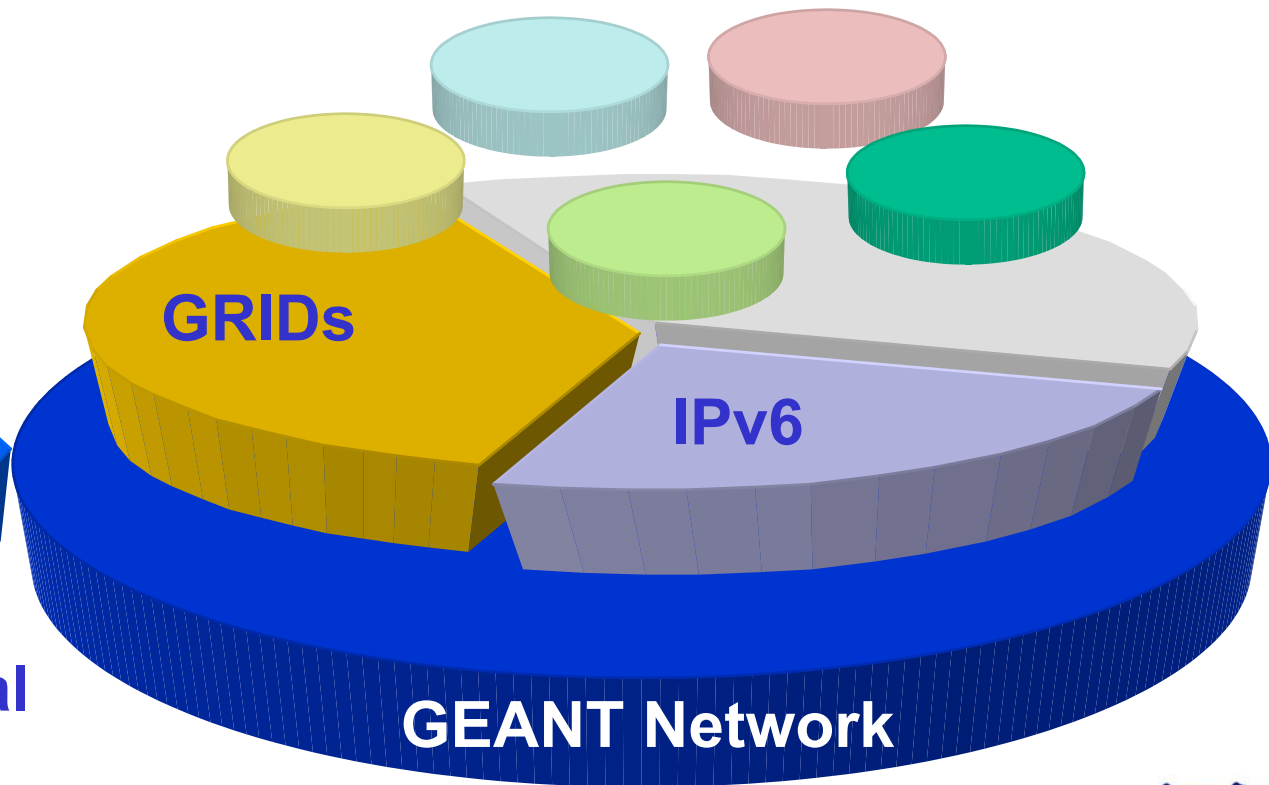


GEANT profits from  
technological innovation



International  
Dimension

Scientific/Application Areas



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# IPv6: A Coordinated Strategy

- ➔ **Technological components**
- ➔ **Experimentation in large testbeds**
- ➔ **Integration of fixed and mobile**
- ➔ **Co-operation with IPv6 Forum**
- ➔ **Launching of IPv6 Task Force**
- ➔ **Communication to the Council and Parliament**



# IPv6: Why Test-beds?

- ⇒ Considering the level of standardisation, the availability of technology, the scale of current experimentation, the emergence of applications and the need to accelerate the uptake of this technology...
- ⇒ Large scale test-beds, involving the right set of actors, emerge as an ideal way to structure, consolidate & integrate European efforts on IPv6.



# Extensive IPv6 Test-beds

*6net*

**6IX**  
*Euro6IX*  
*IPv6: The New Internet*

Native IPv6 at: 34 Mb/s, 155 Mb/s, 2.5 Gb/s  
2500 person months of work over 3 years  
33 MEuro total cost

To Brazil

To North  
America

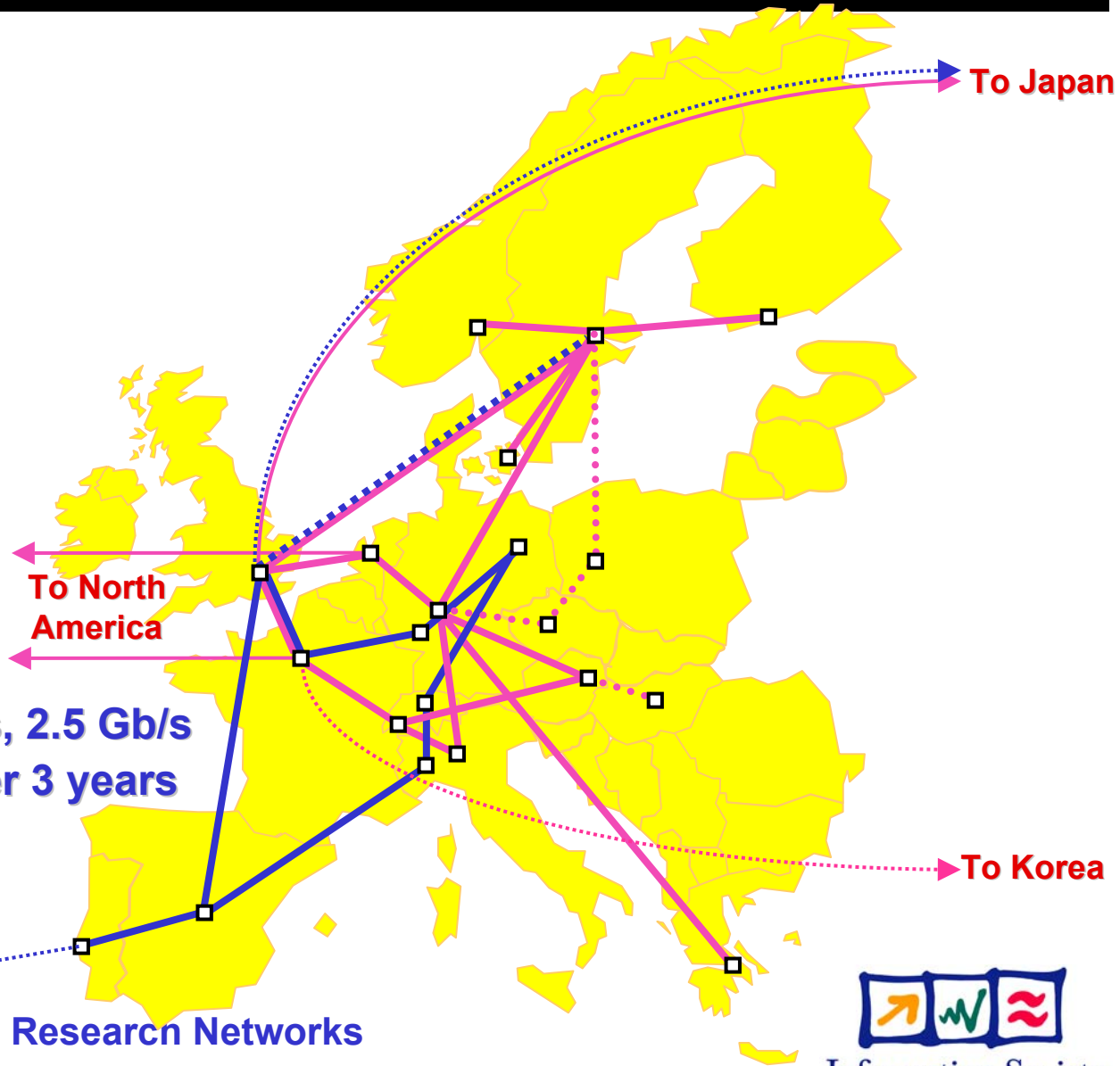
To Japan

To Korea

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# IPv6: Mobilising the Actors through Test-beds

⇒ Europe becomes the focus for early large scale experimentation in IPv6

⇒ Excellent prospects for global cooperation

⇒ Examples of partners

**Router Manufacturers - Cisco, Ericsson Telebit, Hitachi, 6WIND**

**Research Institutions - 9 NRENs and several Universities**

**Operators - DT, BT, Telefonica, PT, FT, TI, NTT, ...**

**Application providers - Sony, IBM, EuroControl, several ISPs**



# EU 6<sup>th</sup> Framework Programme for RTD

- ➔ Include political dimension of networking
- ➔ The European Research Area (ERA) offers new ways of co-operation
- ➔ ERA makes Research more competitive
- ➔ Research Networks are THE tool for the ERA
- ➔ Doubled budget (300 MEuro) to reflect the importance of Research Networking



# Research Networking in FP6

## ⇒ Enhance GEANT:

- ⇒ Keep GEANT as THE research backbone
- ⇒ Extend the reach by addressing a wider user community
- ⇒ Target the 100 Gb/s
- ⇒ Provide middleware services

## ⇒ Continue Global Co-operation and Interconnection

## ⇒ Provide advanced test-beds



# Conclusions

- ⇒ **Networking for Research is an important priority for EU policy**
- ⇒ **With the support of the IST Programme and in the context of the eEurope Action Plan, a new generation backbone for research has been launched - GEANT**
- ⇒ **Increased strategic role of Research Networks matched by increased funding**
- ⇒ **In parallel, EU is investing in advanced networking technologies and in global research network interconnections.**

