

# FEDERICA

## and the role of standards

**4th e-Infrastructure Concertation Event  
Sophia-Antipolis, 5<sup>th</sup>-6<sup>th</sup> December 2007**



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GARR

# Consortium members

## National Research & Education Networks

- CESNET Czech Rep.
- DFN Germany
- FCCN Portugal
- GARR (coordinator) Italy
- GRNET Greece
- HEAnet Ireland
- NIIF/HUNGARNET Hungary
- NORDUnet Nordic countries
- PSNC Poland
- Red.es Spain
- SWITCH Switzerland

## NRENs organizations

- TERENA The Netherlands
- DANTE United Kingdom

## Universities - Research Centres

- i2CAT Spain
- KTH Sweden
- ICCS (NTUA) Greece
- UPC Spain
- PoliTO Italy

## SME

- Martel Consulting Switzerland

## System vendors

- Juniper Networks Ireland

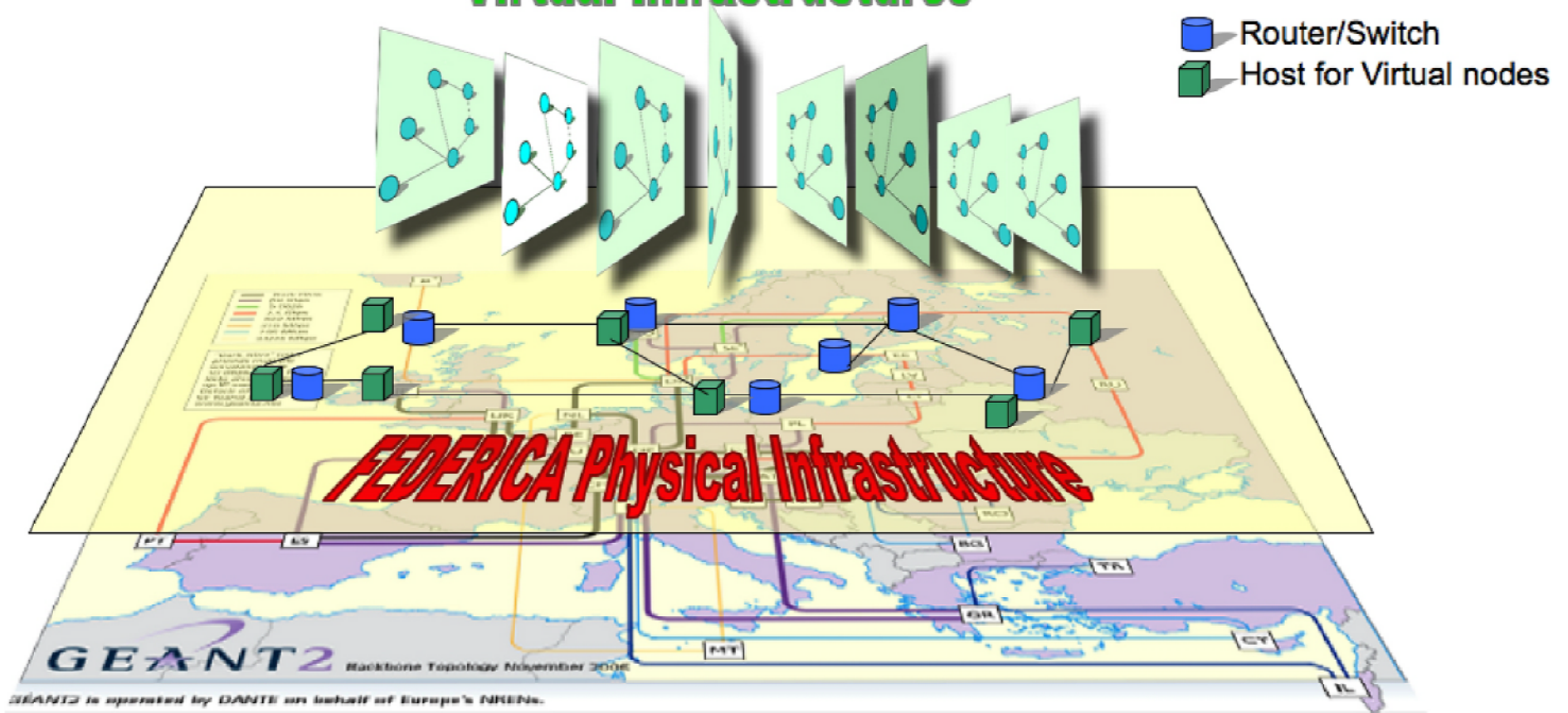
# FEDERICA objectives

- Support the research on new Internet architectures and protocols
  - create an European wide “technology agnostic” infrastructure based on a mesh of 1 Gb/s MPLS and Gbps circuits from NREN/GÉANT and virtualization nodes providing virtualized network/computing facilities (in form of “slices”) to end-users, allowing disruptive emulations
  - open to host researchers’ hardware and applications
  - Simultaneous use by more than one research group
  - provide full control of the network up the data link layer (later lower layers) and access to monitoring data
- Develop experience and a model for managing and using virtual infrastructures as a combination of networks and systems
- Exploit at their best the existing NREN/GEANT networks and tools
- Facilitate technical discussion amongst specialist, in particular when based on experimental results and disseminate knowledge and NREN experience



# FEDERICA e-Infrastructure

## Virtual Infrastructures



**GEANT2 and NRENs Infrastructure**

# Work plan outline

## Networking Activities

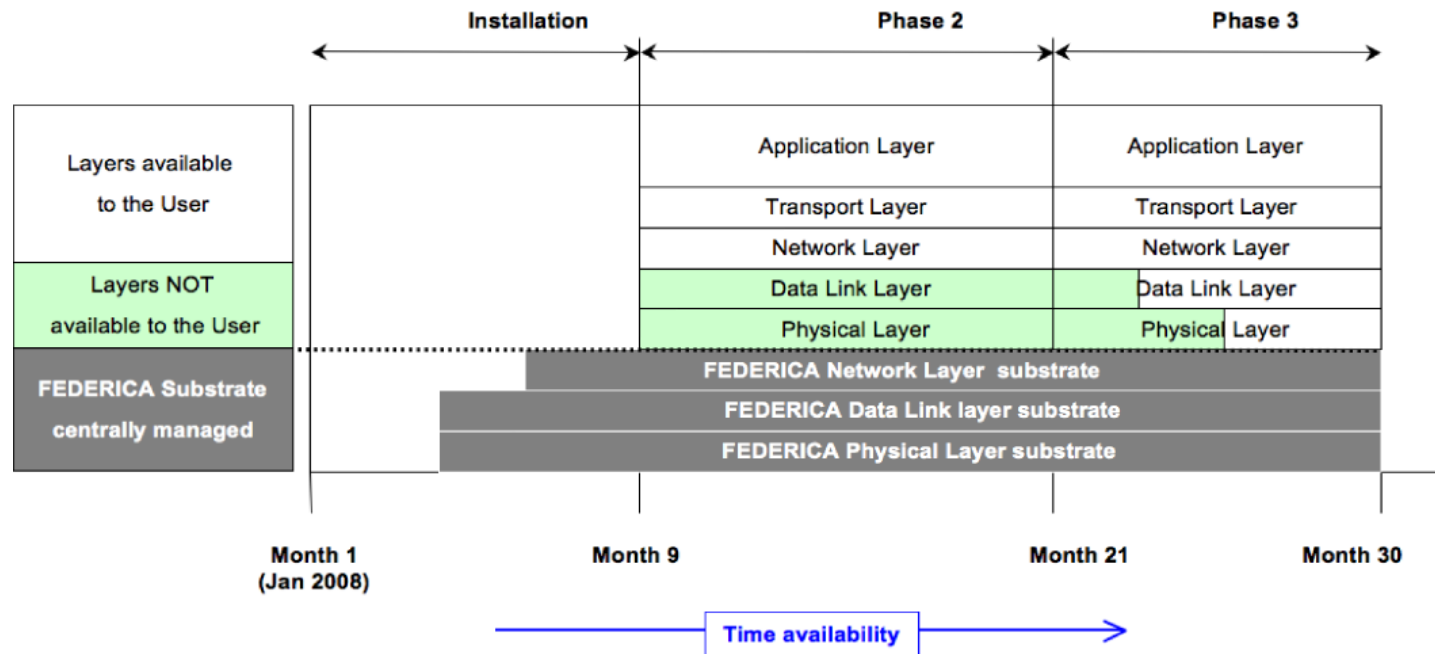
- 1 Management
- 2 Building the User Community
- 3 Standardization & Liaisons
- 4 Dissemination and Training

## Support Activities

- 1 Infrastructure Support
- 2 User Support and Toolbench development

## Research Activities

- 1 Network Control and Management
- 2 Novel Paradigm and User Control



# Standards related work

TNA3.1: Interaction is providing [input, receiving state-of-the art, possibly participating to task forces](#):

IETF (ccamp, pwe3, l(1-2-3)vpn) - IPsphere (definition of business models and architectural principles) - OGF (gridvirt-wg, nml-wg, nm-wg) - for ITU-T, OIF more difficult, as partnership/subscription is needed

TNA3.2: [Liaisons with related projects & initiatives](#):

GÉANT2, Phosphorus, ONELAB and Internet2, ESnet, Canarie

The goal is to reach consensus on tools and architectures and promote them in the research and education networking environment and in the community at large.

Keywords: [network representation and virtualization, signaling protocols, monitoring, control plane, service definitions](#)

The preferred path is through [early prototyping](#) of standards, [including protocols](#), and their [validation through selected end-users](#) in the production environment. The focus is on the user in a [bottom-up, horizontal approach](#). A particular accent is on [multidomain and end-to-end](#) communication.

