



# GÉANT - la rete europea della ricerca

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GARR Workshop

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# GÉANT ... Chi siamo? ... Da dove veniamo? ... Dove stiamo andando?

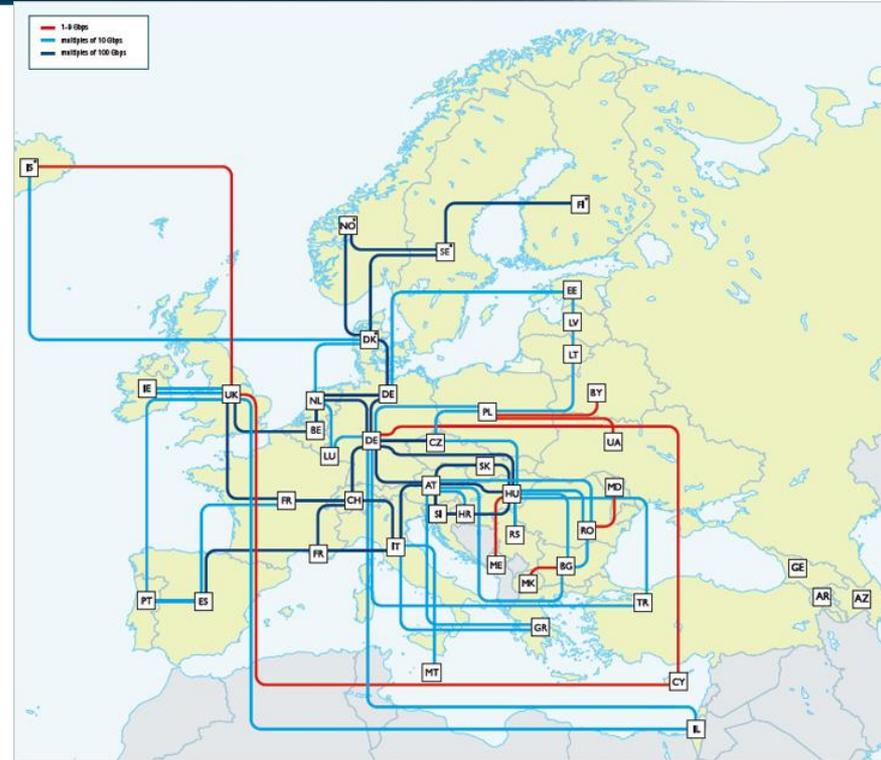


- 1) Che cos'è GÉANT, quali sono le sue caratteristiche e i suoi servizi – perché è importante per la comunità
- 2) Da dove viene la GÉANT Association e qual'è la forza della nostra organizzazione
- 3) qual'è la nostra visione per il futuro, in Horizon 2020 e in relazione alle politiche comunitarie sul DSM, Open Science, Open Cloud etc

# Pan-European GÉANT network



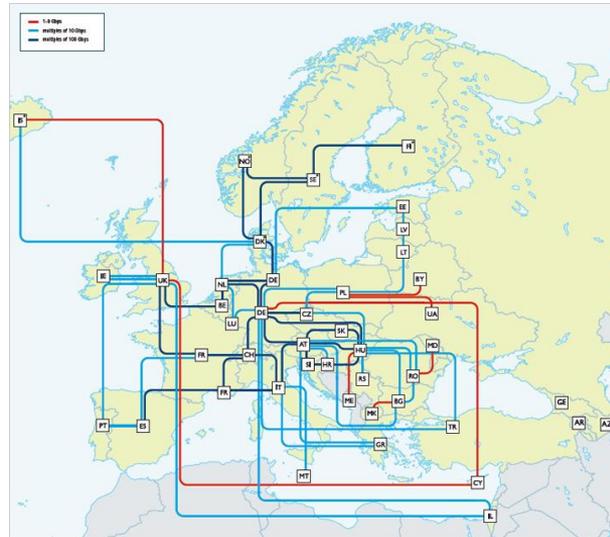
- Together with our NREN partners we connect over 50 million users at 10,000 institutions across Europe.



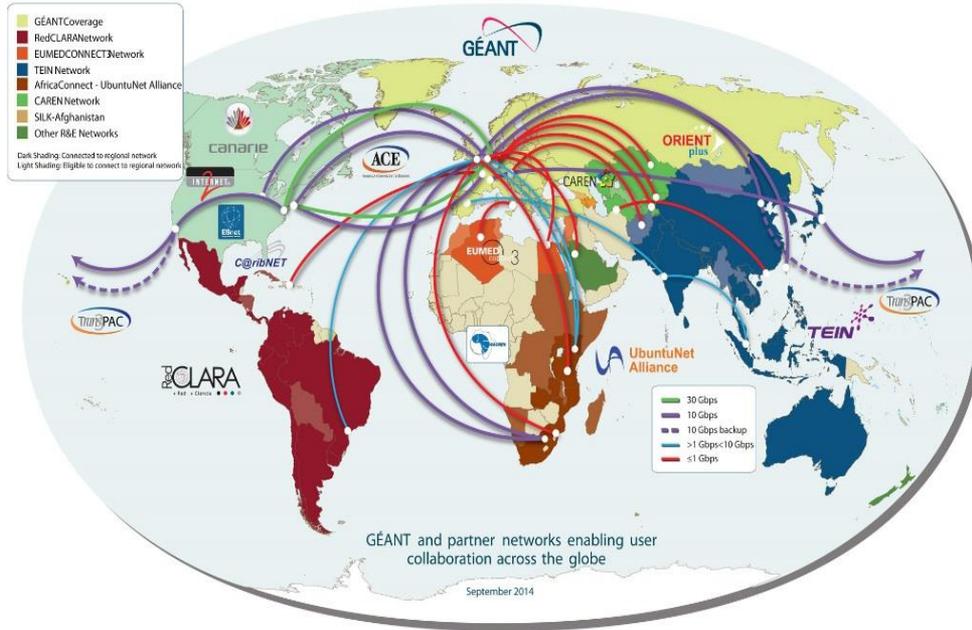
# Pan-European GÉANT network



- Over 1,000 terabytes of data carried every day on GÉANT IP
- 100% average monthly access availability
- Flexible services tailored to individual user requirements
- 100Gbps services available, with rapid scaling up to 8Tbps
- Services including IP, test-beds, authentication and roaming
- Dedicated 24/7/365 Network Operations Centre leading to rapid issue identification and resolution



# Global Networking



- Extensive partnerships worldwide
- GÉANT reaches 100 countries worldwide

A photograph showing a woman with long dark hair and glasses, wearing a white lab coat, looking intently at a computer monitor. In the background, other people are visible working at computers in a laboratory or office environment. The image is partially obscured by a dark blue overlay on the left side.

GÉANT delivers innovative services to empower international research and education.

- **GÉANT develops the services its members need to support researchers, educators and innovators – at national, European and international levels.**
- Our portfolio of advanced services covers:
  - connectivity and network management
  - trust identity and security
  - real-time communications
  - storage and clouds
  - professional services.



## GET IN

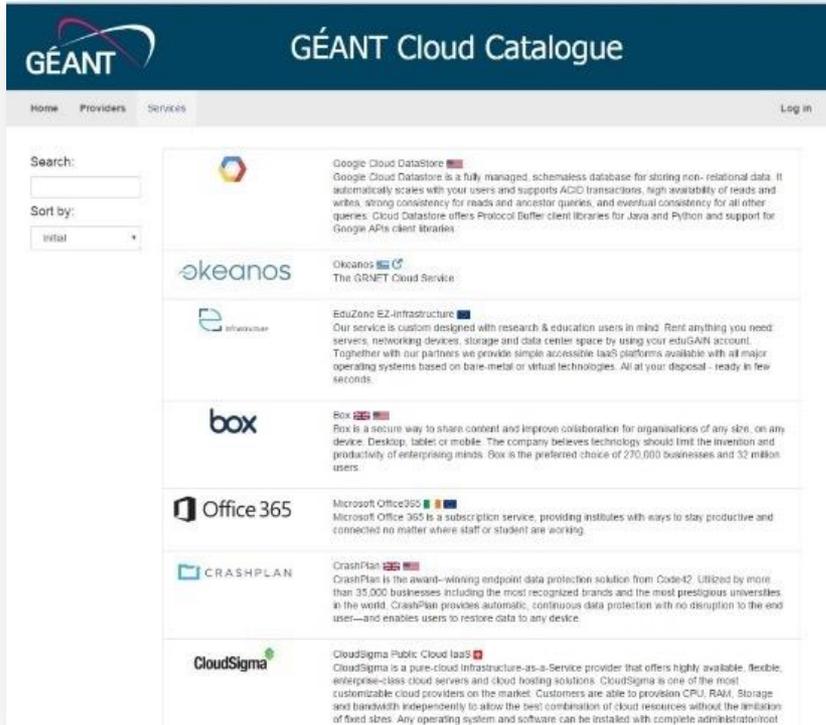
Assure data is handled safely and meets European and national regulations

Acquire and use services through the institutions' structures:

- Affordable and predictable cost and purchasing models (prevent bill shock)
- Limit network traffic costs and provide network integration
- Log in with institutional account

## GET OUT

Be able to move data (to another provider)



A growing resource for the research and education community, with a structured listing of service providers and cloud services.

It provides a quick and easy guide to clarify the capabilities of providers and helps in the procurement of cloud services.

<https://catalogue.clouds.geant.net>



**Community  
Collaboration**

# Task Forces and Special Interest Groups

## » SIG-ISM: Information and Security Management

Developing security expertise and excellence within the NREN community.

## » SIG-NOC: Network Operations Centres

Sharing and creating common best practices for management of Network Operations Centres (NOCs).

## » TF-CSIRT: Computer Security Incident Response Teams

Coordinating training, services and knowledge-exchange for security teams worldwide.

## » TF-MNM: Mobility and Network Middleware

Developing and deploying mobile technologies and interoperable roaming.

## » TF-Storage: Data Storage Infrastructures, Applications and Services

Investigating data storage, data management and cloud storage protocols, platforms and application services.

## » TF-WebRTC: Web Real-Time Communications

Embracing the challenges and opportunities of WebRTC technologies.



# Take a look at the CBP portal

## Knowledge Base

Campus Best Practice provides open access to all its reports to help NRENS, Campus and Departmental IT services share experiences and knowledge across the R&E community.

The CBP team have divided these reports into six key themes to help focus on the issues most relevant to the users. In addition a number of reports have been produced highlighting the experiences of users and NRENS. Members of the CBP teams can access and contribute to future documents through the Wiki.



Physical infrastructure



Campus Networking



Wireless



Network Monitoring



Real-time  
Communications



Security



Reports

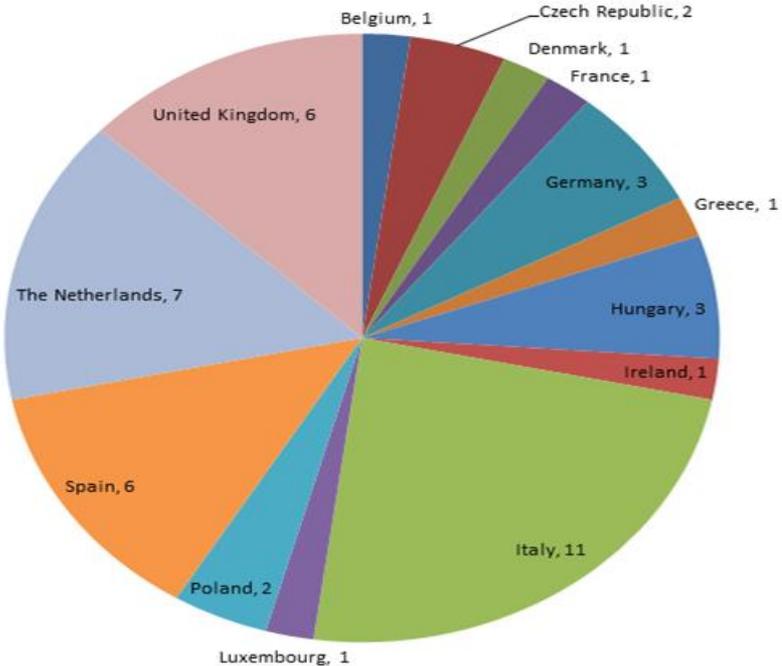


Wiki

<http://services.geant.net/cbp/Knowledge Base/Pages/Home.aspx>

# Innovation GÉANT Open Call

## GN3plus Open Call Successful Proposals Country Representation



Italy, Netherlands and Spain – co-ordinated approach = most success

11 separate instances of participation in 7 projects

5 participants GARR, Institute Tartini, CNIT, Nextworks (SME), Create-Net (SME)

# GARR and Open Call success

eMusic: Using GÉANT dynamic circuits to support remote collaboration in musical education and eCulture

Participants: CESNET; GARR; Janet; Academy of Performing Arts in Prague; Conservatorio di Musica Giuseppe Tartini; Edinburgh Napier University

COFFEE: Coherent Optical system Field-trial For spectral Efficiency Enhancement

Participant: CNIT

REACTION: Research and Experimental Assessment of Control plane architectures for In-Operation flexgrid Network re-optimization

Participants: CNIT; Universita Politecnica de Catalunya; Telefonica

DREAMER: Distributed RESilient sdn Architecture MEeting carrier grade Requirements

Participants: CNIT; Create-NET; GARR

MOMoT: Multi-Domain Optical Modelling Tool

Participants: DTU; Gesellschaft für Wissenschaftliche Datenverarbeitung Gottingen CNIT

NSI-CONTEST: Network Service Interface Conformance Test Suite

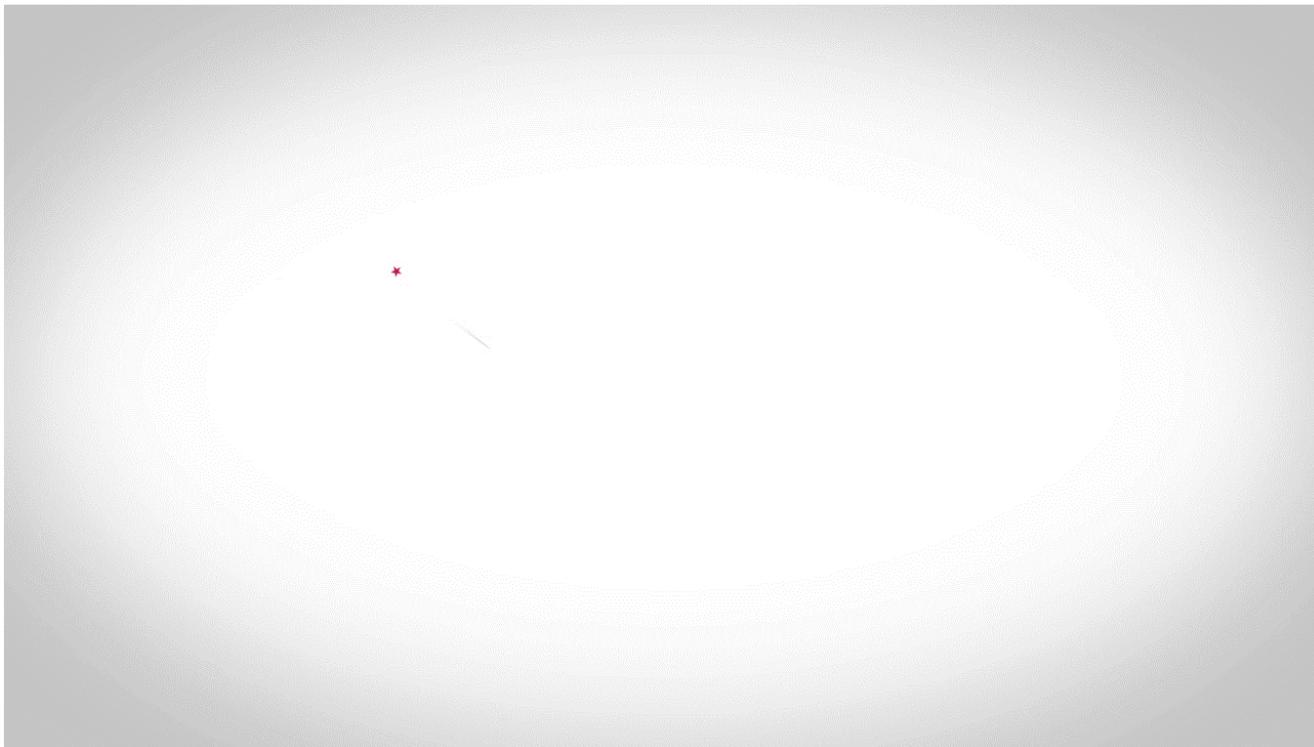
Participants: PSNC; Nextworks

ARES: Advanced Networking for EU genomic research

Participants: University of Perugia; Polo d'Innovazione di Genomica, Genetica e Biologica SCARL



# Where are we coming from?



## Who owns GÉANT Association?

- Owned by core membership of:
  - 36 National Members (European NRENs)
  - 1 Representative Member (NORDUnet - on behalf of 5 Nordic NRENs)
- Associates also welcome:
  - including commercial organisations and multi-national research infrastructures and projects
- One organisation comprising TERENA and DANTE staff, activities and ethos:

**Networking. Services. People.**



## In 2020 ...

*In 2020, GÉANT collaboration is a public-interest body that provides information logistics to global knowledge communities. In doing this, the GÉANT environment facilitates the free movement of knowledge and information within the Knowledge Economy. The GÉANT community achieves this by building and integrating abundant advanced e-infrastructure services from both commercial and non-commercial providers, building on the advanced data network and services developed over the course of its first decade.*

*In 2020, GÉANT provides value to the R&E community through a set of advanced (but fit for purpose) services. These are delivered through advanced data-networks (optical, wirefree etc.), operated by the GÉANT community, including a transparent combination with commercial services. The GÉANT community will strike the balance between innovative and advanced services on one hand and the specific needs of the knowledge communities it serves on the other hand. The GÉANT community has an important role in managing the transaction costs and barriers associated with issues such as trust, intellectual property rights, and information security implied by a heterogeneous environment.*



- Supporting a strategy to achieve the Horizon 2020 vision.
- A trusted EC partner in many global collaboration projects and initiatives through our special relationship with the European Union.
  - DG CONNECT, DG DEVCO, DG NEAR, DG GROW
  - GÉANT Framework Partnership Agreement



## Six “Actions” underpinning the FPA

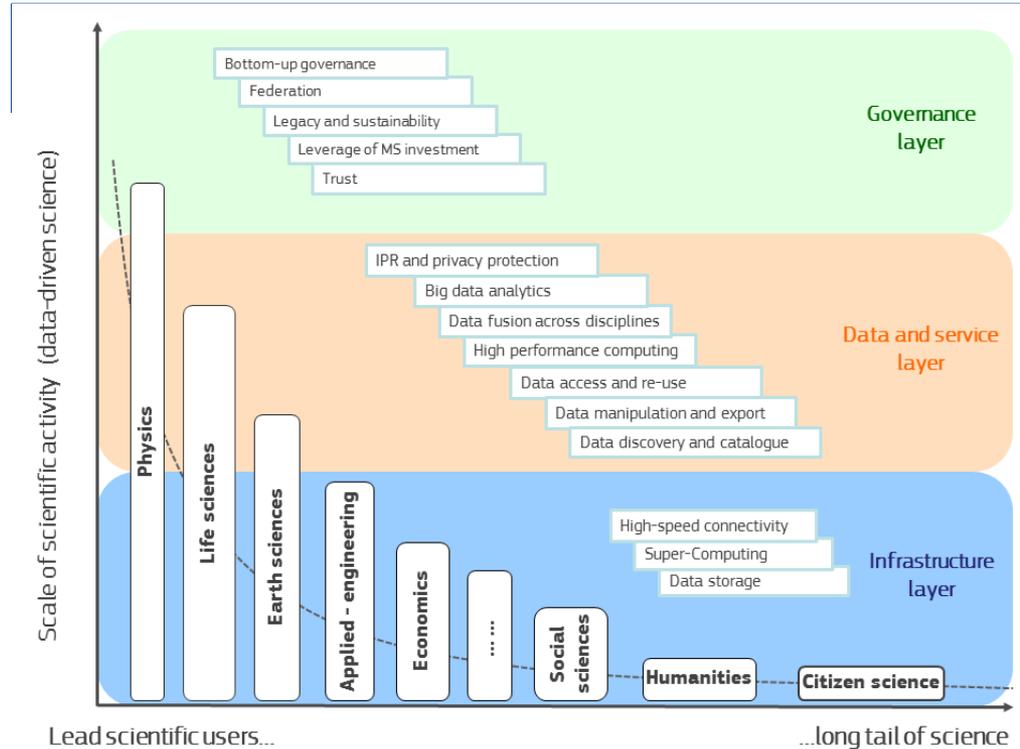


- Drive the Evolution of the Network
- Support the Knowledge Community
- Provide Security, Trust and Identity
- Deliver GÉANT’s Collaborative Ecosystem
- Develop the Human Capital of the GÉANT Partnership
- Ensuring the Long-Term Future of the GÉANT Infrastructure

# GÉANT has a role in tackling global challenges



is concerned that cloud infrastructures for researchers and universities are fragmented; calls on the Commission, in cooperation with all relevant stakeholders, to set up **an action plan to lead to the establishment of the European Open Science Cloud by the end of 2016**, which should **seamlessly integrate existing networks, data and high-performance computing systems and e-infrastructure services across scientific fields, within a framework of shared policies, standards and investments**



- Legal entity with offices and relevant number of staff
- Owns operates and develops dedicated pan-European infrastructures
  - Long term experience in secure and high availability infrastructure
  - Delivery of services that are ahead of commodity
- Governance solely by NRENs which are
  - used to operate by consensus
  - Subscribers of GÉANT services
  - Partners in projects with GÉANT
- Through the NRENs GÉANT has indirect channels to 50 million end users in Europe
- GÉANT is of global impact

- GÉANT is about creating and delivering advanced infrastructures to enable researchers, students and teachers to have easy and trusted access to the most advanced science services.
  - To achieve that GÉANT works with the European NRENs on those infrastructures:
    - Physical network infrastructure
    - wireless network access infrastructure
    - Trust and Identity infrastructure (including single sign-on)
    - Cloud service delivery infrastructure that can deliver commercial cloud services, H2020 cloud services (e.g. Open Science Cloud), NREN cloud services and University cloud services in a federated way. Meaning that for a researcher there is no distinction, all services are delivered in the same easy and trusted way.
- It is the task of GÉANT and the NRENs to make sure that new cloud initiatives like Open Science Cloud can be realised and are readily and easily adopted by researchers in Europe and even worldwide because of the trusted delivery through the GEANT infrastructure.



Thank you  
Any questions?



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