

Examples of Governance:

THE GÉANT MODEL

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RedIRIS (Spanish GÉANT member)

Founded in 1988, RedIRIS has been the Spanish National Research and Education Network (NREN) for over 30 years.

It is comparable to other similar NRENs worldwide, including the European ones, which are members of the European association GÉANT.



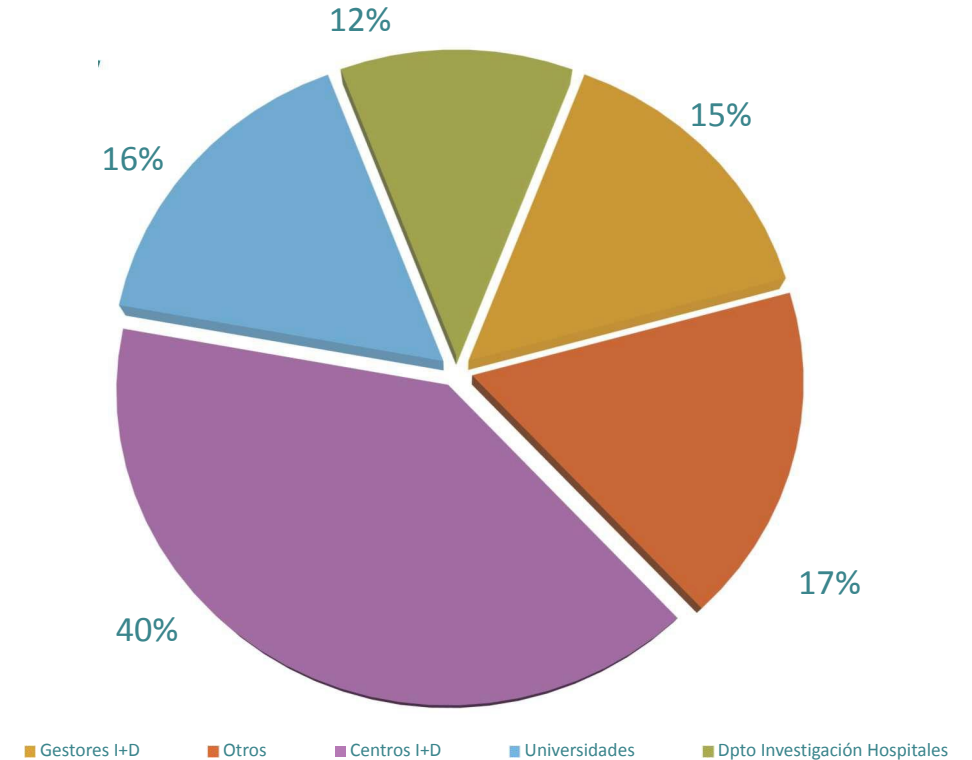
The RedIRIS Community

RedIRIS offers its services to more than 500 institutions including:

- Universities
- ICTSs and RIs
- Research Centres
- Health research departments
- Managers of content of academic and scientific interest
- R&D managers, and some Ministries and public bodies
- School networks

2.000.000 potential users in Universities and research centers

3.000.000 potential users accessing Internet through RedIRIS in primary and secondary schools



Calar Alto Observatory (Almería)



National Microelectronics
Centre, CSIC



Marenostrum,
Barcelona Supercomputing Centre



Doñana Biological Station



Telescope of the Astronomical Centre
of Yeves (Guadalajara)



CERN (Switzerland)



Laboratory of the Polytechnic
University of Madrid

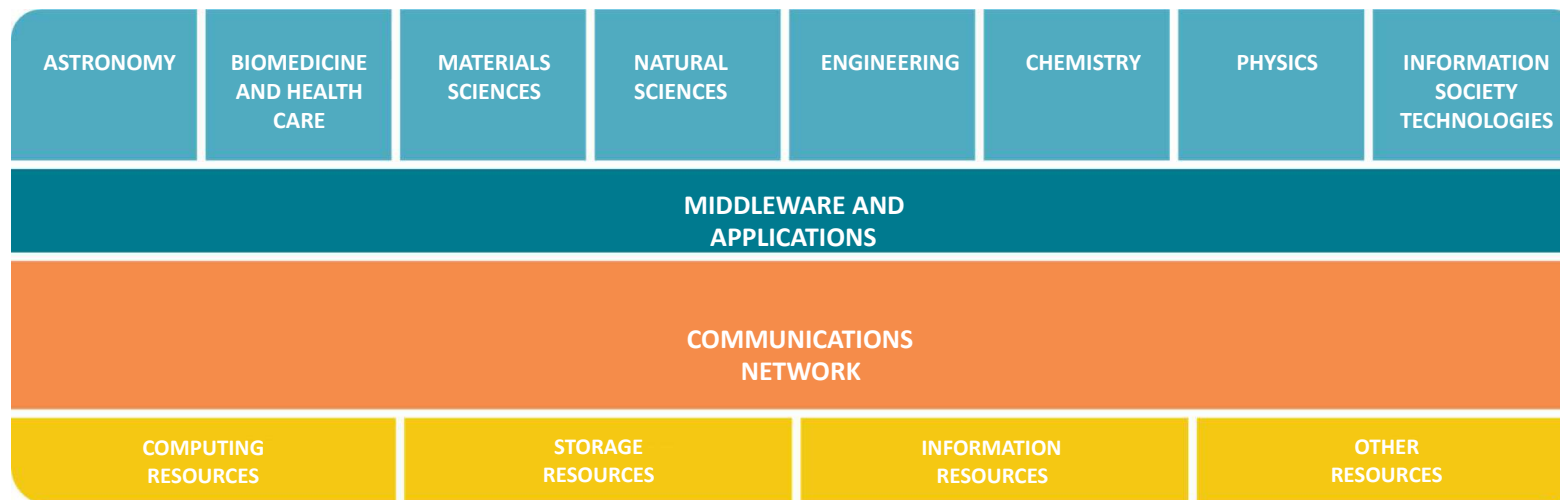


Gran Telescopio de Canarias (The Great Telescope of
the Canary Islands), IAC

RedIRIS and e-Science

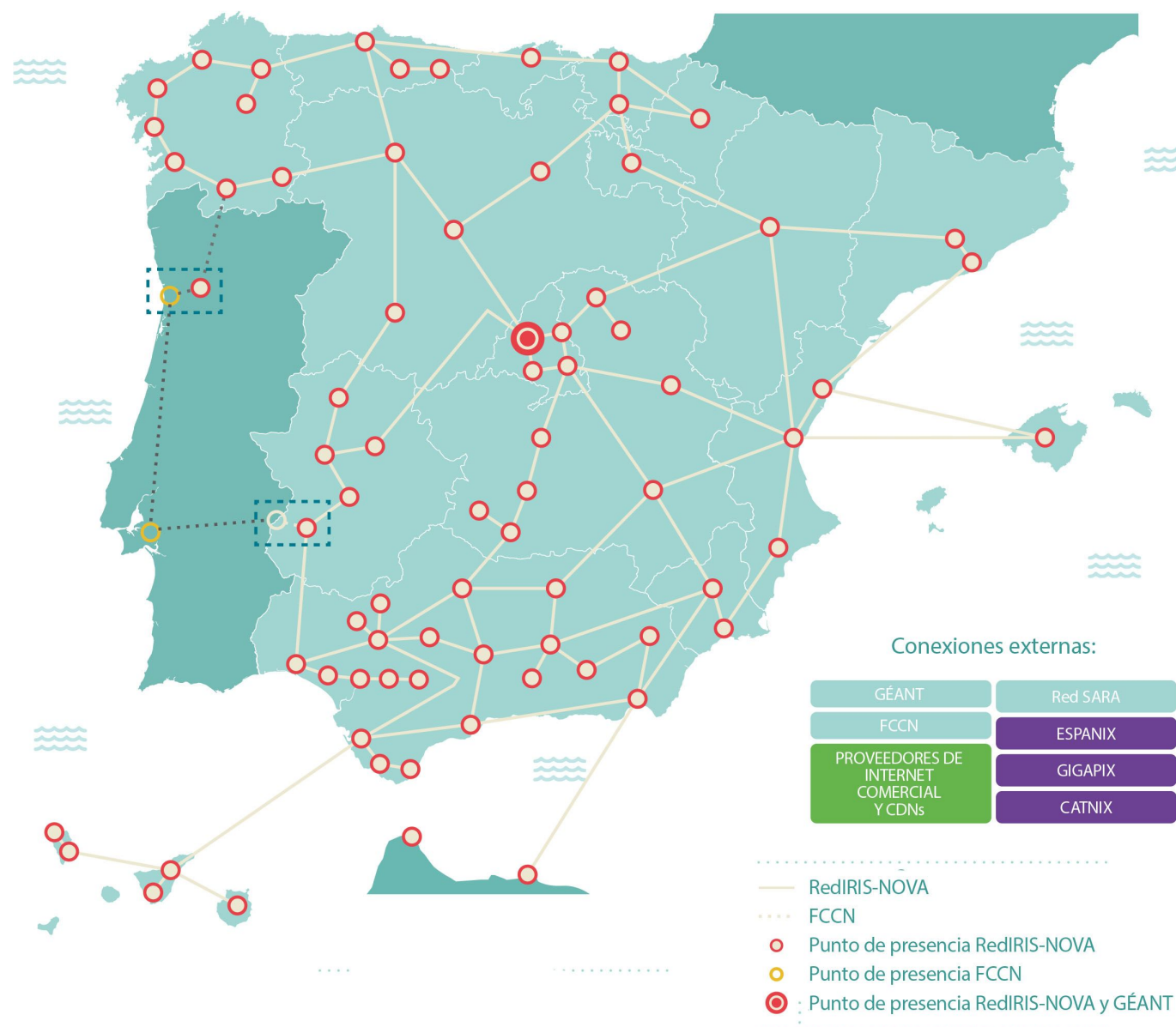
E-science is the scientific activity that makes widespread use of new technologies. Common horizontal e-infrastructures play an important role in this environment.

RedIRIS provide advanced connectivity and data transfer services, as well as several other relevant shared IT services, such as cybersecurity, digital federated identity, access to cloud, collaborative tools, etc.



Our Network

- Very high capacity circuits (up to 100G)
- 15,000km of fibre optics, terrestrial and underwater
- More than 70 points of presence
- Connects ICTSs
- Much more powerful network than the previous one based on capacity rental, for a much lower cost (55 million euros for 20/30 years, plus 50 million euros FEDER)
- More efficient, flexible and robust (redundancy)
- Dedicated optical channels for research projects
- Supports the development of regional networks
- Subsequent additional fibre optic deployments for some Autonomous Communities and member institutions.

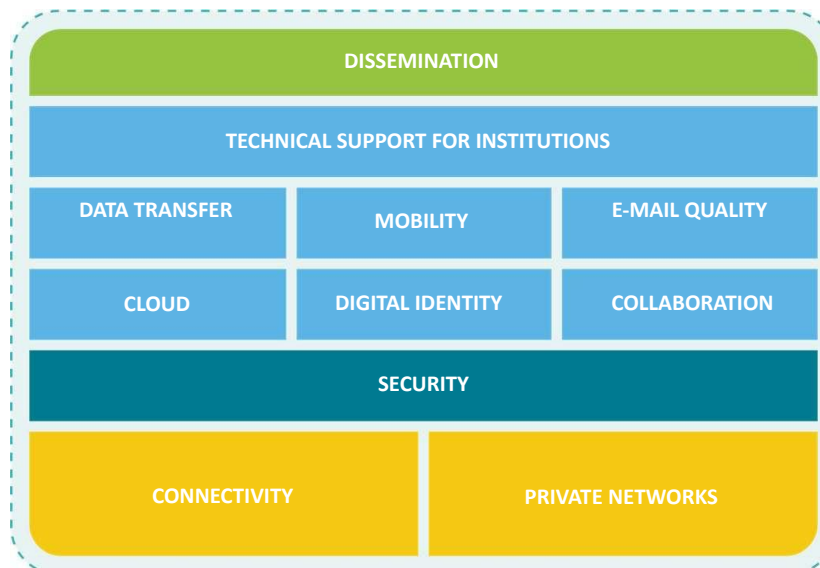


RedIRIS services

Quality and adaptation to demand

Past Present

- Domains
- WEB pages
- Webmail
- News
- SingleSignOn (PAPI)



Future

- Support the Open Science Cloud
- Possible cloud services on a pay-as-you-go basis
- New security services
- Virtual networks programmable by users
- See impact of new technologies (blockchain, 5G, big data, AI, IoT & smart campus) in RedIRIS



Supporting collaboration and development amongst researchers, the dissemination of information & knowledge, and providing access to a portfolio of services and infrastructure resources:



Runs a membership association for Europe's National Research & Education Networks (NRENs)
GÉANT Association



Operates a pan-European e-infrastructure
GÉANT network



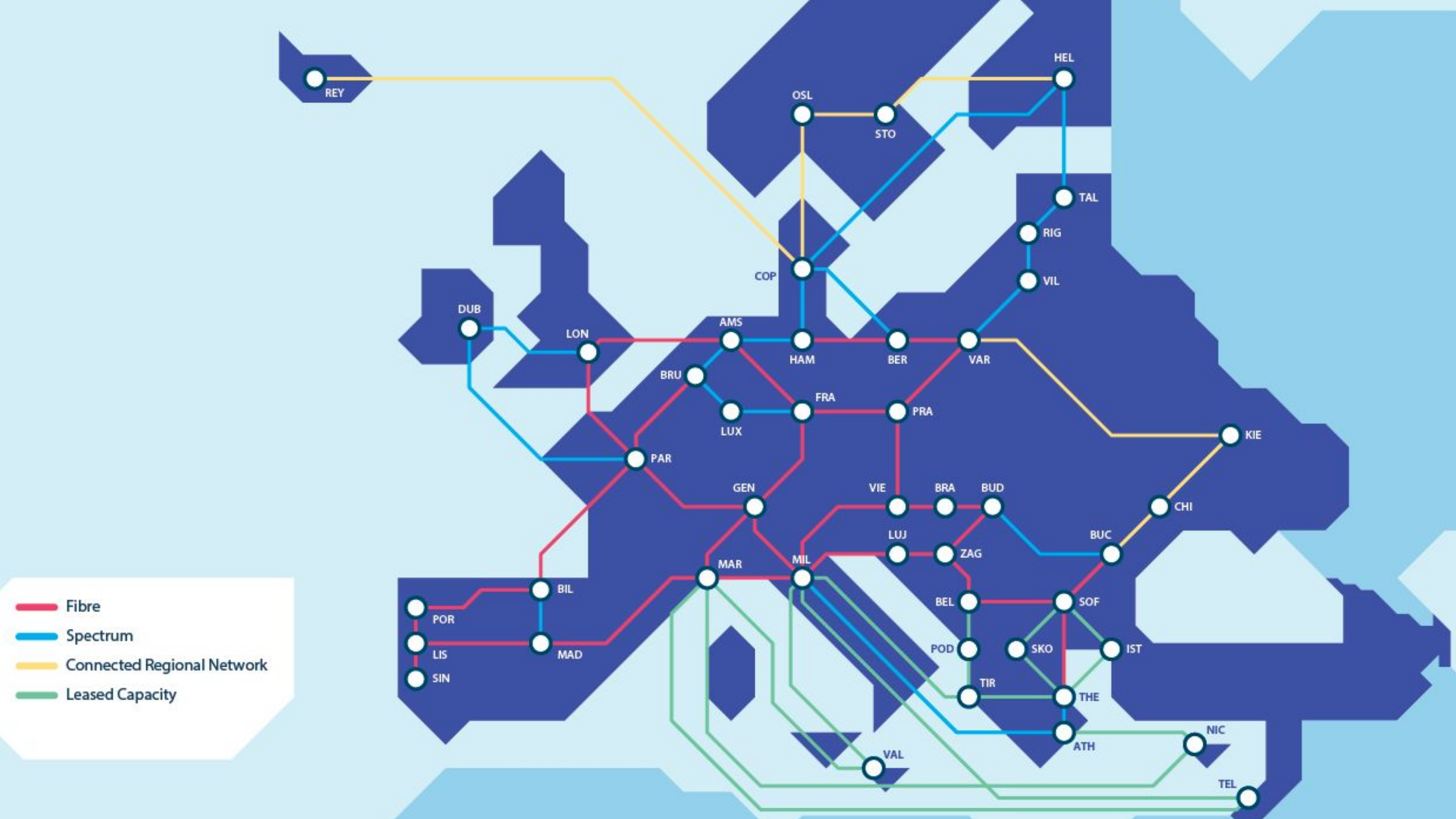
Manages a portfolio of services for research & education
eduX



Coordinates and participates in EC-funded projects
Under Horizon 2020, the Horizon Europe programme, and other EC funding programmes, aimed at securing Europe's global competitiveness.



Organises and runs community events & working groups
TNC, task forces & special interest groups

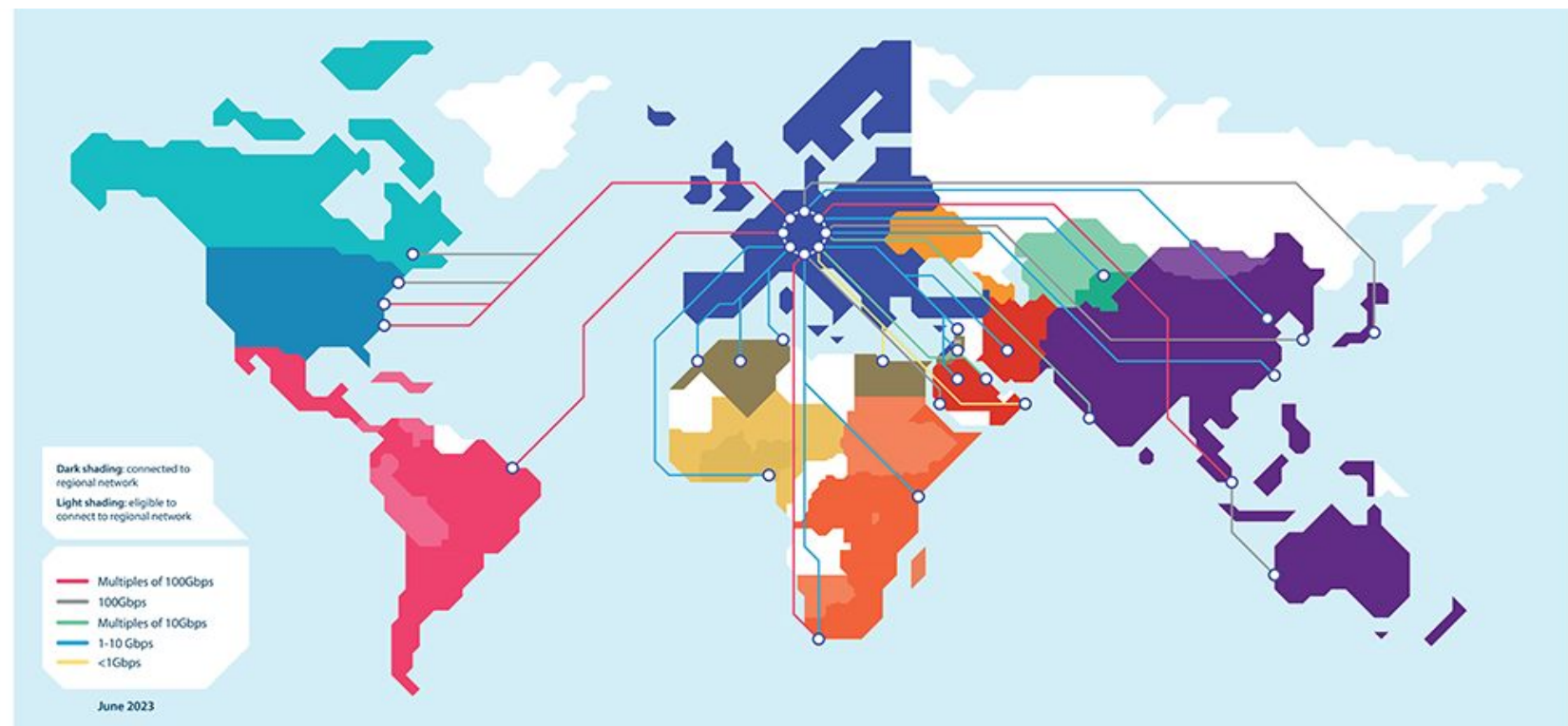


- Fibre
- Spectrum
- Connected Regional Network
- Leased Capacity

Network

The GÉANT network interconnects research, education and innovation communities worldwide, with secure, high-capacity networks.

We design, plan, build and operate the large-scale, high-performance GÉANT network that connects European NRENs to each other and the rest of the world for sharing, accessing and processing the high data volumes generated by research and education communities and for testing innovative technologies and concepts.



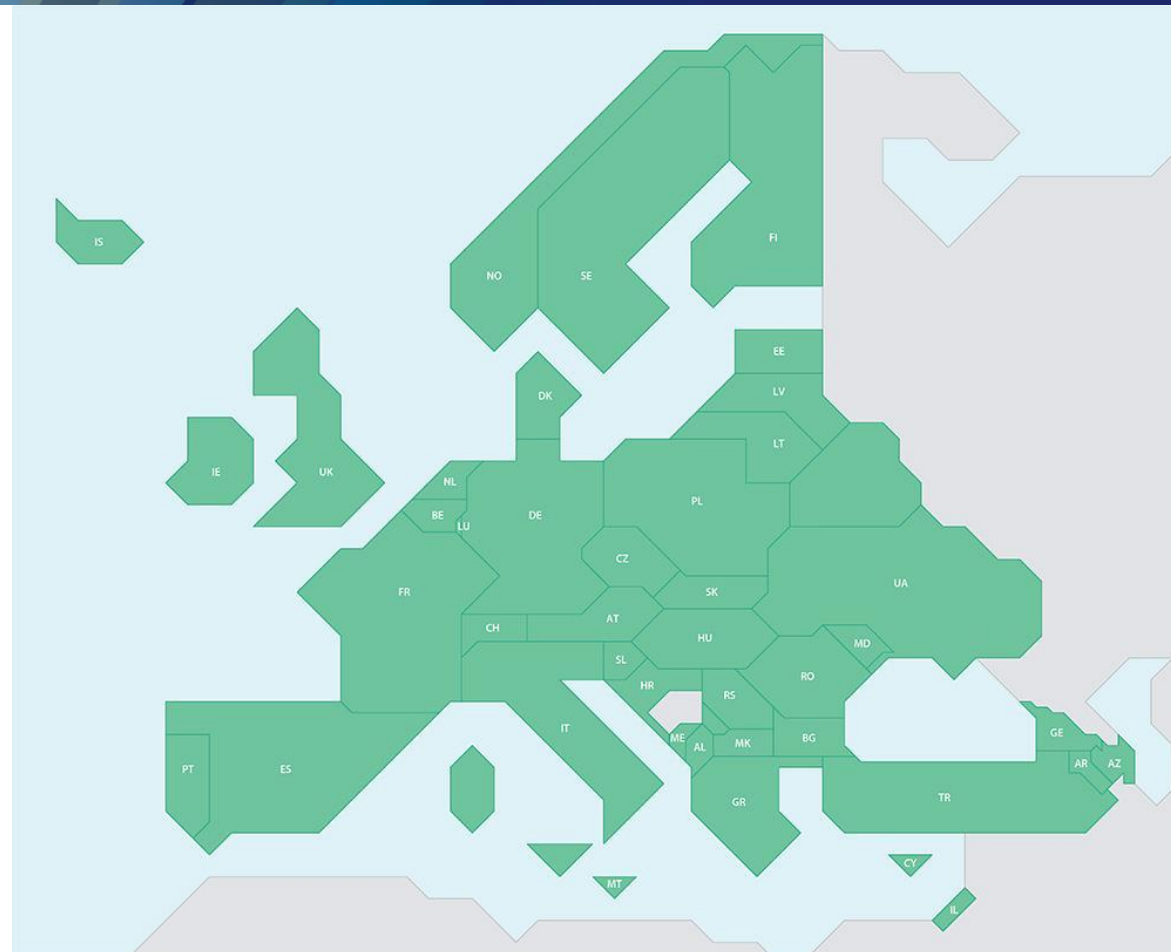
Membership Association

GÉANT Association supports and represents 38 NRENs and NORDUnet across Europe. Together they support over 10,000 institutions and 50 million academic users

Membership: only one NREN member per European country is allowed. Up to each country (usually via National Ministry) to establish their NREN and apply for membership

Not for profit Association Incorporated in NL as GÉANT Vereniging under Dutch Law with circa 150 employees

GÉANT is subject to VAT and is corporate taxable



June 2023

NATIONAL MEMBERS

AL Albania	CZ Czech Republic	HU Hungary	ME Montenegro	SI Slovenia
AM Armenia	DE Germany	IE Ireland	MK F.Y.R Macedonia	SK Slovakia
AT Austria	EE Estonia	IL Israel	MT Malta	TR Turkey
AZ Azerbaijan	ES Spain	IT Italy	NL Netherlands	UK United Kingdom
BE Belgium	FR France	LT Lithuania	PL Poland	UA Ukraine
BG Bulgaria	GE Georgia	LU Luxembourg	PT Portugal	
CH Switzerland	GR Greece	LV Latvia	RO Romania	
CY Cyprus	HR Croatia	MD Moldova	RS Serbia	

REPRESENTATIVE MEMBER (NORDUnet)

DK Denmark
FI Finland
IS Iceland
NO Norway
SE Sweden

ASSOCIATES

CERN
 DeIC (Denmark)
 European Space Agency
 CSC/FUNET (Finland)
 RHnet (Iceland)
 KREN (Kosovo Research and Education)
 SUNET (Sweden)
 Silk (Norway)



History leading to GÉANT Association

1986

RARE is founded by NRENs to promote and develop high-quality international network infrastructures to support the European research community.

1992

RARE becomes TERENA.

1993

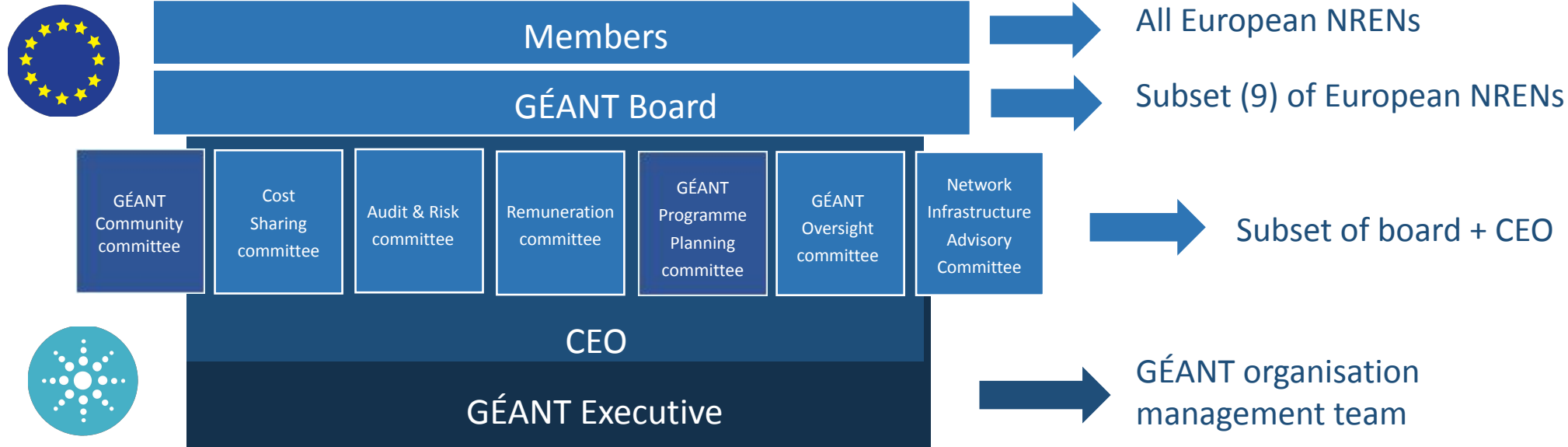
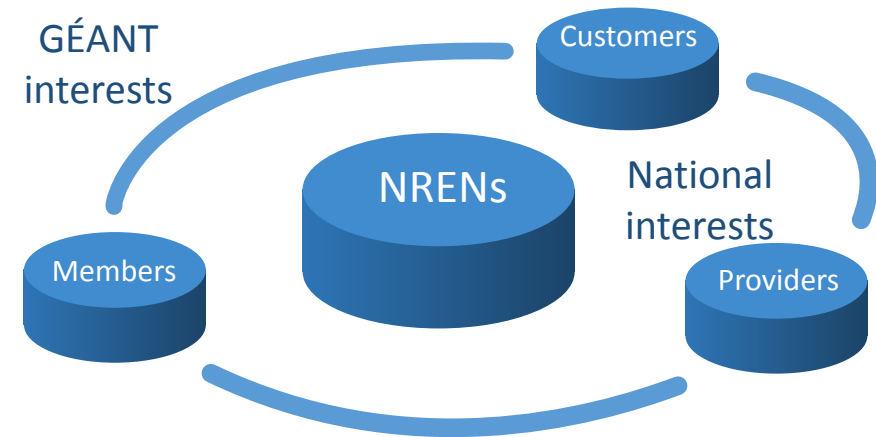
DANTE is founded by NRENs as an operational unit to run the international backbone for the European research community.

2015

DANTE and TERENA merge to become GÉANT Association

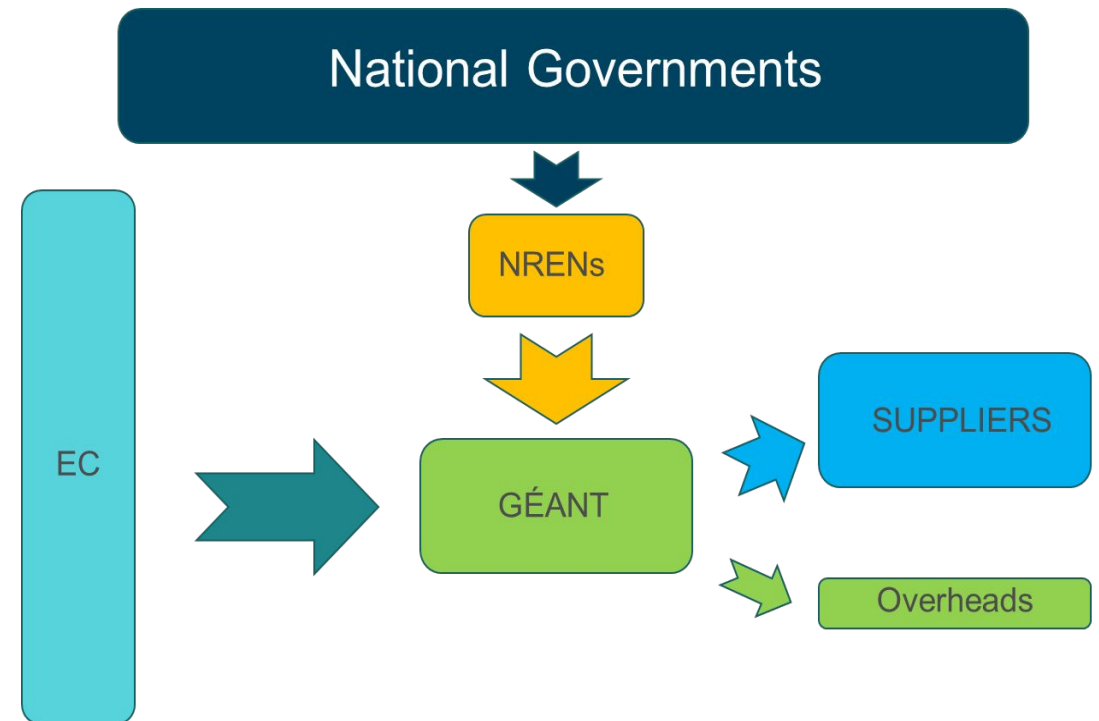
Governance

- GÉANT's highest governing body is the General Assembly (GA), representatives of NREN member organisations meet x 2 per annum min.
- The GA elects 9 Board members who manage/administer the organisation
 - For 1-3 year terms Max 6 years uninterrupted
 - at least 7 from NREN members + up to 2 external members
- Day-to-day operations are carried out by the Association's staff.
- NRENs are members, customers & providers at the same time.



Funding and long term sustainability

- GÉANT funding comes primarily from the following sources:
 - **membership subscriptions** (cost sharing),
 - **EC project funding** (mostly Horizon Europe / DG CONNECT FPA/SGAs)
 - **EC GEANT infrastructure investment** e.g. BELLA submarine cable to Latin America, GN4-3N pan-European dark fibre investment
 - Other external income
- Longer term sustainability:
 - Steady income stream from NRENs
 - Stable EC funding structure through MFF with seven year FPA cycles and 2-4 year SGAs
 - Other project grant income determined by EC Work Programmes for strategic international infrastructure investment



GÉANT & EC

- GÉANT and EC have been **successfully collaborating on Research Infrastructures since 25+ years**. EC has been partially funding GÉANT, through different Programmes like FP7, H2020 & more recently Horizon Europe.
- GÉANT was conceived and shaped by the **collaboration of 40+ National Research & Education Networks (NRENs) community through a bottom up approach**. GÉANT is different from previous instruments explained in the webinars (where the EU set the rules/conditions to shape a specific legal/administrative body).
- Have been using EC's grants and member states funding to **build, operate and evolve their pan-European R&E network and services, which have been the model for similar setups in other regions of the world**.
- **EC is not part of GÉANT's governance**. CNECT has not been the only DG funding GÉANT's projects, neither Horizon has been the only instrument by them.
- Both for H2020 and Horizon Europe, **EC signed a Framework Partnership Agreement (FPA) with GÉANT** that covered the full duration of each of those 2 Programmes. Within the FPA EC launched specific grant agreement calls, inviting GÉANT to submit proposals to address specific areas of the FPA scope/topics.

GN5-1 in numbers



37 Partners (including GÉANT Association), 2 Associated Partners (SWITCH, JISC), 43 Countries
200+ FTEs (average per year over project duration)

GN5-1 total costs: € 82.64M; EC funding: € 55M



9 Work Packages, 42 Tasks
36 Deliverables
46 Milestones

Projects

GEANT's long-standing project relationship with the European Union (EU) has benefited research, education, and innovation around the world for over 25 years.



European
e-infrastructure
projects



Trust & identity
projects



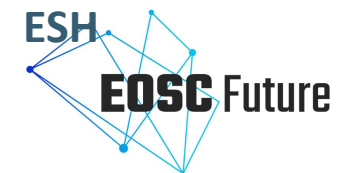
Network
projects



Collaborative
projects



OPENCLOUDM



Adding value - Procurement

- **Case 1**: GÉANT procures infrastructure on behalf of its NREN members, to build and operate services for them, as a closed user group. Due to the control NRENs exercise over GÉANT, they can receive and pay for services from GÉANT without themselves having to go through an external formal procurement procedure
- **Case 2**: Procurement framework of commercial Cloud resources (IaaS) due to our position as a Centralised Purchasing Body (CPB) via each NREN who establishes a contract w/the commercial supplier of the framework.

In both cases, the **community benefit from demand aggregation, single procurement, volume discounts, reduced overhead** etc.

GÉANT procures using NL procurement rules derived from EU procurement directives



GÉANT 2020 Cloud Framework by OCRE

OCRE (Open Clouds for Research Environments) is an EC funded project to provide research and education users easier access to cloud services across Europe. It supports 40 European countries with a **framework of 473 commercial cloud contracts** to ease access and provide volume discounts to research and education institutions. Working in conjunction with members of the GÉANT project, this framework offers substantial benefits to the R&E community.

Reduced Cost and Complexity

The framework reduces the cost and complexity of cloud service procurement

- No institutional tendering is required
- **Significant discounts are available thanks to pan-European aggregation and the economies of scale**
- Advantageous terms and conditions on offer

The frameworks are **in compliance with all relevant EU Regulations (Procurement, VAT, GDPR etc.)**. Call-off Contracts with supplier are under local laws and local in-country platform support and call-off is provided as standard.

Improved Service

Cloud service access enhanced through supplier peering at points of presence on the GÉANT pan-European network with **significant data ingress/egress waivers in place to reduce costs and improve pricing stability**.

All platforms support SAML2/OIDC protocol with **eduGAIN to improve user accessibility**, reduce onboarding costs and complexity and **provide assurances for identity and privacy management**.

- RELATIONSHIP BETWEEN OCRE AND EOSC -

GÉANT & EOSC - Back to 2017.....we knew something new was happening



CONNECT INTERVIEW:

**AUGUSTO
BURGUÑO
ARJONA**

"Without the
GÉANT network
there is no
EOSC"

"GÉANT will play
a vital role in the
European Data
Infrastructure
(EDI)"

We were already working together with other e-infras to jointly serve our users and communities



- Europe's leading infrastructures joined forces for the first time to invite researchers, developers, data practitioners and service providers to the Digital Infrastructures for Research (DI4R) event to find new ways to support and facilitate science and research across Europe.
- DI4R2016 was jointly organised by EGI, EUDAT, GÉANT, OpenAIRE and RDA Europe.
- Designed with research communities in mind the event aimed to foster broader adoption of digital infrastructure services and promote user-driven innovation “people from all disciplines and all infrastructures to work on the shared vision and solve the problems that stand in our way.”

GEANT were involved right from the very start of EOSC



November 2018 – Cathrin Stover becomes first Vice Chair of the European Open Science Cloud (EOSC) Executive Board.

*“I am very honoured to be working with the EOSC Executive Board over the next two years towards the implementation of the EOSC. It is great to see that several European National Research and Education Networks [NRENs] are also represented in the EOSC Governance Board. **Setting up the EOSC will require enthusiasm, collaboration and pragmatism** and I look forward to working closely with the projects and stakeholders to achieve this goal.”*

And still are!



GÉANT's Sarah Jones voted in for a second mandate in EOSC Association Board of Directors

And later our members received a national mandate to do so.....



www.geant.org



From the very start of EOSC – we worked on projects together

2017



2018



2019



Most recently.....



GÉANT work across EOSC projects has primarily been about delivering trusted access

- Operating a secure and scalable network to transfer data
- Using standard protocols to enable access e.g. http
- Running Authentication and Authorisation Infrastructure so access can be controlled and restricted



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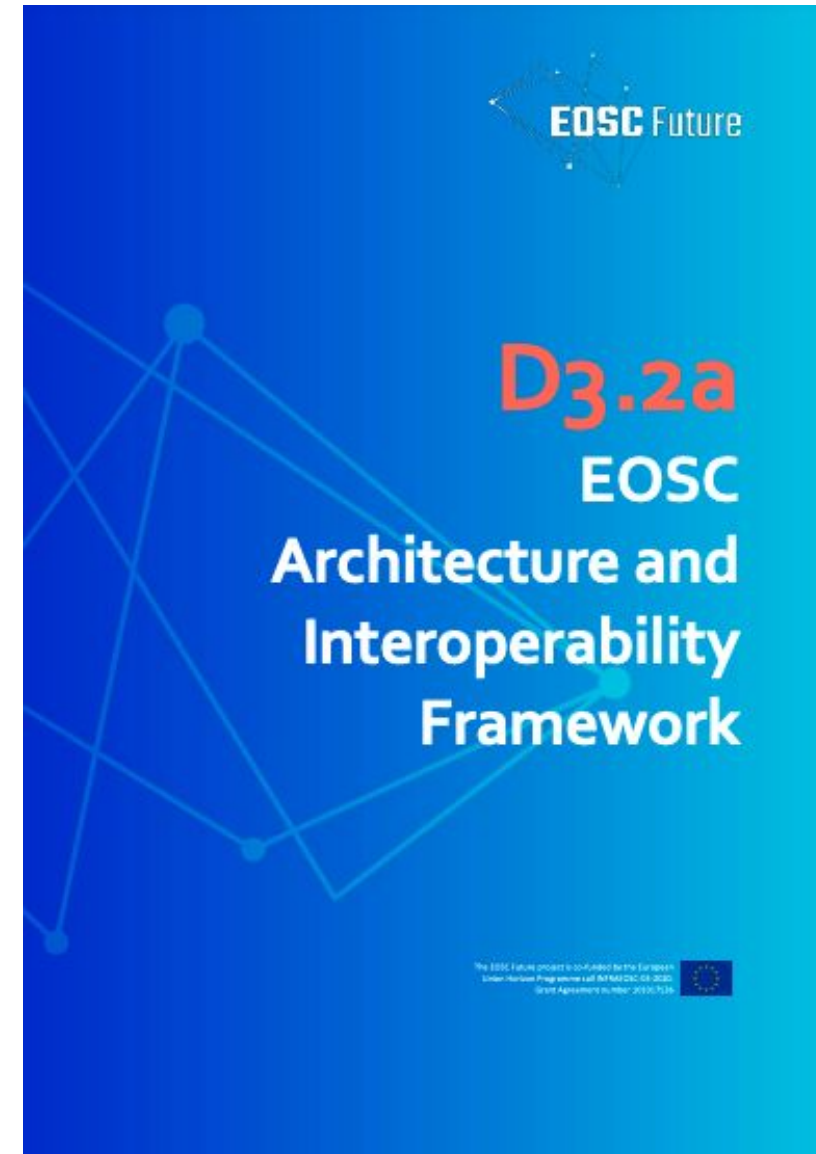
Focusing on EOSC authentication for research communities

Collaborating with research clusters to enable seamless login. They have compatible AAls, which are being brought under an EOSC AAI Federation



And contributing to EOSC Interoperability Framework

- Set of guidelines that promote standard and community best practices within the EOSC
- A governance process to manage EOSC promoted guidelines
- A registry to list the guidelines and who supports them



To conclude....



- **Founding member of EOSC Association**
- Original **Vice Chair of EOSC** (Cathrin Stover) and 2 time **EOSC Board director** (Sarah Jones)
- NREN community members self-representing as **EOSC Task Force co-chairs and members** and **EOSC working groups**
- NREN community members as **Mandated Organisations in EOSC Association** or **ordinary Members** and **Observers**
- NREN community members as **Steering Board representatives**
- Strong community contribution to **EOSC projects**: EOSC pilot, EOSC Hub, OCRE, EOSC Future, EOSC Focus, EOSC regional projects (EOSC Nordic, EOSC Pillar, NI4OS etc.)



Thank You

Any questions?

www.geant.org



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the European Union