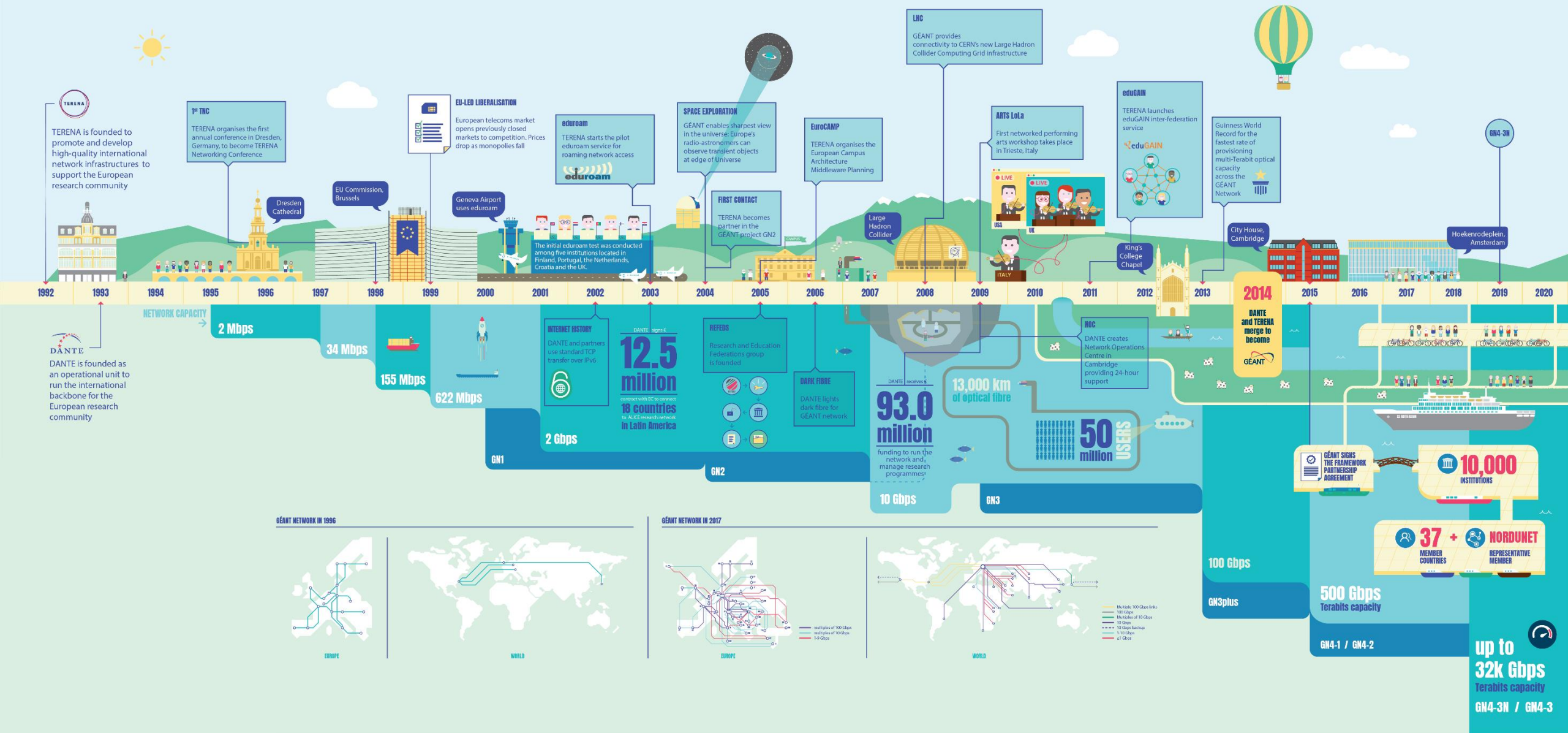




# GÉANT

**Erik Huizer**  
*CEO*

[www.geant.org](http://www.geant.org)



# To empower R&E with an open, innovative, and trusted information ecosystem



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



**Coordinates and participates in EC-funded projects**

Under Horizon 2020 the financial instrument for implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness



**Operates a pan-European e-infrastructure with connections to all regions of the world**  
GÉANT network



**Manages a portfolio of services for research & education**  
EduX



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

# Membership Association

GÉANT Association supports and represents over 40 NRENs across Europe.

Together they support over 10,000 institutions and 50 million academic users.





# The GÉANT Community





The GÉANT Association is the collaboration of European National Research and Education Networks (NRENs), supporting the advancement of research, education, and innovation on a global scale.

Together we deliver an information ecosystem of infrastructures and services used for communication, collaboration, exchange of data, and access to repositories, services and facilities.

### Network

We are the trusted partner for pan-European and global advanced R&E networking.



### Security

We provide a safe and secure information ecosystem for researchers, educators, and students.



### Innovation

We continually evolve key infrastructures, innovate, and develop new services in order to fulfil the needs of the R&E community in a sustainable way.



### Community

We are acknowledged worldwide as a leader for developing and supporting R&E networking communities, and global REN development.



## The GÉANT Association is driven by Eight Strategic Goals

### European Union

We are seen by the EU as an indispensable partner for their vision.



### Stakeholders

We forge relationships with other e-infrastructure providers, research infrastructures (RIs), and other stakeholders, to benefit the R&E community.



### Governance

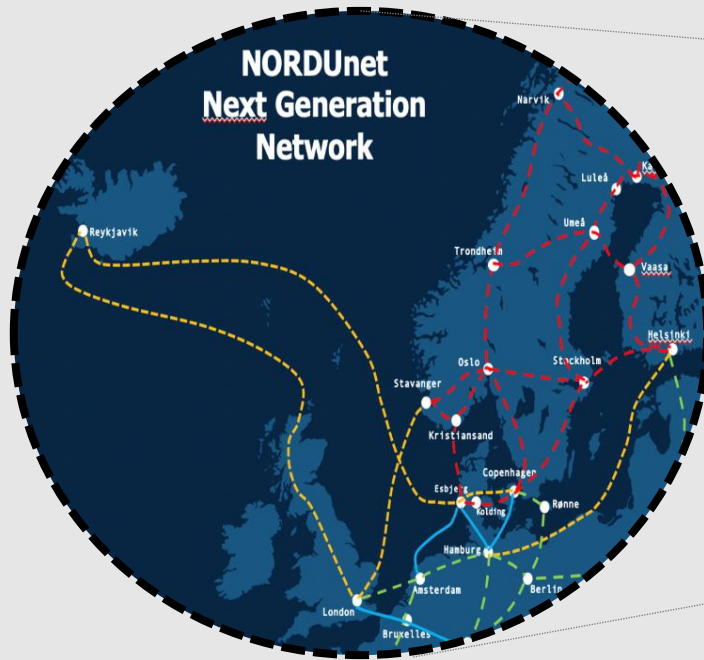
We have a governance structure that is agile and benefits from the diversity of our membership.



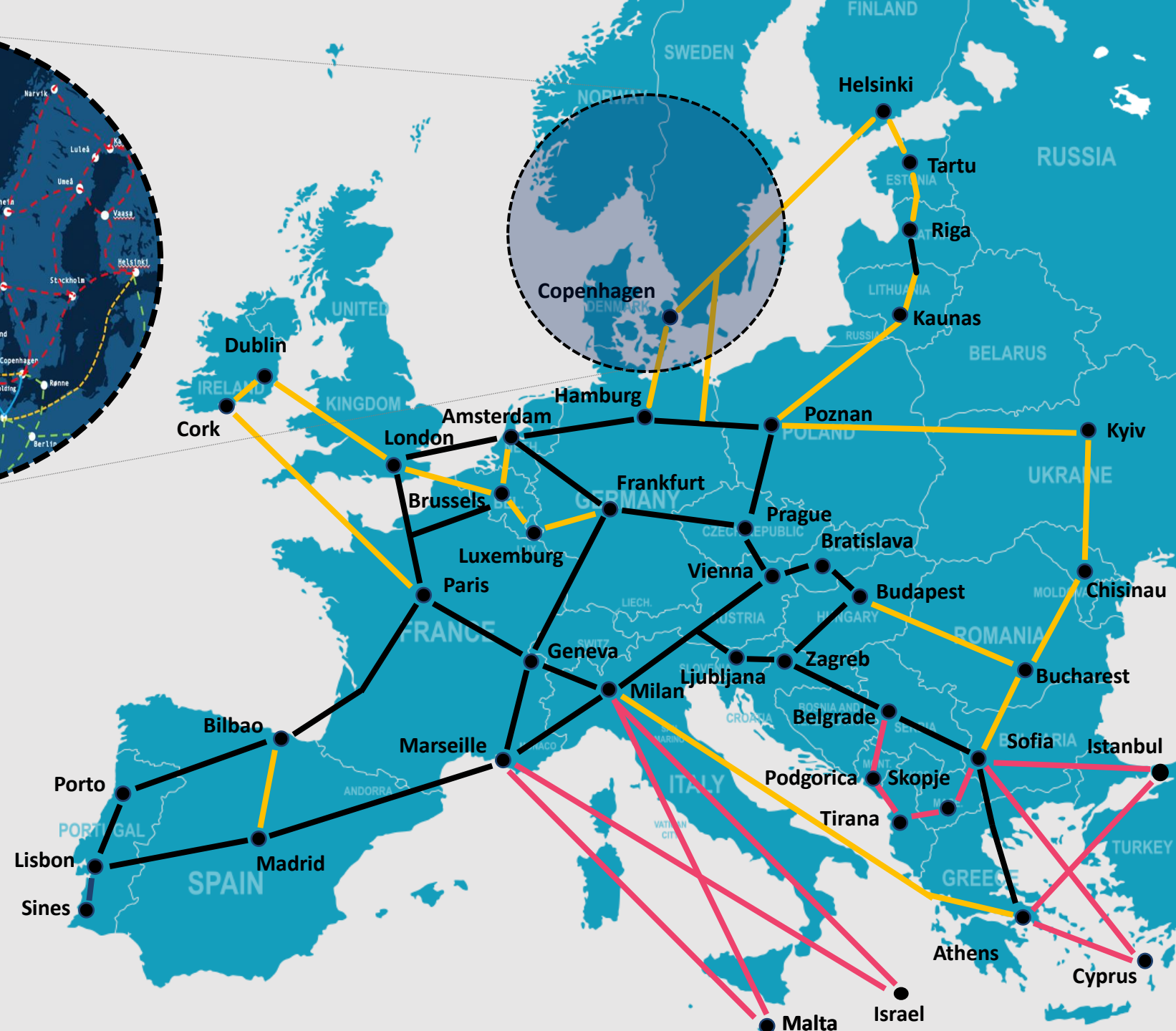
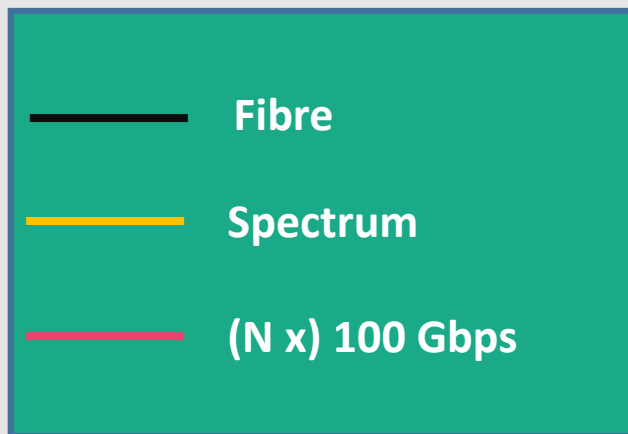
### Funding

We will ensure financial sustainability to benefit our members.



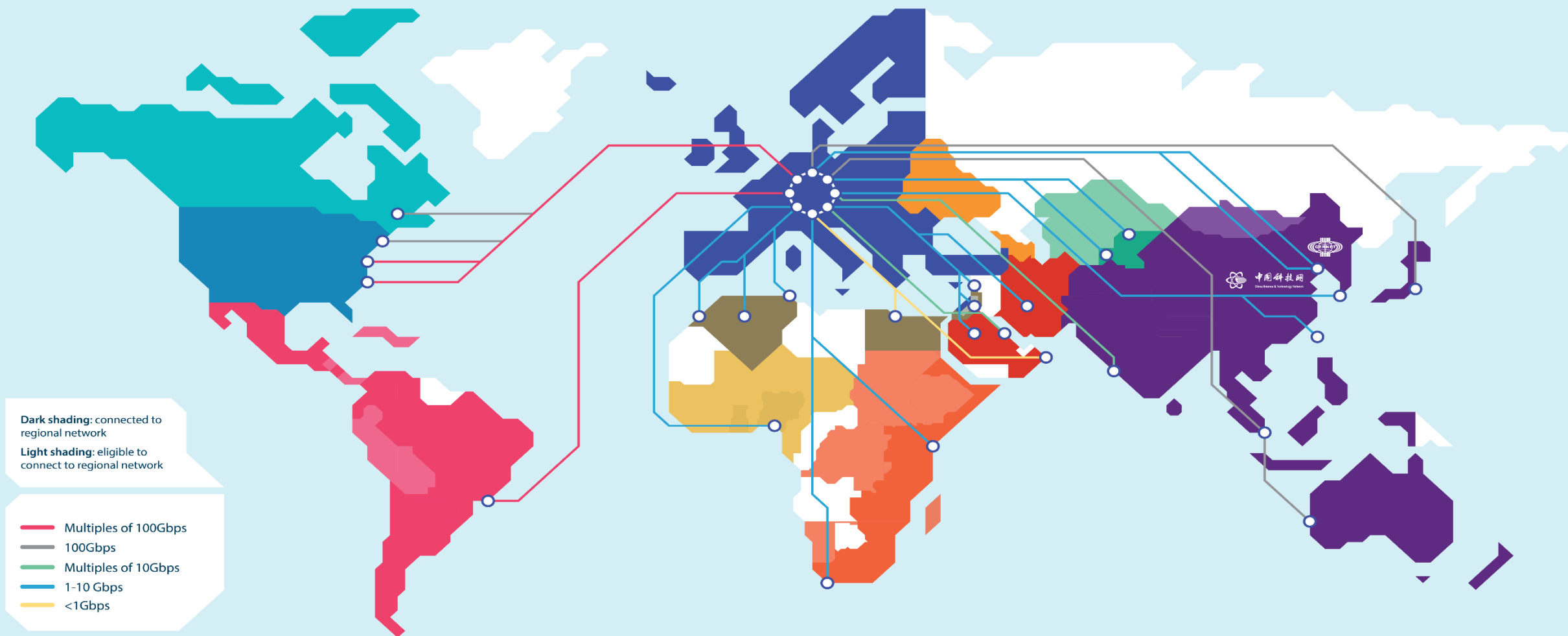


## END POINT: AMBITION FOR INFRASTRUCTURE AT THE END OF THE PROJECT





# International Connectivity

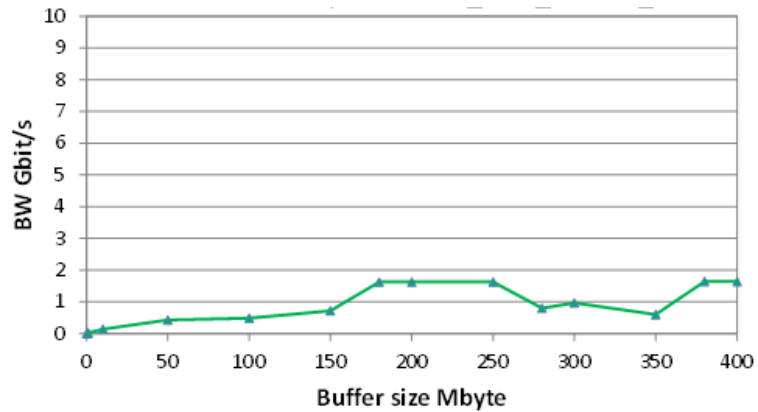


August 2021

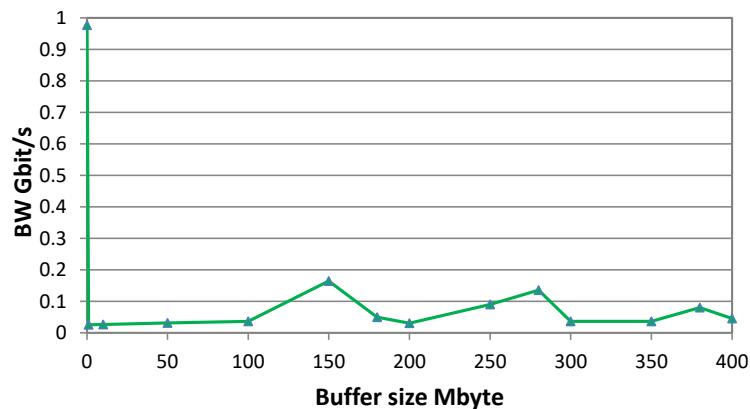
# Optimised for research data transfers

## Public Internet

### Geneva to Canberra

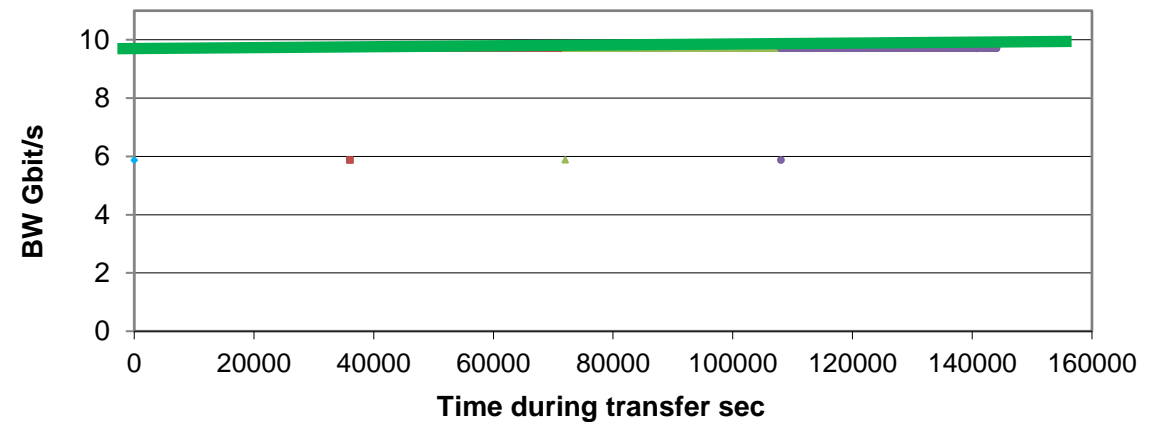


### Geneva to Canberra



## GÉANT and R&E partners

### Geneva to Canberra GÉANT + R&E networks US to Australia

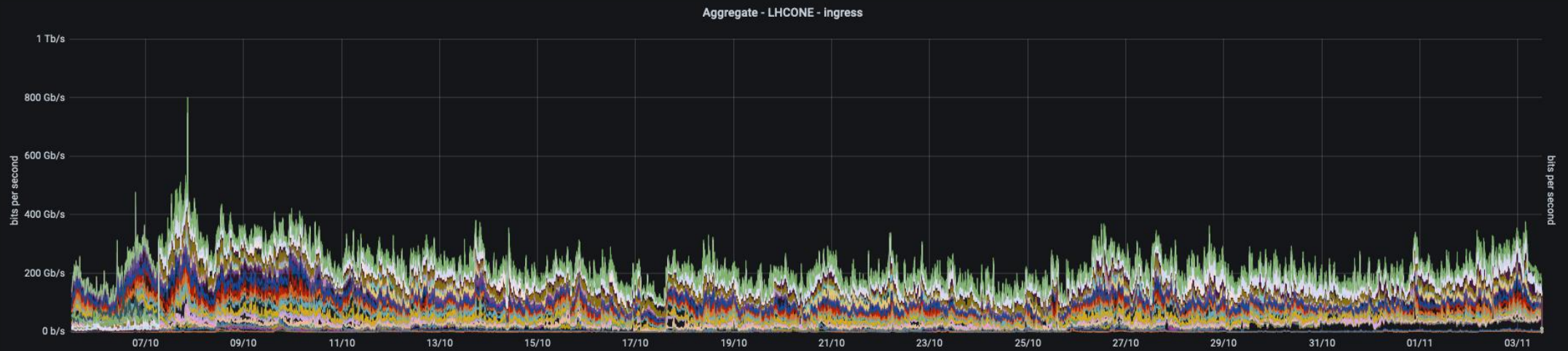
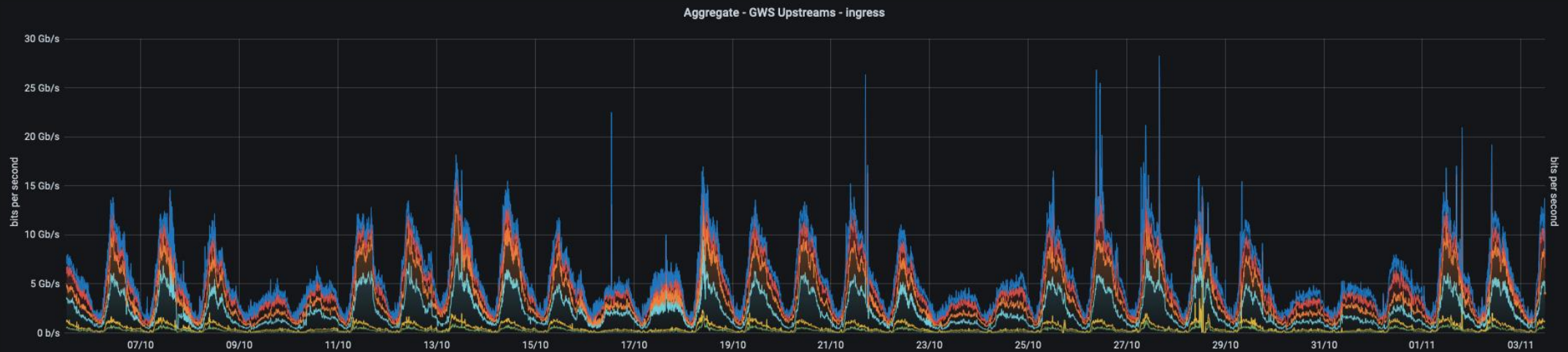


**R&E networks are designed for different goals than the Internet**

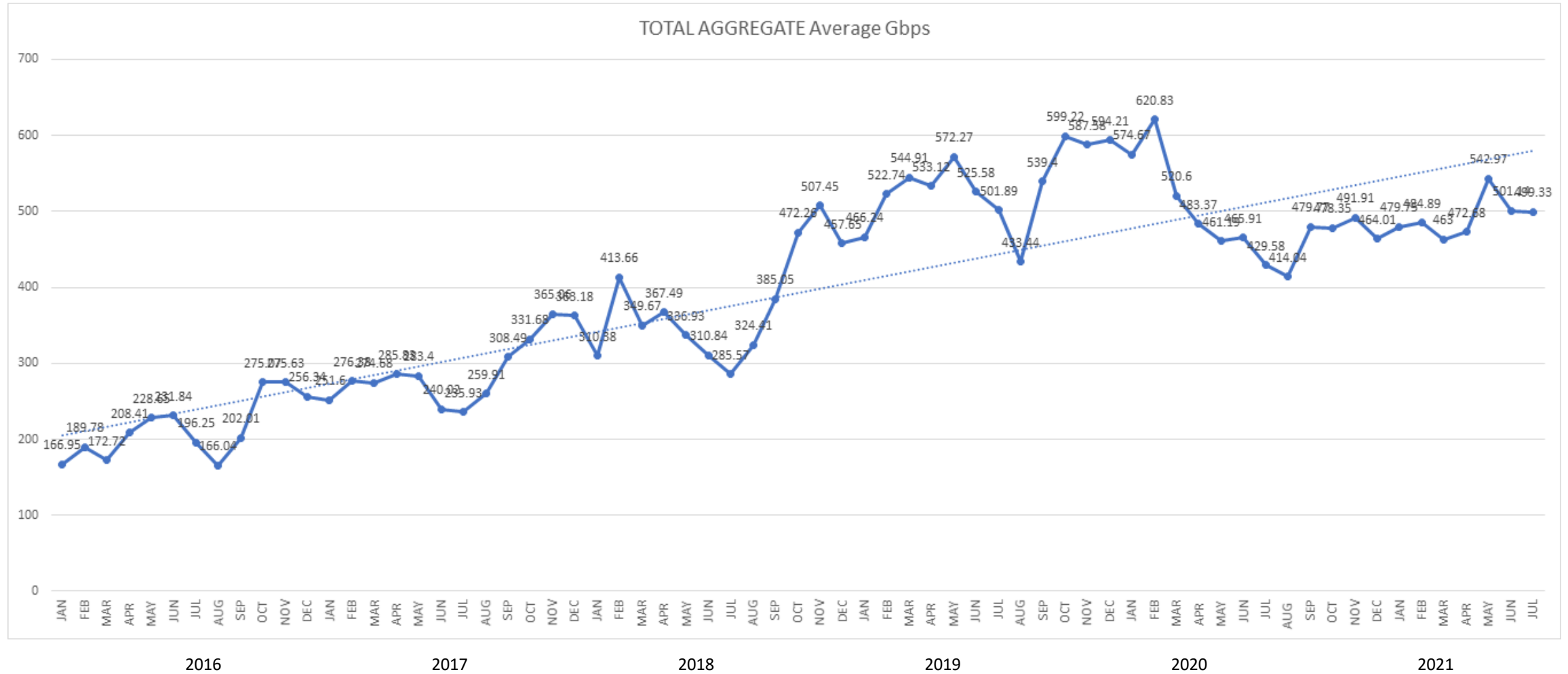
Comparative Times for a 100TByte data transfer.

File Size (TB)	Data rate (Gbit/s)	Time taken (Hours)	Time Taken (Days)
NREN 100	9.27	34.0	1.4
ISP A 100	1.72	183.2	7.6
ISP B 100	0.11	2864.3	119.3

# Not all traffic is equal



# GÉANT Network – Traffic Growth





# GÉANT Services

## Network



GÉANT IP  
GÉANT Plus  
10G Guaranteed Bandwidth  
L3VPN  
MD-VPN  
100G GÉANT Lambda  
GÉANT Open  
GWS  
Commercial Peering  
MS ExpressRoutes  
Oracle FastConnect

## Network Support



perfSONAR  
perfSONAR PMP  
NMaaS  
WifiMon (software)  
GEANT Operations Centre  
Software Tools  
e.g., BRIAN

## Security



NSHaRP:  
*FoD*  
*RTBH (Remote Trigger to Black Hole)*  
*DDoS C&A*  
eduVPN (software)  
Trusted Introducer  
TCS

## Trust & Identity



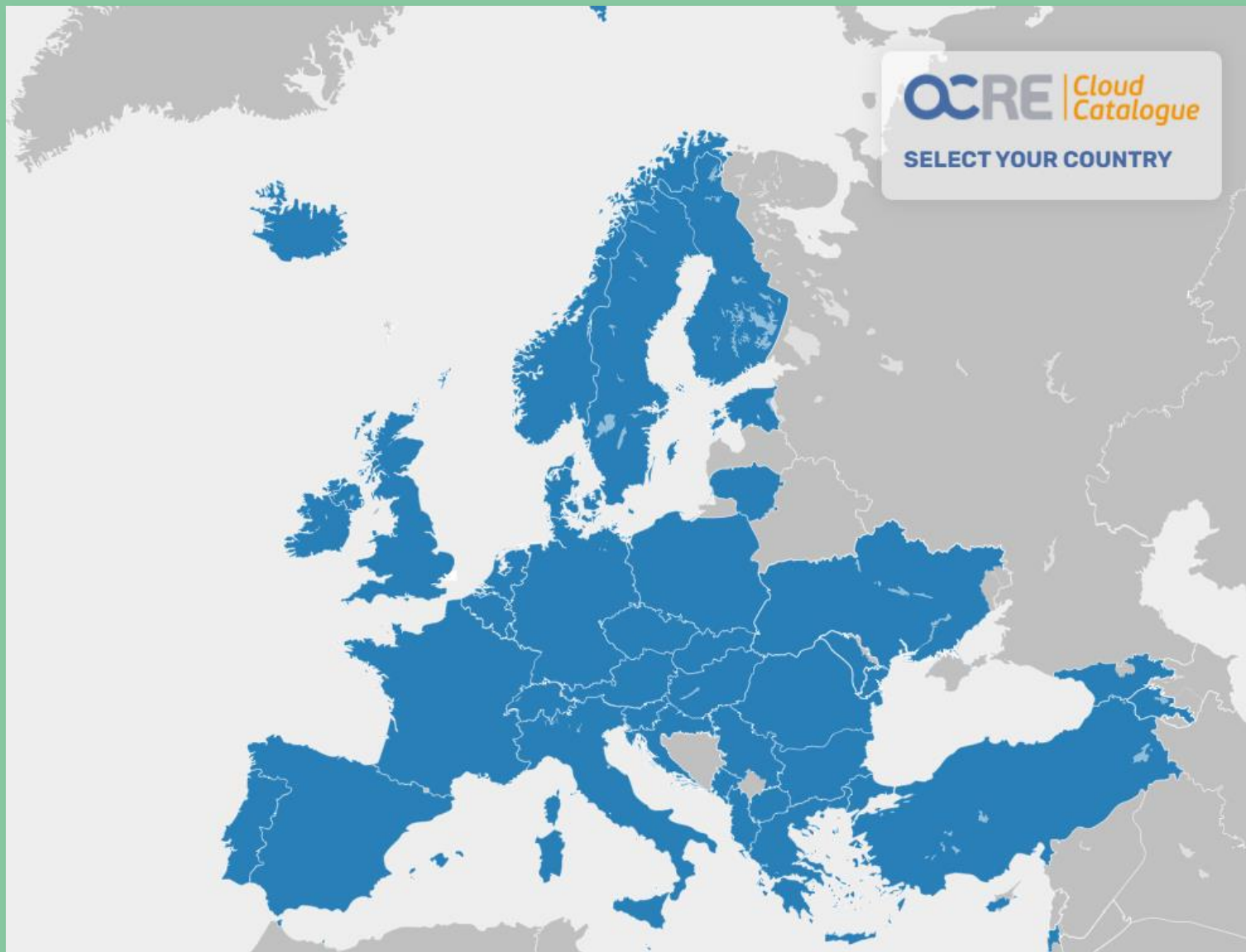
eduroam:  
*Managed IdP*  
*CAT*  
*geteduroam*  
eduGAIN  
eduTEAMS  
InAcademia  
Campus IdP Toolkit (software)

## Cloud & RTC



Filesender Demo  
IaaS+ Framework  
eduMEET (software)

# Procurement for Universities and Research Institutes in Europe



*GÉANT brings down cost of cloud services*

36 participating countries

R&E institutions act as a

Single Digital Market

Market response to tender – 1100 bids

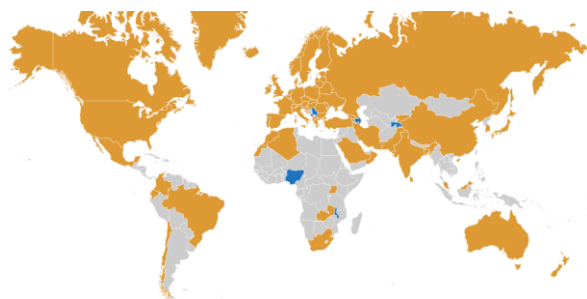
Outcome - 473 cloud contracts

27 cloud platforms represented

39 suppliers (including hyperscale)

Platform tested using HNSciCloud

# Federated Identities in Research and Education - Globally



**70+**

Countries

**4400+**

Institutions

**3400+**

Web  
Services



**106+**

Countries

**8600+**

Institutions

**32000+**

eduroam WiFi  
Locations

# Community support

GÉANT is build upon a community. The GÉANT community invests in the research and development of network architectures, technologies and paradigms to develop into the services, processes, tools and network capabilities of tomorrow.



Community  
Conference



Special Interest  
Groups and  
Task Forces



Research  
Programmes  
and Service  
Development



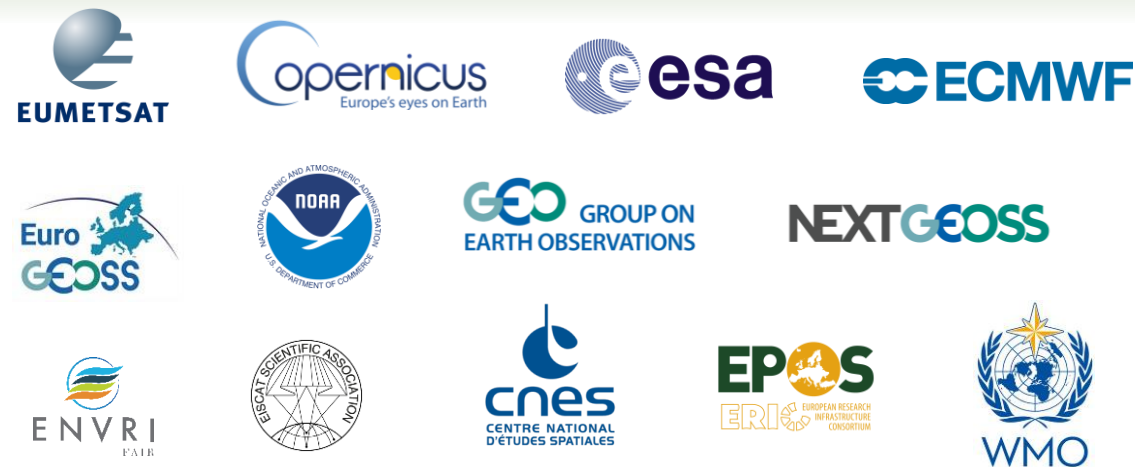
Talent pool



## Astronomy/Physics



## Earth Observation



## eInfras



## Life Science



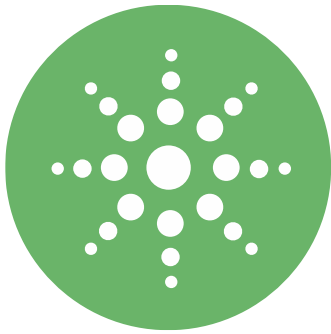
## Arts and Humanities



## Outreach



# The GÉANT Values



**Community**



**Trust**



**Innovation**



**Passion**

# Thank you!

erik.huizer@geant.org

 [www.geant.org](http://www.geant.org)

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© GEANT Limited on behalf of the GN4 Phase 2 project (GN4-2).  
The research leading to these results has received funding from  
the European Union's Horizon 2020 research and innovation  
programme under Grant Agreement No. 731122 (GN4-2).