

THE GÉANT PROJECT (GN4-3 AND GN4-3N)

HIGHLIGHTS



This document presents the highlights of the EC-funded GN4-3/GN4-3N projects during Period 2 (1 May 2020 to 31 August 2021). GN4-3/GN4-3N form the last of three phases implementing the actions defined in the 68-month Framework Partnership Agreement, established between the GÉANT Consortium and the European Commission that started with GN4-1 in May 2015.

GÉANT's vision is to provide users equal, high-performance network access to the research infrastructures and e-infrastructure resources across Europe.

The GÉANT projects are a fundamental element of the European e-infrastructure. Through its integrated catalogue of connectivity, collaboration, and identity services, GÉANT, together with its National Research and Education Network (NREN) partners, provides users with unconstrained access to communication, computing, analysis, storage, applications, and other resources, whenever and wherever needed.

As GN4-3N refreshes the pan-European network, GN4-3 in parallel continues to deliver excellence in networking services, enables integrated High Performance Computing, and supports open science, which reinforces Europe as a global research hub, whilst exploring the potential for new network services in areas such as Quantum Key Distribution and Data Plane Programming. The data demands of the research and education community are evolving faster than ever, and GÉANT's flexible, agile, and long-term approach remains vital.

Supporting the knowledge community

By interconnecting Europe's NRENs and facilitating high-speed links with other global regions, GÉANT connects schools, universities, and the world's largest research projects, enabling scientific discoveries, supporting remote learning and upskilling communities.

Expanding and supporting the community:

AzScienceNet added as GN4-3 partner; Kosovo* REN joins as an associate; onboarding programme introduced for new NREN Directors; established Board Member induction programme.

Community Programme: continued to support knowledge sharing, with particular support for COVID-19 environment through SIG-NOC (network operations and planning) and SIG-Marcomms (online engagement, crisis communications). Period 2 saw highest attendance yet, with 34 meetings and 2,378 attendees; new Task Forces created for eHealth and Distributed Ledger Technology (DLT).

Coordination meetings: bringing the community together to engage around key topics such as EOSC and EuroHPC.

Infoshares and spotlight programme: 38 infoshares held on wide variety of topics; supporting GA members to engage on strategic topics such as cyber security, intercontinental connectivity, and quantum.

Communicating with audiences: development of CONNECT channels led to 76% increase in visitors to the community website and expanded subscribers for the weekly newsletter; IMPACT website showcases user communities supported by GÉANT and its NREN partners; new services websites cater for specific audiences; and effective social media increased followers and overall levels of engagement.

Upskilling the community:

29 training events organised with 2,358 attendees from over 40 NRENs; GLAD manages bespoke learning for the benefit of all project participants and expanded the eAcademy portal for collating and publishing content online; celebrated 10 years of software developer training.

Outreach through events: Project Management Convention held online for WPLs, TLs, and Coordinators; TNC21 was delivered as a fully virtual event with 1,224 participants from 105 countries, of which almost half were newcomers; virtual exhibitor at SC20 and ICRI2021.

Collaborations: supporting the HPC ecosystem with agreement established with PRACE, CERN...

Promoting the network: a new project website for GN4-3N details the network and its global reach, providing an online home for articles, interviews, and status of network rollout.

Innovation Programme: community-funded programme launched to encourage new and innovative ideas for the benefit of the research and education community; 10 projects will receive a share of €300k funding. GN4-3 provides logistics, support, and mentoring, with results due in Period 3.

* This designation is without prejudice to positions on status and is in line with UNSCR 1244/1999 and the ICJ opinion on the Kosovo declaration of independence.

 **161 FTEs**
500+ contributors
40 partners
44 countries

 **TNC21**
1,224 participants
105 countries

 **COMMUNITY PROGRAMME**
34 meetings
2,378 attendees

Inno YOUR_IDEA_HERE vation
Programme

  **INFOSHARE**
38 events

 **CONNECT**
76% increase
in visitors

 **GÉANT IMPACT**
impact.geant.org

Optimising the network for all users

The GÉANT network continues to deliver excellent service and extremely high performance for all users, while implementing the largest network refresh of a generation to maintain and strengthen European and international high-speed networking for the research and education community.

GN4-3N rollout: implementation of the new network continued with build, testing, and moving to production of multiple routes. GN4-3N is creating a more resilient infrastructure and substantially increased network footprint that will also double the amount of fibre.

Expanding fibre footprint: over 10,000km of fibre implemented.

Substantial cost and environmental savings: achieved through network design, equipment specification, support re-procurement and Dynamic Purchasing System (DPS).

GÉANT Connection Service (GCS): now being used in production by the GÉANT operations team for Microsoft Express Routes.

Network automation: first production routers brought under automated configuration control.

Looking to the future: during equipment testing GÉANT reached 800Gbps on a single wavelength in the test lab and on the Amsterdam to Frankfurt route.

Developing services for a rapidly changing world

GÉANT's range of user-focused connectivity, collaboration and identity services remain vitally important to research, education, and an evolving European e-infrastructure. Shorter and more agile development cycles ensure services continue to meet user needs in a rapidly changing environment.

eduroam: global Wi-Fi roaming service reached 4 billion international authentications in Period 2 across 106 territories.

eduTEAMS: the platform that enables communities and research projects to create and manage their virtual teams and manage secure, group- and role-based access to shared resources and services, using existing federated identities, expanded its engagement activities and integrated a range of new services.

eduGAIN: grew to 73 Federations and over 8,000 Identity and Service Providers; F-ticks and central security function development.

eduVPN: expanded to over 100 organisations.

InAcademia: online student validation service grew to cover Spain, The Netherlands, Germany, Denmark, France, Italy, and Sweden.

Trust & Identity Mentorship: new initiative seeks to develop new AAI services and support talent in community.

Leadership in cyber security: 19 project partners took part in the Cyber Security Month awareness-raising campaign; several workshops organised on DDoS Mitigation and Security Operations Tools, and on Crisis Communications.

Network monitoring: new features added to perfSONAR and new WiFiMon service launched.


New IaaS Framework: contract awards in 40 countries providing 474 framework contracts. Collaborating with EUNIS to increase cloud uptake across Europe.

White box: strong interest in the new RARE open source router platform, combining FreeRtr and P4/DPDK, with R&E organisations worldwide connecting to the associated GÉANT P4 Lab.

 **474**
IaaS framework
contracts

 **CYBER HERO**
@HOME

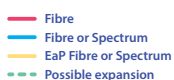

4 billion
authentications

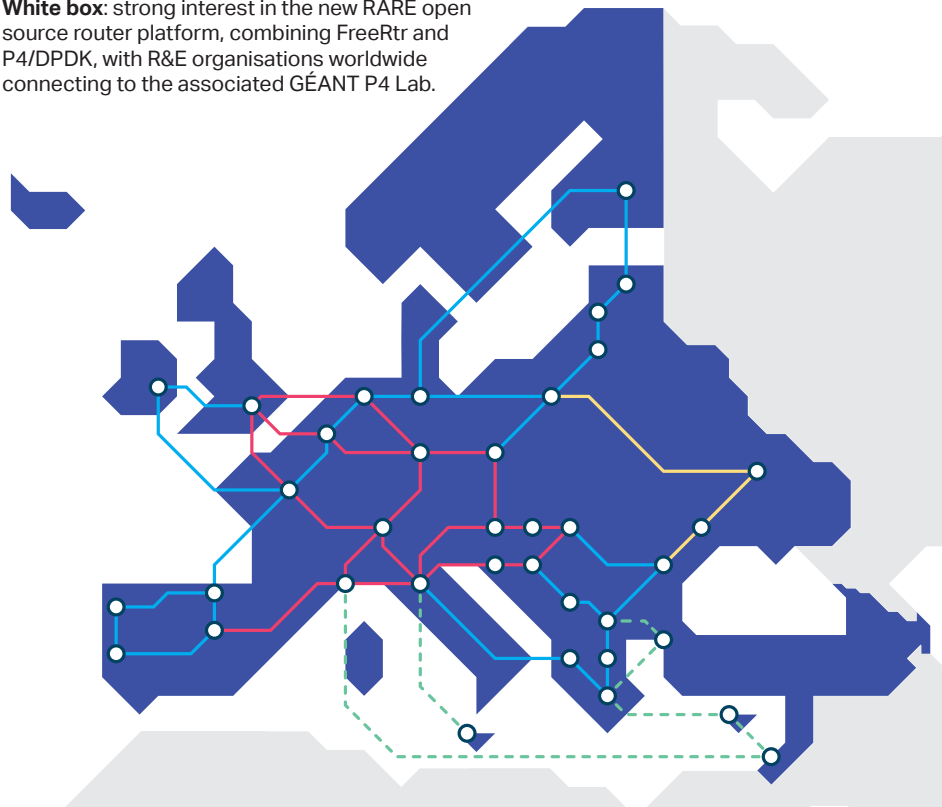
 **eduGAIN**
35 million
authentications
each month

GN4-3N
10,000 km
OF FIBRE IMPLEMENTED

25
COUNTRIES
CONNECTED

46
FIBRE
LINKS


— Fibre
— Fibre or Spectrum
— EoP Fibre or Spectrum
- - - Possible expansion



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To learn more about GN4-3/GN4-3N visit geant.org/geantproject or use the QR code →

