THE GÉANT PROJECT (GN4-2)

HIGHLIGHTS

This document presents the highlights of Period 1 of the EC funded GN4-2 project, from 1 May 2016 to 31 August 2017. Period 2 runs from 1 September 2017 to 31 December 2018. GN4-2 is the second step in 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 ensure equal network access for all scientists across Europe to the research infrastructures and the e-infrastructure resources available to them.

The GÉANT Project is fundamental to European e-infrastructures, delivering the pan-European GÉANT network for scientific excellence, research, education and innovation. Through its connectivity, collaboration and identity services, GÉANT, together with its NREN partners, provides users with highly reliable, unconstrained access to communication, computing, analysis, storage, applications and other resources, whenever and wherever needed.

COLLABORATION WITH NRENS, INDUSTRY, E-INFRASTRUCTURES AND USERS

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, helping deliver real societal benefit. Through close consultation and collaboration with NRENs, large user projects, international networks and e-infrastructures, efforts are being further aligned, relationships continue to be strengthened, NREN satisfaction levels further improved, and communications channels successfully increased.

- **Increased NREN engagement and satisfaction**: unprecedented levels of support with 38 NREN service reviews completed; largest ever response to annual satisfaction survey, with results showing strong confidence in GÉANT with 98% confirming GÉANT's ability to serve its members in the best possible way and 93% that GÉANT's service portfolio meets their NREN's current needs and no NREN disagreeing to this statement.
- **Wider consultation**: 29 NREN Partners, 10 international NREN partners, 7 international research projects, 30 GÉANT project and organisation personnel, as well as numerous vendors and e-infrastructures consulted on GÉANT network and service evolution.
- **Improving access to data**: redesigned and interactive Compendium contributed to by 42 NRENs; now provides better access to data and trends; interactive topology map launched with over 1,300 unique visitors.
- **Closer alignment with e-infrastructures**: significant focus on relationship building; new DI4R joint event successfully launched in 2016, repeated in 2017; numerous alignment meetings held.
- **Growing the community**: over 1,000 attendees at TF/SIG meetings; record attendance and excellent feedback from TNC16 and TNC17.
- **Building skills**: 8 training events held benefiting over 120 participants from 25 partners; GÉANT eAcademy launched to provide 24/7 learning and development.
- **Increasing communication**: flagship CONNECT magazine produced 250 articles covering thought leadership, services, users, partners and sponsors; distributed at worldwide events. Contributions made to global success stories; development of community blog site (traffic up more than 1,500%); new websites launched to support services and community.
- **Key infrastructure**: coordinated deployment of new topology for PRACE, resulting in cost savings and the first large-scale deployment of GÉANT MD-VPN technology.
- **Serving big-science**: expansion of the LHCONE multi-domain service to new world regions; providing unprecedented 2 x 100G capacity to CERN for distribution of the LHC computation.
- **Global users**: the EUMETSAT data dissemination service was successfully expanded to Australia and China.

40 partners
500 contributors

50M users

HIGHEST EVER NREN engagement

TNC 700+ attendees

DIGITAL INFRASTRUCTURES for RESEARCH 2017
Serving the user base

CONNECT MAGAZINE
#22 #23 #24 #25
250 articles

DELIVERING OPERATIONAL EXCELLENCE; REALISING THE FUTURE

The GÉANT network continues to deliver cost-effective and extremely high performance for all users, whilst planning for the next generation network is finalised. With a new European partner in Albania and further expansion of global connectivity, particularly as part of the Advanced North Atlantic (ANA) collaboration, GÉANT continues to support Europe's position at the forefront of research.

- **Cost savings**: re-procured 17 private circuits with direct savings of nearly €700k, whilst increasing the capacity on most of the services.
- **GÉANT Testbeds Service**: GÉANT's network for innovation completed its expansion, including the creation of a Virtual Private LAN Service for GTS use.
- **Security**: securing the project environment and its devices continues to be a high priority; a DDoS solution for the GÉANT Network was successfully implemented.
- **Planning for the future**: with traffic growth greatly outpacing internet growth, it is vital to ensure the delivery of a cost-efficient and high performance network that continues to meet and exceed the rapidly growing requirements of research and education. The network evolution plan published in GN4-2 outlines the vision and strategy for the next generation of the GÉANT network.
- **Standards development**: GN4-2 plays an active role in standards development, with continued leadership roles in standards organisations such as Open Grid Forum, Internet Engineering Task Force and W3C; actively involved in many more.
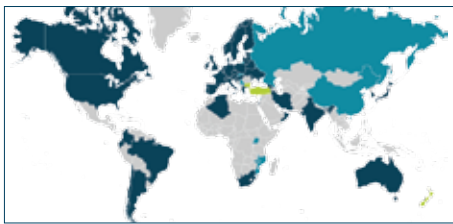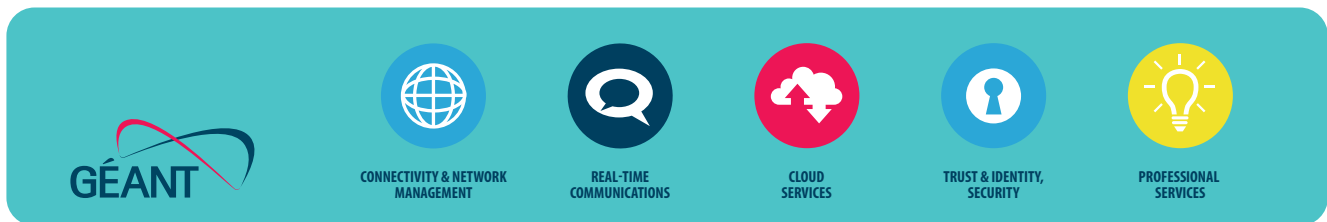
eduGAIN members

Global connectivity map

2115 petabytes TOTAL TRAFFIC VOLUME

60% growth IN GLOBAL TRAFFIC

€ 700K re-procurement savings

GÉANT

CONNECTIVITY & NETWORK MANAGEMENT

REAL-TIME COMMUNICATIONS

CLOUD SERVICES

TRUST & IDENTITY, SECURITY

PROFESSIONAL SERVICES

EXPANDING A PROFESSIONALLY MANAGED USER-DRIVEN SERVICE PORTFOLIO

GÉANT follows a Product Lifecycle Management process to ensure services are developed to user requirements and then transitioned to fully supported production services, within a portfolio covering networking, trust and identity, mobility, security and clouds.

- **Building the cloud**: following a successful pan-European IaaS tender, GÉANT has created an innovative digital single market for cloud services, with 23 services currently available for NRENs to offer their communities. The overall aim is to make cloud and application services safe and easy to use for the European research and education community.
- **Growing eduGAIN**: added 9 new federation members, a 23% increase in the number of IdPs, and significant increase in adoption of features to support research.
- **Growing eduroam**: the roaming wi-fi service for research and education saw national authentications grow by 21% to 3,642,300,756; international by 18% to 834,487,457.
- **Transitioning services**: 7 Trust and Identity service developments moved to design stage, 7 moved to pilot stage, 2 moved to production implementation.
- **Innovative services**: filling the services pipeline with innovative new services, such as InAcademia; eduTEAMS; eduroam managed IdP; Campus IdP; StepUp Assurance & MFA; and Discovery.
- **Improving software development**: ongoing training and software management support to ensure continuous improvements in software development.
- **Support and response**: continuation of highest level support and response saw over 630 service requests (an increase of over 250%) successfully addressed; and 8,800 tickets processed by the GÉANT Operations Centre.

23 cloud services

eduroam 3.6 BILLION NATIONAL AUTHENTICATIONS

SERVICE REQUESTS UP BY MORE THAN **250%**

To learn more about GN4-2 and its achievements visit www.geant.org/geantproject or use the QR code →