Delivering value and benefit to society by enabling research communities across Europe and beyond to transform the way they collaborate. GÉANT Project (GN3)




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Known simply as GÉANT, GN3 is the third term of the successful GÉANT network and project that lie at the heart of the EU's e-Infrastructure strategy. Co-funded by the European National Research and Education Networks (NRENs) and the European Union (EU), the project operates the pan-European GÉANT network and a portfolio of advanced services for the research and education community. GÉANT connects 40 million users in over 8,000 institutions across 40 countries. GEANT also addresses the digital divide of research and education networking across Europe and fosters technological research to assure Europe's role at the forefront of networking and e-Science.

Background

The GÉANT project is a collaboration between 34 project partners comprising 32 European NRENs, DANTE and TERENA; and four Associate NRENs. Together, GÉANT and the national networks create a common pan-European service area (known as the GÉANT Service Area) enabling advanced network services and applications harmonised across GÉANT to be offered by NRENs at local level to institutions, projects and researchers.

The GÉANT network continues to provide extremely high bandwidth to increasing numbers of researchers across Europe and the globe, continually seeking to increase network usage across wider disciplines of user groups. The network and portfolio of services give the end user, their projects and institutions secure access to the network and resources they require, when and where they want it, transforming how research can be carried out.

Objectives

GÉANT's core objective is to deliver real value and benefit to society by enabling research communities across Europe, and the world, to transform the way they collaborate on ground-breaking research. In practical terms, the key focus of the GÉANT project is to operate and expand the pan-European backbone network dedicated to the education and research community, and to develop and roll out a portfolio of advanced network services through its NREN partners, to end users to ensure seamless network performance. The GÉANT project also seeks to shape the Internet of the future by investing in the research and development of an advanced portfolio of technologies, to develop into services, tools and network capabilities for tomorrow's researchers.

Results

Some of the GÉANT project's major achievements and progress to date are reported here.

- GÉANT backbone traffic has been tracked using specific indicators for European Research Area (ERA) e-infrastructures. The indicators show a clear and sustained upward trend in the volume of traffic. In particular, the portion of traffic to non-EU traffic is steadily improving, representing the increased cooperation with the rest of the world.

- The societal benefits delivered by GÉANT continue to be seen in areas as diverse as medicine, radio astronomy, e-Science, climate change and arts and culture.

- The highly successful GEANT Launch event was held in Stockholm in December last year, attended by 209 delegates from 51 countries. It featured a full conference programme, technology demonstrations, poster presentations and panel discussions.

- The GEANT backbone is being managed and developed to ensure it maintains its world-leading position and is supported with security, monitoring and performance services and initiatives to uphold the reliability of the network usage. The past year has seen impressive upgrades to the network including implementation of 40 Gbps wavelengths, capacity upgrades and new interconnection peerings. A new in-house GÉANT NOC has been set up which provides a flexible, cost-effective service.

- The GEANT research programme is dealing with a critical analysis of future networking technologies as well as research into new services, bringing innovation to the core network infrastructure, seeking and delivering technological solutions for network control, management and service-provisioning across the GÉANT Service Area.

- Initiatives are in progress aimed at ensuring 'Campus Best Practice' in the setup and operation of campus networks, and also ways to assess and minimise the environmental impact of operating the pan-European and national networks.

- A range of innovative services for secure and mobile access will allow researchers to access the network and resources whenever and wherever required. Whilst eduroam is an established service, others such as those relating to AAI, are in development.

Impact

Together with Europe's national research networks, GÉANT connects 40 million users in over 8,000 institutions across 40 countries through the GÉANT Service Area. The diversity of user and project applications that already benefit from the bandwidth and global reach of the GÉANT network is immense, with consequent societal benefits of the GÉANT network seen across the spectrum of types of project, from big science to e-health, and from climate change and disaster planning to arts and culture.

GÉANT also directly connects to other high-speed networks with links to the Americas, the Mediterranean, Asia-Pacific, Southern Asia and Central Asia, and in future will connect to Southern and Eastern Africa. This global connectivity extends GÉANT's reach to a further 57 national networks and 47 countries outside the GEANT Service Area.

For more information, please visit the website: http://www.geant.net

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