June 2009

GÉANT – Frequently asked questions

About the Network

What is GÉANT?

GÉANT is the third generation of the GÉANT network, and successor to GÉANT2. Designed and built on behalf of a consortium of National Research and Education Networks (NRENs), with funding support from the European Commission as part of its 7th Framework Programme, the GÉANT network provides a vital research infrastructure as well as the necessary resources for information technology and telecommunications development.

Why is GÉANT needed?

Without high-speed research networks like GÉANT, many research projects and innovative scientific studies at the forefront of their fields would simply not be possible. Europe is home to the largest and most diverse group of academic and scientific researchers in the world. An extraordinary amount of data is collectively produced every month and is shared between researchers in different countries. It is important that they can work together and share data in real time. Work at the frontier of research increasingly depends on large scale databanks and massive processing power to deal with problems such as decoding genetic information, simulating climate change and energy demands, or predicting and managing the spread of epidemics. Commercial Internet technology is not as efficient and does not deliver service availability levels required by current and future projects. Moreover, because GÉANT uses switched and routed technology, it is paving the way for next generation, high performance, cost-effective communication networks.

Who benefits from GÉANT?

High-speed Internet services have not only improved the cost-effectiveness of research, but have fundamentally transformed the way it is carried out, allowing researchers located in different parts of Europe and around the globe to co-operate as if they were on the same campus. Thanks to GÉANT, the results of scientific experiments, such as radio astronomic observations, can be made available instantly, rather than three weeks later. GÉANT also provides access to remote resources that are sometimes too costly for a single country to develop, such as telescopes that are located in remote places.

Users from a wide variety of disciplines can utilise GÉANT to facilitate ground-breaking research that can bring real benefit to society. Big Science users seeking answers about our universe, to medical research seeking cures for diseases across the world; and from research into understanding and predicting climate change, to communication providing support for natural disasters - the diversity of user and project applications is immense.

Which areas are linked to GÉANT?

Users in 38 countries are served by GÉANT, by the 32 NRENs that link to the GÉANT backbone. In addition, extensive links to other world regions create a European gateway for global research.

Which countries are GÉANT partners and which countries receive GÉANT connectivity?
There are 32 GÉANT partner countries that receive GÉANT connectivity directly. Two additional GÉANT partners include the organisations DANTE and TERENA (Trans-European Research and Education Networking Association). In total, 36 countries receive GÉANT connectivity through membership of the GÉANT consortium.

GÉANT partner countries (and NRENs):
Austria (ACOnet), Belgium BELnet), Bulgaria (BREN), Croatia (CARNet), Cyprus (CYNET), Czech Republic (CESNET), Estonia (EENet), France (RENATER), Germany (DFN), Greece (GRNET), Hungary (NIIF), Ireland (HEAnet), Israel (IUCC), Italy (GARR), Latvia (SigmaNet), Lithuania (LITNET), Luxembourg (RESTENA), Macedonia (MARNet), Malta (University of Malta), Montenegro (MRnet), Nordic region (includes Sweden, Finland, Denmark, Norway and Iceland) (NORDUnet), Poland (PSNC), Portugal (FCCN), Romania (RoEduNet), Serbia (AMRES), Slovakia (SANET), Slovenia (ARNES), Spain (RedIris), Switzerland (SWITCH), The Netherlands (SURFnet), Turkey (ULAKBIM), UK (JANET)

GÉANT associate partner countries:
Belarus, Moldova, Russia, Ukraine

Which other world regions are connected to GÉANT?
GÉANT connects:

- the Mediterranean countries via EUMEDCONNECT2
- the Balkans via SEEREN
- Central Asia via SILK/OCCASION and soon CAREN
- Black Sea via BSI
- Asia via TEIN3
- Latin America via ALICE2
- China via ORIENT
- Japan via New York
- South Africa via a dedicated high speed link and the UbuntuNet Alliance African countries
- The US and Canada through a long-standing trans-Atlantic partnership

Are there further regions to connect to GÉANT?
CAREN (Central Asian Research and Education Network) will link to GÉANT later in 2009. This network will connect the countries Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. A feasibility study is also underway in sub-Saharan Africa.

About the Project

What is the GÉANT project?
The GÉANT (or GN3) project is the EC project that funds the GÉANT network. The GÉANT project advances all aspects of European research and education networking. This encompasses the network itself, a range of network support and access services for users, initiatives to address the digital divide of research and education networking around Europe, and technological research to ensure GÉANT continues to be at the forefront of networking on a global scale.

How does this new GÉANT project relate to GÉANT2?
GÉANT is the successor to GÉANT2. It continues and develops the GÉANT network and builds on the technology and service elements of GÉANT2.

What will be the main differences in this GÉANT project?
The two main focuses of GÉANT are service delivery and collaboration.

Service Delivery – the previous project was mainly focussed on building the hybrid network itself but now that this infrastructure has been completed, the GÉANT project is focused on developing and rolling out services to National Research and Education Networks (NRENs) and their end users, institutions and projects to enable them to get the best performance possible from the network.

GÉANT will provide the pan-European backbone to interconnect Europe's NRENs, which will be supported by a range of multi-domain performance and monitoring tools. A suite of advanced end user services will be developed and made available for NRENs to incorporate into their service portfolios, for Europe's research and education community. This creates the pan-European GÉANT Service Area, a collaboration of interconnecting networks, enabling users across Europe to benefit from simple, secure "any place" access to high performance data communication capabilities.

Collaboration – the GÉANT project is focussed on service delivery, not just to NRENs but to end users, institutions and projects, and this requires close collaboration from all the consortium members.

Why is the GÉANT project focussing on user services?
The GÉANT network provides extremely high bandwidth to thousands of researchers across Europe and the globe. In order to optimise the user experience, the suite of GÉANT multi-domain services in development is a major focus.

Funding and the EC

How is GÉANT funded?
GÉANT is co-funded by the EU's 7th Research & Development Framework Programme. Further funding is provided by the project's NREN partners. The overall co-ordination and management of the project is performed by DANTE on behalf of the NRENs and EC.

Why is the EC involved?
Besides the important role it plays in bringing national academic Internet networks together, EC funding is needed to upgrade Europe's research and education networking infrastructure, boosting Europe's research competitiveness. EC-funding enabled GÉANT to stay at the forefront of research networking technology.

What is FP7?
The EC's Seventh Framework programme (FP7) is where all research-related EU initiatives are classified, including GÉANT. Projects within FP7 play a crucial role in reaching the goals of growth, competitiveness and employment in Europe.