

DANTE
ANNUAL
REVIEW
2010





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Bob Day, Chairman, DANTE

Introduction by Chairman

For DANTE 2010 was another year of major success, supporting Europe's National Research and Education Networks (NRENs) in fostering ever-closer collaboration between scientists, academics and researchers across the globe. This commitment to driving inclusion of researchers wherever they are located and whatever discipline they work in benefits the whole of society. The innovation collaboration delivers is pushing back the boundaries of knowledge across disciplines as varied as medicine, biology, physics and the arts.

However, before I introduce the highlights of the year, I must first pay tribute to our colleague and DANTE chairman Klaus Ullmann, who sadly passed away on 25 March 2011. Klaus was a leading figure in the research networking community for over 35 years and many of the successes detailed in this report stem directly from his efforts and work over that time. His energy and drive will be much missed, not just by those of us in DANTE and in successive GÉANT projects who were privileged to work with him, but by the entire research networking community.

2010 saw the 10th anniversary of the high capacity GÉANT network, which has truly transformed research across Europe. The development of GÉANT, still the fastest and most powerful international network of its type, has underpinned research projects that directly benefit the citizens of Europe and the entire world. Projects that would previously have been impossible have flourished with the high capacity connections that GÉANT provides between NRENs and with international partners such as Internet2 in the US and TEIN3 in South-East Asia. The success of GÉANT is due to the collaborative nature of the project, which brings together NRENs, TERENA, DANTE and the European Commission to deliver the network and services that users require.

As GÉANT enters its second decade, the latest iteration of the network is certainly not standing still. Higher capacity connections are being matched by a focus on end-to-end services to ensure that users receive consistent, multi-domain performance to meet their needs, wherever they are located. Working with NRENs, many of these services will be introduced during 2011.

Moving forward to 2011, in these uncertain times it becomes ever more important to continue to demonstrate both the innovation GÉANT delivers, along with the value for money it achieves. European NRENs and DANTE will together continue to demonstrate this value they bring both to the research community and the wider world, shrinking distance and enabling unparalleled global collaboration. This has always been the joint vision and we will continue to deliver it in the years ahead.



**Dai Davies, General Manager,
DANTE**

Statement by Dai Davies

2010 saw a major milestone for DANTE with the celebration of ten years of GÉANT, the flagship European research and education network that DANTE built and operates on behalf of Europe's NRENs. Looking at how GÉANT has developed, and continues developing, demonstrates how research networking has progressed in the last decade, thanks to the strength of both DANTE and its NREN partners.

What we have seen is a seismic shift in how research networking is both delivered and used. In the early days, raw, high speed connectivity was enough to satisfy the needs of research projects – after all before the original GÉANT often the only other way of sharing data was sending it by post. Network capacity and speed increased exponentially, meaning we could use radically different technology that delivered a major step in performance each time we introduced a new iteration of GÉANT.

This picture has now changed – the services that allow researchers to easily use the network are becoming much more important. So while DANTE is still at the forefront of technology innovation, for example the scheduled introduction of 100Gbps links on the GÉANT network, services are now as important as raw speed. In many cases connectivity is taken for granted and new ways of working together (such as accessing distributed databases) now rely on consistent, high speed networks and the services around them.

These new services, such as guaranteed bandwidth on demand and pan-European video conferencing depend on two things – ever-closer collaboration between DANTE and its partner NRENs and a user-focused approach throughout the research networking world.

I've seen the ties between DANTE and NRENs strengthen over the last decade, working collaboratively to ensure these new end-to-end and multi-domain services appear seamless to the user. I'm very proud to see how this co-operative model has also been adopted around the world, with networks such as ALICE2/RedCLARA in Latin America and TEIN3 in South East Asia learning from our experiences in Europe.

The focus on the user has led to a major shift in how DANTE operates. The creation of our own Network Operations Centre three years ago was a very visible demonstration of how we ensure greater control of service levels, both on GÉANT and other networks, and this has been backed up by heavy investment in training and people to make us a more service orientated organisation.

2010 also marks a milestone for me personally, as after 18 years as DANTE General Manager, I hand over responsibility to my successor Niels Hersoug in June 2011. With Niels working alongside Matthew Scott and the rest of the team, I know that DANTE will go from strength to strength, focused on delivering the optimum mix of technology and services for research users across the world now and in the future.



**Matthew Scott, General Manager,
DANTE**

Statement by Matthew Scott

2010 has been an extremely busy and productive year for DANTE, both in terms of projects and wider collaboration.

December 2009 saw the launch of the latest iteration of the GÉANT network. Since then we have worked ever closer with NRENs across Europe to develop new services for users that work seamlessly across multiple networks. Many of these are now either in the pilot or pre-production phase and we see 2011 as very much "The Year of the Service" when these are introduced.

This service development has moved forward hand in hand with technology breakthroughs. In November 2010 we announced a major procurement programme to roll out a 100Gbps capable backbone. This investment will provide a significant development of the building blocks of the GÉANT network, allowing researchers to collaborate even more effectively on projects.

Working with a wide range of stakeholders to plan and successfully deliver major projects such as GÉANT and TEIN demonstrates DANTE's skills in procurement and project management.

In many ways research projects such as GÉANT are like social networks, bringing together people with a common interest to work together towards a common goal. To help achieve this DANTE is adopting new ways of working to ensure we are transparent, open and structured so that we are always responding to the needs of users and the research networking community now and in the future. We've formalised better how we work on pan-European projects with our NREN partners and are constantly looking at how we can improve governance, backed by our stakeholders.

We've strengthened our relationship with user groups across different disciplines, from biotechnology to the arts, to ensure we work together to create the right services to meet their needs and we will develop this even further in 2011.

The projects that we are involved in are truly global. We have improved connectivity for researchers in sub-Saharan Africa through an upgrade to the link between the UbuntuNet Alliance and GÉANT, while our work in the Mediterranean area with the EUMEDCONNECT2 network forms the basis for the expanded Arab States Research and Education Network (ASREN), which was officially launched in December 2010 to serve a potential population of 250 million people. Trans-Atlantic co-operation, through the exciting new America Connects Europe (ACE) initiative will ensure that performance and multi-domain services are delivered seamlessly to users in both Europe and the United States of America.

Finally, I'd like to add my thanks and appreciation to my fellow General Manager, Dai Davies, as he steps down in 2011. Dai's contribution has been fundamental to DANTE's achievements since its formation and has helped shape the culture and skills of the organisation to make it the success it is today. We all wish him well in the future.

About DANTE

DANTE works with NREN partners to plan, build and operate high speed, leading edge research networks that link countries and research communities together. This fosters international research collaboration across Europe and the globe.

Research projects are increasingly international in scope and rely heavily on large scale sharing of computer-based information. Ensuring this data is available quickly and easily is critical in areas as diverse as medical research, radio astronomy, musical collaboration and climate change projects. DANTE's networks provide the international backbone that links national research networks together, creating a single, seamless global infrastructure that transforms how researchers collaborate, irrespective of location. GÉANT, DANTE's flagship project, is a dedicated, high speed, pan-European research network. Funded by the European Commission and NRENs, it links over 40 million users in 40 countries.

At the forefront of technology

This infrastructure has always been built on leading edge technology, delivering the highest possible performance and services to users and acting as a testbed for developments that are then adopted by commercial networks. For example, GÉANT was the first international hybrid network, providing flexibility through a combination of routed and switched infrastructure. In 2010, plans to upgrade the GÉANT backbone to support speeds of 100Gbps were announced, demonstrating DANTE's continued advances in networking technology.

Global reach, driving inclusion

DANTE is a prominent member of the international research community. Through close collaboration with NRENs across Europe and other research network providers (such as Internet2 in the US and ALICE2 in Latin America) networks such as GÉANT underpin critical research by providing seamless, high performance, end-to-end global connections to researchers. By creating an inclusive, worldwide research community these networks bridge the digital divide, enabling collaboration irrespective of physical location.

Recognised by bodies such as the EC for its leadership role in collaborative projects, as well as GÉANT, DANTE is responsible for networks in South East Asia (TEIN3), the Southern Mediterranean (EUMEDCONNECT2), China (ORIENT), Central Asia (CAREN) and Africa (AfricaConnect).

Working with partners to understand and provide the right services to users of each individual network is central to DANTE's mission. This is reflected in the changing outlook and skillset of the projects that DANTE is involved in and the organisation itself, with a growing services and support capability overlaid on DANTE's traditional technology, engineering and project management strengths. As more and more research projects rely on international collaboration, DANTE and its partners aim to remove complexity from communication and information sharing, making it a seamless and simple process and enabling researchers to focus on innovation and collaboration.



Since its creation, DANTE has developed key skills to meet the needs of users and research networks across the world.

Project management

Using a rigorous project management approach, DANTE has planned, procured and built some of the world's largest research networks – on budget and often to challenging timescales. From Europe to Central Asia and Latin America, DANTE has worked with local research networks, governments and funding partners such as the European Commission to bring the benefits of international collaboration to users and bridge the digital divide, wherever they are located.

Collaboration at its heart

DANTE does not operate in isolation. It exists as part of a collaborative international community, involving NRENs and other partners. Working together DANTE and its partners form a virtual team that delivers the right services and support to ensure international projects, such as GÉANT, succeed. This strong collaborative model provides flexibility and strength, allowing end to end services for millions of users across much of the world.

Operational success on complex projects

In its 18 year history, DANTE has built a strong reputation for managing and delivering results across all its complex projects. Despite its relatively small size, DANTE has been involved in some of the world's largest international network procurements, successfully working with multiple partners across the world. This model has been exported globally, being adopted in Latin America and South East Asia.

Service orientation from the core

DANTE's emphasis on service orientation is built on a deep understanding of user needs, close collaboration with other networks and ongoing investment in tools and training. For example, new multi-domain services developed by the GÉANT community and built on user feedback will be introduced across the network in 2011.

At the leading edge of technology

From the first version of GÉANT, DANTE's networks have always been built on leading edge technology. This means they act as a testbed for new developments, before they reach the commercial mainstream. Looking forward, DANTE is a key player in the European Union's Future Internet Initiative, working with partners to understand future requirements and then researching and developing future services to meet changing needs.

A truly international outlook

From its inception, DANTE set out to build an open, inclusive culture by recruiting staff from across Europe. This international outlook is backed by the energy and enthusiasm of everyone within DANTE who share a common commitment and belief in the benefits that research networks bring, both to network users and wider society.



Leadership in collaboration

Research networking is built on collaboration. DANTE itself was formed and is owned by Europe's National Research and Education Networks (NRENS), operating together in order to deliver the vital international connectivity that researchers require through projects such as GÉANT. Together DANTE and the NRENS share a common vision of end-to-end, high speed networking that provides users with the services and capacity they need to move research forward.

Over time, driven by the pace of change in research, this collaboration has become closer and even more vital. Users now require not just high capacity networks, but end-to-end, multi-domain services that work seamlessly across multiple networks. Projects now include participants from many countries and continents and they need to be able to access services such as roaming, authentication and video conferencing wherever their 'home' network is.

To meet this need in the GÉANT project, DANTE and its NREN partners have created the GÉANT Service Area (GSA), a common pan-European service infrastructure that enables a range of advanced network services and applications to be offered at a national level by NRENS.



ACE – building a multi-domain framework between Europe and the US

DANTE's reach extends well beyond Europe. Trans-Atlantic co-operation with North American networks such as Internet2 (USA), ESnet (USA) and CANARIE (Canada) is also accelerating. The National Science Foundation (NSF) funded America Connects to Europe (ACE) project provides multi-domain connectivity and services between Europe and the USA. Announced in August 2010, DANTE is working closely with Indiana University GlobalNOC, the project lead, and other partners to ensure large user projects that span these continents can collaborate seamlessly using IP and point-to-point services in a coherent, managed environment.

Networking the world

DANTE's work spans international research networks across the globe and the successful model behind the organisation has already been adopted in Latin America, through the ALICE2-RedCLARA Network and is now being applied in South East Asia, through the TEIN3 project.

The following pages give more details on DANTE's work with international networks across the globe.



Working with users

The world of research is undergoing a radical shift. The previous model, which saw information saved locally, making sharing difficult, is being replaced by a collaborative model which sees centralised stores of information available to all. Given the ever-increasing size of this data, this makes high speed network capacity critical to research success in projects as varied as medical research, radio astronomy and extreme weather prediction.

The rise of digitisation across different research disciplines means that projects using the network now span an incredibly wide range of academic subjects. As well as traditional 'big science' projects, such as the Large Hadron Collider, innovative collaborations in the areas of music, e-learning and archaeology now rely on network power to deliver results.

DANTE and its NREN partners have evolved how they operate to meet these changing user requirements. As well as high performance networks, consultancy and services are now critical parts of what the organisation provides. By building strong relationships, both with individual projects and wider academic disciplines, DANTE ensures that the right new services are being developed, deployed and managed to enable the closest levels of collaboration.

Bringing musicians together with LOLA

The LOW LATency (LOLA) project supports real-time remote musical collaboration, meaning that musicians in multiple locations can perform together in perfect harmony. This allows wider musical co-operation and cuts down on the time and expense of bringing musicians together physically to rehearse and perform.

The LOLA project has created completely new software that enables performers to play together, with both pictures and sound shared across the network in real-time. Achieving this level of performance requires high speed, reliable and stable networks providing guaranteed bandwidth. These demanding requirements can currently only be cost-effectively met through research networks, such as GÉANT and GARR in Italy. First tested in November 2010, in a piano performance between Paris and Trieste, plans for 2011 include the simultaneous playing of a violin piece in Spain and Italy, and for musicians in multiple locations to perform together as a virtual music group.

"Current Internet technology is simply not able to cope with real-time musical collaboration, so we had to rewrite the software from scratch. To achieve audio and video performance on this scale requires the highest levels of network speed, performance and reliability. The services that GARR and GÉANT provide are critical to underpin the LOLA project and bring musicians together to play in harmony across Europe"

Claudio Allocchio, Senior Coordinator for Advanced Application Services, GARR

Sharing biological data across the globe

The European Bioinformatics Institute (EBI), part of the European Molecular Biology Laboratory (EMBL), is leading the revolution in biological information sharing, creating and providing freely available data and bioinformatics services to researchers in order to drive scientific and medical progress in areas such as genomics research, where it is the European hub for the global 1000 Genomes project.

With projects creating terabytes of information and international collaboration with hundreds of partners around the world, the EBI relies on high speed, robust networks that can securely carry large amounts of information. To achieve this demanding level of performance EMBL-EBI uses JANET, the UK's National Research and Education Network (NREN) and GÉANT to communicate across Europe and beyond. As well as providing high speed links for EMBL-EBI between JANET and other European networks GÉANT also interconnects with academic networks around the world, including Internet2 in the USA and CERNET in China, delivering truly global research collaboration.

"Data generated by biological experiments is doubling every five months, driven by vital collaborations such as the 1000 Genomes Project. Our mission at the EMBL-EBI is to make the results of these international collaborations freely available to the scientific community wherever they are located. To do this we need an infrastructure that is robust, flexible and high performance, linking us to our partners across the globe. Our close working relationship with the JANET and GÉANT networks delivers the speed and capacity that we need, giving us confidence and allowing us to focus on sharing data to push forward scientific progress."

Dr Paul Flicek, Head of Vertebrate Genomics, EMBL-EBI.

These are just a selection of the types of projects using DANTE's networks, for more please visit the project websites listed on pages 8-13.

GÉANT

2010 was a memorable year for GÉANT. Not only did the project celebrate its 10th birthday, but it outlined ambitious plans for the future.

Happy Birthday GÉANT!

Since the first GÉANT network was launched in November 2000, it has grown to bring together 40 million users across 40 European countries, plus another 45 million users, through interconnections with nine other regional networks. GÉANT has transformed European research collaboration, driving regional co-operation on critical projects that push back the boundaries of knowledge and help deliver major societal benefit. Now in its third iteration, GÉANT is still the most advanced international research network in the world.

“The power and scope of GÉANT ensure that Europe is the central hub for research and education, bringing together the brightest minds in the world,” said Neelie Kroes, Vice-President of the European Commission for the Digital Agenda. “GÉANT not only benefits Europe's competitiveness, but is also boosting collaboration between researchers on a global scale. Through GÉANT the European Commission is committed to enable worldwide research collaboration that tackles some of the biggest challenges that society faces and to get Every European Digital.”

Towards 100Gbps

Ensuring that GÉANT has the performance to match user needs is a critical focus of the project. Consequently developments to increase capacity to support 100Gbps transmission speeds were announced in Autumn 2010, with procurement currently well underway to introduce these upgrades. This will put in place the infrastructure to address the predicted explosion in data and network usage, driven by new projects and the increasing digitisation of research.

2011 – The year of services

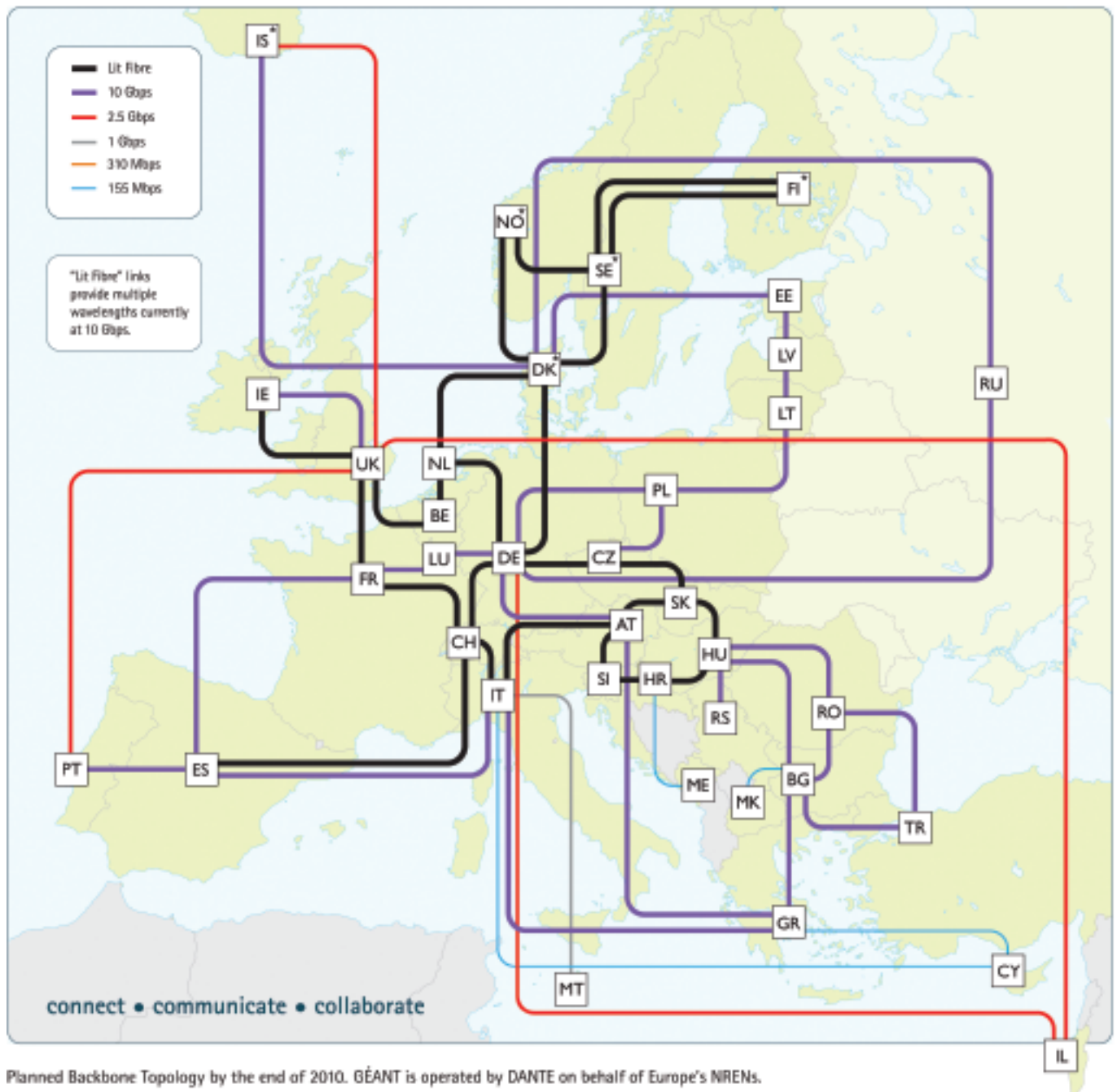
Delivering the right services to match the requirements of the research community is at the heart of the GÉANT project. The last two years have seen the project develop and extend the portfolio of end-to-end services that GÉANT provides, from roaming to bandwidth on demand. Rolling these out across the entire, multi-domain GÉANT Service Area will be a key focus for 2011.

The research community social network

GÉANT is an active collaboration between the NRENs, DANTE and the European Commission. Essentially it brings together a geographically dispersed group of organisations with a common purpose and unites them to help achieve this. Altogether over 500 people are part of the extended GÉANT project team. In 2010, as the latest GÉANT project moved into its second year, DANTE has formalised how these groups work together on specific projects, facilitating a more consistent and consequently more powerful approach. These project management skills act as a blueprint that can be applied to other industries and sectors.

2020 – A strong vision for research networking

Whilst the current GÉANT project will run until at least 2013, it is vital to take a longer term view to ensure the network and services match changing user requirements, drive forward new technology and offer new ways for researchers to work together. Besides working as part of the EU-funded Future Internet Initiative, the GÉANT project team investigates how market-driven technologies such as virtualisation and cloud computing can be incorporated into future research networking developments. This combination of strategic and technology vision provides stability and a long term plan for European research networking.



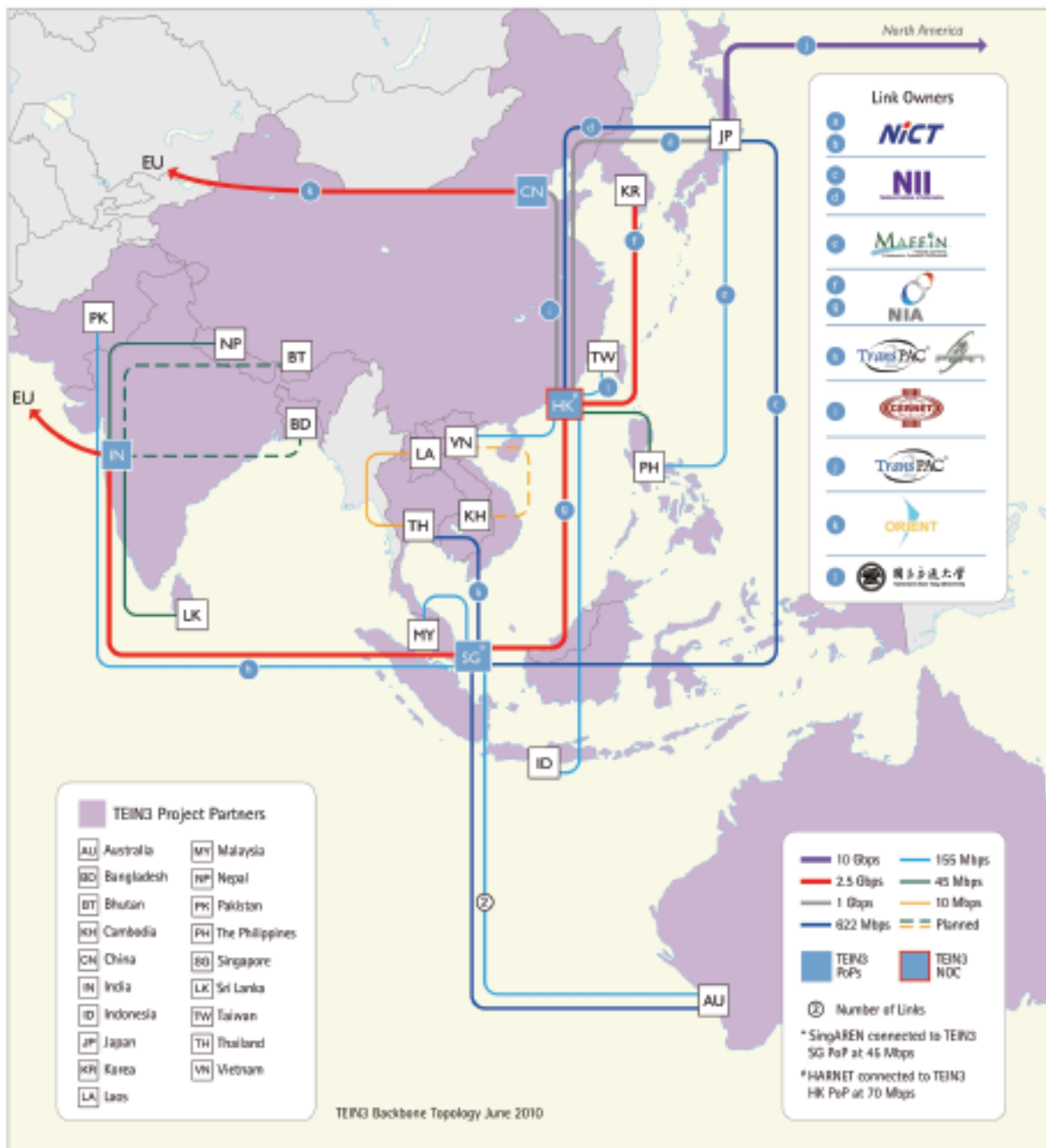
Planned Backbone Topology by the end of 2010. GÉANT is operated by DANTE on behalf of Europe's NIRENs.

Austria	Cyprus	Estonia	Greece	Israel	Luxembourg	Malta	Portugal	Russia	Slovakia
Belgium	Czech Republic	Spain	Croatia	Iceland	Latvia	Netherlands	Romania	Sweden	Turkey
Bulgaria	Germany	Finland	Hungary	Italy	Montenegro	Norway	Serbia	Slovenia	United Kingdom
Switzerland	Denmark	France	Ireland	Lithuania	FYR Macedonia	Poland	*Connections between these countries are part of NORDUnet (the Nordic regional network)		

Networks

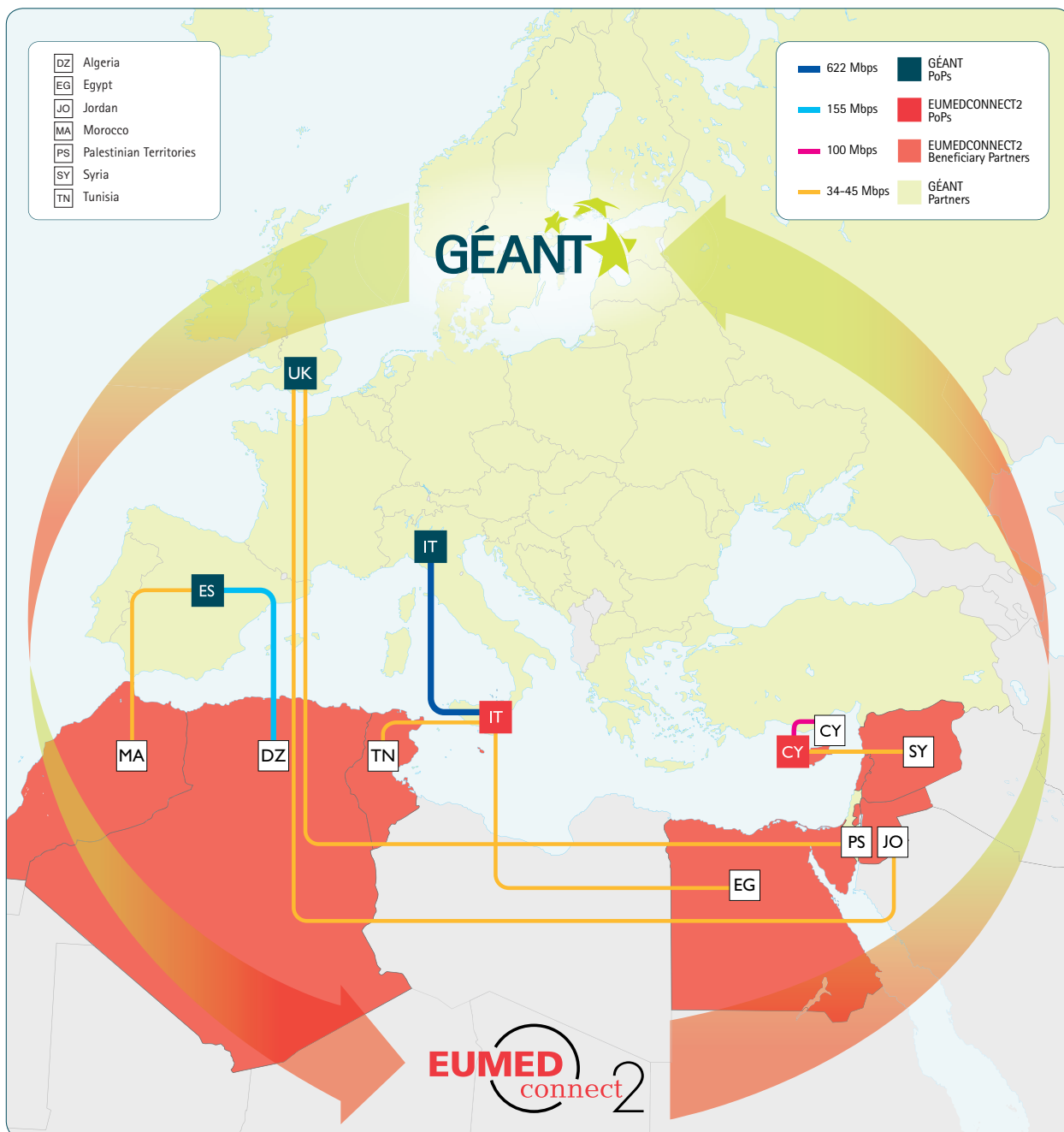
TEIN3 (Asia Pacific)

The Trans-Eurasia Information Network (TEIN) connects the Asia-Pacific research and education community across Asia-Pacific. Starting with a single circuit between France and Korea in 2001, TEIN3, the third generation of the project currently links 18 countries in the region to each other and the global research community and is managed by DANTE. Applications using the network include climate research and meteorology, food security and health programmes. The TEIN* Cooperation Center is being established, with Korean government and TEIN partner support and endorsed at ASEM8 in October 2010, to take responsibility for a 4th phase of the TEIN programme starting in 2012. The TEIN*CC organisation will be closely supported by DANTE in its initial phase. For further information, please visit <http://www.tein3.net>.



EUMEDCONNECT2 (Southern Mediterranean)

EUMEDCONNECT2 provides a regional network for seven North African and Middle Eastern countries serving 2 million users in 700 institutions, and connecting them to Europe and globally via GÉANT with EC funding until mid-2011. Researchers into many fields including e-science, archaeology and e-learning are all benefiting from the high capacity and wide reach of EUMEDCONNECT2. In 2010, building on EUMEDCONNECT2, the Arab-led Arab States Research and Education Network (ASREN) initiative was launched under the patronage of the League of Arab States to provide sustainable e-Infrastructures across the Arab world. At an ASREN event in December, the EC confirmed its intention to fund a further 3 year phase of EUMEDCONNECT to support ASREN to become a self-sustaining organisation for Mediterranean research and education networking. For further information, please visit <http://www.eumedconnect.net>.



ORIENT (China)

With over 15 million researchers and students, China is a vital part of the global research community. ORIENT connects GÉANT to the Chinese research networks CERNET and CSTNET, enabling collaboration across a joint research population of 45 million. Since its launch in 2007, the ORIENT link has underpinned projects in radio astronomy, meteorology, sustainable development, cosmic ray observation, high energy physics and grid computing. ORIENT is managed by DANTE on behalf of European networks and CERNET on behalf of Chinese networks.



CAREN (Central Asia)

Upgrading the ancient Silk Road to the twenty-first century is quite a challenge but since July 2010 the Central Asia Research and Education Network (CAREN) has been providing a high-performance Internet connectivity for scientists and students in Kyrgyzstan, Tajikistan and Turkmenistan. To do this CAREN has built on the achievements of the NATO-funded Silk project. So far over half a million users in more than five hundred universities and research institutes benefit from CAREN connectivity which provides access to the European and global research community through the interconnection to GÉANT. Kazakhstan and Uzbekistan are also candidate countries. Applications are being developed in seismology, health and e-learning.



For further information, please visit <http://caren.dante.net>.

ALICE2 (Latin America)

ALICE2 is the successor of the ALICE (America Latina Interconectada Con Europa) project, created in 2003, and provides a research network infrastructure across Latin America. Starting at the end of 2008, ALICE2 covers 18 Latin American countries and connects to other regions through high speed links. A key part of the ALICE project was the creation of the Latin American Research and Education Networking Organisation, RedCLARA, which is now responsible for the implementation of ALICE2, with DANTE as a key partner. Innovative projects in areas such as telemedicine, volcanology and radio astronomy all rely on the ALICE2-funded RedCLARA network.

For further information, please visit <http://alice2.redclara.net>.



AFRICAConnect (Southern and Eastern Africa)

The AfricaConnect project aims to establish a high-capacity Internet network for research and education in Southern and Eastern Africa to provide the region with a gateway to global research collaboration. The project is expected to last for four years, starting in Q2 2011, after which time the African Project Partners of AfricaConnect will ensure the sustainability of the intra-regional African research network and its direct connection to GÉANT. The project partners include existing National Research and Education Networks (NRENs) in Southern and Eastern Africa, several European NRENs and DANTE's regional counterpart organisations in Africa – UbuntuNet Alliance covering Eastern and Southern Africa, and WACREN covering Western and Central Africa – as well as the Association of African Universities, all working to ensure that the project benefits all of sub-Saharan Africa.

In 2010 UbuntuNet Alliance negotiated an upgrade of its 1Gbps IP interconnection to the GÉANT network, to include a 10Gbps IP connection to GÉANT and a new 10Gbps link for dedicated point-to-point connectivity. This makes Sub-Saharan Africa the first world region outside North America to gain dedicated circuit capacity with Europe.

For further information, please visit <http://www.africaconnect.eu>.



Working at DANTE

Since its creation, DANTE has set out to create a unique working environment that attracts the best staff across a wide range of technical, operations, service and commercial disciplines. DANTE's workforce is the organisation's biggest asset, enabling the creation, introduction and management of advanced networks and services across the globe.

Reflecting its position at the heart of international collaboration, DANTE employees are drawn from across Europe, representing a wide range of nationalities. This creates an exciting and interesting mix of cultures, providing different perspectives and opportunities to learn. Added to this is the chance to work together with the members of the wider international project teams, building a virtual organisation that brings together many different skills, dedicated to achieving common objectives.

Staff are attracted by the opportunities that DANTE provides to work at the leading edge of technology and services. Being at the forefront of research networking delivers the ability to learn and put into practice new skills, actively encouraged by the large amount of training and development that DANTE invests in for all its staff.

"DANTE's projects are amongst the most advanced in the world. Working with my colleagues I'm continually learning about the latest technology and how it can help deliver benefits to our users."

Mian Usman, Network Engineer

"What I enjoy about my job is the relaxed and friendly working environment. Everyone at DANTE is committed and enthusiastic about what we do and works together to make sure that we deliver on our projects."

Trupti Kulkarni, Systems Engineer

"The research projects we support have the potential to improve people's lives across the globe. Providing the network and services to help achieve these advances is incredibly satisfying – I really feel that what I do makes a difference."

Tom Fryer, International Relations Officer

Accounts

For DANTE, 2010 was another successful year financially. As a not for profit organisation our aim is to match income closely to expenditure to ensure value and economic sustainability for Europe's NRENs. A small decline in overall revenues was matched by lower operating costs and a stable operational cost base to deliver a surplus of income over expenditure (before tax) of €67,000. This led to a surplus on activities after taxation of €26,000 that has been transferred to reserves.

The GÉANT programme is DANTE's key activity, representing around 72% (€27m) of total 2010 income, with the TEIN, EUMEDCONNECT and CAREN projects making up the remainder.

2010 saw an increased focus on driving efficiencies, with savings made both on administration and network costs, particularly due to co-operative purchasing of commodity IP services. This meant that GÉANT costs declined in 2010 and on-going cash levels increased over the year, despite a greater demand for services over the network.

Moving into 2011 a major initiative will see us investing in procuring new transmission and switching equipment for the GÉANT network. This is seen as crucial in terms of delivering the on-going innovation in service development and implementation that facilitates and enhances research across Europe, and between Europe and other world regions.

Furthermore, we will also be budgeting for the exciting new AfricaConnect project, which brings south and east Africa into the global research networking community and represents a highly exciting time for research networking.



Nicola Anson, Head of Finance and Commercial Operations, DANTE

Accounts

Income and expenditure account for the year ended 31 December 2010

	2010 € 000	2009 € 000
Turnover	37,488	38,507
Cost of sales	(35,236)	(36,103)
	<hr/>	<hr/>
Gross surplus	2,252	2,404
Administrative expenses	(2,258)	(2,309)
Foreign exchange profit	(9)	(37)
	<hr/>	<hr/>
Operating (deficit)/surplus	(15)	58
Interest receivable	82	41
	<hr/>	<hr/>
Surplus on ordinary activities before taxation	67	99
Tax on surplus on ordinary activities	(41)	(18)
	<hr/>	<hr/>
Surplus on ordinary activities after taxation	26	81
	<hr/> <hr/>	<hr/> <hr/>

All amounts relate to continuing activities.

Statement of total recognised gains and losses for the year ended 31 December 2010

There are no recognised gains or losses other than the surplus attributable to the shareholders of the company of €26,000 in the year ended 31 December 2010 (2009 – surplus of €81,000).

Balance Sheet

at 31 December 2010

	2010 € 000	2009 € 000
Fixed assets		
Tangible assets	2,216	3,649
Current assets		
Debtors	15,464	26,095
Cash at bank and in hand	47,732	35,292
	63,196	61,387
Creditors: amounts falling due within one year	48,558	52,682
Net current assets	14,638	8,705
Total assets less current liabilities	16,854	12,354
Creditors: amounts falling due after more than one year	9,474	5,000
Net assets	7,380	7,354
Capital and reserves		
Called up share capital	1,576	1,576
Capital contributions	35	35
Income and expenditure account	5,769	5,743
Shareholders' funds	7,380	7,354

DANTE Shareholders

Organisation	Country	No of shares
ARIADNET	Greece	22,000
ARNES	Slovenia	22,000
CESNET	Czech Republic	22,000
DFN	Germany	165,000
FCCN	Portugal	22,000
GARR	Italy	165,000
HEAnet	Ireland	22,000
HEFC-E on behalf of JISC (UKERNA/JANET)	United Kingdom	165,000
HUNGARNET	Hungary	22,000
NORDUnet	Nordic Countries (Denmark, Finland, Iceland Norway, Sweden)	82,500
RedIRIS	Spain	55,000
RENATER	France	165,000
RESTENA	Luxembourg	22,000
SURFnet	Netherlands	110,000
SWITCH	Switzerland	110,000

Directors

R Buch
T Brunner
R Day
I Maric

Auditors

Ernst & Young LLP
Compass House
80 Newmarket Road
Cambridge
CB5 8DZ

Solicitors

Manches
9400 Garsington Road
Oxford Business Park
Oxford
OX4 2HN

Secretary

M J Scott

Bankers

Barclays Bank plc
Bene't Street Branch
P.O. Box 2
Cambridge
CB2 3PZ

Registered office

9400 Garsington Road
Oxford Business Park
Oxford
OX4 2HN



DANTE Limited
City House
126-130 Hills Road
Cambridge
CB2 1PQ
UK

Tel: +44 (0)1223 371300
Fax: +44 (0)1223 371371
Email: prm@dante.net
Web: www.dante.net