

2001



Annual Report

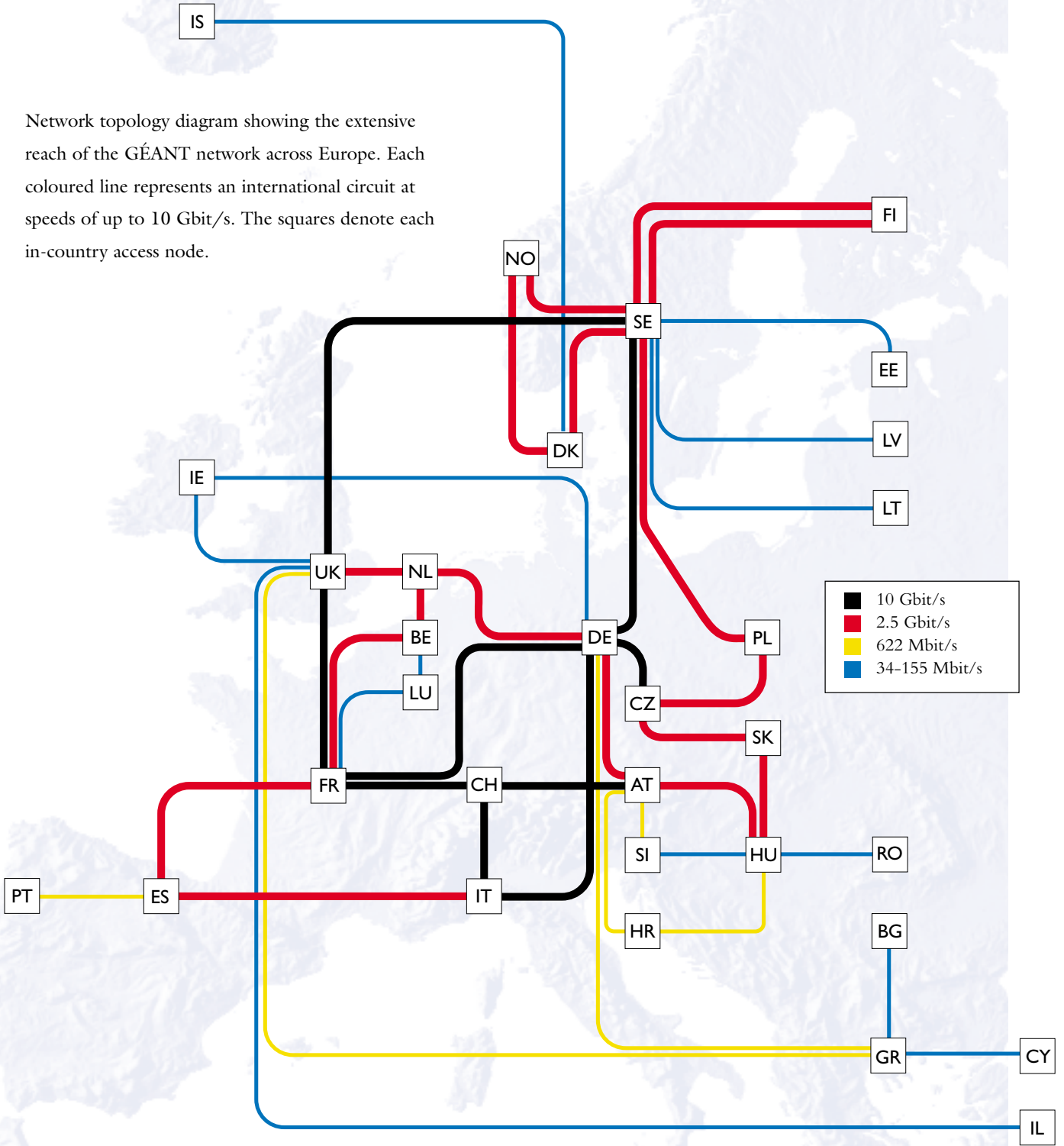




Annual Report

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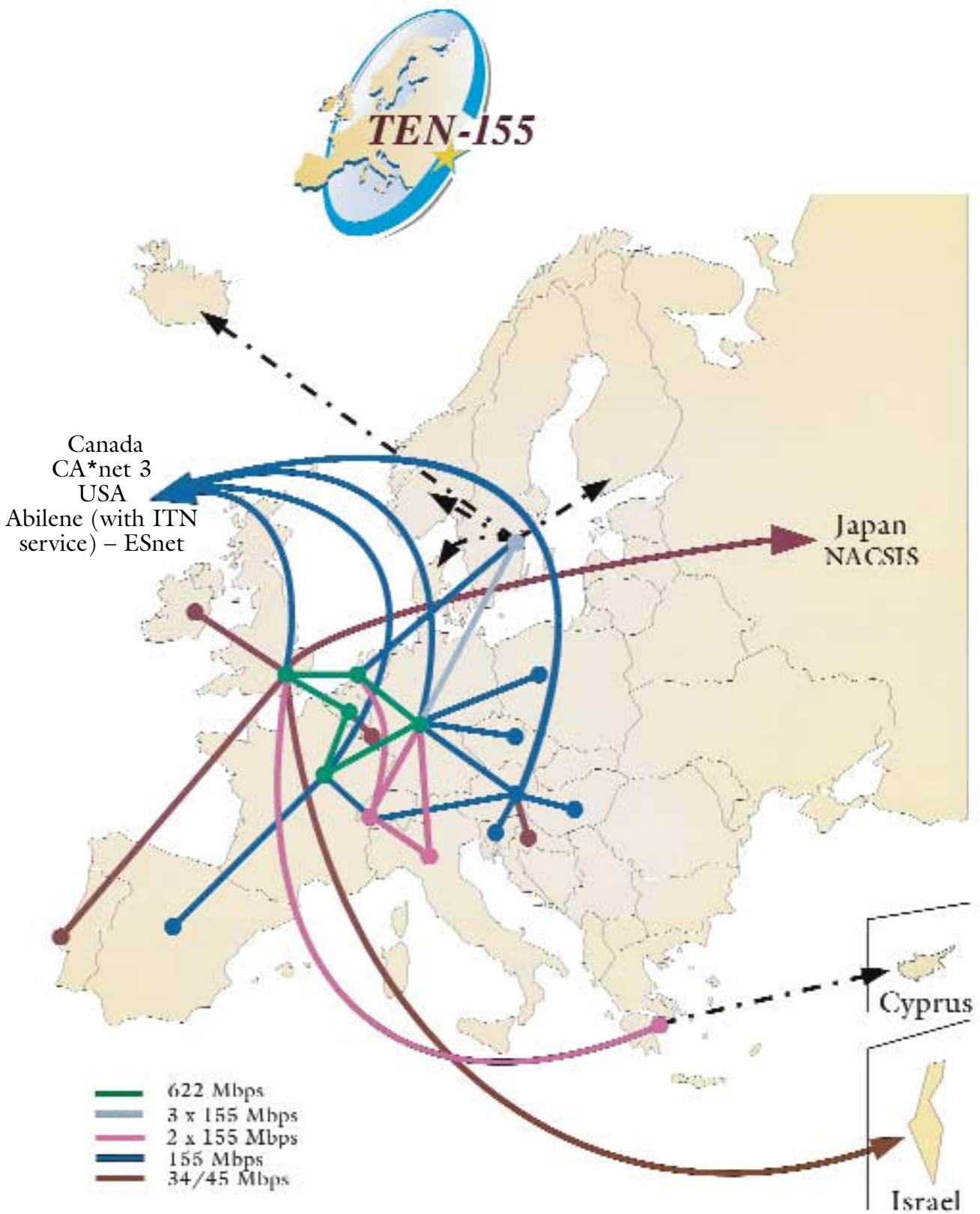
Network topology diagram showing the extensive reach of the GÉANT network across Europe. Each coloured line represents an international circuit at speeds of up to 10 Gbit/s. The squares denote each in-country access node.



AT	Austria	DE	Germany	FR	France	IL	Israel	LV	Latvia	RO	Romania
BE	Belgium	DK	Denmark*	GR	Greece	IS	Iceland*	NL	Netherlands	SE	Sweden*
BG	Bulgaria†	EE	Estonia	HR	Croatia†	IT	Italy	NO	Norway*	SI	Slovenia
CH	Switzerland	ES	Spain	HU	Hungary	LT	Lithuania	PL	Poland	SK	Slovak Republic
CY	Cyprus	FI	Finland*	IE	Ireland	LU	Luxembourg	PT	Portugal	UK	United Kingdom
CZ	Czech Republic										

† Planned connection * Connections between these countries are part of NORDUnet (the Nordic regional network)

TEN-155 topology for 2001



Chairman's Report

2001 was one of the most challenging and positive years for DANTE, culminating in the successful implementation of GÉANT. GÉANT is the latest in a successive generation of pan-European networks crossing new frontiers in terms of its increased geographical reach and its advanced technical capability. In terms of geographical coverage, capacity and number of research institutions connected, it is the largest and most comprehensive network that exists in the world today.

During the first half of 2001, DANTE concluded the procurement process and contracted for the various individual elements necessary to build the new infrastructure. The second half of the year saw the effort focused more on the delivery, acceptance and implementation of the new network. Under a tight deadline, GÉANT became fully operational on 1st December 2001.

This was only possible with the continued support of the institutions that benefit from and fund the network. These being the National Research and Education Networks across Europe, organised in a consortium which is successfully chaired by Fernando Liello from Italy, and the European Union IST programme which complements the financial contributions from the National Research and Education Networks with generous funding.

I would also like to express my thanks to the dedicated team at DANTE and the two General Managers, together with all the other individuals and organisations involved throughout the last year that have contributed to making this network such a notable success in the development of services to Research Networking. Finally specific thanks and all my gratitude should go to Howard Davies, who retired at the end of the year. During the years since DANTE's creation, Howard Davies has contributed in a fundamental way to our common work. I wish him all the best for the future.



Klaus Ullmann





GÉANT General

GÉANT is the latest generation of pan-European research network infrastructure. It connects National Research and Education Networks in 31 countries. Built using the latest DWDM technology operating at 10 Gbit/s, connecting very high performance M160 routers from Juniper, GÉANT is one of the most advanced state-of-the-art networks in the world today. The total network capacity of over 120 Gbit/s represents a twenty-fold increase over its predecessor network, TEN-155. At the core of the network are nine 10 Gbit/s wavelengths, complemented by a further eleven wavelengths operating at 2.5 Gbit/s. This makes GÉANT the most advanced network of its kind in the world in terms of speed of operation. The network itself has been built by DANTE on behalf of a consortium of 27 National Research and Education Networks across Europe. GÉANT is co-funded by the European Commission as part of its 5th Framework Programme. The main goals of GÉANT are to provide an infrastructure to support researchers, as well as providing a research infrastructure for information technology and telecommunications developments.

GÉANT Planning and Roll Out

A tremendous amount of planning and analysis went into the creation of GÉANT. The response to the tenders for the network was impressive. Nearly fifty

Introduction to 2001

This is DANTE's ninth Annual Report. The following Activity Review, which is available in five languages (English, French, German, Italian and Spanish), describes the main services and projects organised and managed by DANTE in 2001. The 2001 Financial Report and Accounts, at the end of this report, provide details of the statutory financial information relating to activities during 2001.

TEN-155

2001 saw the final months of operation of the TEN-155 network which connected 21 National Research and Education Networks across 25 European countries. The network proved extremely reliable during its three-year history and included two major backbone upgrades and one significant equipment upgrade. The National Research and Education Networks also upgraded their access to TEN-155 during 2001 with two speeds up to and including 622 Mbit/s. The successes of the previous networks EuropaNET, TEN-34 and now TEN-155, have provided the foundation for the development of the new network, GÉANT.





organisations responded. Thirty three of these were proposals for connectivity. In all we evaluated over 3,400 different offers for circuits. The final result was three major contracts with COLT, T-System and Telia. This was for the provision of a total of 120 Gbit/s of wavelength capacity, including 10 Gbit/s wavelengths which represent the leading edge of transmission technology today. These wavelengths are connected to 16 Juniper M160 routers, together with a further 3 Gbit/s of slower speed capacity from a variety of other connectivity providers.

In total, 19 network Points of Presence, 37 International circuits, 45 access connections to connected Research Networks, or other networks, and 18 routers were installed together with auxiliary equipment which included 36 workstations for network monitoring during the three-month period September – November 2001. The TEN-155 network was switched off on 30 November 2001.

GÉANT the Next Steps

GÉANT represents a major breakthrough in pan-European research networking. It has created an enormous increase in the capacity available to support researchers across Europe. It is the 6th generation pan-European research network. It employs the most advanced technology available in the market place. There is a major difference between GÉANT and its predecessor network in as much as, for most of its geography, GÉANT is at the leading edge of technology. As a consequence the development of GÉANT is likely to follow a much more evolutionary path.

During the lifetime of GÉANT there will be a programme of experimentation and technology testing. This will lead to improvements in the services provided by GÉANT. Some more fundamental challenges in respect of technology are apparent today. Optical technology has led to vast increases in transmission speeds. It is, however, fundamentally an analogue technology. Optical switches may be based on micro-miniature technology but they are little different in concept from the mechanical switches that were at the heart of telephone exchanges thirty years ago. In terms of manageability, telecommunications technology has taken a step backwards. There is really nothing between the management of packets using digital technology and the management of optics using analogue technology. The ability to provide flexible and manageable capacity to users is a challenge which the successor network to GÉANT will need to address.

Other challenges are more prosaic but, nevertheless, equally important. The bandwidth made available in GÉANT will enable new scientific co-operations distributed across the geography of Europe and increasingly globally. The model of a “best efforts” IP service is incapable of supporting the needs of such co-operation. There is a need to develop an organisational model capable of supporting such new types of co-operation. A further, non-technical, challenge is the availability of connectivity to certain European regions. The requirement to build an all optical based connecting network will, unfortunately, need some time to fulfil.





Global Connectivity

One of the primary objectives of GÉANT is the development and enhancement of connectivity with partner networks in other world regions. An important development in this respect has been the implementation of two 2.5 Gbit/s wavelengths between Europe and North America which interconnect GÉANT with the North American research networks, Abilene, CA*Net 3 and ESnet. An innovative feature of this connectivity is the joint management between the network operations centres of Abilene and GÉANT. This is a significant first step to a much more global co-operation in research networking. The transatlantic wavelengths complement existing connectivity between Europe and the Japanese network, SINET. In addition, there are established plans for enhancing connectivity with the Asia-Pacific area and the South American/Mediterranean regions.

Via its PoP in New York, DANTE continued to provide interconnections with research networks in North America and other world regions as well as access to the commercial Internet. These services are offered to NRENs who purchase their own transatlantic capacity as well as to those which subscribe to a complete transatlantic service from DANTE.



At the end of 2001, the aggregate capacity provided at the New York PoP to North American research networks was in excess of 1 Gbit/s. Abilene also provided the DANTE world service customers with an International Transit Network (ITN) service, via which they obtain access to STAR TAP and networks such as SingAREN, APAN, etc. The interconnection with NACSIS/NII (Japan) continued to be maintained, with a 155 Mbit/s link to London.

TEN-155/GÉANT continued to be interconnected with the commercial Internet in Europe at five locations through a peering agreement with Infonet. Those interconnections were also upgraded in 2001 to a total of 1 Gbit/s.



TF-NGN

TF-NGN is a task force composed of representatives of the National Research and Education Networks and Research Institutions. Its aim is to study and develop technologies which are viewed as strategically important for the NRENs and the GÉANT project as set out in the GÉANT Technical Annex. In 2001, TF-NGN focused its activities on IP Quality of Service, IPv6, IP multicast, capacity management, network measurement and optical networking.

SEQUIN

Quality of Service has always been a major challenge in the Internet. Historically, IP services have focused on connectivity rather than quality. Recent developments in router technology offered the possibility of providing guaranteed quality across

multiple management domains. The SEQUIN project is a pilot project to define quality-based IP services and to trial them in an operational network. During 2001, the work performed by the SEQUIN partners successfully established the principles by which QoS could be provided across a multi-domain network environment. The results of the SEQUIN project have been presented at international conferences, such as TNC 2001 in Antalya, Qofis 2001 in Coimbra and Internet-2 meetings. Several projects are beginning to make use of the proposed QoS design parameters established by SEQUIN by using the GÉANT network as a base for their pilot phase activities.

NameFLOW

NameFLOW is the project on co-ordination and integration of European National Research directory services. In 2001, the NameFLOW Directory switched to the LDAP (version 3) service, supporting both “traditional” ISO X.521 and new domain-component naming schemes. The X.500’93 service became secondary and ready for shutdown at the end of the year. A new web gateway to the Directory was installed and the NameFLOW web site has been restructured and given a new look. Also available on the NameFLOW web site, the TIO Exchange Data service allows national service managers to exchange Tagged Index Objects (TIO). TIO is the data format used for optimisation of search operations through multiple directory servers. The development of TIO Exchange is to be continued in 2002.



DANCERT

DANCERT continued the good work of previous years with further building of relationships with other CERTs through activities within TF-CSIRT and general CERT activities. With the advent of the new GÉANT network, DANCERT will be looking to progress to more proactive and innovative security measures by improving the procedures and inter CERT co-operations needed to effectively prevent, detect and investigate any future potential security incidents.



Howard Davies

Howard Davies

After over eight years with DANTE, Howard Davies retired as Joint General Manager at the end of December 2001. Howard had been involved with all the different phases of DANTE and was Joint General Manager from establishment of the Company in Cambridge. However, his connection with Research Networking goes back far beyond this. He was actively involved in the establishment of UKERNA (the UK Research and Education Network provider) and was the original director of the Cosine Project Management Unit in Amsterdam. Cosine, as a project, generated mixed emotions in the Research Networking community. It did, however, lead to the establishment of DANTE and the creation of EuropaNet, the multi-protocol backbone which bridged the gap between the different competing protocols that existed ten years ago. Howard was also Vice-President of RARE (the Association of European Research Networks). He has made a major contribution to both National and European Research Networking and we wish him well in his retirement.



2001 Report and Accounts

Delivery of Advanced Network Technology to Europe Limited



2001 saw a major change in the underlying infrastructure of the Pan-European Research Network. The TEN-155 network continued to operate until the planned contract end date of 30 November, while from September the new GÉANT infrastructure was rolled out and was fully functioning in time to allow an orderly migration of service during October and November. GÉANT became fully operational from 1 December. From a financial as well as operational perspective, the migration was very successful.

Operating costs increased by 10% to 45 M€ compared to the prior year. However, this was less than anticipated due to the continuing downward market pressure on connectivity costs and a shorter actual overlap period when the two networks were operating in parallel. Revenues also increased by 8% to 47 M€. Administrative expenses were exactly in line with the overall budget at 2.5 M€. Interest received on cash deposits was higher than expected at 1.5 M€. This was due to higher than anticipated cash reserves, mainly from advance EC payments for the GÉANT project, but also due to DANTE's general reserves and advance subscriptions.

The surplus of income over expenditure for the period, before taxation, amounted to €640,000 (2000: €700,000). As in 2000, a provision for taxation is being made in the accounts. So after taxation, the surplus of income over expenditure for the period amounted to €427,000 (2000: €441,000). DANTE is continuing to apply for the tax-exempt status it has qualified for since its inception. Applications for this status cannot now be submitted before finalising each year's annual report and it is felt prudent to provide for a potential taxation charge in the event that the tax-exempt status is not retained.

From 1 January 2001, the company has changed its functional currency from Pounds Sterling to Euro. This has significantly helped reduce the foreign exchange risk and minimise potential foreign exchanges gains and losses.



Registered No. 2806796

Directors

V Castelo
J Harms
F Liello
K Ullmann
D Vandromme

Secretary

M J Scott

Auditors

Ernst & Young LLP
Compass House
80 Newmarket Road
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Bankers

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Cambridge
CB2 3PZ

Solicitors

Manches
3 Worcester Street
Oxford
OX1 2PZ

Registered Office

3 Worcester Street
Oxford
OX1 2PZ

The directors present their report and accounts for the year ended 31 December 2001.

RESULTS AND DIVIDENDS

The directors have determined that as a result of the company primarily generating and expending its cash in Euro and the Euro being the primary currency of the economic environment in which the company operates, the Euro is the functional currency of the company. Therefore from 1 January 2001, the company has changed its functional currency from Pounds Sterling to Euro. The surplus of income over expenditure for the period, before taxation, amounted to €640,000 (2000: €700,000). The surplus on ordinary activities after taxation amounted to €427,000 (2000: €441,000) which has been transferred to reserves. The Articles of Association of the company do not permit the payment of a dividend.

PRINCIPAL ACTIVITY AND REVIEW OF THE BUSINESS

The company's principal activity is the research into, and the development and provision of, advanced electronic international telecommunication facilities, primarily for the research, academic and educational community in Europe. During the year the company successfully migrated from the TEN-155 network to the new GÉANT network, which provides 20 times more capacity to 27 National Research and Education Networks across Europe.

FUTURE DEVELOPMENTS

The introduction of GÉANT will significantly expand the network's capacity, reach and technical capability and most of the company's activities will be to manage and develop the network over the lifespan of the network to 2004.

DIRECTORS AND THEIR INTERESTS

The directors who served during the year were as follows:

V Castelo
J Harms
G R Hoffmann (resigned 10 January 2001)
F Liello
K K Ullmann
D Vandromme (appointed 10 January 2001)

The Articles of Association do not permit directors to hold any interests in the share capital of the company.

AUDITORS

A resolution to re-appoint Ernst & Young LLP as the company's auditor will be put to the forthcoming Annual General Meeting.

By order of the board

M J Scott
Secretary

5 April 2002



DANTE

Statement of Directors' Responsibilities in respect of the accounts

Company law requires the directors to prepare accounts for each financial year which give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period. In preparing those accounts, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the accounts; and
- prepare the accounts on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the company and to enable them to ensure that the accounts comply with the Companies Act 1985. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

We have audited the company's financial statements for the year ended 31 December 2001 which comprise the Income and Expenditure Account, Balance Sheet and Statement of Cash Flows and the related notes 1 to 15. These financial statements have been prepared on the basis of the accounting policies set out therein.

Respective responsibilities of directors and auditors

As described in the Statement of Directors' Responsibilities the company's directors are responsible for the preparation of the financial statements in accordance with applicable United Kingdom law and accounting standards.

Our responsibility is to audit the financial statements in accordance with relevant legal and regulatory requirements and United Kingdom Auditing Standards.

We report to you our opinion as to whether the financial statements give a true and fair view and are properly prepared in accordance with the Companies Act 1985. We also report to you if, in our opinion, the Directors' Report is not consistent with the financial statements, if the company has not kept proper accounting records, if we have not received all the information and explanations we require for our audit, or if information specified by law regarding directors' remuneration and transactions with the company is not disclosed.

We read the Directors' Report and consider the implications for our report if we become aware of any apparent misstatements within it.

Basis of audit opinion

We conducted our audit in accordance with United Kingdom Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by the directors in the preparation of the financial statements, and of whether the accounting policies are appropriate to the company's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or other irregularity or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion

In our opinion the financial statements give a true and fair view of the state of affairs of the company as at 31 December 2001 and of its surplus for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

Ernst & Young LLP
Registered Auditor
Cambridge
5 April 2002



DANTE

**Income and Expenditure Account
For the year ended 31 December 2001**

	<i>Notes</i>	<i>2001</i> €'000	<i>2000</i> €'000
TURNOVER	2	46,761	43,102
Cost of sales		45,172	40,958
		<hr/>	<hr/>
GROSS SURPLUS		1,589	2,144
Administrative expenses	3	(2,488)	(2,146)
Foreign exchange profit/(loss)		37	(237)
		<hr/>	<hr/>
OPERATING LOSS	4	(862)	(239)
Interest receivable		1,502	939
		<hr/>	<hr/>
SURPLUS ON ORDINARY ACTIVITIES BEFORE TAXATION		640	700
Tax on surplus on ordinary activities	6	213	259
		<hr/>	<hr/>
SURPLUS ON ORDINARY ACTIVITIES AFTER TAXATION	12	427	441
		<hr/> <hr/>	<hr/> <hr/>

There are no recognised gains or losses which have not been reflected in the above results for the current or prior period.

	<i>Notes</i>	<i>2001</i> €'000	<i>2000</i> €'000
FIXED ASSETS			
Tangible assets	7	8,433	965
CURRENT ASSETS			
Debtors	8	22,235	19,304
Cash at bank and in hand		37,804	24,260
		60,039	43,564
CREDITORS: amounts falling due within one year	9	61,926	38,623
NET CURRENT (LIABILITIES)/ASSETS		(1,887)	4,941
TOTAL ASSETS LESS CURRENT LIABILITIES		6,546	5,906
PROVISIONS FOR LIABILITIES AND CHARGES	10	213	–
		6,333	5,906
CAPITAL AND RESERVES			
Called up share capital	11	1,539	1,539
Capital contributions	12	35	35
Income and expenditure account	12	4,759	4,332
TOTAL SHAREHOLDERS' FUNDS		6,333	5,906

K K Ullmann
Director

5 April 2002



DANTE

**Statement of Cash Flows
For the year ended 31 December 2001**

	<i>Notes</i>	<i>2001</i> €'000	<i>2000</i> €'000
NET CASH INFLOW/(OUTFLOW) FROM OPERATING ACTIVITIES	13(a)	15,897	(7,000)
RETURNS ON INVESTMENTS AND SERVICING OF FINANCE	13(b)	1,502	939
CAPITAL EXPENDITURE AND FINANCIAL INVESTMENT	13(b)	(3,980)	(746)
MANAGEMENT OF LIQUID RESOURCES	13(b)	(8,162)	(7,036)
FINANCING	13(b)	45	35
INCREASE/(DECREASE) IN CASH		<u>5,302</u>	<u>(13,808)</u>

A reconciliation of net cash flow to total changes in cash at bank and in hand and short term deposits is given in note 13(c) to the accounts.



DANTE

Notes to the accounts At 31 December 2001

1. ACCOUNTING POLICIES

Accounting convention

The accounts are prepared under the historical cost convention and in accordance with applicable accounting standards.

Fixed assets

All fixed assets are recorded at cost.

Depreciation

Depreciation is provided on all tangible fixed assets, at rates calculated to write off the cost or valuation, less estimated residual value, of each asset evenly over its expected useful life, as follows:

Short leasehold property	–	over the lease term
Furniture	–	over 5 years
Equipment	–	over 3 years

Change in functional currency

The directors have determined that as a result of the company primarily generating and expending its cash in Euro and the Euro being the primary currency of the economic environment in which the company operates, the Euro is the functional currency of the company. Therefore from 1 January 2001, the company has changed its functional currency from Pounds Sterling to Euro. The amounts and disclosures in the financial statements for the year ended 31 December 2000 have been restated to reflect this change in functional currency.

Foreign currencies

Transactions in foreign currencies are recorded at the rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated at the rate of exchange ruling at the balance sheet date. All differences are taken to the income and expenditure account.

Deferred taxation

Deferred taxation is provided using the liability method on all timing differences which are expected to reverse in the future without being replaced, calculated at the rate at which it is anticipated the timing differences will reverse.

Deferred taxation assets are only recognised if recovery without replacement by equivalent debit balances is reasonably certain.

2. TURNOVER

Turnover, which is stated net of value added tax and arises from one activity, represents amounts derived from the provision of services which fall within the company's principal activity. All turnover is derived from Europe.

**DANTE**

Notes to the accounts At 31 December 2001

3. ADMINISTRATIVE EXPENSES

	<i>2001</i>	<i>2000</i>
	€ '000	€ '000
Wages and salaries	1,202	965
Social security costs	227	199
Other staff costs	355	366
Depreciation	55	71
Premises	208	241
Professional services	257	82
Financial charges	13	8
Other administrative expenses	171	214
	<u>2,488</u>	<u>2,146</u>

The average weekly number of employees during the year was as follows:

	<i>2001</i>	<i>2000</i>
	<i>No.</i>	<i>No.</i>
Administration	<u>21</u>	<u>18</u>

4. OPERATING LOSS

	<i>2001</i>	<i>2000</i>
	€ '000	€ '000
This is stated after charging/(crediting):		
Auditors' remuneration		
–audit services	21	21
–non audit-services	12	8
Operating lease costs for buildings	208	241
Foreign exchange (profit)/loss	(37)	237
Depreciation of owned fixed assets	<u>1,644</u>	<u>653</u>

5. DIRECTORS' REMUNERATION

No director received any remuneration from the company during the year (2000: €nil).

6. TAX ON SURPLUS ON ORDINARY ACTIVITIES

	<i>2001</i>	<i>2000</i>
	<i>€ '000</i>	<i>€ '000</i>
UK corporation tax	–	259
Deferred taxation	213	–
	<u>213</u>	<u>259</u>
	<u><u>213</u></u>	<u><u>259</u></u>

No provision for taxation is required for years up to, and including, the year ended 31 December 1999 as the company has received confirmation of its exemption from the charge to corporation tax as a scientific research organisation under Section 508 of the Income and Corporation Taxes Act 1988.

The company intends to apply for exemption for the year ending 31 December 2001 and has applied for exemption for the year ended 31 December 2000. However, in recognition of indications from the Department of Trade and Industry regarding changes to the interpretation of Section 508, the directors consider it to be prudent to make full provision for taxation.



DANTE Notes to the accounts At 31 December 2001

7. TANGIBLE FIXED ASSETS

	<i>Short leasehold property</i> € '000	<i>Furniture</i> € '000	<i>Equipment</i> € '000	<i>Total</i> € '000
Cost:				
At 1 January 2001	52	83	2,225	2,360
Additions	–	6	9,106	9,112
At 31 December 2001	52	89	11,331	11,472
Depreciation:				
At 1 January 2001	43	65	1,287	1,395
Provided during the year	7	8	1,629	1,644
At 31 December 2001	50	73	2,916	3,039
Net book value:				
At 31 December 2001	2	16	8,415	8,433
At 1 January 2001	9	18	938	965

8. DEBTORS

	2001 € '000	2000 € '000
GÉANT debtors	4,685	–
TEN-155 debtors	55	5,766
Other trade debtors	4,574	2,711
Other debtors	8,407	3,249
Prepayments and accrued income	3,952	6,417
Overseas VAT repayable	–	225
UK VAT repayable	562	893
Amounts due on partly paid shares	–	43
	22,235	19,304

9. CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

	<i>2001</i>	<i>2000</i>
	€ '000	€ '000
GÉANT creditors	17,670	–
TEN-155 creditors	2,670	3,356
Rebates in respect of GÉANT service subscription	1,413	–
Rebates in respect of TEN-155 service subscriptions	2,655	8,411
Rebates in respect of TEN-US service subscriptions	197	996
Other trade creditors	5,685	2,536
UK corporation tax	251	251
Other taxes and social security costs	102	33
Other creditors	13,219	5,089
Accruals and deferred income	18,064	17,951
	<u>61,926</u>	<u>38,623</u>

10. PROVISIONS FOR LIABILITIES AND CHARGES

The movements in deferred taxation during the current and previous years are as follows:

	<i>2001</i>	<i>2000</i>
	€ '000	€ '000
At 1 January	–	–
Charge for the year (note 6)	213	–
	<u>213</u>	<u>–</u>
At 31 December	<u>213</u>	<u>–</u>

Deferred tax liabilities/(assets) provided in the accounts and the amounts not provided are as follows:

	<i>Provided</i>		<i>Not provided</i>	
	<i>2001</i>	<i>2000</i>	<i>2001</i>	<i>2000</i>
	€ '000	€ '000	€ '000	€ '000
Capital allowances in advance/(in arrears)				
of depreciation	213	–	–	(68)
Tax losses	–	–	(66)	–
	<u>213</u>	<u>–</u>	<u>(66)</u>	<u>(68)</u>



DANTE Notes to the accounts At 31 December 2001

11. CALLED UP SHARE CAPITAL

			<i>Authorised</i>	
			<i>2001</i>	<i>2000</i>
			<i>No.</i>	<i>No.</i>
Ordinary shares of £1 each			2,500,000	2,500,000
			=====	=====
	<i>Allotted, called up and fully paid</i>		<i>Allotted, called up and partly paid</i>	
	<i>2001</i>	<i>2000</i>	<i>2001</i>	<i>2000</i>
	<i>€ '000</i>	<i>€ '000</i>	<i>€ '000</i>	<i>€ '000</i>
Ordinary shares of £1 each	1,539	1,468	–	71
	=====	=====	=====	=====
	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>
	1,149,500	1,094,500	–	55,000
	=====	=====	=====	=====

12. RECONCILIATION OF SHAREHOLDERS' FUNDS AND MOVEMENTS ON RESERVES

	<i>Share capital</i>	<i>Capital contributions</i>	<i>Income and expenditure account</i>	<i>Total shareholders' funds</i>
	<i>€ '000</i>	<i>€ '000</i>	<i>€ '000</i>	<i>€ '000</i>
At 1 January 2000	1,539	35	3,891	5,465
Surplus for the year	–	–	441	441
	-----	-----	-----	-----
At 31 December 2000	1,539	35	4,332	5,906
Surplus for the year	–	–	427	427
	-----	-----	-----	-----
At 31 December 2001	1,539	35	4,759	6,333
	=====	=====	=====	=====

The income and expenditure account's opening balance as of 1 January 2000 has been restated to include a one-time adjustment reflecting the translation of share capital and capital contributions at historical exchange rates as a result of changing the functional currency from Pounds Sterling to Euro.

13. NOTES TO THE STATEMENT OF CASH FLOWS

a) Reconciliation of operating loss to net cash inflow/(outflow) from operating activities:

	<i>2001</i>	<i>2000</i>
	€ '000	€ '000
Operating loss	(862)	(239)
Depreciation	1,644	653
Increase in debtors	(2,976)	(6,657)
Increase/(decrease) in creditors	18,171	(751)
Exchange rate movements on cash and short term deposits	(80)	(6)
	<u>15,897</u>	<u>(7,000)</u>

b) Analysis of cash flows for headings netted in the Statement of Cash Flows

	<i>2001</i>	<i>2000</i>
	€ '000	€ '000

RETURNS ON INVESTMENTS AND SERVICING OF FINANCE

Interest received	1,502	939
	<u>1,502</u>	<u>939</u>

<i>2001</i>	<i>2000</i>
€ '000	€ '000

CAPITAL EXPENDITURE AND FINANCIAL INVESTMENT

Payment to acquire tangible fixed assets	(3,980)	(746)
	<u>(3,980)</u>	<u>(746)</u>

<i>2001</i>	<i>2000</i>
€ '000	€ '000

MANAGEMENT OF LIQUID RESOURCES

Increase in short term deposits	(8,162)	(7,036)
	<u>(8,162)</u>	<u>(7,036)</u>

<i>2001</i>	<i>2000</i>
€ '000	€ '000

FINANCING

Proceeds from partly paid ordinary shares	45	35
	<u>45</u>	<u>35</u>

Notes to the Statement of Cash Flows are continued on the next page



DANTE Notes to the accounts At 31 December 2001

NOTES TO THE STATEMENT OF CASH FLOWS (continued)

c) Analysis of changes in net debt

	<i>At 1 January 2001 € '000</i>	<i>Cashflow € '000</i>	<i>Exchange rate movements € '000</i>	<i>At 31 December 2001 € '000</i>
Cash	3,080	5,302	80	8,462
Short term deposits	21,180	8,162	–	29,342
	24,260	13,464	80	37,804
	24,260	13,464	80	37,804

Short term deposits are included within cash at bank and in hand in the balance sheet.

14. RELATED PARTY TRANSACTIONS

K K Ullmann, a director of the company, is also joint managing director of DFN-Verein zur Förderung eines Deutschen Forschungsnetzes (DFN), which holds 165,000 ordinary shares in the company. During the year, sales totalling €7,537,433 (2000: €9,567,360) were made by DANTE to DFN. All sales were made on a fully arms-length basis. At the balance sheet date the amount due from DFN was €1,362,400 (2000: €1,275,960). D Vandromme, a director of the company, is also a director of GIP Renater, which holds 165,000 ordinary shares in the company. During the year, sales totalling €1,431,167 (2000: €2,132,650) were made by DANTE to GIP Renater. All sales were made on a fully arms-length basis. At the balance sheet date the amount due to GIP Renater was €294,543 (2000: due from GIP Renater: €620,549).

Under UK accounting standards, transactions between a company and a significant shareholder with common management are deemed to be related party transactions.

15. OPERATING LEASE COMMITMENTS

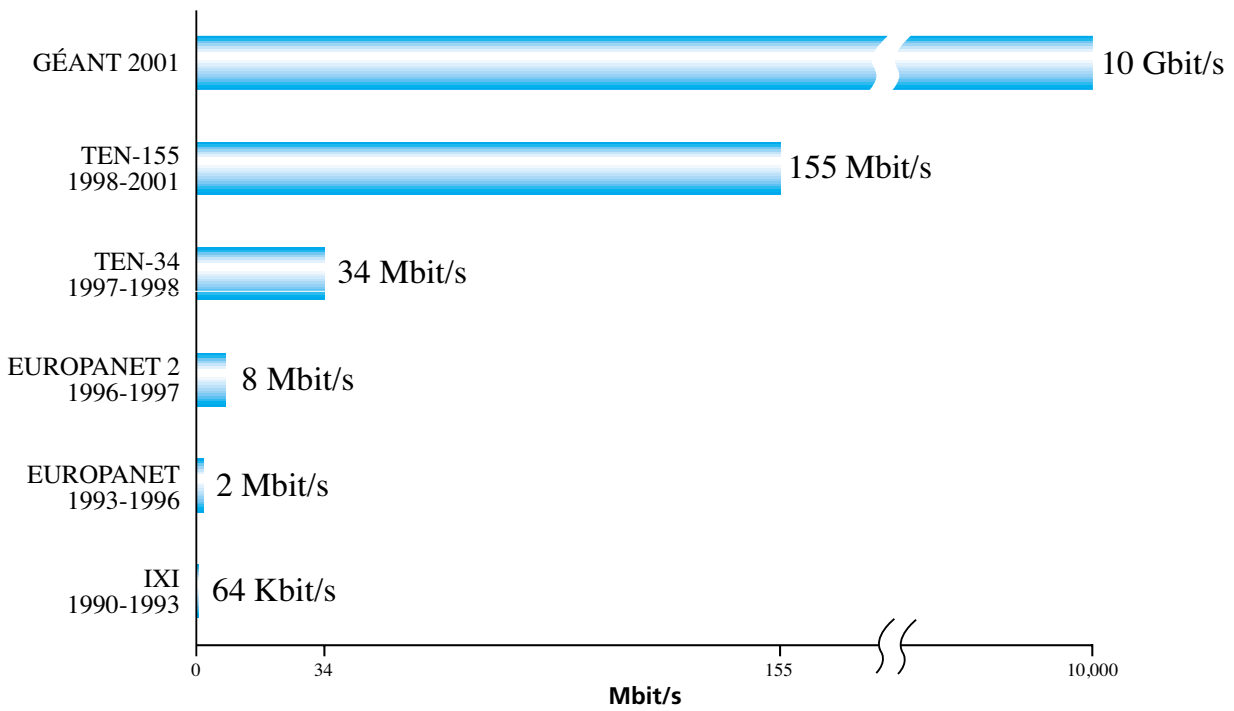
At 31 December the company had annual commitments under operating leases in respect of land and buildings as set out below:

	<i>2001 € '000</i>	<i>2000 € '000</i>
Operating leases which expire: in 1–5 years	140	92
	140	92

DANTE staff in December 2001

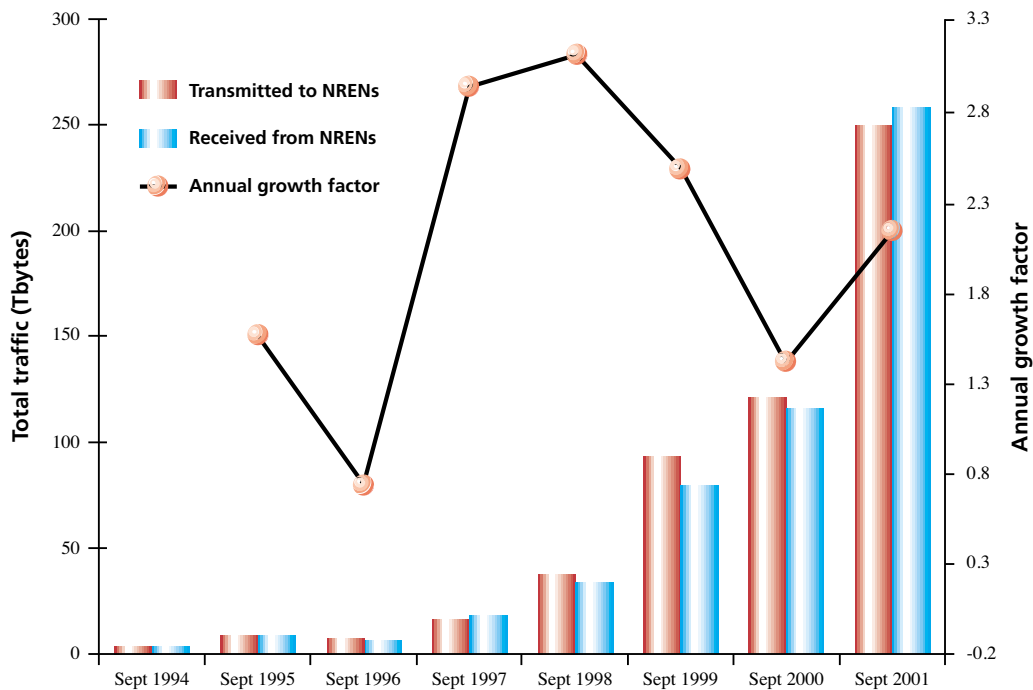
Dai Davies General Manager	UK
Howard Davies General Manager	UK
Matthew Scott Commercial Manager	UK
David West Project Manager	UK
Marine Chartois External Relations Manager	FR
Susan Taylor Financial Administrator	UK
Krystyna Owen Accounts Administrator	UK
Amanda Collins Secretary/Administrator	UK
Alex Gosnell Secretary/Administrator	UK
Roberto Sabatino Head of Network Planning	IT
David Harmelin Network Engineer	FR
Agnes Pouélé Network Engineer	FR
Nicolas Simar Network Engineer	BE
Janos Mohacsi Network Engineer	HU
Ioannis Kappas Network Engineer	GR
Michael Enrico Network Engineer	UK
Vincent Berkhout Operations Manager	NL
Tim Streater Network Engineer	UK
Marian Garcia-Vidondo Network Engineer	ES
Sabine Kuehn Network Engineer	DE
Rob Walton Network Engineer	UK
Konstantin Chuguev Applications Engineer	RU
Anton Antonov Systems Administrator	RU

Pan European backbone capacity network history



Backbone capacity of 6 generations of pan-European networks

Pan European traffic volume history



Monthly traffic volume and year-on-year volume growth

who is connected to GÉANT

ACONET	Austria	LATNET	Latvia
ARNES	Slovenia	LITNET	Lithuania
BELNET	Belgium	NORDUnet	Denmark
CARNet	Croatia		Finland
CESNET	Czech Republic		Iceland
CYNET	Cyprus		Norway
DFN	Germany		Sweden
EENet	Estonia	PSNC	Poland
FCCN	Portugal	RedIRIS	Spain
GARR	Italy	RESTENA	Luxembourg
GIP Renater	France	RoEduNet	Romania
GRNET	Greece	SANET	Slovakia
HEAnet	Ireland	SURFnet	Netherlands
HUNGARNET	Hungary	SWITCH	Switzerland
IUCC	Israel	UKERNA	United Kingdom

DANTE shareholders, December 2001

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
GIP Renater	France	165,000
HEAnet	Ireland	22,000
HEFC-E on behalf of the JISC	United Kingdom	165,000
HUNGARNET	Hungary	22,000
INFN	Italy	165,000
NORDUnet	Nordic Countries (Denmark, Finland, Iceland, Norway, Sweden)	82,500
RedIRIS	Spain	55,000
SURFnet	Netherlands	110,000
SWITCH	Switzerland	110,000



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