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\* \*            A bi-monthly electronic news bulletin  
\*            reporting on the activities of DANTE,  
\*            the company that organises international  
\*            network services for the European  
THE WORKS OF D A N T E            research community.

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\*            HTML version: <http://www.dante.net/pubs/works/34.html>            \*

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#### TEN-155 Distributes Oslo Sessions To Europe

At the Internet Engineering Task Force (IETF) meeting in Oslo, July 12-16, the TEN-155 network distributed live audio and visual feeds to network participants throughout Europe. UNINETT, the Norwegian academic network for research and education, hosted the IETF and was responsible for the transmission of the sessions. The TEN-155 network provided connectivity to other European countries and NORDUnet, the regional academic research network for the Nordic countries, provided Multi-cast transmissions to the United States. The broadcasts consisted of two simultaneous working group sessions each of which was multi-cast over the Internet in one high bandwidth 2 Mbit/s, and one low bandwidth 28kbit/s stream. This allowed those with access to the multi-cast to follow the sessions without being physically present.

#### New Connections to TEN-155

The Irish Research Network, HEAnet, connected to TEN-155 with an access capacity of 10 Mbps at the TEN-155 PoP in London on June 29. Due to the delay in completing the TEN-155 PoP, in Dublin the 5E1 circuits which provide the Dublin-London link were connected to the HEAnet switch in Dublin as an interim arrangement until they can be connected to a KPN switch.

The Portuguese Research network, RCCN, migrated from the TEN-34 network to TEN-155 on June 30. The new physical circuit with a speed of 34Mbps also terminates at the TEN-155 PoP in London.

RESTENA, the Luxembourg Research Network, completed its migration from TEN-34 to TEN-155 on July 7. The new physical circuits to the Amsterdam TEN-155 PoP replace the previous TEN-155 connectivity, which was obtained by transiting across the German Research Network, DFN.

#### TEN-155 NACSIS Connection to be Upgraded

The existing 2 Mbps link between TEN-155 and the Japanese National Research Network NACSIS will be significantly upgraded in autumn this year. Discussions and detailed planning between DANTE and NACSIS continue on the basis of a proposal for a 10 Mbit/s NACSIS connection via the DANTE New York PoP and one of DANTE's transatlantic circuits. to the TEN-155 IP service at the TEN-155 PoP in Frankfurt and a 15

Mbit/s connection to the Managed Bandwidth Service at the TEN-155 PoP in London. This upgrade will boost co-operative research between scientists in Europe and Japan.

#### Access Availability Improving

The overall access availability for July showed an improvement in comparison to the previous three months, although scheduled and emergency maintenance led to some service interruptions. The most serious of these affected RESTENA, the Luxembourg Research Network, and was caused by a faulty SP card on a switch at the Luxembourg node. In June RedIRIS, the Spanish Research Network, and GRnet, the Greek Research Network suffered from an average availability of only 96.62% and 96.36% respectively. RedIRIS' problems resulted primarily from a broken fibre and GRnet's reduced availability was attributable to a problem with a cross-connect in Geneva. Eight of the national research networks had 100% access port availability in July, while the average availability for the whole of TEN-155 was 99.52%

#### Multi-Cast Developments

TEN-155 currently runs multi-cast (in native mode) on routers in the UK, Netherlands, and Sweden. Multi-cast will also be operational in France in the near future. These routers interconnect NORDUnet, the Nordic Research Network, SURFnet, the Dutch Research Network, BELNET, the Belgian Research Network, GRnet, the Greek Research Network, and RCCN, the Portuguese Research Network, using PIM sparse mode and MBGP for routing.

The functionality of this set-up was demonstrated during the IETF meeting in Oslo when the TEN-155 distributed the sessions on multi-cast. The multi-cast service is provided only as a "best-efforts" service at present and is dependent on one or two critical individuals. Plans are underway, however, to convert it to an integral part of the TEN-155 service from 1 June 2000.

More information about multi-cast developments can be found at <http://www.dante.net/mbone/>

#### Managed Bandwidth Service Beta Phase Reaches a Successful Conclusion

The beta test phase of the TEN-155 Managed Bandwidth Service has now been successfully completed. The eight projects that participated in the beta tests were EDISON, TF-TANT MPLS, TF-TANT diffserv, SUSIE, ENCART, RCnet, DYNACORE, and a collaboration between the Czech physicists and CERN. Altogether 11 countries took part in the alpha and beta tests. A meeting with Group Network Managers has been organised for 15 September in preparation for an interim report on the MBS due to be submitted to the EC in October.

The TEN-155 Managed Bandwidth Service allows for the definition of Virtual Private Networks, with committed bandwidth, between sites of specific user groups and research organisations connected to a participating national research network. The service is also available

to research organisations taking part in EC co-funded research and development activities at sites in a country which has a participating national research network.

The TEN-155 Managed Bandwidth Service External Procedures is now available and provides a step-by-step guide explaining how a project can qualify for, and make use of, MBS.

#### Q-MED Update

The Q-MED project is a complementary project to Quantum and offers the framework for the connection of the National Research Network of Israel (MACHBA/ILAN) and the University of Cyprus/CYNET to TEN-155. As reported in the Works of DANTE, the connection between Israel and the TEN-155 London PoP has been in place since the end of May 1999. The line implementation from Cyprus to the TEN-155 Athens PoP is progressing with one 2Mbps link in place and carrying IP traffic and an additional 2Mbps link currently being tested for ATM service.

A meeting between the Q-MED partners was held in Tel-Aviv on 12 August, which was followed by a workshop on Quality of Service.

#### DANTE at Telecoms99

DANTE will be exhibiting on the KPN stand at Telecoms99 in Geneva (October 7-17). The TEN-155 network and Managed Bandwidth Service will be demonstrated by the EDISON 'Man in the Loop' simulation; an astronaut and operator training programme designed for the International Space Station which is due to be launched in 2003. The simulation hooks up several sites in Europe using MBS and replicates the docking of an Automated Transfer Vehicle. After five minutes an error is introduced into the programme which must be recognised by mission control before the docking is completed manually by the astronaut. Another EDISON simulation will demonstrate the use of MBS with a programme designed to analyse interior noise levels in the aerospace and automotive industries.

DANTE will be hosting a VIP day at Telecoms99 for special guests on October 15. DANTE representatives will also be attending the press day on October 9, and in support of the EC on the Government day held on October 10.

#### Staff at DANTE

Christi Scarborough (GB) took up the position of Systems Administrator with DANTE on July 12. Christi joined DANTE from Molecular Simulations Inc where she worked as part of a team responsible for the administration of the NT and UNIX work stations. Christi's experience includes working as a system's engineer for IBM, and she is currently completing a PhD entitled 'Medical Ethical Decision Making'

Karen R. Bartlett (GB) joined DANTE on August 2 as External Relations Manager. Prior to joining DANTE Karen carried out a similar international role for United World Colleges. After graduating from

University College London, Karen gained experience developing and managing external relations projects for commercial and non-profit organisations, and for governments.

Agnes Pouele (FR) joined DANTE at the beginning of September as a Network Engineer. Agnes previously worked as a Network Engineer for UREC, the Paris based network department for the National Centre of Scientific Research, CNRS.