

**UKERNA Quarterly Report to the JANET Community
January 2004 to March 2004**

Contents

- [1 Introduction](#)
- [2 Operational Services](#)
 - [2.1 Basic Internet Protocol \(IP\) Transmission Service](#)
 - 2.1.1 Access to Backbone
 - 2.1.2 Core Network
 - 2.1.3 IP Multicast
 - [2.2 External Network Access Provision and Transmission](#)
 - 2.2.1 Access within Europe
 - 2.2.2 Access to the North American Internet
 - 2.2.3 Access to Abilene and ESnet
 - 2.2.4 Access to the UK's Internet Exchanges
 - 2.2.5 Access to the Chinese Education and Research Network (CERNET)
 - [2.3 Fault Handling](#)
 - 2.3.1 Fault Reporting
 - 2.3.2 Network Status Information
 - [2.4 Managed Router Service \(MRS\)](#)
 - [2.5 Naming and Addressing](#)
 - 2.5.1 Naming Domain Administration
 - 2.5.2 Domain Name Service (DNS)
 - 2.5.3 Primary Nameserver Service
 - 2.5.4 Secondary Nameserver Service
 - 2.5.5 Domain Name Service Whois Service
 - 2.5.6 IP Address Assignment
 - [2.6 Supporting Infrastructure Services](#)
 - 2.6.1 Network Time Service
 - 2.6.2 Co-ordination of Message Handling Services
 - [2.7 Usenet News Distribution](#)
 - 2.7.1 Usenet News Backbone
 - 2.7.2 JANET News Feed Service
 - 2.7.3 JANET News Reader Service
 - [2.8 Videoconferencing Services](#)
 - 2.8.1 JANET Videoconferencing Service (JVCS)
 - 2.8.2 JANET Video Technology Advisory Service (VTAS)
 - [2.9 Administrative Services](#)
 - 2.9.1 Connection Administration
 - 2.9.2 Peer Networking Agreement Administration
 - 2.9.3 Licence Administration
 - [2.10 Operational Support Services](#)
 - 2.10.1 Management of Maintenance Activities
 - [2.11 JANET Bandwidth Management Advisory Service \(BMAS\)](#)
 - [2.12 JANET Multi-site Connectivity Advisory Service \(MCAS\)](#)
- [3 Information and Support Services](#)
 - [3.1 Network Information Service](#)
 - [3.2 JANET Customer Service \(JCS\)](#)
 - 3.2.1 Contact Information
 - [3.3 Documentation](#)

- [3.4 Technical Updating for the UKERNA Community](#)
 - 3.4.1 Workshops and Conferences
 - 3.4.2 Training Courses
- [3.5 Network User Groups](#)
- [4 Security Services](#)
 - [4.1 Security Monitoring and Information Dissemination](#)
 - 4.1.1 Incident Response and Abuse Handling Overview
 - 4.1.2 Network Monitoring
 - 4.1.3 Intelligence Analysis
 - 4.1.4 Distribution of Advice to Customer Organisations
 - 4.1.5 Customer Education
 - 4.1.6 Representing JANET within Security Related Forums
- [5 Other UKERNA Activities](#)
 - [5.1 TERENA](#)
 - 5.1.1 Mobility Task Force (TF-Mobility)
 - 5.1.2 Task Force-Next Generation Networking (TF-NGN)
 - 5.1.3 Task Force-Public Relations (TF-PR)
 - 5.1.4 TERENA Networking Conference
 - 5.1.5 TERENA General Assembly
 - 5.1.6 TERENA Compendium
 - [5.2 GÉANT and Delivery of Advanced Network Technology to Europe \(DANTE\)](#)
 - 5.2.1 Mobility Group – Joint Research Activity 5 (JRA5)
 - 5.2.2 Quality of Service (QoS) – Service Activity 3
 - [5.3 Development Activities](#)
 - 5.3.1 UKLight
 - 5.3.2 Content Delivery Infrastructure (CDI) Project
 - 5.3.3 Co-location Services Development
 - 5.3.4 Internet2
 - 5.3.5 Quality of Service (QoS)
 - 5.3.6 Internet Protocol version 6 (IPv6)
 - 5.3.7 e-Science/Grid and Research Liason
 - 5.3.8 SuperJANET Development Network
 - 5.3.9 JISC Authentication, Authorisation and Accounting (AAA) Programme
 - [5.4 Pilot and Trial Services](#)
 - 5.4.1 JANET Satellite Pilot
 - 5.4.2 Higher Quality Videoconferencing
 - 5.4.3 Conferencing on Demand (CoD)
 - 5.4.4 Automated Quality Assurance (QA) Testing
 - 5.4.5 Voice over Internet Protocol (VoIP)
 - 5.4.6 Location Independent Networking (LIN)
 - [5.5 Further Education \(FE\) Liaison](#)
 - 5.5.1 FE Colleges
 - 5.5.2 Specialist Colleges
 - 5.5.3 Adult and Community Learning (ACL)
 - 5.5.4 Scotland
 - [5.6 Study Groups](#)
 - 5.6.1 Wireless Advisory Group
- [6 UKERNA](#)
 - [6.1 UKERNA Staff](#)
- [7 Further Information](#)

This report is produced and published by the United Kingdom Education and Research Networking Association (UKERNA) for use within the JANET Community. We welcome comments on all aspects of this document and on any other UKERNA publications. Please direct feedback about the content to JANET Customer Service (JCS), at the contact address given.

This document is copyright The JNT Association trading as UKERNA. Parts of it, as appropriate, may be freely copied and incorporated unaltered into another document unless produced for commercial gain, subject to the source being appropriately acknowledged and the copyright preserved. The reproduction of logos without permission is expressly forbidden. Permission should be sought from JCS:
service@janet.ac.uk

1 Introduction

This report broadly follows the sequence of the Service Level Agreement (SLA) between UKERNA and the funding bodies represented on the Joint Information Systems Committee (JISC), for the financial year 1 August 2003 to 31 July 2004.

The numbering follows that of the SLA, and apparent omissions reflect the fact that there is nothing to report at present.

This report covers the period January to March 2004 (Spring).

The next report will cover a four month period – April to July – to bring it in line with UKERNA's other reporting responsibilities. Thereafter it will report for the usual three month periods.

Electronic copies of UKERNA's Quarterly Reports to the JANET Community can be found at:
<http://www.ja.net/documents/quarterly.html>

2 Operational Services

2.1 Basic Internet Protocol (IP) Transmission Service

2.1.1 Access to Backbone

There were a few major incidents within several Regional Networks that affected access to the JANET backbone for a number of sites:

- Early in January five sites within Net North West Ltd (NNW) had a service outage for 6.5 hours due to an area power failure which affected the telco exchange point.
- On 9 January the University of London Computer Centre (ULCC) to London Core Point of Presence (C-PoP) link went down due to a cut fibre. All London Metropolitan Network (LMN) sites and sites connected via ULCC suffered a loss of JANET services for 2 hours and 40 minutes until a development link was configured for emergency production use.
- On 10 January nine sites within Fife and Tayside Metropolitan Area Network (FatMAN) had nearly a 5 hour service outage due to a blown fuse in the telco's equipment following site power system maintenance the day before.
- On 12 January thieves stole some interfaces from a South West England Regional Network (SWERN) router in the Bristol machine room, resulting in 38 sites without JANET service for 2.5 hours and five sites in Bristol without service for over 17 hours.
- From 4:00am on 25 February to 11:20 on 26 February all sites but two in the North Wales Metropolitan Area Network (NWMAN) lost their JANET connection. This was due to a Cable & Wireless (C&W) microwave transmission equipment problem.

This reporting period has seen a total of 16 new or enhanced customer connections completed and brought into service:

- Cambridge Regional College
- Coleg Harlech
- Coleg Meirion-Dwyfor
- Foxes Academy Limited
- Henshaws College of Further Education
- Lancashire Adult & Community Learning
- Meldreth Manor School
- National Centre for Young People with Epilepsy
- Norwich School of Art & Design
- Oakwood Court
- Queen's University of Belfast
- Royal West of England School for the Deaf
- Ruskin Mill College
- Sense East
- West of England College
- Workers' Educational Association (Exeter)

For information regarding current upgrades or connections, please contact JANET Customer Service (JCS) at:
connections@janet.ac.uk

A list of all primary sites connected to JANET may be found at:
<http://www.ja.net/janet-sites/>

2.1.1.1 Further Education (FE)

England

The rollout of connections to 31 Specialist Colleges has continued during the quarter, with a total of 18 connections now ready for service.

The Learning and Skills Council (LSC) is funding UKERNA to upgrade the JANET connections for FE Colleges. These upgrades are planned to take place over the period April 2004 to April 2005 and discussions are underway with the local Regional Support Centres (RSCs) and Regional Network Operators (RNOs).

Northern Ireland

College access circuits and the connection to SuperJANET continue to be extremely reliable. Most college connections are being used close to capacity during peak hours.

Scotland

The high bandwidth connections provided to all Scottish colleges continue to perform well.

Wales

Implementation of the North Wales Metropolitan Area Network (NWMAN) has been hampered by delays to circuit deliveries to some FE colleges. The final connections to NWMAN were delivered in January but have proved to be unreliable, and the old circuits have been re-used. UKERNA is working closely with the NWMAN to resolve the problems.

2.1.2 Core Network

The core network has been running reliably over the quarter apart from the following major incidents:

- On 1 January the Lancaster-Manchester link was down for over 9 hours due to power loss on telco equipment. Cumbria Lancashire Education Online (CLEO) traffic was re-routed via the Lancaster-Warrington link so that users did not experience a service outage.
- On 9 January the ULCC to London C-PoP link went down due to a cut fibre. All the London Metropolitan Network (LMN) sites and sites connected via ULCC suffered loss of backbone access for 2 hours and 40 minutes until a development link was configured for emergency production use.
- In late January the core link between Portsmouth and London was down for 36 hours due to failure on the telco's equipment. There was no service impact as traffic was re-routed on the core network.
- At the end of February a faulty line card on the Edinburgh core router took the Edinburgh-Leeds core line down for 9 hours. However, traffic was re-routed and no service loss was experienced by users.
- In February the Dublin-London link went down twice, once for 4 hours and then again for just under 10 hours. Traffic was re-routed over the Dublin-Belfast link and again no service loss was experienced by users.

Preparation of Cumbria and North Lancashire Metropolitan Area Network's (C&LNMAN) access link upgrade has been completed. The new 1 Gigabit Ethernet (GE) connection between Lancaster and Warrington will be brought into service in April.

The Telehouse R-PoP (Regional Point of Presence) is in the process of re-locating to a more secure area in the Telehouse North building. Migrating the live service over to the new PoP location will be carried out in the next few months.

Major outages are reported on the JANET web server at:

<http://www.ja.net/cgi-bin/index.pl/outages/>

2.1.3 IP Multicast

IP multicast is a bandwidth conserving technology that can reduce traffic by transporting single streams of information across the network backbone to regional and local distribution points where the data is replicated for simultaneous delivery to multiple users. Some applications that can take advantage of multicast include videoconferencing, video serving and news distribution.

The multicast beacon from the National Laboratory for Applied Network Research (NLANR) is a useful tool for monitoring the performance of a multicast session. To aid in detecting multicast connectivity problems between sites connected to the JANET network, a beacon server has been established in the JANET network capable of receiving reports from beacon clients operating in an open multicast group.

The JANET beacon server can display three views of the reporting beacons:

- Global View – an unfiltered view showing all reporting beacons.
- Regional Network View – a filtered view showing only the beacon clients set up for monitoring multicast connectivity on the regional networks.
- AccessGrid™ View – a filtered view showing only the beacon clients set up for monitoring AccessGrid™ sites.

Earlier this year UKERNA offered financial help to the Regional Networks to implement beacon clients. Most accepted the offer, and 70% of them have completed the installation and their beacons are visible on the Regional Network View.

UKERNA would like to encourage the remaining Regional Networks to complete their installation to give as complete a picture as possible of the Regional Network View on the beacon server.

Similarly UKERNA would like to encourage the AccessGrid™ facilities to run a multicast beacon to give a full picture of the AccessGrid™ View.

Details on how to implement this can be found at:

<http://ulcc.beacon.ja.net/>

2.2 External Network Access Provision and Transmission

2.2.1 Access within Europe

JANET access to the European National Research and Education Networks (NRENs) is via a 2.5Gbit/s connection to the Gigabit European Academic Network (GÉANT) from Telecity together with a backup link at the same capacity from Telehouse. Traffic over the link peaked at around 500Mbit/s during the reporting period.

Further information about GÉANT can be found at:

<http://www.dante.net/>

2.2.2 Access to the North American Internet

JANET access to the global Internet is provided by Sprint® and Level 3™ Communications from Telehouse and Telecity in London. This provides a highly resilient service.

Aggregated peak traffic increased to around 2.35Gbit/s over these connections.

The topology of current external connectivity can be found at:

<http://www.ja.net/topology/external.html>

2.2.3 Access to Abilene and ESnet

JANET private peerings with the US research networks Abilene and ESnet are provided via GÉANT. The services have been stable throughout the reporting period.

2.2.4 Access to the UK's Internet Exchanges

The London InterNet eXchange (LINX) is the facility that allows the transfer of traffic between Internet Service Providers (ISPs) within the UK. JANET access to the LINX is achieved via two Gigabit Ethernet connections from Telehouse and Telecitey. During the reporting period, traffic peaked at around 1.2Gbit/s over the two connections and the service was reliable.

JANET peers with ISPs via the Manchester Network Access Point (MaNAP). There is a Gigabit Ethernet connection to MaNAP's 10Gbit/s network2 and a FastEthernet connection to MaNAP's 1Gbit/s network1. Total traffic over the two peering connections peaked just above 80Mbit/s during the reporting period.

Peering traffic via PacketExchange™'s 1Gbit/s connection is about 120Mbit/s.

2.2.5 Access to the Chinese Education and Research Network (CERNET)

The 45Mbit/s peering connection between JANET and CERNET is currently carrying peak traffic of about 15Mbit/s.

There were a couple of short service outages during the reporting period due to telecommunication link problems.

More information on CERNET can be found at:
<http://www.edu.cn/HomePage/english/>

2.3 Fault Handling

2.3.1 Fault Reporting

The existing fault reporting mechanism remains unchanged. UKERNA's Reporting Problems web page can be found at:

http://www.ja.net/reporting_prob.html

Announcements relating to major service outages can be found at:

<http://www.ja.net/cgi-bin/index.pl/outages/>

The JANET Operations Desk is the main point of contact for reporting faults related to the JANET backbone.

To provide continuity to services at all times, the following numbers are available for use by customers when calling from the UK:

Telephone: 0870 850 6672

Facsimile: 0870 850 6673

E-mail: operations@ja.net

2.3.2 Network Status Information

The network monitoring service (JANET Netsight) has been developed by UKERNA to provide an easy to understand view of the status and performance of JANET. The service comprises a number of UNIX® based machines deployed around the edge of the backbone that provide an overview of all the JANET regional networks.

There are now 25 Netsight systems in place on the network, all managed by the RNOs. These systems are monitoring all their respective regional connections. Individual connection details such as traffic, reliability and latency figures are available to those connections via a username and password.

The Netsight facility is available to the Regional Broadband Consortia (RBC) in England and Scottish Schools Digital Network (SSDN) in Scotland. The RBC connections that are currently connected and active can be found at:

<http://schools.netsight.ja.net/>

The SSDN connections currently connected and active can be found at:
<http://ssdn.netsight.ja.net/>

Some of the Reading C-PoP and Leeds C-PoP Co-location Services are currently monitored and available on the Netsight system located at Reading University, which can be found at:
<http://reading.netsight.ja.net/>

In future Netsight will be used to provide a monitoring service to other developing services within JANET.

More details on Netsight are available at:
<http://www.ja.net/services/netsight/>

2.4 Managed Router Service (MRS)

There has been no increase in the number of sites requesting the MRS during the quarter, leaving the total number of sites covered at 16. UKERNA continues to progress service installation to sites that have registered for the service.

Further information can be found at:
http://www.ja.net/services/managed_router/

2.5 Naming and Addressing

2.5.1 Naming Domain Administration

UKERNA administers the domain name approval service for both the ac.uk and gov.uk second level domains. The procedure for gaining names in both domains is detailed at:
http://www.ja.net/documents/naming/names_ac_gov.html

The modifications procedure for domain names under ac.uk and gov.uk already registered in the Domain Name Service (DNS) is available at:
http://www.ja.net/documents/naming/naming_mods.html

The rules on eligibility for registration under ac.uk are available at:
<http://www.ja.net/documents/naming/ac.uk-naming-rules.html>

During the reporting period a total of 513 requests for both new domain name registrations and modifications to existing entries were received. The rate of applications for new domain names averaged 118 per month, with an average of 53 modifications for each month.

The charge for a new name request is £94 including V.A.T. (including the first two year's maintenance charge). There is also a maintenance charge of £47 including V.A.T. for all modification requests, although this charge is not applicable to those organisations while they remain connected to the JANET network. Further information on domain name charging can be found at:
http://www.ja.net/documents/naming/ac_payments.html

2.5.2 Domain Name Service (DNS)

The JANET DNS service continues to run reliably.

Details are available at:
http://www.ja.net/documents/naming/naming_mods.html

2.5.3 Primary Nameserver Service

The operation of nameservers and maintenance of DNS information is an essential infrastructure activity that some small organisations do not have the resources to perform themselves. JANET can provide a basic Primary Nameserver service to support e-mail and web use by smaller or less experienced JANET customer organisations, publishing their zones on central nameservers and

allowing a restricted facility for requesting changes to resource records. The service provides high availability Primary and Secondary Nameservers that satisfy DNS queries for the zone data they hold.

Four organisations registered with UKERNA during the reporting period to use the JANET Primary Nameserver service. There are now a total of 10 users of the service.

More information is available at:

<http://www.ja.net/services/primaryname/>

2.5.4 Secondary Nameserver Service

The Secondary Nameserver Service is currently available without charge to any customer with a Primary Connection to JANET. Under this service UKERNA will arrange for a secondary nameserver to be run on the customer's behalf at a remote site on JANET. By the end of this reporting period the number of organisations using this service had increased to 475.

Further information about the service can be found at:

http://www.ja.net/services/secondary_nameserver.html

2.5.5 Domain Name Service Whois Service

The Whois service was reachable without exception.

The Whois server database of existing names in both the ac.uk and gov.uk domains is in place, and is now automated and operational. Organisations unsure of a domain name's availability for registration should contact JANET Customer Service (JCS).

2.5.6 IP Address Assignment

JCS administers procedures for the assignment and approval of IP address allocations, permitting existing and new organisations to apply for appropriate addresses required for their connection to JANET.

During the reporting period 33 applications were completed. In February 2004 JCS took over the allocation of the IPv6 address space and has since processed a couple of these applications.

Further information about the service can be found at:

http://www.ja.net/connect/obtain_ip.html#IPv6

2.6 Supporting Infrastructure Services

2.6.1 Network Time Service

This delivers a stable time reference to customer organisations using the Network Time Protocol (NTP) specified in Report For Comment (RFC) 1305. It consists of four stratum-1 servers distributed across the JANET network and located at London, Bristol, Manchester and Edinburgh. This mesh of communicating systems gets 'true time' from external references such as MSF time signals broadcast by the UK Time and Frequency Standard Station, and the Global Positioning System (GPS) satellite navigation system. The result is that clock settings across the whole mesh are very closely synchronised and a single rogue system with the wrong time will have very little effect. A synchronised time service is important for some services, such as distributed file systems.

12 more sites registered to use this service during the reporting period. There are now a total of 128 sites using the service. Overall, it is a stable and well-used service.

Details of the service are available at:

<http://www.ja.net/ntp/>

2.6.2 Co-ordination of Message Handling Services

The JANET Mailer Shield (JMS) can help make the mail facilities of a JANET organisation more secure and robust, particularly where the organisation is small or its resources for managing e-mail are limited. In response to requests to develop a bulk mail filter, the pilot service was extended beyond its original end date of April 2003. During the trial period to date, no pilot site has suffered significant outages due to external hostility and no unauthorised mail has been relayed through the mail systems.

During this reporting period no more organisations joined the pilot service, leaving the total at 18 sites.

Details of JMS can be found at:

http://www.ja.net/mail/mailler_shield/

2.7 Usenet News Distribution

2.7.1 Usenet News Backbone

The JANET Usenet News Service enables JANET customers to receive Usenet News feeds from a backbone of JANET News servers. The service is available free to all organisations with a Primary Connection to JANET, and can provide a full feed of all the newsgroups available worldwide, except for geographically limited hierarchies, and groups excluded because they have a record of containing illegal material. An organisation may choose to be provided with a News feed which does not include all the newsgroups available.

The review of the report of the field trial of the News Cache Service has been completed. The conclusions of the review were that hardware used in the second phase of the trial is reliable enough to be used for an operational service. A service requirement will be developed in the next quarter.

The current JANET Usenet News Service offers two ways of receiving News over JANET. The documentation is linked from:

<http://www.ja.net/usenet/>

2.7.2 JANET News Feed Service

The News Feed Service continues to function well. In the reporting period, one new site has joined the service bringing the total number of sites connected to 93.

The six organisation based servers have now been replaced by four co-location based servers. The transfer of clients to the new servers is nearing completion.

More information is available at:

<http://www.ja.net/usenet/feed.html>

2.7.3 JANET News Reader Service

Two sites have joined the News Reader Service during the reporting period and there are now 44 sites connected to the service.

The service is documented at:

<http://www.ja.net/usenet/reader/reader.html>

2.8 Videoconferencing Services

2.8.1 JANET Videoconferencing Service (JVCS)

The JVCS provides support for point-to-point and multipoint videoconferencing over IP and Integrated Services Digital Network (ISDN), as well as gatewaying between videoconferencing technologies.

A patch has been provided to resolve an issue with audio levels encountered with Multipoint Control Units (MCUs) which was adversely affecting Quality Assurance (QA) testing. All the MCUs have now been patched. The Ezenia MCUs have reached the end-of-life, and have been replaced with an MGC-100, which will provide additional gateway capacity between IP and ISDN. All videoconferencing equipment located at the JVCS – Management Centre will be moved onto a new IP address range.

The JVCS – Management Centre provided support for the interoperability testing recently undertaken by the Video Technology Advisory Service (VTAS). The results of the testing will be available shortly from:

<http://www.video.ja.net/vcproducts/>

There are 347 videoconferencing venues registered to use the JVCS over ISDN (JVCS-ISDN) and a further 217 venues registered to use JVCS-IP. During the reporting period 608 conferences took place that used ISDN over 1908 hours. In addition 1154 conferences took place using IP and the IP/ISDN gateway over 2995 hours. The overall statistical trend indicates an increase in the use of videoconferencing, particularly IP videoconferencing.

Further information about the JVCS can be found at:

<http://www.jvcs.video.ja.net/>

2.8.1.1 JANET Videoconferencing Service Booking Service

This service enables users at registered sites to book videoconferences and schedule the use of central JVCS resources.

The new user interface for the JANET Videoconferencing Booking Service (JVCS – Booking Service) was launched on 2 February 2004. The new interface is based on the concept that videoconferencing brings people together as well as booking resources, and that it should not be necessary to understand videoconferencing technologies before being able to book a conference.

The revised interfaces, for both user and administrative functions, were the result of a project to review and improve the usability of the JVCS – Booking Service, initiated in April 2003. Work was carried out by the Commercial Projects Team managed by the Video Services Manager, with input from the Welsh Video Network (WVN) Support Centre and the JVCS – Management Centre. Consultants from Bunnyfoot Universality were contracted to advise on usability issues and perform user testing, as ease of use was key to the success of the new user interface.

The changes to the JVCS – Booking Service, including the removal of freely available personal data, ensure compliance with the Data Protection Act.

The login page for the JVCS – Booking Service can be found at:

<http://www.jvcs.ja.net/booking/>

2.8.1.2 Welsh Video Network (WVN)

The WVN Support Centre provides a single point of contact for support and maintenance for over 90 videoconferencing studios across the FE and Higher Education (HE) sectors in Wales.

Funding has been made available by the National Council – Education Learning Wales (ELWA) out of the Learning Challenge Fund to provide WVN-style studios to six schools that are part of Cymdeithas Ysgolion Dros Addysg Gymreag (CYDAG), a consortium of schools using the Welsh language for teaching. As part of the project, funding has been made available for the WVN Support Centre to provide assistance with the design and deployment of these studios, and to support their use for the cooperative teaching of A/AS level units.

Further information about the Welsh Video Network can be found at:

<http://www.wvn.ac.uk/>

2.8.2 JANET Video Technology Advisory Service (VTAS)

VTAS is a UKERNA service that provides unbiased technical advice to JANET connected HE, FE and research organisations. It has maintained its schedule of product evaluations, most recently re-examining the Sony PCS-1P and Polycom VSX 7000.

The evaluation reports, together with the testing schedule, revised overview document and previous evaluation reports can be found at:

www.video.ja.net/evaluation/

One aim of the advisory service is to develop documentation of interest to the JANET community, and a number of new documents have been completed during this reporting period.

The VTAS guide 'Videoconferencing Standards' has now been updated and made available at:

<http://www.video.ja.net/stan/>

The VTAS document 'Security Guide for H.323 Videoconferencing' has been released and is available at:

<http://www.video.ja.net/323security.pdf>

The 'Market Survey of Videoconferencing Products' has also been made available on the site at:

<http://www.video.ja.net/vcproducts/>

A number of other documents have been commissioned and are currently under development.

Further details about the service can be found on the VTAS Web pages at:

<http://www.video.ja.net/>

A general factsheet outlining the features of the service is available from JANET Customer Service.

2.9 Administrative Services

2.9.1 Connection Administration

UKERNA is responsible for administering the approval and commissioning of new and upgraded connections to the JANET Network. This involves liaising with customers to report progress on their new or upgraded connections. The conditions under which organisations may be connected to JANET are given at:

http://www.ja.net/documents/connection_policy.pdf

Requests for new or enhanced JANET connections should be made via JANET Customer Service (see Section 3.2.1).

A list of organisations connected to JANET during the reporting period is provided in section 2.1.1.

For information regarding current upgrades or connections, contact JCS at: connections@janet.ac.uk or service@janet.ac.uk

2.9.2 Peer Networking Agreement Administration

Peering agreements with the following companies were reached and implemented during the reporting period:

Public Peering

LINX™ Peering (London)

- QSC AG
- Web Tapestry
- Hotlinks Internet Services
- Prodigy Networks

Private Peering

- Eweka Internet Services

2.9.3 Licence Administration

JCS issued a total of three new Sponsored Connection licences and no new Proxy Connection licences. Further information about Sponsored and Proxy Connections can be found at:

http://www.ja.net/connect/types_connect.html

The Sponsored Connection process has undergone a complete overhaul and changes were implemented from 1 August 2003 for new connections. For existing Sponsored Connections the new licence fees will come into effect from 1 August 2004.

2.10 Operational Support Services

2.10.1 Management of Maintenance Activities

There were a total of 12 'at risk' sessions during which planned work and maintenance activities took place.

Further information can be found at:

<http://www.ja.net/services/at-risk.html>

2.11 JANET Bandwidth Management Advisory Service (BMAS)

BMAS provides advice and guidance to JANET organisations on issues relating to the management of bandwidth. The emphasis has been on continuing to make the UK education and research community, particularly the FE sector, aware of the services offered. This has been done by attending a number of RSC and other events, including the JISC Conference in March 2004, as well as maintaining a specific web site for BMAS. This can be found at:

<http://www.bmas.ja.net/>

2.12 JANET Multi-site Connectivity Advisory Service (MCAS)

This service provides a means for the JISC community, particularly FE colleges, to obtain advice on Local Area Network (LAN)/Wide Area Network (WAN) multi-site connectivity issues beyond the main JANET connection. It complements the service already provided directly to FE colleges by the RSCs. It also provides support for the JANET link, general networking advice and additional resources specialising in multi-site network connectivity issues.

The JANET helpdesk has received a number of enquiries for MCAS and it has provided advice ranging from help in accessing remote sites via secondary JANET links to a review of new wireless technology for non-line-of-sight connections. The service continues to be involved in supporting Adult and Community Learning organisations.

The case study writing initiative is ongoing and a study on the use of low cost Baseband circuits for Megastream-like service is available at:

<http://www.ja.net/mcas/CaseStudy-WestCheshireCollegev1.5.doc>

Progress is being made in the preparation of further reports.

The Introduction to MCAS and Technology Overview presentation given to the RSC-North West and updated for RSC-Eastern has been added to the MCAS web site home page.

Contacts continue to be established with a number of suppliers and the list of potential providers of services and expertise is growing. During the next quarter a comprehensive supplier list will be developed.

Work has been progressing on a telecommunications company services availability map of the UK. This will help organisations looking at circuit costs to identify the location of telcos in any given area. Once sufficient data has been gathered, this will be published on the web site.

This is an interesting time for MCAS as the service tackles the production of documents, handles a range of enquiries and promotes the service through the web and forthcoming presentations at RSC technical forums.

Further information about the Multi-site Connectivity Advisory Service can be found at:
<http://www.ja.net/mcas/>

3 Information and Support Services

3.1 Network Information Service

The JANET/UKERNA web server continues to perform well.

Any comments or suggestions on the web server structure and page appearance will be gratefully received and should be directed in the first instance to JCS at:
service@janet.ac.uk

3.2 JANET Customer Service (JCS)

JCS provides the primary point of contact for all enquiries concerning JANET services and requests for information. Contact information is provided below.

During this reporting period the total number enquiries received was 1724. As in previous quarterly reports, a large proportion of these queries related to the DNS, requests for new Primary Connections, Sponsored and Proxy Connections, General Enquiries and JANET Access/Connection.

A total of two complaints were received in this reporting period. Both complaints have been closed but unresolved actions mean that the tickets must remain open.

3.2.1 Contact Information

JANET Customer Service is staffed from 08.00 to 18.00 Monday to Friday, with voicemail available for calls outside of these hours, and if staff are temporarily unable to answer a call.

There are three UK-wide public holidays in the next quarter: Good Friday (9 April), May Day (3 May) and Spring Bank Holiday (31 May), when JCS will not be staffed. Easter Monday (12 April) is not a UK-wide public holiday, so JCS will therefore be operating but with limited cover from 09.00 to 16.00.

Enquiries may be made by e-mail, telephone, fax, post, or in person, as follows:

E-mail: service@janet.ac.uk

Telephone: 0870 850 2212

Fax: 0870 850 2213

Post: JANET Customer Service, UKERNA, Atlas Centre, Chilton, Didcot, Oxon OX11 0QS.

3.3 Documentation

Unless otherwise stated, paper copies of these documents can be obtained from JCS, but please note that some documents are now produced primarily for publication on the web and are better read online. If an electronic version of a document is available, the URL is given.

UKERNA welcomes feedback from the community on the usefulness of all documentation produced and encourages suggestions as to which areas require additional documentation.

Comments should be sent by e-mail to:
service@janet.ac.uk

During the reporting period, UKERNA produced the following documents.

Factsheets

User Authentication

PB/INFO/041 (04/01)

<http://www.ja.net/documents/factsheets/041-User-Authentication.pdf>

JANET Videoconferencing – New Booking Service
PB/INFO/043 (04/02)
<http://www.ja.net/documents/factsheets/043-Booking.pdf>

Connecting to JANET: Adult and Community Learning Overview
PB/INFO/042 (04/02)
http://www.ja.net/documents/factsheets/042_Connecting_ACLs.pdf

Introduction to Firewalls (update)
PB/INFO/009 (04/02)
<http://www.ja.net/documents/factsheets/firewalls.pdf>

JANET Bandwidth Management Advisory Service (BMAS)
PB/INFO/044 (04/03)
<http://www.ja.net/documents/factsheets/044-JANET-BMAS.pdf>

JANET Usenet News Service
PB/INFO/045 (04/03)
<http://www.ja.net/documents/factsheets/045-Usenet.pdf>

JANET Videoconferencing Service (JVCS)
PB/INFO/046 (04/03)
<http://www.ja.net/documents/factsheets/046-video.pdf>

JANET Advisory Services
PB/INFO/047 (04/03)
<http://www.ja.net/documents/factsheets/047-advisory-services.pdf>

JANET Nameserver Service
PB/INFO/048 (04/03)
<http://www.ja.net/documents/factsheets/048-nameserver-service.pdf>

JANET Network Complementary Services
PB/INFO/049 (04/03)
<http://www.ja.net/documents/factsheets/049-complementary-service.pdf>

Newsletters

UKERNA News 26
http://www.ja.net/documents/UKERNA_News/2004/March/NEWS26b.pdf

Service Documentation

Security Guide for H.323 Videoconferencing
GD/VTAS/009
<http://www.video.ja.net/323security.pdf>

Videoconferencing Standards
GD/VTAS/008
<http://www.video.ja.net/stan/>

Market Survey of Videoconferencing Products
GD/VTAS/013
<http://www.video.ja.net/vcproducts/>

Evaluation of ISDN/IP Videoconferencing Products
GD/VTAS/012 v1.2
<http://www.video.ja.net/evaluation/>

JANET Web Mail Service
PS/ANS/Service/DOC/004
<http://www.ja.net/services/webservices/webmail/JANET-Web-Mail-Service.html>

JANET Web Filtering Service
PS/ANS/Service/DOC/005
<http://www.ja.net/services/webservices/web-filtering/web-filtering.html>

Reports

UKERNA Quarterly Report to the JANET Community
Winter 2003
<http://www.ja.net/documents/quarterly.html>

Other

JANET Support Manual
GD/JANET/MANUAL/001 v2
http://www.ja.net/documents/support_manual.pdf

Glossary
<http://www.ja.net/documents/glossary.pdf>

Network Services Guidance for Schools (Draft for Comment)

Videoconferencing
<http://getconnected.ngfl.gov.uk/docs/videoconferencing.doc>

Network Design
http://getconnected.ngfl.gov.uk/docs/network_design.doc

Security
http://getconnected.ngfl.gov.uk/docs/network_security.doc

3.4 Technical Updating for the UKERNA Community

3.4.1 Workshops and Conferences

BETT Show, 8-11 January 2004, Olympia, London.

Once again UKERNA had a stand at the BETT Show. A number of enquiries were made, including those from teachers who were asking when their school would be connected to JANET. Those were referred to the Regional Broadband Consortia (RBC) stand. There were fewer visitors than in previous years and a decision has been taken not to have a stand in 2005.

JANET Videoconferencing Briefing, 28 January 2004, Weston Building, Manchester Conference Centre.

The JANET Videoconferencing Briefing: Service Update and Roadmap was aimed at both new and experienced users with a technical interest in videoconferencing. It was designed to inform delegates of recent and future developments in videoconferencing and to familiarise them with the videoconferencing services managed by UKERNA.

Representatives from Polycom and Tandberg attended the day and were available to discuss their product ranges during the breaks.

Feedback from delegates was positive, with the majority finding the presentations informative.

Details of the programme and the presentations can be found at:
http://www.ja.net/conferences/video_2004/prog.html

JANET Wireless Event, 26 February 2004 Coventry Techno Centre.

UKERNA's Wireless Advisory Group conference on Wireless Networking was well attended with delegates from all sections of the JANET community. The programme began with a review of current wireless technologies and issues, went on to give examples of existing wireless installations and ended with a review of future developments.

Martin Dunmore (Lancaster University) introduced the many different wireless technologies, both proprietary and standards-based, that can be used to transport packets using radio waves.

Andrew Cormack (UKERNA) reviewed the security issues of wireless networks and made reference to two recent UKERNA Factsheets on Wireless Security and User Authentication that describe these issues in more detail.

Mark O'Leary (Manchester University) described how to design, implement and monitor a wireless network and stressed the need for periodic re-surveys to take account of changes in building contents and user requirements that can affect the performance of the wireless network over time.

George Howat described Edinburgh University's wireless service, based on the Bluesocket gateway product. He described the usage policy where users are given their account and how the different classes of users can be given varying levels of access to different parts of the network.

Bruce Rodger described the impact of wireless networks on teaching at Strathclyde University where the university loaned laptops to all students on a first-year business studies course and re-equipped teaching rooms to support students working in small groups. The most noticeable effect was that students with their own computer developed IT and group working skills much more quickly than those without. They were also much more productive when away from the campus. Losses and breakages have been lower than feared.

Josh Howlett described the Roamnode software he has developed at the University of Bristol. Roamnode allows users anywhere on campus to authenticate with their home department login and password and obtain access to departmental and other licensed services just as if they were in their own building.

Tim Chown (Southampton University) described the Location Independent Networking (LIN) activities being sponsored by TERENA and UKERNA. LIN aims to support the expansion of local solutions, such as Roamnode, to a national or international scale. If trials are successful, organisations connected to JANET or other National Research and Education Networks will have a simple way of offering authenticated network connections to guests from other sites, whilst retaining appropriate security and accountability. LIN can support both visiting wireless laptops and fixed open access terminals. UKERNA's Wireless Advisory Group (WAG) is designing a national RADIUS hierarchy and policies that would be needed to support any LIN technology.

James Sankar (UKERNA) described the other activities of the WAG including information dissemination such as conferences and factsheets, technology trials and case studies. Details of all of these are on the WAG website.

Martin Dunmore returned at the end of the day to review some areas where research, development and standards work is still continuing.

All the slide presentations from the conference are on the UKERNA website at:
<http://www.ja.net/conferences/wireless/feb-04/prog.html>

More details of UKERNA's Wireless Advisory Group can be found at:
http://www.ja.net/development/network_access/wireless/wag/

A full write-up of the day's papers will be published in the next issue of UKERNA News.

UCISA Conference, 17-19 March, G-MEX/MICC, Manchester.

UKERNA had a stand at the Universities and Colleges Information and Systems Association (UCISA) Management conference, which was held at G-MEX/MICC. UKERNA staff were kept busy throughout the conference with visitors to the stand. Technical guides proved popular with the delegates. Andrew Cormack gave a joint presentation with Mike Roche (University of Reading) on security issues.

JISC Conference, 23 March, ICC, Birmingham.

Attendance at this year's JISC conference was up on last year and UKERNA staff were busy throughout the day with visitors to the UKERNA stand. Jeremy Sharp gave a presentation on SuperJANET5 at one of the breakout sessions. Again, the Technical Guides proved popular with the delegates.

RSC Northern Ireland Conference, ILT is Everybody's Business, 26th March 2004, Derry, N.Ireland.

Two UKERNA staff travelled to the western edge of JANET to attend this conference organised by the JISC Regional Support Centre.

The programme consisted of a mixture of plenary sessions and workshops. Andy Dyson (JISC) discussed how effective use of Information and Learning Technology (ILT) in colleges can have benefits far beyond the teaching room. Examples included making administration more efficient and administrators' jobs more interesting, and using desktop video links to enhance college open days while reducing disruption to staff. Well supported ILT can change the way colleges work, not just add to existing processes.

Nigel Paine described how an online culture had been adopted within the BBC, with the intranet becoming a basic tool in everyone's working life and professional development. Every member of the organisation should be viewed as learner, teacher and source of business information with ILT allowing them to contribute to all these roles at any time. Tony Toole (Coleg Sir Gâr) described how ILT had changed the thinking of a group of colleges in West Wales who now collaborate in developing teaching materials even while competing to deliver the materials to students. Marian Cree (Department for Employment and Learning) noted that recent reviews of education in Northern Ireland have highlighted the importance of ILT and discussed the measures her Department would be taking to promote it.

The parallel workshops included a well matched pair on the problems that can arise if colleges do not have adequate policies to support their use of ILT (Andrew Cormack, UKERNA) and the Flexible Image Transport System (FITS) framework for implementing reactive and proactive measures to create a reliable ILT infrastructure (Paul Stonier, Becta).

A small exhibition area provided an informal environment for conversations between delegates and invited support organisations, including UKERNA.

All the delegates seemed to enjoy the day and thanks are due to the RSC for inviting us to participate in such a friendly event.

3.4.2 Training Courses

The training section has delivered seven courses during the period.

UKERNA were commissioned to deliver a Security (Management) Course to the networking staff at University College London on the 4 February 2004.

As part of the project to bring the Specialist Colleges online to JANET, two Security (Management) Courses were presented to the college staff at Queen Alexander College Birmingham on 18 and 25 February. Two courses were needed to accommodate staff numbers.

Four courses were delivered at the Institute of Directors (IoD) Hub in Bristol:

Transmission Control Protocol (TCP)/Internet Protocol (IP)	Monday 8 March
Domain Name Service (DNS)	Tuesday 9 March
Security (Technical)	Wednesday 10 March
Router Configuration	Thursday 11 March

These were the first outings for both the Security (Technical) and DNS courses. Details of future courses and a timetable can be found at:

<http://www.ja.net/training/>

3.5 Network User Groups

JANET User Groups represent the views and needs of all users, both to the bodies that fund JANET and to the providers of the network. The JANET User Groups include those representing geographical regions, those representing particular interest groups and the National User Group. User Group meetings are usually held two or three times a year. UKERNA sends representatives to these meetings as it is a good way of disseminating information about the latest changes and developments as well as distributing recent publications. The meetings also provide a forum for informal technical help and discussion among people doing similar jobs.

Organisations should ensure that they are represented at their regional User Group, and that appropriate people know about the various affiliated groups, details of which can be found at:

<http://www.ja.net/usergroups/>

The number of user groups has reduced as a result of decisions made at previous meetings. The National User Group is looking at the most effective method of feeding the views of the users into the JCN.

During the reporting period UKERNA attended the South West England Regional Network (SWERN) User Group, the South East JANET Regional User Group and the JANET National User Group.

UKERNA also attends the Universities and Colleges Information Systems Association (UCISA) Networking Group meeting which did not meet during this period.

Further details about UCISA can be found at:

<http://www.ucisa.ac.uk/>

4 Security Services

4.1 Security Monitoring and Information Dissemination

4.1.1 Incident Response and Abuse Handling Overview

This quarter was dominated by new viral and worm infestations and their many different variants. The end of January saw the rise of the MyDoom virus. This spread rapidly but its mechanisms were conventional and still required users' active participation to germinate. The resulting e-mail generated from both virus and misconfigured mail servers presented problems for the team and community alike.

February saw the release of the NetSky and Bagle worms and MyDoom was extended to include a listening port (TCP 3127) which could be used to upload further binary code or Proxy Connections. These worms were enhanced by other variants in March. They raised issues with Anti-Virus provisions as definitions were often lagging behind so many new variants released in such a relatively short time.

Another notable worm was the Witty Worm which spread by exploiting the vulnerability in ICQ (I Seek You) parsing. This has the potential to make firewalled hosts vulnerable. This worm arrived hours after the vulnerability notice and successfully beat the Internet Security Systems™ (ISS) patch. Fortunately it appears to have not fulfilled its potential but could have caused a great deal of damage. More recently the emergence of the Agobot/Goobot worm has caused concern. Although infections have so far been lower than other worms, the community should remain wary. Infection is achieved via Remote Procedure Call (RPC) and Webdav vulnerabilities but patches have been available for a while. The worm tries to add infected hosts to an Internet Relay Chat (IRC) botnet, leaving the machine open to misuse such as launching Distributed Denial of Service (DDoS) attacks or hosting illegal material for download.

Many of these viruses included functionality which could be used for illegal intent.

During the period 'bots' have been affecting a number of JANET organisations, with many using altered versions of remote administration tools installed onto compromised machines. The marketing of compromised machines within the criminal community continues to be a global concern. It appears that such machines originating from within JANET are taking advantage of the bandwidth to launch DDoS attacks and decimate smaller targets. A marked increase in these activities has been noted after several months of relative inactivity. All sites should be reminded that the liability on poorly secured machines within the JANET community is a hot issue and may result in litigation in the future.

The general upward trend of spam incidents has continued and a rise in false reports of spam originating from JANET customers has been noticed. These used forged From: addresses or, more commonly, header entries forged by spammers so that they appear to come from JANET customers.

4.1.2 Network Monitoring

This data is unavailable until a system upgrade is completed later in 2004.

4.1.3 Intelligence Analysis

This data is unavailable until a system upgrade is completed later in 2004.

4.1.4 Distribution of Advice to Customer Organisations

The team have distributed eight advisories. Two were on the Linux kernel remap vulnerability, one each on the multiple vendor H.323 implementation vulnerability (Cisco, Microsoft, VC), and one on a vulnerability in Microsoft Internet Explorer and the Microsoft Windows Abstract Syntax Notation number One (ASN.1). There have also been advisories on the increasing rate of MyDoom-C and DoomJuice infections. Warnings on the W32/Bagle-Q were issued and the Beagle.J virus was identified as being more persuasive than most in encouraging users to believe in its authenticity.

The JANET Computer Emergency Response Team (JANET-CERT) web pages are currently being updated and the site re-built. The changes include updated Security Advisories and the addition of CERT's new incident type definitions. The team have deleted some older information and rebuilt several links. This work is ongoing until the end of August 2004.

4.1.5 Customer Education

During this period the team have delivered a number of presentations and been involved with the organisation and delivery of courses.

JANET-CERT arranged for BestPractical™, the creators of Request Tracker for Incident Responses (RTIR), to provide a training course in Europe on RTIR for 10 teams representing eight countries. The NHS was also given a presentation on RTIR. The RTIR Task Force - Computer Security Incident Response Team (TF-CSIRT) Working Group (WG) was established with the inaugural meeting organised by JANET-CERT and held in London. The new technical security course was delivered in Bristol and appears, at first sight, to have been well received.

4.1.6 Representing JANET within Security Related Forums

JANET-CERT has been involved in producing the Draft Department for Education and Skills (DfES) System Security Paper for schools and Local Education Authority (LEA) connections, representing UKERNA at Kent (twice), Birmingham, Oxford and the West Midlands LEAs. The team has also attended meetings at TF-CSIRT, Réseaux IP Européen (RIPE) (where they contributed to the SPAM WG), eCRIME Congress, Communications Electronic Security Group (CESG) conference and Honeypot meeting. The team has also been active on the Internet Watch Foundation (IWF) Funding council, contributing to the Constitution change and offering expertise at the SJ5 Router discussions and requirements meetings.

5 Other UKERNA Activities

5.1 TERENA

TERENA was formed in October 1994 by the merger of the Réseaux Associés pour la Recherche Européenne (RARE) and the European Academic and Research Network '...to promote and participate in the development of a high quality international information and telecommunications infrastructure for the benefit of research and education'. TERENA carries out technical activities and provides a platform for discussion to encourage the development of a high quality computer networking infrastructure for the European research community.

5.1.1 Mobility Task Force (TF-Mobility)

The TF-Mobility group met on 30 January 2004 in Amsterdam and discussed the following specific deliverables.

Deliverable G

This was based on the selection of an Inter-NREN roaming solution based on the previous deliverables. The deliverable was in its final draft and was formally agreed and finalised at the meeting.

Deliverable H

The meeting then focused on deliverable H and Klaas Wierenga (SURFnet) presented his vision of an 'interworking scenario'. Klaas's view was that this deliverable could be improved with configuration examples included. The aim was to have the three solutions (802.1x, Virtual Private Network (VPN), Web-based redirect) in place as described in the 'interworking scenario'. To achieve this, Klaas believed that wireless access points should broadcast two Service Set Identifiers (SSIDs), one to support 802.1x and the other to support VPN. In Holland this could be achieved as most of the access points in use were Cisco, and thus capable of broadcasting two SSIDs. The deliverable would also consider a solution for organisations with access points that were non-802.1Q capable.

Some security issues were also discussed. Hansruedi Born (SWITCH) presented the results of some small scale trials of the Controlled Address Space for VPN Gateways model. His proposed model has the docking network separated by the NREN network as well as the access control device. The range of addresses allocated depends on the number of VPN gateways in use. Hansruedi described two approaches that he has considered: dedicated routing and VPN forwarding. The group agreed that tests needed to be widened and a number of NRENs expressed an interest in getting involved in some inter-NREN tests based on both concepts.

Deliverable I

This will contain the recommendations for implementing one of the three solutions outlined in deliverable H. It will also contain a policy draft to cover intra-NREN roaming. Ideally the document will be pitched at a high level that lists some guiding principles and it was stressed that it should not consider detailed legislation at national levels or the harmonisation of such laws.

Deliverable J

Jardar Leira (UNINET) has put his deliverable online at:
<http://www.uninett.no/wlan/>

It contains information about Wireless Local Area Networks (WLAN) such as standards, products, security issues and product testing. Jardar asked for feedback about the site, especially on the product testing section. It was agreed that the product list should be restricted to those deemed relevant and important to the TF-Mobility scope. Everybody should provide feedback and contributions to this deliverable whilst Jardar concentrates on gathering data on access points.

Deliverable K

Tim Chown (University of Southampton) agreed to lead this deliverable and confirmed that it will only contain information about MobileIPv6.

The remainder of the meeting focused on an update from Juergen Rauschenbach (Deutsches ForschungsNetz) on Joint Research Activity 5 (JRA5) within GÉANT 2, which will build on top of TF-Mobility. The future of the task force was discussed. It was agreed to end the current TF-Mobility group in June 2004 with all deliverables completed. A proposal to form a new group will be made to TERENA. A revised charter will need to be produced in line with GÉANT 2 objectives and would therefore focus on roaming but with consideration for the integration of Authentication/Authorisation Infrastructures (AAI).

TF-Mobility members are completing these remaining deliverables and have also been involved in the GÉANT 2 Joint Research Activity 5 that is looking at roaming and AAI integration issues. The next TF-Mobility meeting is scheduled to take place in June at the TERENA Networking Conference in Rhodes, Greece.

Further information about the TERENA Mobility Task Force can be found at:
<http://www.terena.nl/tech/mobility/>

5.1.2 Task Force-Next Generation Networking (TF-NGN)

The thirteenth TF-NGN meeting was held in Madrid at the end of January 2004. As usual, an update on the state of the GÉANT network was given, including a progress report on the EUmedconnect project, which will connect non-EU Mediterranean countries to GÉANT.

The roadmap for the rest of the year includes work on enhancements to the IPv4 multicast service and the IPv6 service, with additional activities involving monitoring and measurement, technology testing and layer two Virtual Private Network (VPN) issues.

Some time was also given over to a discussion of activities in the GÉANT 2 (GN2) project, which succeeds GÉANT later this year.

The IPv6 area (led on behalf of UKERNA by Dr Tim Chown of the University of Southampton) included updates from both the EC 6net and Euro6IX projects.

The Swiss NREN (SWITCH) and the Polish NREN (POZMAN/PSNC) presented updates on the SWITCHlambda and PIONIER optical networks respectively. These updates were of great interest in relation to the work UKERNA is undertaking for SuperJANET5.

The next meeting of TF-NGN is scheduled for May 2004, in Amsterdam.

Further details about the TF-NGN activities can be found at:
<http://www.dante.net/tf-ngn/>

5.1.3 Task Force-Public Relations (TF-PR)

A meeting of the TF-PR took place on 4-5 March 2004 in Brussels. A presentation on best practice in NREN web sites was well received and is available online at:

<http://www.terena.nl/news/pr/websites/NREN-report-final.pdf>

Information on the TF-PR activities can be found at:
<http://www.terena.nl/news/pr/>

5.1.4 TERENA Networking Conference

Several UKERNA staff and members of the UK academic community are members of the TERENA programme committee for the 2004 European Networking Conference that will be held in Rhodes, Greece from 7-10 June 2004.

Bookings are now being taken for this conference which has a number of associated events taking place around it. Details of the programme can be found at:
<http://www.terena.nl/conferences/tnc2004/programme/>

5.1.5 TERENA General Assembly

The TERENA General Assembly has not met during the last quarter. The next meeting will take place directly after the TERENA Networking Conference in Rhodes on the 10 and 11 June.

5.1.6 TERENA Compendium

The 2003 version of the TERENA Compendium can be found at:
<http://www.terena.nl/compendium/>

Requests for updates for the 2004 compendium are being sought from all members of TERENA.

5.2 GÉANT and Delivery of Advanced Networking Technology to Europe (DANTE)

GÉANT is the pan-European research and education network that connects over 3000 research and education organisations in over 30 countries. It connects many of the NRENs in Europe. DANTE is the company, formed in 1993, that is responsible for developing and operating GÉANT.

5.2.1 Mobility Group - Joint Research Activity 5 (JRA5)

The GÉANT2 JRA5 group has been working on defining this research activity which focuses on ubiquity (mobility) and roaming access to services. A proposal was submitted to the European Commission in March 2004 and, following approval, the work will commence in September 2004.

5.2.2 Quality of Service (QoS) Project - Service Activity 3

The GÉANT2 QoS group has been working on defining this service activity. A proposal was submitted to the European Commission in March 2004 and, following approval, the work will commence in September 2004.

5.3 Development Activities

5.3.1 UKLight

Contracts for equipment and international circuits (London to Amsterdam and London to Chicago) were awarded late last year and the first phase of equipment installation is now reaching its peak. Both international circuits are functioning and the installation at NetherLight in Amsterdam is complete, with the StarLight installation scheduled for early April. Within the UK the central UKLight facility at ULCC is close to completion and work is well in hand for the first phase of extending access to the facility in the Cambridge and Manchester regions.

The UKLight Steering committee had its first meeting and gave approval for UKLight to become a member of TransLight. Formalities remain to be completed but membership of TransLight should enable UK-based projects to participate in collaborative work with colleagues from around the world who are connected by similar infrastructures.

More information about TransLight can be found at:
<http://www.startap.net/translight/>

Discussions are continuing with other areas of the UKLight programme involving photonics.

There is a self-subscription JISCmail list (UKLight-announce) for those wishing to keep track of developments. Details of how projects can connect to and use UKLight can be found on the web at: www.uklight.ac.uk/

5.3.2 Content Delivery Infrastructure (CDI) Project

Phase 2 testing is now complete. A report on the second phase of the CDI trial will be published in May 2004.

Based on the findings of the JANET CDI trial throughout 2003, UKERNA are proposing to form a CDI Architecture Group with the aim of creating an architectural framework for content delivery on JANET. The group will consist of a number of key representatives from the JANET community and NHSNet (the network connecting NHS organisations). It is anticipated that the architecture group will begin work in May 2004.

UKERNA continues to work with the Managing Agent and Advisory Service (MAAS), the JISC Committee for the Information Environment (JCIE) and the British Universities Film and Video Council (BUFVC).

Further information can be found at:
<http://www.ja.net/development/content/>

5.3.3 Co-location Services Development

UKERNA are initiating a project with the aim of formalising and promoting the provision of co-location services to both the JANET community and commercial providers.

The project will start in April 2004 and the initial phase will last six months.

Further information about the co-location service can be found at:
<http://www.ja.net/co-location/>

5.3.4 Internet2

UKERNA will be represented at the next Internet2 members meeting in Arlington, Virginia on the 19-21 April. The meeting will focus on key areas including advanced application deployment, security on high-performance networks and global e-Science collaborations.

Further details are available from:
<http://events.internet2.edu/2004/spring-mm/>

5.3.5 Quality of Service (QoS)

5.3.5.1 JANET QoS Development Project

UKERNA worked with the partners of the JANET QoS project to finalise the test plan document and prepare for live QoS testing on the JANET production network, spanning the backbone and regional and campus networks that are configured to support QoS.

Prior to testing, various monitoring infrastructures were deployed to test the effect of QoS during the testing phase. The monitoring infrastructure consisted of the following tools: Cisco Service Assurance Agent, Iperf, Real-time U(ser Datagram Protocol) Data Emitter (RUDE)/Collector for RUDE(CRUDE) and JANET Netsight. It was felt that a comparison of the results from the various monitoring tools, together with an evaluation of the monitoring tools, would be beneficial for the JANET community.

In February the project partners conducted local tests within their campus networks to gather preliminary results and to prepare for live tests on the production network. These were carried out during three JANET 'at risk' periods in March.

The live testing phase was conducted on 2, 9 and 16 March and involved running three types of applications to test the Premium and Less than Best Effort (LBE) class of service.

IP Videoconferencing and VoIP applications were used to test the premium service, and the AccessGrid™ application was used to test the effect on LBE traffic during congestion. During the tests both natural and artificial traffic loads were injected at various points on the networks in order to assess the effect of traffic marked as Best Efforts, LBE and Premium. Traffic generators such as RUDE/CRUDE and Iperf were used for the artificial traffic load. Both subjective and objective measurements were carried out during the testing phase and the results will be published on the JANET website in due course. Results of the testing will also be presented at Networkshop.

Further details of the JANET QoS Development Project can be found at:
<http://www.ja.net/development/qos/>

5.3.6 Internet Protocol version 6 (IPv6)

The JANET IPv6 Experimental Service has been running for some time and applications to use the service and request IPv6 address space continue to be received from the JANET community.

The rollout of IPv6 / IPv4 dual stack across SuperJANET continues. An implementation plan showing the status of the deployment can be found at:
<http://www.ja.net/development/ipv6/statustable.html>

During the last quarter it was found that some of the backbone access routers need hardware and/or software upgrades and dual stack cannot be installed on these routers until such upgrades are completed. UKERNA is planning to carry out the upgrades over the next few months.

UKERNA is a partner in the European Commission funded project, 6NET, which began in January 2002. Its aim is to establish a pan-European native IPv6 network to gain practical experience of managing and implementing such a network. UKERNA has installed and commissioned the 6NET infrastructure in the UK to provide IPv6 connectivity to UK universities that are participating in this project (University College London, University of Southampton and Lancaster University).

UKERNA has been working with Lancaster University to produce a deliverable that addresses IPv6 QoS. This document will be published on the 6NET website in the near future.

On 17-19 March 2004, UKERNA attended the 6NET consortium meeting in Lisbon, Portugal. The aim was to discuss the feedback obtained from the European Commission on the 6NET project and future work activities. The other area discussed was the extension of the project due to end in December 2004. Agreement was reached that during the next few months discussions on the extension of the project will be conducted by the policy committee of 6NET and, if an extension is justified, a proposal will be submitted to the European Commission.

Further details about the 6NET project can be found at:
<http://www.6net.org/>

5.3.7 e-Science/Grid and Research Liaison

David Salmon attended the Grid Networking Workshop (GNEW 2004) at the Centre Européenne pour la Recherche Nucléaire (CERN) to give a presentation on UKLight, although the workshop was strongly oriented towards issues raised by the use of such facilities by e-Science applications.

Andrew Cormack has been invited to join the Grid Security Task Force, which will be developing advice on security issues for the Grid programme. Early activities include identifying and documenting existing best practice and providing guidance for principal scientists.

5.3.7.1 e-Science Videoconferencing Project

UKERNA has undertaken work in a number of areas to support videoconferencing within the e-Science community.

Work has focused on formalising support for videoconferencing within the e-Science community, and ascertaining the requirements for promoting and enhancing current activities.

The procurement for the UK e-Science Videoconferencing Centre is complete and contractual discussions with the preferred supplier are entering the final stages of negotiation. Subject to contract, a limited service will be offered from early April 2004, with a full service being offered from the 30 June 2004.

Following on from a call for proposals, UKERNA has commissioned a number of studies based upon the report entitled 'Multi-site Videoconferencing for the UK e-Science Programme'. These reports will be made available early in Quarter 3 2004.

5.3.8 SuperJANET Development Network

To support the development activities and the requirements of the research community, a flexible network development infrastructure that is separate from the production network has been deployed and is fully operational.

A guide providing information on the facilities offered by this network, and a user guide for those development projects that have arranged time to use the development network can be found at: http://www.ja.net/development/SJ4Dev_Network.html

UKERNA has been deploying and configuring the out-of-band equipment at various locations to allow alternative access to the development network routers should the dedicated circuits fail. This work is progressing and should be complete within the new few months.

5.3.9 JISC Authentication, Authorisation and Accounting (AAA) Programme

The JISC executive is forming a programme with the JISC services (including UKERNA) to establish a national infrastructure for Authentication and Authorisation. Early discussions have taken place and UKERNA will continue to be involved, making links where appropriate to the projects within the JANET network development programme.

5.4 Pilot and Trial Services

5.4.1 JANET Satellite Pilot

Two two-way satellite services (Gilat™ 360E, Hughes Network Systems™ Enterprise satellite service package solution DW5000-2048) are currently operational. All Gilat™ 180 terminals have been replaced with Gilat™ 360E terminals and users have reported a much better quality of service. All SATLYNX Broadband Interactive terminals (except for UKERNA) have been decommissioned. Over 50% of the sites who had a SATLYNX Broadband Interactive have entered into commercial agreements with the trial satellite service provider to continue with the two-way satellite broadband internet service. The remaining Gilat™ 360E sites have been offered commercial terms for the continuation of their service after the trial finishes at the end of April 2004.

UKERNA and the Independent Evaluation Team continue to monitor the performance of the 360E to assess the level of improvement compared to the Gilat™ 180. UKERNA also continues to monitor the satellite connections for its sole SATLYNX Broadband Interactive terminal to servers on the Internet.

All monitoring data gathered is available online at: http://www.ja.net/development/network_access/satellite/activity1/results.html

Further information about the satellite trial can be found at: http://www.ja.net/development/network_access/satellite/trial.html

5.4.2 Higher Quality Videoconferencing

The Higher Quality Videoconferencing project is assessing the feasibility of running Motion Picture Experts Group (MPEG) based high bandwidth videoconferencing applications on JANET.

UKERNA are currently configuring the hardware components of the MPEG Coder-Decoders (CODECs) procured. Resourcing issues mean that this project now has a planned start date of April 2004.

5.4.3 Conferencing on Demand (CoD)

The CoD project is a hands-on demonstrator project aimed at assessing the feasibility of providing self controlled Multipoint Control Unit (MCU) resources for JANET community. The MCU and scheduling equipment used to support the CoD project has now been installed and configured.

Testing of the CoD interface and underlying infrastructure is well underway, and both UKERNA and the JVCS - Management Centre are working closely with the manufacturer to ensure suitability for deployment on JANET. A number of issues have come to light during testing, particularly in the area of accessibility. UKERNA is considering developing a separate interface as a solution.

A pilot phase for the CoD project is planned for the second quarter of 2004.

5.4.4 Automated Quality Assurance (QA) Testing

The automated QA project is a hands-on feasibility study into the potential provision of an audio and video online QA tool for the JANET community. The video and audio analysis equipment is installed and configured, and initial testing is underway.

UKERNA is working with the JVCS – Management Centre to configure the central control equipment, and to facilitate the production of a pre-recorded audio and video script.

This project encountered a number of issues relating to the insolvency of the equipment supplier but these have now been resolved and it is planned to make the tool available to the JANET community in June 2004.

5.4.5 Voice over Internet Protocol (VoIP)

UKERNA is carrying out a trial of VoIP using Cisco® Call Manager on a Cisco® Media Convergence Server with a range of Cisco® and Polycom® IP telephones including the Cisco® 7960G, Cisco® 7905G and Polycom® SoundPoint IP 500.

IP phones have been distributed to a number of JANET organisations taking part in the trial. Some testing has already been done within UKERNA and more testing will take place over the next few months.

UKERNA are also considering the implications of JANET supporting voice services, from both a technical and a regulatory perspective.

5.4.6 Location Independent Networking (LIN)

LIN will allow JANET users to roam between academic organisations nationally (and even internationally) and transparently connect to their home organisations facilities/services via JANET. Its advantage lies in reducing the burden for the systems administrator at the visited organisation of manually setting up guest accounts. It also reduces the time and complexity for guest users to gain wired/wireless network access to their local site's facilities. LIN may in the future encourage greater opportunities for collaborative working between academics regardless of their physical location.

A project to deploy the LIN trial service infrastructure has been initiated by UKERNA and is being steered by the JANET Wireless Advisory Group (WAG). The WAG members are finalising a LIN

architecture document that will define the technical solution, service support and policy guidelines for the trial.

The University of Bristol has been selected to provide the technical support for the trial service (to manage the national RADIUS servers and service support elements). A small number of other universities will be involved in an initial 'proof of concept' testing phase. If successful, UKERNA will issue an open call for participation in a broader national trial.

Further details about the LIN project will be presented at Networkshop 32.

5.5 Further Education (FE) Liaison

5.5.1 FE Colleges

UKERNA undertook a review of the FE sector to identify any specific issues and requirements. Twenty three colleges were visited across England and Wales. UKERNA was also present at three Regional Technical Forums led by the RSCs. The summary report will be discussed within UKERNA in April.

A review of requirements for bandwidth upgrades to JANET connections for FE Colleges in England has been completed. Colleges that have demonstrated a level of traffic above 15% of capacity will be upgraded to 10Mbit/s and others to 4Mbit/s. This upgrade is planned for completion by April 2005 and will bring FE Colleges in line with the targets for schools connectivity.

UKERNA was represented at the inaugural National Information and Learning Technologies Association (NILTA) South East Regional meeting.

5.5.2 Specialist Colleges

The project to provide JANET connections to Specialist Colleges is nearing completion. The Colleges have drawn on the expertise of both UKERNA and JISC-RSC staff to make best use of the connections. A successful security conference was held by JANET-CERT to raise awareness and technical skills within the Colleges. A national web filtering service has gone live with eight Colleges currently making use of the service.

5.5.3 Adult and Community Learning (ACL)

The initiative to connect Adult and Community education continues to make progress in providing JANET connections to a number of local authorities. Twelve of the early adopters group of 20 Local Authorities (LAs) have circuits on order and discussions are taking place with the remainder. Complex routing involving the RNOs and RBCs together with an understanding of the implications for each authority have slowed the planned progress. Further authorities with direct provision (i.e. ACL provided and/or managed by the authority and typically on their own premises) have requested a JANET connection and these are being progressed. The trial web-based e-mail service for ACL is now at implementation phase with Buckinghamshire County Council.

An infrastructure mapping exercise is gathering data about the provision of ACL resources and over 50% of LAs have completed the survey. A preliminary analysis report is planned for dissemination at the end of April 2004. There is little existing data and this document will be used to inform the strategic policies for development of this sector at a national level.

5.5.4 Scotland

The Scottish Schools Digital Network (SSDN) Interconnect is now complete, connecting 32 Local Authorities and providing 37 establishments with gov.uk addresses. Procurement of the SSDN Intranet is currently out to tender and this should be completed by the end of 2004 with implementation occurring over a 12-18 month period.

5.6 Study Groups

5.6.1. Wireless Advisory Group (WAG)

The JANET WAG website structure has been updated and an open call for wireless networking case studies is now available online at:

http://www.ja.net/development/network_access/wireless/wag/opencall.html

Three wireless networking case studies have been approved by the WAG and are being written. Two further case studies are under review.

A JANET Wireless Event was held in February 2004. It was fully booked with an attendance of approximately 150 delegates and their feedback was positive. Presentations from the event are available online at:

<http://www.ja.net/conferences/wireless/feb-04/prog.html>

Two factsheets have been produced by Andrew Cormack on Wireless Security and User Authentication. Online versions are available at:

<http://www.ja.net/documents/factsheets.html>

6 UKERNA

6.1 UKERNA Staff

The following staff changes were recorded during the reporting period.

Leavers

Ann Pocklington retired 31 March 2004

Norma Martin retired 31 March 2004

New Staff

Mally McLane – JANET-CERT Member

Frances Neilson – FE Account Manager, Scotland

Linda Godden – P/T Documentation Officer

Ben Jeapes – Documentation Officer

Daniel Wilkes – P/T Web Administrator

Internal Changes

Tom Meyer – Web Services Manager

7 Further Information

Further information on any aspect of this report can be obtained through UKERNA's general enquiry point, JCS. They can be contacted by e-mail or telephone:

E-mail: service@janet.ac.uk

Telephone: 0870 850 2212

JANET®, SuperJANET® and UKERNA® are registered trademarks of the Higher Education Funding Councils for England, Scotland and Wales. The JNT is the registered user of these trademarks.

AccessGrid™ is a trademark.

BestPractical™ is a trademark.

Cisco® is a registered trademark of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

Gilat™ is a trademark.

Hughes Network Systems™ is a trademark of Hughes Electronics Corporation.

Internet Security Systems® is a registered trademark.

Level 3™ Communications is the trademark of Level 3 Communications, Inc.

LINX™ is a trademark.

LINUX. The term 'Linux' is a registered trademark of Linus Torvalds, the original author of the Linux kernel.

Microsoft® and Windows® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

PacketExchange™ is a trademark.

Polycom® is a registered trademark of Polycom Worldwide.

Sprint® is a registered trademark of Sprint Communications Company L.P.

StarLightSM is a service mark of the University of Illinois Board of Trustees and the Northwestern University Board of Trustees.

Telehouse® is a registered trademark of Telehouse International Corporation of Europe Limited.

UNIX® is a registered trademark licensed to X/OPEN.