

**UKERNA Quarterly Report to the JANET Community
April 2003 to June 2003**

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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 or any complaints about the content to JANET Customer Service (JCS), at the contact given in section 3.2.1, or e-mail: 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 2002/2003.

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

This report covers the period April to June 2003 (Summer).

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

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

- College of North East London;
- Daresbury Laboratory;
- Newham Sixth Form College;
- Preston College;
- Trinity and All Saints College;
- University of London Computer Centre.

JCS has recently begun connecting a group of specialist colleges to the network (see 2.1.1.1), along with connections for Scottish Local Authorities involved in the SPARK project.

For information regarding current upgrades or connections, please contact 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)

The initial programme of provision of JANET connections to FE colleges throughout the UK is complete.

England

A pilot project to connect six specialist colleges, funded by the Learning and Skills Council (LSC), has been completed. Rollout of JANET connections to a further 31 specialist colleges is scheduled to start during July 2003.

Northern Ireland (NI)

College access circuits and the connection to the SuperJANET backbone have been extremely reliable. The majority of college access circuits continue to be used close to capacity during peak hours.

Scotland

All Regional Network reprocurments are complete and Scottish colleges are now benefiting from enhanced bandwidth to JANET.

Wales

Implementation of the North Wales Metropolitan Area Network (MAN) has been hampered by delays to circuit deliveries to some FE colleges. The North Wales MAN continues to press its supplier to deliver the remaining circuits.

2.1.2 Core Network

The core network has run smoothly over the past quarter. There was one major outage that took place in late May on the Leeds-London link for over 28 hours. The outage was due to fire damage, and did not affect JANET service as traffic was rerouted. While repairing this fibre damage our Nottingham-London circuit was affected, which left East Midlands Metropolitan Area Network (EMMAN) without JANET access for about 6 hours.

Major outages are reported on the JANET web server at:
<http://www.ja.net/cgi-bin/index.pl/outages/>

2.1.3 IP Multicast

The request for information issued to the Regional Network Operators (RNOs) to assess the current extent of deployment of multicast transport across JANET was very successful with most RNOs responding. The main issues were multi-vendor interoperability and monitoring.

UKERNA has deployed a beacon server at ULCC, and the server is capable of displaying various views of the reporting beacons. These are:

Global view

(an unfiltered view showing all reporting beacon clients configured according to the above instructions.)

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

Access Grid view

(a filtered view, showing just the beacon clients set up for monitoring Access Grid sites.)

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

The History Logging facility has been enabled in this view. To appear in this view, as well as configuring it as described above you should send an e-mail request to: **M.Godfrey@ukerna.ac.uk** stating the IP address, hostname and configured name of your Access Grid beacon client.

Regional Network view

(a filtered view, showing just the beacon clients set up for monitoring multicast connectivity on the regional networks.)

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

If you wish your beacon client to appear in either view, you should send an email request to: **M.Godfrey@ukerna.ac.uk** stating the IP address, hostname and configured name (i.e. your email address) of your Regional Network beacon client.

The Multicast Addressing Policy and the Beacon Architecture Document will be made available on the JANET web site in the near future.

2.2 External Network Access Provision and Transmission

2.2.1 Access within Europe

JANET access to European National Research and Education Networks (NRENs) is via a 2.5Gbit/s connection to the Gigabit European Academic Network (GÉANT) from Telecity. Traffic over the link peaks at around 400Mbit/s.

Further information about GÉANT can be found at:

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

2.2.2 Access to the North American Internet

JANET access to the global Internet is provided by Sprint[®], Level3 Communications[™] from Telehouse[®] and Telecity in London. Global Internet access provided by MCI from St Pancras in London was terminated at the end of May 2003.

Aggregated peak traffic reached 1.6Gbit/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 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 GigaEthernet connections from Telehouse® and Teleticity. During the reporting period, traffic peaked at around 900Mbit/s over the two connections and the service was reliable.

JANET has started peering with Internet Service Providers (ISPs) via the Manchester Network Access Point (MaNAP). There is a 100Mbit/s connection to MaNAP network 1 and a 1Gbit/s connection to MaNAP network 2. Total traffic peaked at around 50 Mbit/s.

A new external connection (100Mbit/s) to PacketExchange was established in June. This enables JANET to set up direct peering sessions with ISPs that do not have a point of presence in the UK. The first peering session, B2 Bredband Network, in Sweden was established via this connection in June. Traffic over this connection peaked at 90Mbit/s as soon as the peering was enabled. Hence an upgrade of the connection to PacketExchange from 100Mbit/s to 1Gbit/s is currently in progress.

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

The peering connection between JANET and CERNET was saturated during this reporting period. An agreement was reached by the Higher Education Funding Council for England (HEFCE) and CERNET to upgrade this link to 45 Mbit/s later this year.

A 26.5 hour outage took place on this link in May due to a major cable break caused by an earthquake in Algeria.

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 SuperJANET. Please note that the phone and fax numbers (when calling from the UK) have been changed as follows:

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 will in the long term provide an overview of all the JANET Regional Networks.

There are now 22 Netsight systems in place on the network all managed by the RNOs. The majority of the systems have now had all their respective regional connections added. Individual connection details such as traffic, reliability and latency figures are available to those connections via a username and password on each system.

The development of the Netsight system is very much a dynamic process with enhancements being incorporated continually. The Network Resource Group at UKERNA, which is responsible for the development of the monitoring system, maintains an internal and customer based 'wish list' for desired

improvements and enhancements to Netsight. An internal committee reviews the requested and proposed enhancements quarterly.

Work has begun to make the Netsight facility available to the Regional Broadband Consortia (RBC). The RBCs together with some of the Reading Core Point of Presence (C-PoP) Co-Location Services are currently monitored and available on the system located in the University of London Computer Centre (ULCC) which, until they are available on their own dedicated system, can be found at: <http://ulcc.netsight.ja.net/>

Netsight will continue to be developed to provide a monitoring service to other developing services within JANET.

More details 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. UKERNA continues to work on completing the service installation to sites that have already requested the service. There are currently 16 sites connected to the MRS. 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, along with any modifications required to register entries in the Domain Name Server (DNS) for these 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 DNS is available at: http://www.ja.net/documents/naming/naming_mods.html

The rules on eligibility for registration under ac.uk have recently been updated to make it clearer to customers which organisations may be eligible for an ac.uk domain name. Details can be found at: <http://www.ja.net/documents/naming/ac-uk-naming-rules.html>

The eligibility guidelines were amended and updated over the reporting period, with the rules for gov.uk being completely revised by the Office of the e-Envoy, which took over responsibility of the gov.uk domain from the Office of Government Commerce (OGC) on 1 April 2003.

During the reporting period 611 requests for new domain name registrations and modifications to existing entries were received. The rate of applications for new domain names averaged 115 per month, with an average of 89 modifications for each month.

The charge for a new name request is £94 including V.A.T. (including the first two years maintenance charge). The biennial maintenance charge of £47 including V.A.T. for all modification requests is not applicable to organisations while they remain connected to JANET. 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 Name Servers Service

JANET will provide a basic DNS service for its customers, publishing their zones on central name servers and allowing a restricted facility for requesting changes to resource records. The detailed

information will be published on the web site, and is expected to be found at:
http://www.ja.net/primary_nameserver/primary_nameserver/

2.5.4 Secondary Name Servers Service

The Secondary Name Servers Service is currently available without charge to any customer with a Primary Connection to JANET. Under this service UKERNA will arrange for a secondary name server 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 the service had increased to 455. 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

There have been no known failures to the whois service during this reporting period.

The whois server database of existing names in both the ac.uk and gov.uk domains is in place, and is currently updated approximately once a month. An automated updating system of the whois server database is progressing and it is anticipated that this will be in place and operational within the next few months. The current server can be queried using one of the following UNIX[®] commands:

```
whois -h whois.ja.net domainname.ac.uk  
whois -h whois.ja.net domainname.gov.uk
```

2.6 Supporting Infrastructure Services

2.6.1 Network Time Service

The JANET Network Time Service delivers a stable time reference to customer organisations using the Network Time Protocol (NTP) specified in RFC 1305. It consists of four stratum-1 servers distributed across the network, 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.

Eleven more sites registered to use the JANET Network Time Service during the reporting period bringing the total to 54. Overall, it is a stable and well-used service. During the reporting period the clock at Edinburgh appeared to have developed a fault. However it was identified to be a reception issue and was resolved by re-positioning the aerial.

The importance of the Network Time Service and maintaining accurate clocks in computer systems was recently referenced in a survey issued to the JCN.

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, as its name suggests, is being developed to provide a shield to organisations' mail servers, that would otherwise be vulnerable to mail abuse. In response to requests to develop a bulk mail filter, the pilot service has been extended beyond its original end date of April 2003. 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, two of the pilot sites and some internal end users have evaluated the enhanced pilot service. Some of the feedback has reported over 90% of unsolicited Bulk E-mail (Spam) has been identified, with only a small rate of false positives. Any client interested in taking part in the extended pilot service, should contact JANET Customer Service at service@janet.ac.uk

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. A customer organisation may choose to be provided with a News Feed that does not include all the newsgroups available.

The field trial of the News Cache Service has been completed. The report on the trial and the recommendations on how to run a Cache Service were completed during the reporting period. The report has been reviewed and the recommendations are currently being evaluated.

There are currently two ways of receiving Usenet News over JANET, and the JANET Usenet News Service documentation reflects this. 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 this reporting period, no new sites joined the Service which now has 93 sites connected. More information is available at:

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

2.7.3 JANET News Reader Service

One site has joined the News Reader Service during the reporting period, bringing the number of connected sites to 39.

The migration of the News Reader South server was successfully made from the Rutherford Appleton Laboratory to the Reading Co-location facility. 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 contract was signed with the University of Edinburgh to continue the operation of the Videoconferencing Management Centre (VCMC). The new service started on 1 April 2003 and will initially operate for three years. The VCMC continues to provide support for videoconferencing over Internet Protocol (IP) and Integrated Services Digital Network (ISDN), as well as gatewaying between videoconferencing technologies.

Work is currently underway to test a new version of software and a new module for the Multipoint Control Units (MCUs). Subject to the results of the testing being satisfactory the software and module will be deployed across the service enhancing the quality of transcoded conferences by reducing latency.

There are 350 videoconferencing venues registered to use the JANET Videoconferencing Service over ISDN (JVCS-ISDN) and a further 160 venues registered to use the JANET Videoconferencing Service over Internet Protocol (JVCS-IP). During the reporting period 1047 conferences took place that used ISDN over 2685 hours. In addition 767 conferences took place using IP and the IP/ISDN gateway over 1599 hours.

Further information about the JANET Videoconferencing Service can be found at:

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

2.8.1.1 JANET Videoconferencing Booking Service

Work is ongoing to make functional enhancements and improvements to the user interface. Details of the Booking Service are available at:

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

2.8.2 Video Technology Advisory Service (VTAS)

This is a UKERNA service that provides unbiased technical advice to JANET-connected FE, HE and Research Organisations. VTAS has maintained its schedule of product evaluations, most recently examining the Polycom® Vortex® EF2241 and the Sony® Contact 1600. The evaluation reports, together with the testing schedule and previous evaluation reports, can be found at:

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

One of the aims of the advisory service is to develop documentation of interest to the JANET community. The VTAS Streaming Products Survey, including the document 'An Introduction to Streaming' is available from:

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

Work is continuing to facilitate the integration of the VTAS and JCS helpdesk systems.

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

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

A Factsheet outlining the features of the service is available from JCS or online at:

<http://www.ja.net/documents/factsheets/vtas.pdf>

2.9 Administrative Services

2.9.1 Connection Administration

UKERNA is responsible for administering the procedure for the approval and commissioning of new and upgraded connections to JANET. This involves liaising with customers to report progress on their new or upgraded connections. All sites connected to JANET must adhere to the JANET Connection Policy which can be found at:

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

Requests for new or enhanced JANET connections should be made via JCS.

A list of organisations connecting 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

2.9.2 Peer Networking Agreement Administration

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

LINX™ Peering (London)

- Arcor AG & Co
- Entanet®
- Interoute®
- Lycos® Europe
- Net Access Corporation
- NetCologne
- Qix®
- Reach

- Song Networks
- Tele2[®] (Liberty Broadband)

MaNAP Peering (Manchester)

- Entanet[®]
- Netservices

Private Peering

- B2 Bredband AB

2.9.3 Licence Administration

During this reporting period JANET Customer Service have issued a total of four new Sponsored Connection licences and two new Proxy Connection licences, with 18 licences cancelled. The invoices for the current year, 1 April 2003 to 31 March 2004 were issued in mid-April.

The Connection process is undergoing a complete overhaul with changes being implemented from 1 August 2003 for new connections.

The new tariffs and licence fees will come into force from 1 August 2004 for existing Sponsored Connections. Further information about these changes will be sent to hosting organisations of existing sponsored connections during July 2004.

Further information about Sponsored and Proxy connections can be found at:
http://www.ja.net/connect/types_connect.html

2.10 Operational Support Services

2.10.1 Management of Maintenance Activities

There were a total of 13 at-risk sessions for the reporting period during which planned work and maintenance activities took place.

Major activities that took place included:

- Internetwork Operating System (IOS) upgrades to various routers;
- implementation of Quality of Service (QoS) techniques continues with changes to a number of routers.

3 Information and Support Services

3.1 Network Information Service

The JANET/UKERNA web server continued to perform well. The new style for the web pages has now been successfully implemented and has received positive feedback.

The web server mirror has been successfully tested and was installed at a remote location during June. This will provide increased resilience to the service in line with the goals of the Business Continuity Plan.

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)

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

The number of enquiries received and logged by JCS in this reporting period was 1871. As in previous quarters a large proportion of these queries related to the Domain Name Service (72%), requests for new Primary Connections (FE college connectivity), Sponsored and Proxy Connections, General Enquiries and JANET Access/Connection.

A total of four complaints were received in this reporting period, including one DNS complaint. All complaints have been resolved

3.2.1 Contact Information

The Service is staffed from 08.00 to 18.00 Monday to Friday, with voice-mail available for calls outside these hours and if staff are temporarily unable to answer a call.

During the next reporting period there is one non UK-wide public holiday which is August Bank Holiday on 25 August 2003, when JCS will be staffed with limited cover from 9am to 4pm.

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

E-mail: service@janet.ac.uk

Tel: 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

JANET Netsight

PB/INFO/013 (03/04)

<http://www.ja.net/documents/factsheets/Netsight0304.pdf>

Newsletters

UKERNA News 23 (June 2003)

http://www.ja.net/documents/UKERNA_News/2003/June/NEWS23.pdf

Service Documentation

Guide to JANET Co-location Service (update)

GD/COLOC/001 version 2.3

http://www.ja.net/co-location/Co-location_Service_Guide_V2.3.pdf

An Introduction to Streaming

GD/VTAS/011 v1

http://www.singleton.swan.ac.uk/projects/vtas/pdf/streaming_intro.pdf

Reports

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

Policy Document

JANET Connection Policy

May 2003

<http://www.ja.net/documents/connection-policy.pdf>

Technical Guides

Designing Reliable Mail Systems

GD/JANET/TECH/005 (03/03)

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

Secure Virtual Private Networks

GD/JANET/TECH/004 (03/05)

http://www.ja.net/documents/technical_guides.html

Other

General Tariffs for Connection to JANET

CS/DOC/006 (03/06)

Tariffs for Connection to JANET for Research Council Establishments

CS/DOC/020 (03/06)

Tariffs for Additional Bandwidth for Colleges of Further Education

CS/DOC/022 (03/06)

3.4 Technical Updating for the UKERNA Community

3.4.1 Workshops and Conferences

Networkshop 1-3 April 2003, The University of York

The company continues to organise the annual Networkshop which is the largest event it holds. This year's event was held at the University of York in April and was aimed at networking experts from JANET sites. The format of the programme was changed this year due to the constraints on the facilities available which meant that there were more parallel sessions and only two plenary sessions. The new format was well received by the delegates as it allowed them to attend the sessions that they felt pertinent to their needs. A large exhibition was part of the conference and both exhibitors and delegates found it beneficial to be able to talk to each other.

http://www.ja.net/conferences/networkshop/networkshop_31/prog.html

JANET CERT Security Conference, 5 June 2003, Trinity House, London

Approximately 100 members of the security teams within the JANET Community attended this event. It is hoped that the event will happen twice a year and that different security teams will host the event around the country.

Association of Scottish Colleges, 12-13 June 2003, Airth, by Falkirk, Scotland

UKERNA had a stand at this annual event.

3.4.2 Study Groups

3.4.2.1 Wireless Advisory Group

A JANET Wireless Advisory Group has been established. Group members were selected on the basis of their responses to the Wireless Networks survey that took place in December 2002. The group met for the first time at the end of May 2003 and consisted of higher and further education representatives that are active in wireless networking together with industry representation from O₂[®], Orange[™] and Cisco[®]. The group has finalised its Terms of Reference, and a group webpage has been produced at: http://www.ja.net/development/network_access/wireless/wag/wag.html

A public mailing list has been set up to encourage wireless discussion between the Wireless Advisory Group and the JANET community:
wireless-admin@jiscmail.ac.uk

The Wireless Advisory Group also has links to a number of other workgroups, including the TERENA Mobility Taskforce and IPv6. The group's next task is to draft and approve an action plan based on the Terms of Reference.

3.4.3 Training Courses

The training section delivered one course during the reporting period. This Technical Overview Course was the first of three courses delivered at Manchester University with other courses to be reported in the next quarter.

UKERNA scheduled four courses in Glasgow towards the end of May but low numbers of delegates meant that the courses had to be cancelled.

Details of 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 of JANET, 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 also sends representatives to these meetings, as this is a good way of disseminating information concerning the latest changes and developments, as well as distributing recent publications. The meetings also provide a forum for informal technical help, and discussion with people doing similar jobs. Please ensure that your organisation is represented at your regional user group, and that appropriate people know about the various special interest groups, details of which can be found at:
<http://www.ja.net/usergroups/>

During the last six months there have been a number of changes to the Regional User Groups (RUG) with new groups being formed and old ones being closed down. Further details can be found on the JANET National User Group (JNUG) website:
<http://www.jnug.ac.uk/>

During the reporting period UKERNA attended the following user group meetings:

- South East JANET Regional User Group – 12 May 2003. The group heard a talk by Alan Hames of UKERNA about co-location facilities.
- South West England Regional Network (SWERN) User Group – 14 May 2003. This was the first meeting of the group and the group produced its Terms of Reference as well as providing an update on the SWERN network.

- Welsh JANET User Group - 9 May 2003. The group encouraged users and support staff to attend and discussed matters relevant to Wales.
- JANET National User Group – 5 June 2003. Professor Peter Clarke from University College London gave an interesting presentation on the Grid.

UKERNA also attended the Universities and Colleges Information Systems Association (UCISA) Networking Group meeting on 3 June 2003.

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 Response

This quarter has been relatively quiet compared to the first quarter of the year. UKERNA has seen an increase in probes most notably for Web (80) and Hyper Text Transfer Protocol (HTTP) (443) and scans aimed at port 445, an MS-DS.

The usual reports of pirated software stores on JANET remain a problem, and particularly prevalent on Windows® machines with servers listening on high numbered ports to evade Intrusion Detection Systems (IDS) and firewalls. UKERNA has seen a significant rise in viruses over the quarter. W32/Palyh-A, in particular, has been aggressive and was found right across the network. The standard advice applies - keep signatures up to date, do not open suspicious attachments and if possible filter at the server.

Yet again the continuing level of activity involving open relays and proxies being abused for the propagation of spam is of major concern. Spammers are devising more and more ingenious methods of abusing open relays and several JANET sites have had the misfortune to be placed on one or more Realtime Black List (RBL). Remember, it is easier to get on to such a list than it is to be removed from it.

Nimda, Code Red and Slapper continue to trouble the network despite warnings, news reports and advice. If boxes have been switched off or unused for a period of time, please check them before allowing them back on the network. The reports and probes reported to the JANET Computer Emergency Response Team (JANET-CERT) have surpassed 30,000 in one month for the first time, that is a 1000 a day passing through UKERNA's new system.

4.1.2 Awareness

Awareness activities this quarter have focused on the two-day training course for Computer Security Incident Response Teams (CSIRTs), now being maintained as part of the European Training of Network Security Incident Teams Staff (TRANSITS) project. The second EC-funded presentation of the course took place in Warsaw with 21 delegates mostly from Eastern Europe. The Chief Security Adviser was invited by SurfNet to present the course to their customers in Amsterdam. One module from the course was also presented as a tutorial session at the Forum of Incident Response and Security Teams (FIRST) conference in Ottawa. Arrangements have been finalised for the next presentation of the course to JANET users in July.

The inaugural JANET-CERT Security conference was held on 5 June 2003 with an audience of 100, hearing speakers from Microsoft®, Symantec™, Southampton University, JANET-CERT and the London School of Hygiene & Tropical Medicine. The feedback was very promising and the second event should be in Leicester in November. JANET-CERT has also been very prevalent in spreading awareness between the RSC's with talks at RSC Southeast, Wales and Midlands during the period.

4.1.3 Liaison

Security advice is being provided to a number of new developments in and around the JANET community. These include UKERNA's Wireless Advisory Group, the SPARK project to connect schools in Scotland and the National Health Service (NHS)/HE Forum. A paper on security architectures was written for the Forum in 2002 and this is now being used as a model by a number of projects to help staff and students in universities and NHS trusts to access each other's services.

The law as it applies to computers and networks continues as an area of activity. Responses to government consultations on data retention, data access and data protection were written and submitted on behalf of UKERNA and the JANET community. These areas were also discussed at a meeting of the Internet Crime Forum (ICF), of which UKERNA is a member, and a workshop on data organised by the Foundation for Information Policy Research. Discussions were also held with Ofcom to clarify the implications of the EC Telecommunications Directive for the JANET network; the conclusions were submitted to the Trans-European Research and Education Networking Association (TERENA) Study into the Evolution of European Research and Education Networking (SERENATE) project. Comments on the proposed European Network and Information Security Agency have been sent to the UK Department of Trade and Industry.

UKERNA staff attended a meeting of TERENA's CSIRT Task Force in Warsaw and the FIRST Computer Security Incident Handling Conference in Ottawa.

JANET-CERT has been active within the eCSIRT .net project involved with the introduction of Incident Object Description and Exchange Format (IODEF) Working Group and contributing to the design of this new protocol. The RTIR project with Best PracticalTM has generated a great deal of interest across the world after presentations and a BOF at United Kingdom Computer Emergency Response Teams (UKCERT), Task Force-Computer Security Incident Response Team (TF-CSIRT) and FIRST conferences respectively. CERT Coordination Centre (CC) are now interested in contributing to what will be the first commercially available incident handling system, a great coup for the team.

The template of configuration for the specialist colleges continues to promote discussion and several Regional Support Centre (RSC) liaison meetings were attended during the period.

4.1.4 Information

The CERT website will be under major review in September.

This period has seen the release of nine advisories including the release of SP 4 for Windows[®] 2000.

Further information on JANET-CERT can be found at:

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

5 Other UKERNA Activities

5.1 TERENA

The Trans-European Research and Education Networking Association (TERENA) was formed in October 1994 by the merger of the Réseaux Associés pour la Recherche Européenne 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

The TERENA Mobility Task Force met in Zagreb on May 18 2003. The meeting began with an overview of the technical inventories for 802.1x, Virtual Private Network (VPN) and web-based authentication solutions. The Portuguese NREN introduced their VPN and Public Key Information

(PKI) solution. The remainder of the meeting was spent discussing how the national solutions will be supported by a European wide architecture that could be scalable, interoperable and able to meet the other requirements that had been identified and agreed by the taskforce.

Deliverable B (A glossary of 'mobility' terms) has been revised to include non-technical / taskforce terms so that all future deliverables are consistent and refer to the same glossary.

Deliverable C (Inter NREN roaming requirements) is complete and online. Deliverable D (Inventory of 802.1x), Deliverable E (Inventory of VPN), Deliverable F (Inventory of web-based authentication) have been reviewed by the taskforce and final versions are complete. Deliverables B, C and F are online, whilst deliverables D & E will be available online in early July 2003.

UKERNA is currently working on the first draft of deliverable G (preliminary selection for inter-NREN roaming) with the aim of circulating the first draft for comment at the end of June 2003. The taskforce is currently two weeks behind schedule, however the time lag has been worthwhile as the quality of the deliverables has improved and the taskforce has incorporated both the Portuguese PKI solution and Bristol University (UK) Point-to-Point Protocol over Ethernet (PPPoE) 'Roamnode' solution into current deliverables.

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

The TERENA Mobility Task Force charter is available at:
<http://www.terena.nl/tech/task-forces/tf-mobility/docs/mobility-charter4.pdf>

5.1.2 Task Force-Computer Security Incident Response Team (TF-CSIRT)

The team continues to contribute to the TF-CSIRT. It has been involved in the IODEF implementation with the extended Incident Handling (INCH) Internet Engineering Task Force (IETF) working group and helped to create the new model currently under discussion. The eCSIRT.Net project has moved forward with WPs 2, 3, 4 and 5 all making progress. The team is currently introducing the interface to implement an IODEF exchange with its European neighbour teams.

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

UKERNA continue to lead the Internet Protocol version 6 (IPv6) project of the joint TERENA/Delivery of Advanced Network Technology to Europe (DANTE) TF-NGN through Dr Tim Chown of the University of Southampton. UKERNA and Dr Chown are also working internationally on demonstrating the use of the Less than Best-Effort (LBE) traffic class for bulk data transfer and simultaneous live User Datagram Protocol (UDP) based applications.

TF-NGN is initiating a network measurement and monitoring activity, with a view to building tools similar to those being developed in the Internet2 community. UKERNA expects to be able to contribute towards this project in the future.

A separate project which may become a TF-NGN activity is looking at methods of co-ordinating the solution of performance related problems on the Internet, in a similar fashion to those already used by the CERT community. The project is currently known as the Performance Enhancement Response Team (PERT).

Dr Chown attended the last TF-NGN meeting in Poland. The next meeting is scheduled for September in Cambridge.

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

5.1.4 TERENA Networking Conference

UKERNA staff and other members of the UK education community were members of the TERENA programme committee for the 2003 European Networking Conference. This conference was held in Zagreb, Croatia from 19–22 May 2003 and was a joint conference with the Croatian Users Conference. 470 delegates attended the event from all around the world with a significant number attending from Croatia. The feedback from delegates suggested that this was the best TERENA conference to date.

The view from the delegates was that the conference programme was excellent with high quality speakers. Some speakers who were unable to attend the conference were able to come into their sessions via videoconferencing. Colleagues unable to attend the conference were able to see each of the sessions live on the web as it was happening. Copies of the presentations and the web sessions can be found on the TERENA web site at:

<http://www.terena.nl/conferences/tnc2003/>

Delegates were particularly impressed by the wireless and Dynamic Host Configuration Protocol (DHCP) services provided to those with laptops. Other delegates were able to use the PCs available within the exhibition area. For those delegates and speakers who had to participate in external meetings, excellent videoconferencing facilities were provided to delegates and a number of delegates were able to remain in touch with their NREN via this facility.

UKERNA presented papers on both designing manageable protocols and the network access area, with particular focus on the results of the Asymmetric Digital Subscriber Line (ADSL) and two-way satellite trials.

The overall view of the delegates was that this was an excellent conference.

5.1.5 TERENA General Assembly

The TERENA General Assembly met immediately after the TERENA Conference in Zagreb on 22 - 23 May, 2003. This meeting was, in effect, the main 'Annual' GA conference at which the TERENA accounts and annual report were accepted. A number of positions on the TERENA Executive were due for re-election. Shirley Wood was re-elected as the TERENA Vice-President, Conferences for a second two-year period.

5.1.6 TERENA Compendium

TERENA is working on the next version of the compendium. Data has been collected and will be available on the web. A printed version of the compendium will also be made available later in the year.

5.2 Development Activities

5.2.1 Broadband Network Development

5.2.1.1 Broadband Scotland

5.2.1.2 Welsh Video Network (WVN)

The WVN Support Centre provides a single point of contact for the support and maintenance for over 90 videoconferencing studios across the FE and HE sectors in Wales. Use of the JANET IP Videoconferencing Service by the WVN studios has continued to increase and thereby eliminate the direct cost associated with the use of ISDN.

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

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

5.2.1.3 The Lifelong Learning Network for Wales (LLNW)

All local authorities in Wales now have the ability to route IP traffic over the LLNW and onto the Internet via the JANET Interconnect.

Fifteen local authorities are using the LLNW for all corporate traffic. The rollout of broadband to schools is progressing at a significant rate. Most authorities have networked some of their schools and many are awaiting delivery of LAN Extension Services (LES) circuits with the intention of migrating most schools onto the LLNW before the start of the new academic year in September 2003. One authority has 100% of its schools using the LLNW connection.

5.2.2 UKLight

The UKLight requirements group has been constituted and has met twice, once in closed session and once in an open-forum. The architecture of UKLight and its components has become clearer and the opto-electronics research community has also begun to define its requirements for dark-fibre infrastructure. Visits were made to both NetherLight in Amsterdam and StarLightSM in Chicago and useful operational contacts were established against a background of discussions about the projects being supported and how they were using the various infrastructures. Preparations for the procurement of the international circuits and associated equipment (Synchronous Digital Hierarchy (SDH) multiplexers and Gigabit Ethernet switches) are proceeding well and a series of pre-procurement meetings with potential suppliers is being held. Drafting of procurement documentation is also well under way.

UKLight Governance mechanisms have been agreed with JISC who will establish a steering group to handle policy issues with the UKLight stakeholders. UKERNA will establish a technical advisory group to address operational and feasibility issues with projects proposing to use the UKLight facility.

The JISC Committee for the Support of Research (JCSR) has approved an initial extension phase to the SuperJANET development network which will be used to provide access to UKLight. This will equip a path across the backbone from Manchester to Cambridge through London using uncommitted production capacity in the SuperJANET contract with MCI.

5.2.3 Content Delivery Infrastructure Project

The initial testing phase of the JANET Content Delivery Infrastructure project is complete. Objective and subjective data has been collected from over 100 video streaming sessions, both delivered 'on demand' and through a proxy, using RealNetworks[®] Helix content delivery platform.

It has been agreed to extend the trial by five months, including the six existing trial sites and to open participation to other JANET connected sites from both the HE and FE communities. During the trial extension a number of alternative content delivery platforms will be trialed, including products from Kasenna, and Darwin. The trial will also explore a number of key content delivery services such as metadata and authentication.

It is planned that an architecture for Content Delivery on JANET will be agreed by January 2004. UKERNA continue 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).

<http://www.terena.nl/tech/task-forces/tf-mobility/docs/mobility-charter4.pdf>

5.2.4 Co-location Services Development

Details of this service are available at:

<http://www.ja.net/co-location/>

5.2.5 Internet2

UKERNA attended the Internet2 Spring 2003 members meeting which featured major tracks on both Optical Networking and Authentication/Authorisation issues. Presentations are available at:

<http://events.internet2.edu/2002/Spring02-index.html>

5.2.6 Quality of Service (QoS)

5.2.6.1 JANET QoS Development Project

Contractual agreements are in place with seven regional networks and their organisations to participate in the JANET QoS Development Project.

The work for the project has begun. An instrumentation exercise has been completed being the first stage in implementing one of the QoS classes of service, IP Premium. The results can be found at: http://www.ja.net/conferences/networkshop/networkshop_31/11302cQoS.pdf

The next stage was to enable remarking on the JANET routers, in order to remark the Diff Serv Code Point (DSCP) of non-participating traffic entering JANET. This work was completed during the last quarter. Policing will be enabled on the JANET backbone during July 2003.

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

5.2.7 Internet Protocol version 6 (IPv6)

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

Details about the JANET Experimental Service can be found at: <http://www.ja.net/development/ipv6/>

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

During the rollout, some bugs have been identified in the software being used and work is continuing to resolve these issues with the equipment manufacturer.

UKERNA is a partner in the European Commission funded project, 6NET. The aim of this project is to establish a pan-European native IPv6 network to gain practical experience of managing and implementing an IPv6 network. The project officially began in January 2002. 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). During the last quarter, UKERNA was involved in discussions regarding the policy of network routing over 6NET and contributed to a network management deliverable. Further details about the 6NET project can be found at: <http://www.6net.org/>

5.2.8 e-Science/Grid

UK e-Science is entering a new phase with an emphasis on operating and supporting 'production grids' while new developments continue with the moves towards a web-services based architecture with Grid services and Globus Toolkit[®] 3.0.

The Grid Network Team has finished its work and will no longer meet and UKERNA's participation in the e-Science technical advisory group will be reduced to network specific items in future.

UKERNA is working on network monitoring and measurement within the e-science programme and this area is expected to grow during the next two years with the shift in operational emphasis. Efforts are already bearing fruit in the form of enhancements to the Multicast Beacon.

Details are available at: <http://ulcc.beacon.ja.net/>

5.2.9 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.

The SuperJANET Development Network is fully operational. Two guides that provide information on the facilities being offered by the development 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

The Managed Bandwidth - Next Generation (MB-NG) project is currently using the development network. Full details about this project can be found at:
<http://www.mb-ng.net/>

During the last quarter, UKERNA published information for Regional Networks that wish to establish a second connection to the SuperJANET Backbone Access Router (BAR) for experimental work only. Further information together with application details can be found at:
<http://www.ja.net/development/connect2application.html>

5.2.10 JISC Authentication, Authorisation and Accounting (AAA) Programme

Recruitment issues have delayed the start of some of the projects within the programme but these have been resolved and all projects are now running. A series of visits to projects has started and these will proceed over the summer in anticipation of a second projects meeting in July and an open meeting in October to report results to the JANET community.

5.3 Pilot and Trial Services

5.3.1 JANET Satellite Pilot

All Gilat satellite connections for individual users and those from Broadband Interactive (BBI) for connecting Local Area Networks (LANs) are now installed and operational.

Bridge Broadband has installed an enterprise satellite service package solution DW5000-2048 (2048Kbit/s downlink and 768Kbit/s uplink, with a network contention of 10:1) at Cornwall College's Duchy College Stoke Climsland Campus. Bridge Broadband manages all service support. The installation currently connects up to 150 PCs via a two-way satellite connection to the Internet and then onto JANET.

ATiT, a consultancy firm based in Belgium, has been awarded a contract to evaluate the satellite trial independently. All trial sites have provided regular feedback to ATiT on the satellite service to assist in the assessment of the performance of the trial services.

UKERNA has conducted network-monitoring tests between BBI terminals, Internet servers, Gilat terminals and other BBI terminals,. The results have been presented as graphs with commentary on a monthly basis since February 2003. Monitoring results can be found 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

5.3.2 JANET Asymmetric Digital Subscriber Line (ADSL) Trial

The ADSL trial service connecting off-campus learning centres directly to the JANET network ended in June 2003. Many trial sites have decided to end their ADSL connection and take up a new ADSL connection with a commercial ISP at the start of the next academic year. Some have already migrated to commercial ISPs.

An end of trial report is available at
http://www.ja.net/development/network_access/adsl/JANETADSLTrial_EndofTrialr.pdf

5.4 e-Learning

The Business Division is continuing to discuss e-Learning developments with the JANET community, and with organisations involved in aspects of the promotion, development and use of technology in teaching and learning.

UKERNA has been represented at events promoting the development of e-Learning in specific sectors including:

- Ferl Managers Conference, run by Ferl
- Wales – The e-Learning Country, run by DYSG the Learning and Skills Development Agency operation in Wales.

The Business Development Division as a whole is looking at the issues involved in widening the JANET community. Twelve visits were made to Local Education Authorities in Q2 with a view to identifying the requirements of the Adult & Community Sector, and how a JANET connection could be implemented and used. As part of the initiative the National Institution for Adult and Continuing Education (NIACE) organised nine regional awareness events. UKERNA delivered the infrastructure element of the programme at each event.

There has been continued involvement with the Content Delivery Infrastructure Trial. A five-month extension to the trial has been agreed with JISC in order to complete further testing.

5.5 Further Education (FE) Liaison

The Account Managers for England and Wales continue to liaise with the FE community by attending a variety of national and regional events and contributing to new initiatives in the Learning and Skills sector. UKERNA was represented at the Learning and Skills Development Agency (LSDA) summer conference and the Regional Support Centre (RSC) Wales annual conference. Regionally, account managers have been invited to contribute to National Learning Network (NLN) partners' meetings in the West Midlands and the South East.

At the request of the LSC, UKERNA is providing pilot JANET connections to specialist colleges and the adult and community learning sector. UKERNA through its Business Division is represented on the NLN Transformation Board's Implementation Subgroups for these two communities and is contributing to events organised to support the extension of the NLN to specialist colleges and adult and community learning.

6 UKERNA

6.1 UKERNA Staff

The following staff changes were recorded during the reporting period.

Leavers

- Emma Castle, 22 April 2003
- Anne Dawson, 30 May 2003
- Laura Huzzey, 26 May 2003

New Staff

- none

Internal Changes

- Henry Hughes, to SuperJANET Development Programme Manager, 1 April 2003
- Fiona Mathers, to Content and Delivery Programme Manager, 19 May 2003
- Mike Allenby, to IT Support Officer, 2 June 2003

- June Winfield, to Personnel Administrator, 17 June 2003

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 using e-mail at: service@janet.ac.uk

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