

# UKERNA Quarterly Report to the JANET Community July 2003 to September 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](mailto:service@janet.ac.uk)

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## **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 2002 to July 31 2003 and 1 August 2003 to 31 July 2004.

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 July to September 2003 (Autumn).

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 26 new or enhanced customer connections completed and brought into service:

- Angus Council;
- Arden College;
- The Bournemouth and Poole College of Further Education;
- Buckinghamshire Adult Learning Centre;
- Calderdale College;
- Clackmanshire Council;
- Coleg Llandrillo;
- Derby College (Derby Tertiary College campus);
- Dundee City Council;
- East Ayrshire Council;
- Gloucestershire College of Arts and Technology (2);
- Hull College;
- Langdon College;
- Learning and Teaching Scotland (Dundee);
- Learning and Teaching Scotland (Glasgow);
- Leicester College;
- New College, Nottingham;
- Orkney Islands Council;
- Perth and Kinross Council;
- Portland College;
- Shetland Islands Council;
- South Lanarkshire Council;
- Stirling Council;
- Tameside College;
- The SEEMIS Group.

Progress is being made on the connection of Specialist Colleges.

For information regarding current upgrades or connections, please contact JCS at:  
[connections@janet.ac.uk](mailto: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**

Following the successful conclusion of a pilot project to provide JANET connections to six Specialist Colleges, the rollout of connections to a further 23 such colleges commenced in July. The first of these connections came into service during September.

#### **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 (MAN) continues to be hampered by delays to circuit deliveries to some FE colleges. UKERNA is working closely with the North Wales MAN and its supplier to bring the rollout to a successful conclusion in late 2003.

### **2.1.2 Core Network**

The core network ran smoothly over the past quarter despite the Cisco® Internet Operating System (IOS) vulnerability announcement in July. The JANET Network Operations and Service Centre (NOSC) took immediate action to upgrade the IOS on all of the JANET backbone routers. No related problems were encountered during the period.

A link between the JANET Telehouse® Regional Point of Presence (R-PoP) and the Telecity R-PoP was upgraded from 2.5Gbit/s to 10Gbit/s at the end of September. The London Core Point of Presence (C-PoP) to Telehouse® R-PoP link and the Reading C-PoP to Telehouse® R-PoP link are both to be upgraded to 10Gbit/s in October. This will provide sufficient capacity on a 10Gbit/s ring to carry all external traffic reliably.

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

### **2.1.3 IP Multicast**

Financial support has been offered by UKERNA to all JANET Regional Network Operators (RNOs) to deploy a multicast beacon client so that a Regional Network view on the status of multicast can be presented via the JANET beacon server. Eighty percent of the Regional Networks have accepted the offer and are currently in the process of implementing a beacon client on their respective Regional Network.

There has been a steady increase of clients on the Global and AccessGrid views of the JANET beacon server. UKERNA encourages those organisations that have AccessGrid nodes to participate as it provides a good initial indicator of the status of multicast.

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

## **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 peaked at around 250Mbit/s during the reporting period. A backup 2.5Gbit/s connection from Telehouse® to the GÉANT UK PoP is to be brought into service in early October.

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<sup>®</sup> and Level3 Communications<sup>™</sup> from Telehouse<sup>®</sup> and Teleticity in London. This provides a highly resilient service.

Aggregated peak traffic reduced to around 1Gbit/s over these connections due to the holiday season.

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<sup>™</sup>) is the facility that allows the transfer of traffic between Internet Service Providers (ISPs) within the UK. JANET access to the LINX<sup>™</sup> is achieved via two GigaEthernet connections from Telehouse<sup>®</sup> and Teleticity. During the reporting period, traffic peaked at around 450Mbit/s over the two connections and the service was reliable.

JANET peers with ISPs via the Manchester Network Access Point (MaNAP). There is a GigaEthernet 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 60Mbit/s during the reporting period.

Two new private peerings via ThePacket Exchange were established during the reporting period (see section 2.9.2). Total traffic over The Packet Exchange's 1Gbit/s connection is about 60Mbit/s.

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

The 2Mbit/s peering connection between JANET and CERNET was saturated until 23 September when the upgraded 45Mbit/s link was brought into service and traffic peaked one way at 6Mbit/s. Engineers from both sites continue to do the final tuning. 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 webpage can be found at:

[http://www.ja.net/reporting\\_prob.html](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.

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

Telephone: 0870 850 6672

Facsimile: 0870 850 6673

E-mail: [operations@ja.net](mailto: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<sup>®</sup> 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 23 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.

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) in England and SPARK in Scotland. The RBC and SPARK connections that are currently live can be found at:

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

In due course the RBC and SPARK connections will be configured on their own individual Netsight systems located in London and Edinburgh respectively.

Some of the Reading C-PoP Co-Location Services are currently monitored and available on the system located in the University of London Computer Centre (ULCC) that 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)**

Further information can be found at:

[http://www.ja.net/services/managed\\_router/](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](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](http://www.ja.net/documents/naming/naming_mods.html)

The rules on eligibility for registration under ac.uk can be found at:

<http://www.ja.net/documents/naming/ac.uk-naming-rules.html>

During the reporting period 564 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 73 modifications for each month.

There is a maintenance charge of £47 including V.A.T. for all modification requests, although this charge is not applicable to those organisations that remain connected to the JANET network. Further information on domain name charging can be found at:

[http://www.ja.net/documents/naming/naming\\_mods.html#payment\\_charges](http://www.ja.net/documents/naming/naming_mods.html#payment_charges)

### **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](http://www.ja.net/documents/naming/naming_mods.html)

### **2.5.3 Primary Nameservers Service**

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

Two organisations registered to use the JANET Primary Nameservers Service during the reporting period.

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

### **2.5.4 Secondary Nameservers Service**

The Secondary Nameservers 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 the service had increased to 464. Further information about the service can be found at:

[http://www.ja.net/services/secondary\\_nameserver.html](http://www.ja.net/services/secondary_nameserver.html)

### **2.5.5 Domain Name Service whois service**

During the reporting period, the whois service for ac.uk/gov.uk had one period of downtime. This occurred on 10 September 2003 as the NOSC brought the new automated whois server into service. The outage happened at 12:47hrs and lasted for 17 minutes. The service has been contactable during all other periods.

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. If you are unsure of a domain name's availability for registration, please contact JCS.

## **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.

Fifty-two more sites registered to use the JANET Network Time Service during the reporting period bringing the total to 106. 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 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, two of the pilot sites and some internal end users have continued to evaluate the enhanced pilot service. Feedback has reported over 90% of unsolicited bulk e-mail (Spam) has been identified, with only a small rate of false positives.

During the next reporting period a review of the pilot will be undertaken, with a view to move to a production service in early 2004.

Details of this service can be found at:

[http://www.ja.net/mail/mailler\\_shield/](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. A customer organisation may choose to be provided with a News Feed that 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.

There are currently two ways of receiving Usenet News over JANET, the JANET News Feed Service and the JANET News Reader Service. 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, one has fully transferred to the Reader Service and another, which was in transition to the Reader Service, has completed the changeover. There are now 92 sites connected to the service. 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, bringing the number of connected sites to 41. 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 Service Digital Network (ISDN), as well as gatewaying between videoconferencing technologies.

Issues encountered with current software testing are being discussed with the suppliers and manufacturers. Once resolved, new software and hardware will be deployed across the service enhancing the quality of transcoded conferences by reducing latency.

There are 353 videoconferencing venues registered to use the JVCS over ISDN (JVCS-ISDN) and a further 175 venues registered to use JVCS-IP. During the reporting period 621 conferences took place over 3685 hours that used ISDN. In addition 599 conferences took place over 1636 hours using IP and the IP/ISDN gateway. The overall statistical trend indicates an increase in the use of

videoconferencing, however, as is typical over the last quarter, there was a slight seasonal reduction in use.

Further information about the JVCS can be found at:  
<http://www.jvcs.video.ja.net/>

#### **2.8.1.1 JANET Videoconferencing Booking Service**

The JANET Videoconferencing Booking Service enables users at registered sites to book videoconferences and schedule the use of central JVCS resources. Work is ongoing to make functional enhancements and improvements to the user interface. To ensure optimum functionality of the service, usability consultants are assisting with the development of the users interface, which will be launched in the first quarter of 2004. Details of the Booking Service are available at:  
<http://www.jvcs.video.ja.net/videoconf/>

#### **2.8.1.2 Welsh Video Network**

The Welsh Video Network (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.

A series of case studies have been added to the WVN web site. Information about how three organisations are using their videoconferencing studios is included at:  
<http://www.wvn.ac.uk/casestudies/intro.htm>

Further information about the Welsh Video Network can be found at:  
<http://www.wvn.ac.uk/>

#### **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. It has maintained its schedule of product evaluations, most recently examining the Tandberg Director. The evaluation reports, together with the testing schedule and previous evaluation reports, can be found at:  
<http://www.video.ja.net/evaluation/>

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 that can be found at:  
[http://www.ja.net/documents/connection\\_policy.pdf](http://www.ja.net/documents/connection_policy.pdf)

Requests for new or enhanced JANET connections should be made via JCS (see below).

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](mailto:connections@janet.ac.uk) or [service@janet.ac.uk](mailto: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:

### **LINX™ Peering (London)**

- Cogent Communications
- Netcetera Ltd
- PlusNet Technologies Ltd
- UUNET

### **MaNAP Peering (Manchester)**

- Business Serve plc
- Merula Ltd
- Telecomplete Ltd
- Timewarp

### **Private Peering**

- @Home Benelux B.V.
- Big Pipe Inc.

### **2.9.3 Licence Administration**

During the reporting period JCS have issued a total of four new Sponsored Connection licences and one new Proxy Connection licence, with ten licences cancelled.

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

Further information about Sponsored and Proxy Connections can be found at:  
[http://www.ja.net/connect/types\\_connect.html](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.

### **2.11 Bandwidth Management Advisory Service (BMAS)**

The function of BMAS is to provide advice and guidance to JANET organisations on issues relating to the management of bandwidth. The service was launched at Networkshop at the University of York on 1 April 2003. In the reporting period the emphasis of BMAS has been on ensuring the UK education and research community, particularly the FE sector, are aware of the services offered. This has been achieved by attendance at eight Regional Support Centre (RSC) events and three other events, producing newsletter articles, publication of a service pamphlet and establishing a specific website for BMAS at:

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

### **2.12 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. The MCAS service 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.

MCAS was officially launched on 1 August 2003 following a comprehensive awareness building programme.

The helpdesk has received enquiries and provided advice on resolving problems such as accessing websites and satellite based remote access.

August saw the start of the case study writing initiative. Three authors have agreed to produce case study reports. Contact has been established with a number of suppliers and the information store of potential providers of services and expertise is growing. During the next quarter, a comprehensive supplier list will be developed.

The MCAS website has recently been updated, including a link to the Technical Guide *Secure Virtual Private Networks* (GD/JANET/TECH/004(03/05))

Work has progressed on the provision of a UK map showing the availability of telecommunications company services to assist organisations in identifying which telecommunication providers can be approached in each area for circuit provision costs. Once sufficient data has been gathered, this will be published on the website.

Further information about MCAS can be found at:  
<http://www.ja.net/mcas/>

### **3 Information and Support Services**

#### **3.1 Network Information Service**

The JANET/UKERNA web server continued 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](mailto: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 1976. As in previous quarters, a large proportion of these queries related to the Domain Name Service (71%), 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. One complaint has been resolved and one is outstanding.

##### **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.

There are three UK-wide public holidays within the next quarter - Christmas Day, Boxing Day and New Year's Day. JCS will therefore be closed 25-26 December 2003 and 1 January 2004. There are also four Privilege Days on 29, 30 and 31 December 2003, when JCS will be operating from 09:00 to 16:00 with limited cover.

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

E-mail: [service@janet.ac.uk](mailto: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**

Technical Publications (update)

PB/INFO/008 (03/07)

[http://www.ja.net/documents/factsheets/technical\\_publications.pdf](http://www.ja.net/documents/factsheets/technical_publications.pdf)

Connecting to JANET – Specialist College Overview

PB/INFO/039 (03/08)

<http://www.ja.net/documents/factsheets/connecting-specialist-colleges.pdf>

#### **Newsletters**

UKERNA News 24 (September 2003)

[http://www.ja.net/documents/UKERNA\\_News/2003/September/NEWS24.pdf](http://www.ja.net/documents/UKERNA_News/2003/September/NEWS24.pdf)

#### **Service Documentation**

Primary Nameserver Service

PS/ANS/Service/DOC/002

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

Multi-site Connectivity Advisory Service (Pamphlet)

PB/SERV/006 (03/06)

JANET Acceptable Use Policy, Version 7 (July 2003)

[http://www.ja.net/documents/use\\_policy.pdf](http://www.ja.net/documents/use_policy.pdf)

#### **Reports**

UKERNA Quarterly Report to the JANET Community

April 2003 - June 2003

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

JANET Report 2002-2003

<http://www.ja.net/documents/janetreport/report2003.pdf>

#### **Technical Guides**

IP Multicast on JANET

GD/JANET/TECH/006 (03/06)

<http://www.ja.net/documents/tg-IPMulticast.pdf>

#### **Tariffs**

Tariffs for Sponsored and Proxy Connections to JANET

CS/DOC/008 (03/07)

## **Other**

SuperJANET5 Requirements Analysis  
ND/SJ5/JS/RA/DOC/001  
[http://www.ja.net/SJ5/requirements\\_analysis.pdf](http://www.ja.net/SJ5/requirements_analysis.pdf)

JANET Brochure  
PB/MKT/001 (03/06)

### **3.4 Technical Updating for the UKERNA Community**

#### **3.4.1 Workshops and Conferences**

##### **SuperJANET5 User Requirements Event, 3 July 2003, The Queen Elizabeth II Conference Centre, London**

This event was organised to announce the start of the SuperJANET5 User Requirements Analysis. The results of this analysis will allow UKERNA to advise the funding bodies of the requirements for a successor to the current SuperJANET network. The workshop provided delegates with an overview of the key areas under consideration and gave UKERNA an opportunity to request feedback from the community. Although the majority of delegates came from HE there were representatives from FE and the Research communities as well as commercial suppliers working in the telecommunications area. Copies of all the slides presented at the workshop are available on the SuperJANET5 web site at:

[http://www.ja.net/conferences\\_training/SJ5/details.html](http://www.ja.net/conferences_training/SJ5/details.html)

##### **Multi-Service Networks 2003, 3-4 July 2003, Cosener's House, Abingdon.**

The purpose of the 16<sup>th</sup> in this annual series of workshop was to provide a forum in which leading senior researchers and research students, from industry and academia could meet and exchange ideas and updates on progress. The remit was broader than the title might suggest and covered many topics in multi-service and multimedia systems as well as networks and communications. This year there were 85 participants, including approximately 30 research students and 5 overseas visitors from New Zealand, Germany, Sweden, and USA. There were 24 talks, including 10 from students, addressing topics from community wireless networks to optical networks, performance engineering and monitoring, intrusion detection, scaling issues in authentication and authorisation, and outdoor playful learning environments using wireless networking.

The continuation of the event has been secured through the award by the the Engineering and Physical Sciences Research Council (EPSRC) of funds to the University of Sussex to run a new community network entitled 'Next Generation Networking', for which the annual Cosener's workshop will become a component. Proceedings are available at:

<http://www.acu.rl.ac.uk/msn2003/>

##### **RSC/UKERNA Liaison Meeting, 8 July 2003, Kenilworth Hotel, London.**

Details of this event can be found at:  
[http://www.ja.net/fe/ukerna\\_rsc\\_meetings/7th-meeting/](http://www.ja.net/fe/ukerna_rsc_meetings/7th-meeting/)

##### **Computer Security Incident Response Team (CSIRT) Training Course, 15-16 July 2003, IoD Hub, Bristol**

UKERNA staff presented another two-day training course for staff of CSIRTs. The delegate feedback was extremely positive. Further information can be found at:  
[http://www.ja.net/conferences/security/csirt\\_jul03/summary.html](http://www.ja.net/conferences/security/csirt_jul03/summary.html)

##### **Broadband Aggregation Workshop, 23 July 2003, Scarman House, The University of Warwick**

The purpose of the Workshop was to promote awareness amongst those involved in the strategic management of regional networks for education and research of the opportunities that are beginning to appear for the regional aggregation of public-sector demand for broadband services. Participants would

also be asked to consider steps that might usefully be taken to facilitate take-up of these opportunities amongst the education network communities, and to advise UKERNA and the JISC on how these might be taken forward.

The objectives and presentations of the event are linked from:

[http://www.ja.net/conferences\\_training/broadband/](http://www.ja.net/conferences_training/broadband/)

### **Workshop for Event Organisers in the Education and Research Community, 12-13 August 2003, Scarman House, The University of Warwick.**

This joint JISC and UKERNA event was a great success and the feedback from all the delegates was positive. The first afternoon's session encouraged the delegates to re-think their approach to marketing events and managing exhibitions. The sessions on the second day covered the issues of data protection, insurance and copyright followed by an entertaining look at selecting speakers for events. The delegates then listened to an expert who organises the Association of Colleges Annual Conference. Details can be found at:

[http://www.ja.net/conferences/event\\_organisers/Workshop/prog.html](http://www.ja.net/conferences/event_organisers/Workshop/prog.html)

### **Scottish Education and Teaching with Technology (SETT), 24-25 September 2003 Scottish Exhibition and Conference Centre (SECC), Glasgow.**

The visitors to the UKERNA stand were keen to hear about JANET and understand how it will make a difference to them when their school is connected via SPARK. Most of the attendees seemed to be from schools rather than FE or HE organisations. A number of Local Authority representatives also visited the stand.

<http://www.settshow.com/>

#### **3.4.2 Training Courses**

Six Training Courses were delivered during the reporting period:

Router Configuration, 1 July

Security, 2 July

CSIRT, 15-16 July

JANET Essentials, 21 July

Tech Overview, 22 July

Security, 23 July.

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 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 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, but work is taking place to resurrect meetings in the north of the country.

During the reporting period there were no user group meetings.

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 has probably been the busiest in JANET-Computer Emergency Response Team (CERT) history. It started, and continues with enhanced scanning for various Microsoft® weaknesses but particularly for Microsoft SQL Server™ and Network Basic Input Output System (NetBIOS). The majority of the CERT effort has been focused on the outbreaks of worms and viruses. Some sites have been severely compromised by the Mimail-A and Sobig.F viruses, whose infection rates took many by surprise. One of the most worrying traits was the lack of understanding at user level showing a requirement for greater awareness and procedures for the diagnosis and cure of viral infections is required. These infections could have been drastically reduced with proper handling and recovery plans.

However, these viruses pale into insignificance compared to the effect of the Blaster and Nachi worms. Many sites were crippled, and several were so badly affected that they removed themselves from the network. The infections spread across the entire JANET community, ranging from large HEs to smaller FE colleges. It was found that blocks were often ineffective due to the large internal infection rate. This is still a major problem at many sites as UKERNA continues to see large re-infections due to staff and students plugging in infected machines at random. Policy should be strict on this practice and solutions such as operating Media Access Control (MAC) address filtering should be considered. These worms are likely to remain for several months, so a greater emphasis on consistent patching, general security practices and the checking of policy and procedures is required. Both August and September were record months for the amount of correspondence received by JANET -CERT, 134,000 and 195,000 respectively, the latter being 500% more than July.

There has also been a marked increase in the level of Spam and collateral Spam related incidents. Open proxies and, to a lesser extent, relays are still causing concern and WAREZ (copyrighted software music or products sold illegally over the Internet) is still very prevalent. Another worrying trend has been the lack of patching at sites by contractors.

#### **4.1.2 Distribution of Advice to Customer Organisations**

The team have distributed over 12 advisories during the reporting period including those dealing with portable Open Secure Shell (SSH) versions 3.7p1 and 3.7.1p1, that contained multiple vulnerabilities in the new Pluggable Authentication Modules (PAM) code. Several gave advice on the critical vulnerabilities in Windows® NT/2000/XP/2003 Remote Procedure Call (RPC) services and RPC interface. Advisories were also issued regarding the W32.Blaster worm. These included inputs from CISCO® and CERT-Co-ordination Centre (CERT-CC) and also gave advice on the impact experienced on the Internet. An advisory based on the CISCO® report of Nachi was also released.

The CERT webpages are due for a major review starting in November so only minor changes have been made during this period.

#### **4.1.3 Customer Education**

During the reporting period the team were involved in a number of courses and presentations. These included the new Management Security Course and a review presentation of its accompanying technical version. The latter has now been finalised and will be presented on the next scheduled course date. UKERNA has also been carrying out a great deal of work with the RSCs including a presentation on digital certificates at the RSC/UKERNA liaison meeting, a presentation on wireless security to RSC South East, and a general security presentation at the specialist college forum. A CSIRT course was

also well received in Bristol using the material from the EU funded Training of Network Security Incident Teams Staff (TRANSITS) project.

#### **4.1.4 Representing JANET within Security-related Forums**

July was particularly busy with the team attending the EC inter-disciplinary European Network and Information Security Agency (NISA), a European CSIRT (eCSIRT) project meeting, the Defcon and Red Hat Seminars and Internet Watch Foundation (IWF) Board Meeting. These resulted in several liaison activities including a briefing to LINX<sup>TM</sup> and the Home Office on legal issues in investigations that may involve pornography, involvement on the sub-committee to re-write the IWF constitution and several tests on Incident Object Description and Exchange Format (IODEF) and statistical data exchange between eCSIRT partners. A report on NISA was also completed.

August was dominated by worm activity but UKERNA still managed to attend the Communications Object Description and Exchange Format (CESG) for a discussion on IODEF, data exchange and co-operation. UKERNA also visited the pre-Réseaux IP Européens (RIPE) meeting on the Incident Response Team (IRT) object. Further discussion with regard to IODEF has been requested from both CESG and Unified Incident Reporting and Alerting Scheme (UNIRAS). Reports on the new CERT System transition document, timetable, backup requirements and options were completed.

In September the team attended the RIPE seminar where a team representative is chairman of the Working Group on Spam. Several actions have been taken forward from this forum including a Spam meeting at Bracknell. Liaison visits from Japan-CERT (JP-CERT) regarding the Request Tracker Incident Response (RTIR) and IODEF have led to closer co-operation between the two teams. Attendance at the UK-CERT and eCSIRT meetings demonstrated the need for information sharing and the team continues to contribute significantly to this goal. The team attended the Trans-European Research and Education Networking Association (TERENA) Task Force-Computer Security Incident Response Team (TF-CSIRT) meeting in Amsterdam and took on several actions involving IODEF integration and the formation of an RTIR working group. A member of the team was also elected as Deputy Chairman of TF-CSIRT.

### **5 Other UKERNA Activities**

#### **5.1 TERENA**

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 (TF-Mobility)**

This group met in Berlin on 22 September 2003. The group reviewed the second draft of Deliverable G (*Preliminary architecture - deliverable will select, based on the previous deliverables, solutions for inter National Research and Education Networks (NRENs) roaming*) and recommended more focus on the interoperability issues between the national 802.1x, web-based redirection and Virtual Private Network (VPN) authentication systems. Furthermore, the group expressed its desire to achieve interoperability between the proposed 'Controlled Address Space for Gateways' and the operational 'RADIUS proxy hierarchy' mobility schemes and that this should be one of the main aims of the group. The group also agreed that policy guidelines were needed for participation in either mobility solution. As there was still a considerable amount of work to be rewritten and agreed, Deliverable G will not be completed until mid-November 2003.

The group recommended the immediate start of Deliverable H (*Test-bed - design a test-bed and test plan based on the roaming concepts selected from Deliverable G*) as the main roaming concepts had already been agreed at the meeting and only the documentation of suitable roaming concepts was needed in order to move forward. Deliverable G would be written in parallel with Deliverable H.

The group also agreed that greater awareness of the group work was important. Members were encouraged to speak, or invite TF-Mobility members to speak, at national and international events to raise the profile of the group. A technical workshop was also considered and discussed.

The next meeting of the TF-Mobility meeting will be held on 23 January 2004 in Amsterdam.

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

The TERENA Mobility Task Force terms of reference are available at:  
<http://www.terena.nl/tech/task-forces/tf-mobility/docs/MobilityToF.pdf>

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

The TF-CSIRT met in September and UKERNA presented an update on RTIR. A Working Group is to be formed to investigate future co-operation among European teams to extend this product. A member of the team is now Deputy Chairman of the Task Force.  
<http://www.terena.nl/tech/task-forces/tf-csirt>

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

This is a joint TERENA/Delivery of Advanced Network Technology to Europe (DANTE) European activity, engaged in advanced networking technology projects. The most recent meeting was hosted by DANTE, at the University of Cambridge.

UKERNA, through Dr Tim Chown of the University of Southampton, leads the IPv6 area. Dr Chown was able to report at the last meeting that the majority of NRENs were now connected to the GÉANT IPv6 service, enabling NRENs to exchange both IPv4 and IPv6 packets natively across GÉANT.

The Task Force continues to make progress on developing monitoring and performance measurement tools, including the possibility of being able to exchange data on demand between NRENs. This is seen as being of great value when attempting to locate the source of poor network performance. The meeting also discussed future plans for education and research networking in Europe.

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

### **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.

The 'Call for Papers' for this conference can be found at:  
<http://www.terena.nl/conferences/tnc2004/programme/cfp.html>

Delegates can book for this conference in February 2004.

### **5.1.5 TERENA General Assembly**

The TERENA General Assembly met immediately after the TERENA Conference in Zagreb on 22 - 23 May, 2003. The following TERENA Executive Members were voted onto the TERENA Executive Committee:

Dorte Olesen - President

The Danish IT Centre for Education and Research (UNI-C), Denmark. Elected 2003.

Claudio Allocchio - Vice-President Technical Programme

The Italian Academic and Research Network (GARR), Italy. Elected 2001, re-elected 2003.

Shirley Wood - Vice-President Conferences  
UKERNA, United Kingdom. Elected 2001, re-elected 2003.

Sabine Jaume-Rajaonia - Member at Large  
Le Réseau National de Télécommunications pour la Technologie, l'Enseignement et la Recherche (RENATER), France. Elected 2001, re-elected 2003.

Marko Bonac - Member at Large  
Akademska in raziskovalna mreža Slovenije (ARNES), Slovenia. Elected 2003.

The technical programme for the organisation meeting was also discussed in detail.

### **5.1.6 TERENA Compendium**

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

Printed copies are available from the TERENA Secretariat at:  
[secretariat@terena.nl](mailto:secretariat@terena.nl)

## **5.2 GÉANT and DANTE**

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

The National Research and Education Network Policy Committee (NREN-PC), working through an agreed editorial panel, has been spending much time developing a proposal (named the GN2 project) to obtain the funding for a successor network to replace GÉANT and for funding additional development activities. The proposal (which has requested funding of 100 million Euros from the European Commission) is to be submitted to the European Commission at the beginning of October. UKERNA has been involved in developing the proposal along with several other NRENS.

Robin Arak was elected to the board of DANTE in July and has subsequently attended two board meetings. Currently the main issues for DANTE are the approval of the proposal to develop and fund the GN2 project, the modification of the NREN consortium agreement to accommodate the necessary changes for the GN2 project and the subsequent procurement of a new pan European network backbone.

## **5.3 Development Activities**

### **5.3.1 Broadband Network Development**

#### **5.3.1.1 Welsh Video Network (WVN)**

Information about the Welsh Video Network can be found at:  
<http://www.wvn.ac.uk/>

#### **5.3.1.2 The Lifelong Learning Network for Wales (LLNW)**

All 22 local authorities in Wales are now routing IP traffic over the LLNW and onto the Internet via the JANET Interconnect. Almost all of the authorities are using the LLNW for all corporate traffic.

The rollout of broadband to schools is still underway. Five authorities have all schools connected; seven have connected the majority of schools and the remaining ten authorities have reported that they have connected some of their schools.

Welsh Networking Ltd (WNL) continues to broaden its provision of network services to the local authorities, including DNS hosting, Primary and Secondary nameservers, e-mail relay and NTP services.

### **5.3.2 UKLight**

The UKLight procurement started with an announcement in the European Journal on 17 July 2003. The closing date for submissions was 9 September 2003 and the procurement panel is now evaluating the responses. At this stage most of the details remain confidential but the procurement timescale can be found at:

<http://www.ja.net/development/UKLight/UKLightprocurement.html>

The UK community was well represented at the Lambda workshop held in association with this year's NORDUnet conference in Reykjavik. This meeting gathered together representatives from each country with an interest in developing an optical networking research and development infrastructure. The ensemble of national initiatives is being named Global Lambda Integrated Facility (GLIF). Discussions centred on governance issues, applications that might use the facilities and technical matters related to the infrastructure and operations.

An event is being organised on 3-4 November in Manchester to publicise the UKLight facility, explain how it relates to its international peers and describe how projects will be funded and supported.

### **5.3.3 Content Delivery Infrastructure (CDI) Project**

Phase two of the JANET CDI Trial is now underway. Over the last few months all of the current CDI infrastructure software has been updated, in preparation for phase two testing.

During phase two a number of alternative content delivery platforms will be trialled, including products from Kasenna<sup>TM</sup> and Darwin. The trial will also explore a number of key components of content delivery services such as metadata and authentication.

Plans to form a separate Content Delivery Architecture group with representation from a number of key stakeholder organisations within the JANET community are currently underway. The aim of the architecture group will be to define a content delivery architecture and service model for JANET.

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/>

### **5.3.4 Co-location Services Development**

A third co-location facility is currently being commissioned at Chilton to complement the two existing facilities at Reading and Leeds. These facilities allow equipment and services to be hosted close to the core for the SuperJANET network, providing maximum performance and availability. Further enhancements to the security arrangements for remote access to equipment are scheduled for early next year. Further information about the co-location service can be found at:

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

### **5.3.5 Internet2**

UKERNA will be represented at the next members meeting for Internet2, being held in Indianapolis between the 13-16 October. The meeting will focus on new applications and their requirements and impact on high performance network infrastructures.

<http://www.internet2.edu/>

### **5.3.6 Quality of Service (QoS)**

#### **5.3.6.1 JANET QoS Development Project**

During the last quarter, remarking was enabled on the JANET routers in order to remark the Differentiated Services Code Point (DSCP) of non-participating traffic entering JANET. Policing has also been enabled on the JANET backbone that will allow only 5% of premium traffic on a given participating Regional Network link to get priority over other traffic types during congestion periods.

In June 2003, the partners of the project submitted the details and results of the instrumentation activities carried out during the summer to UKERNA.

On 10 July 2003, a meeting with the partners of the project was held in London. The aim of the meeting was to discuss progress of the project together with timescales on the testing phase.

Currently UKERNA and the partners of the project are producing a document that will outline the type of testing to be carried out for the QoS prototype service implemented on JANET and the monitoring infrastructure to be deployed in order to verify this model. The QoS Testplan will be complete and available on the JANET website by the end of 2003. It is anticipated that the testing will be carried out during quarters one and two of 2004.

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

#### **5.3.7 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 IPv6 Experimental Service can be found at:  
<http://www.ja.net/development/ipv6/>

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>

UKERNA is a partner in the European Commission funded project, 6NET, begun in January 2002. 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. 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 connected a small Cisco® router to the UK core 6NET router in order to allow the University College of London to carry out IPv6 multicast testing with other partners of the project. UKERNA also attended the 6NET consortium meeting that was held on 17-18 September 2003 in Brussels, Belgium.

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

#### **5.3.8 e-Science/Grid**

UKERNA attended an e-Science stakeholders meeting in London on 10 July 2003 and gave a presentation on the requirements gathering process for SuperJANET5, briefly touching on some of the implications for e-Science. UKERNA was also present at the e-Science All-Hands conference held at the East-Midlands Conference Centre on 2-4 September and gave an expanded version of the presentation 'Towards SuperJANET5'.

UKERNA was represented on the project evaluation panel for the Computer Science for e-Science programme and also participated in the JISC Committee for the Support of Research (JSCR) away day to identify areas for its own programmes through discussion with the Research Community.

A workshop will be held on 5-6 November for invited participants to discuss research and e-Science requirements for SuperJANET5.

UKERNA's Chief Security Advisor has been providing advice to the Grid Security Task-Force that considers how computer and network security issues impact upon the e-Science programme.

UKERNA attended the JCSR away day on 11 September, 2003 to explore Research Council requirements for supporting research, including e-science. There was notable unanimity expressed by all the Research Councils on the basic areas of importance, which included data access (everything relating to access, curation, and management); Authentication, Authorisation, Accounting and Security (AAAS); broad availability of visualisation systems; support for collaborative environments; and the fundamental importance of networking to underpin almost every activity, specifically all of the above.

The EPSRC panel considering project proposals submitted under the first round of the Fundamental Computer Science for e-Science programme met on 23 July 2003. Four million pounds of the programme's eight million pounds funding was allocated in this round to projects covering middleware, Grid support environment and applications. There was a large number of high-quality applications, only a few of which (13 projects), a quarter by value could be funded. For further information from the EPSRC home page see:  
<http://www.epsrc.ac.uk/>

#### **5.3.8.1 E-Science Videoconferencing Project**

In October 2002 a report titled 'Multi-Site Videoconferencing for the UK e-Science Programme' was submitted to JCSR. It was commissioned by the UK e-Science core programme Director, with the objective of providing a roadmap for the future of videoconferencing within e-Science. It can be found at:  
[http://www.nesc.ac.uk/technical\\_papers/VCReport\\_FINAL\\_Oct2.pdf](http://www.nesc.ac.uk/technical_papers/VCReport_FINAL_Oct2.pdf)

The recommendations in the report were accepted by JCSR and as a result JISC asked UKERNA to take the recommendations forward and establish a 'UK e-Science Videoconferencing Programme'. The programme of work is organised into three elements, each of which are described below:

**A.** Establish a videoconferencing centre to support the use of Access Grid and to provide advice on System (VRVS). This videoconferencing centre will complement the existing JANET videoconferencing services;

**B.** Undertake three of the study areas that were identified in the programme of work through an agreement put into place with the University of Manchester. The three study areas concerned are:

1. investigate the best method of enabling participation in Access Grid sessions from non-multicast enabled sites.
2. investigate the requirements for a Multi-site Booking System.
3. investigate the ways in which the resources involved in establishing and maintaining Access Grid nodes can be reduced by working with commercial vendors.

**C.** Issue an open invitation to tender for a number of other study areas defined in the report, by UKERNA in October 2003.

#### **5.3.9 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 and is fully operational. A guide that provides information on the facilities being 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](http://www.ja.net/development/SJ4Dev_Network.html)

During the last quarter, UKERNA has been investigating how to deploy alternative (out-of-band) access to the development network, should the dedicated links to the core routers fail. The requirements document is currently being written by UKERNA and during the next quarter work will continue to deploy the equipment required for alternate access.

### **5.3.10 JISC Authentication, Authorisation and Accounting (AAA) Programme**

The second meeting for projects within this programme was held on Thursday 31 July at Church House Conference Centre in London. Presentations from 11 of the 12 participating projects presented updates and reports of results obtained, and most of the projects are now working towards their final reports. Both a summary of the report of the comparison between the Akenti and Permis authorisation tools and a forward-look on JISC/e-Science authentication and authorisation issues were presented. Discussions centred on four themes - aspects of the role of a central certificate authority for the HE/FE community; metadata issues including standard/unique identifiers for learners and organisations, roles/rights of metadata for use with authorisation policies; certificate revocation approaches. Dissemination of results to the community was also touched upon and this will be discussed within the JISC development group so that the results can be considered in relation to the broad range of JISC programmes.

## **5.4 Pilot and Trial Services**

### **5.4.1 JANET Satellite Pilot**

The two-way satellite services are operational. Useful information is being collated from service hubs via satellite service providers, feedback from trial sites and ping times for SATLYNX platforms via UKERNA.

ATiT, a consultancy firm based in Belgium, is collating and analysing this information to produce a series of independent evaluation reports. A preliminary report is due shortly.

UKERNA and JISC are organising a day for satellite triallists and network managers to meet and discuss their experiences and thoughts on the trial service. This event will be taking place in October 2003.

Satellite monitoring results for the SATLYNX platform (Gilat and BBI) are available at:

[http://www.ja.net/development/network\\_access/satellite/activity1/results.html](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](http://www.ja.net/development/network_access/satellite/trial.html)

### **5.4.2 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.

The JANET ADSL trial report is available at:

[http://www.ja.net/development/network\\_access/adsl/JANETADSLTrial\\_EndofTrialr.pdf](http://www.ja.net/development/network_access/adsl/JANETADSLTrial_EndofTrialr.pdf)

### **5.4.3 Higher Quality Videoconferencing**

The Higher Quality Videoconferencing Project is being undertaken to assess the feasibility of running MPEG based high bandwidth videoconferencing applications on JANET.

UKERNA are currently in the process of configuring the hardware components of the MPEG Coder/DECoders (CODECs) procured.

#### **5.4.4 Conferencing on Demand**

The aim of the Conferencing on Demand Project is to assess the feasibility of providing self controlled Multipoint Control Unit (MCU) resources for the JANET community. The MCU and scheduling equipment used to support the Conferencing on Demand Project has now been installed and configured. UKERNA is working with the JANET Videoconferencing Management Centre to develop a set of testing criteria for this project. It is anticipated that the review point for this project will be March 2004, a decision to initiate a pilot will be made at this stage.

#### **5.4.5 Automated Quality Assurance (QA) Testing**

The aim of the automated QA project is to investigate the feasibility of providing an audio and video on-line videoconferencing 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 JANET Videoconferencing Management Centre to configure the central control equipment, and to facilitate the production of a pre-recorded audio and video script. It is anticipated that a review of this project will be undertaken in April 2004, at which point a decision will be made with a view to initiating a pilot automated QA service.

#### **5.4.6 Voice over Internet Protocol (VoIP)**

Over the last three to five years, a number of standards-based technologies have been developed to enable provision of IP based telephony services. The most prevalent of these are based on the H.323 suite of protocols. During the development of the JANET IP Videoconferencing Service (JVCS-IP), and in particular the Global Dialling Scheme (GDS), significant consideration was given to how IP telephony could be accommodated within this service framework. The JVCS-IP and GDS provide an H.323 network architecture for the provision of video services, and UKERNA is now in a position to trial an H.323 based IP voice service using this existing network architecture as a foundation. As part of the overall trial, other IP telephony standards such as Session Initiation Protocol (SIP) will also be considered.

At this stage, UKERNA is not proposing to trial an alternative telephony system, rather, a complementary telephony service that will run alongside traditional telephony provision. A future development may be to provide an alternative telephony service on JANET and areas that will be investigated are telephony licensing, service provision, billing and gatewaying onto the Public Switched Telephone Network (PSTN).

The trial will run for a period of six months, after which a review will be undertaken. It will consist of both internal UKERNA staff with experience of, or a requirement for, using VoIP and individuals from a number of other organisations across JANET. Staff will be located at both UKERNA and other locations. At the end of the trial the project team will assess the suitability of the service for a national service and either plan an implementation or continue trials.

After investigating the various options available, UKERNA has decided to run the trial using Cisco<sup>®</sup> Call Manager on a Cisco<sup>®</sup> Media Convergence Server with a range of Cisco<sup>®</sup> and Polycom<sup>®</sup> IP telephones including the Cisco<sup>®</sup> 7960G, Cisco<sup>®</sup> 7905G and Polycom<sup>®</sup> SoundPoint IP 500. The equipment has been purchased and delivered to the sites taking part in the trial. UKERNA is now at the stage of arranging installation of Call Manager so that testing can begin.

#### **5.4.7 Widening Access**

As part of its strategy review, JISC held a number of think tanks. UKERNA attended the 'Wider Post-16 Sector' on 18 July 2003. The key points considered were:

roll-out of JANET to all post-16 education;

help to ensure Information Communication Technology (ICT) is used effectively to improve learning and teaching;  
appropriate links to schools;  
international research links and knowledge transfer;  
international distance learning.

The main purpose was to examine how JISC might make its activities available and more relevant to this wider community, including work-based learning. Much of the discussion focused on e-learning and its support in diverse dispersed communities.

## **5.5 Further Education (FE) Liaison**

UKERNA continues to liaise with the FE community and is building strong links with the RSCs that interface directly with the colleges. In July another successful UKERNA/RSC liaison day was held. UKERNA was invited to give a presentation at a National Learning Network (NLN) subject specific support event held for NLN partners and subject mentors. Through its account managers UKERNA was fully involved in the discussions to progress the work of the NLN in the FE community.

In addition to general liaison with the FE community, the account managers continue to work on two projects to widen access to JANET in the learning and skills sector. Following successful completion of the pilot project to connect six specialist colleges, an event was held on 3 July at Queen Alexandra College to launch tranche one of the programme to connect other Specialist Colleges. Connections for the tranche one colleges are progressing well.

The pilot project for the connection of an Adult Community Learning (ACL) network to JANET via a Local Authority is now complete. A programme to connect two groups of some ten Local Education Authorities (LEAs) that wish to be 'early adopters' in the programme to connect ACL organisations has been agreed with the Learning and Skills Council (LSC) and is now underway. UKERNA is working closely with the National Institute of Adult Continuing Education (NIACE), the managing agent for the NLN initiative for ACL.

The account managers represent UKERNA in the NLN Implementation Groups for Specialist Colleges and ACL.

## **5.6 Study Groups**

### **5.6.1. Wireless Advisory Group**

The JANET Wireless Advisory Group met for the second time on 5 September 2003. At the meeting, the group terms of reference were formally approved and an action plan of agreed work and deliverables was discussed and documented. The meeting also gave representatives the opportunity to present details of specific wireless and the University of Manchester and The University of Southampton presented an update on wireless network deployments.

[http://www.ja.net/development/network\\_access/wireless/wag/wag.html](http://www.ja.net/development/network_access/wireless/wag/wag.html)

## **6 UKERNA**

### **6.1 UKERNA Staff**

The following staff changes were recorded during the reporting period.

#### **Leavers**

- James Hutton (Retired), 29 August 2003
- Mark Godfrey, 12 September 2003

#### **New Staff**

- Silvia Jacks, Ledger Clerk, 1 September 2003
- Arron Bowley, Content Delivery Infrastructure Projects Engineer, 22 September 2003
- Pat Hale, Ledger Clerk, Short Term Contract, 1 September 2003

### **Internal Changes**

- Paul Wakefield, p/t cover for Claire Harriman maternity leave
- Kate Nunn-Price, p/t cover for Shaena Porter maternity leave

### **6.2 ISO9001:2000**

UKERNA's existing certification to the ISO9001:1994 Quality Standard has been upgraded to ISO9001:2000. The new standard puts increased emphasis on process definition, preventive action, customer satisfaction, and performance monitoring.

Central to the transition to the new standard has been the definition of UKERNA's key processes and clarification of the interactions between them. This work provided an opportunity for a thorough review of UKERNA's working practices and has resulted in the replacement of the previous quality system by a new management framework based on process flowcharts.

Preventive action in UKERNA started with the risk management work that was carried out for the SuperJANET4 development and is now standard practice throughout the company. UKERNA also continues to monitor customer satisfaction and service performance to improve the quality of service provision and has introduced additional internal monitoring of its processes, to facilitate their ongoing review and improvement.

### **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](mailto:service@janet.ac.uk)

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