Quarterly Report to the Community

February – April 2010

Editorial

As noted in the report on the latest Networkshop, the conference began as the Large Hadron Collider began taking data at CERN in Geneva. At the same time as the event that thrashes out the future of the network, an event that shapes that future was already happening. The JANET network, along with the regional and campus networks, will be delivering up to 10 Petabytes of data per year from CERN to physics departments across the UK. Such demanding requirements highlight the wide range of activities supported by the UK's research and education infrastructure. Applications require that infrastructure, and because that infrastructure exists, new applications arise that can use it to its fullest. In that way JANET shapes and is shaped by the future.

This has also been the quarter that the UK's Digital Economy Act passed into law. JANET's Chief Regulatory Adviser has been closely involved with the parliamentary bodies drafting the Bill to ensure that its provisions take a realistic approach to the circumstances of networking in the UK's education and research sectors. JANET has come under close scrutiny but a happy conclusion is that our house is already well in order, thanks to the careful policies devised years ago and followed ever since.

1. Introduction

This report broadly follows the sequence of the SLA (Service Level Agreement) between JANET(UK) and the funding bodies represented in JISC (Joint Information Systems Committee), for the financial year 1 August 2009 to 31 July 2010.

The numbering follows that of the SLA, and apparent omissions reflect the fact that there is nothing to report for this period.

2. Support Services (SLA J2.4)

(a) Documentation [**more information**]

Documents published between February-April 2010

Newsletters   JANET News 11

Services   JANET Services 2010

                           JANET Development Programme

(b) Workshops and Conferences [**more information**]

Networkshop 2010

The 38th Networkshop conference took place at the University of Manchester between 30 March and 1 April 2010, supported by the University of Manchester and NetNorthWest. By coincidence, the conference began as the Large Hadron Collider began taking data at CERN in Geneva. The JANET network, along with the regional and campus networks, will be delivering up to 10 Petabytes of data per year from CERN to physics departments across the UK. Such demanding requirements highlight how the UK's research and education infrastructure supports a wide range of activities. The conference covered many topics of interest to researchers, managers and support staff: slides from the presentations are on the workshop website at http://www.ja.net/services/events/2010/networkshop-38.html.

Numerous speakers talked about the requirements for the next incarnation of JANET and many also took the opportunity to look back. Paul Harness, the director of IT at the University of Manchester reminded us that the last Networkshop to take place at the University of Manchester was in 2005. He reflected on how the university has evolved in the last five years. Tim Kidd, Head of Operations for JANET(UK), gave an update of the operations and showed that the utilisation on several JANET links is over 10Gbit/s. He also gave details of JANET peering. JANET now has 169Gbit/s of connectivity to other networks and he expects this to jump to 208Gbit/s next year. Jeremy Sharp, Head of Strategic Technologies for JANET(UK), talked about extending SuperJANET5 and preparing for the next backbone upgrade after 2013. The high-performance networking available to UK universities was highlighted from the other end of the spectrum, and the other side of the world, by David Blake from the British Antarctic Survey: he spoke about the networking infrastructure available to scientists in Antarctica who rely on expensive satellite links running at speeds that JANET hasn't seen for 25 years. Interestingly enough, David informed the conference that the connectivity was very reliable and the only trouble they have had is with a BT line across the UK!

The bulk of the conference consisted of around 45 parallel sessions with topics ranging from "Optical Networking" to "Networking During An Economic Crisis". Furthermore, numerous Birds of a Feather sessions and a new Rapid-Fire session gave the opportunity to talk about an even wider array of topics. Many speakers continued the theme of looking back to guess the future. The first transatlantic optical cable is only 20 years old; now cables can deliver 25 terabits per second with wave division multiplexing technology. What is next for fibre optic cables? On the application side, attendees heard that YouTube and iPlayer continue to change the landscape, and how new network-based applications such as DNSSec and new 802.11 protocols will provide new opportunities and challenges for network providers and support staff. The conference also heard about a technology that is slow at being adopted: an IPv6 debate highlighted the rapidly depleting IPv4 address space but IPv6 supporters are still

trying to talk people into running pilot projects. What will happen? Either way, the community should make preparations.

The 38th Networkshop came to a close with a look forward to some of the new opportunities and challenges. A presentation on "An Infrastructure Challenge in the Digital Economy" explored some of the opportunities and challenges in ubiquitous computing, crowd sourcing and cloud computing. These are sure to be hot topics at future Networkshops and important applications for the JANET community. Networkshop 39 will take place at the University of Hertfordshire, 12-14 April 2011.

(c) Security, Regulation and Policy [more information]

The Digital Economy Bill became the Digital Economy Act 2010 immediately before the dissolution of Parliament in April. Although the concerns we had been expressing to the Bill Team on behalf of universities, colleges and libraries did not result in obvious changes to the text of the law, the need to accommodate them in its implementation was repeatedly stated in Parliamentary debate. Since the creation of the Act JANET(UK) has attended two meetings at Ofcom and had useful additional discussions with them and with rights-holders. It seems that the UK education and research sectors are recognised as dealing effectively with online copyright breaches and that there is no desire for the Act to interfere with that good work. A draft Code, implementing the notification requirements of the Act, is expected to be published for consultation in June and July.

Talks on the Act have been given at Networkshop and at the UK Network Operators' Forum. A talk on research use of network traffic data was also given at Networkshop, and a joint presentation with TERENA and WAYF.DK on identity federations in education at EEMA's eIdentity Inter-op workshop in Brussels. JANET's courses on "Managing IT Security" and "Computers, Privacy and the Law" were presented in Bristol and Cambridge respectively.

Other meetings attended included the London Internet Exchange, UCISA Management Conference, EURIM working group on eID Governance, the Internet Watch Foundation Funding Council and the first meeting of a new Permanent Stakeholders' Group of ENISA (European Network and Information Security Agency). Meetings with the NHS have discussed the NHS/JANET Gateway and the Research Capability Programme.

Discussions on regulatory issues within the company have included federation, inter-federation and the establishment of trust; environmental monitoring and personal data; and regulatory requirements for IP telephony.

3. IP Services (SLA J3)

3.1 IP Service (SLA J3.1)

This reporting period has seen a total of 31 new or enhanced customer connections completed and brought into use:

Further Education
- Brooklands College
- Carmel College
- East Devon College
- Hadlow College
- King George V College
- London Borough of Hillingdon Adult & Community Learning
- Milton Keynes College
- Reigate College
- Sir John Deane's College
- Stroud College
- Sussex Coast College, Hastings
- Weston College

Higher Education
- The Open University
- Queen Mary and Westfield College, University of London
- Royal Agricultural College
- University of Oxford (2)

JISC
- London Grid for Learning Trust
- Natural Environment Research Council

Self-funded
- Blackpool Council
- Bury Metropolitan City Council
- Hertfordshire County Council
- Liverpool City Council
- Manchester City Council
- Rochdale Metropolitan Borough Council
- Salford City Council
- St Helens Council
- United World College of the Atlantic
- University of Buckingham
- Windsor and Maidenhead Royal Borough Council, Tinkers House
- Windsor and Maidenhead Royal Borough Council, York Stream House

New or enhanced customer connections
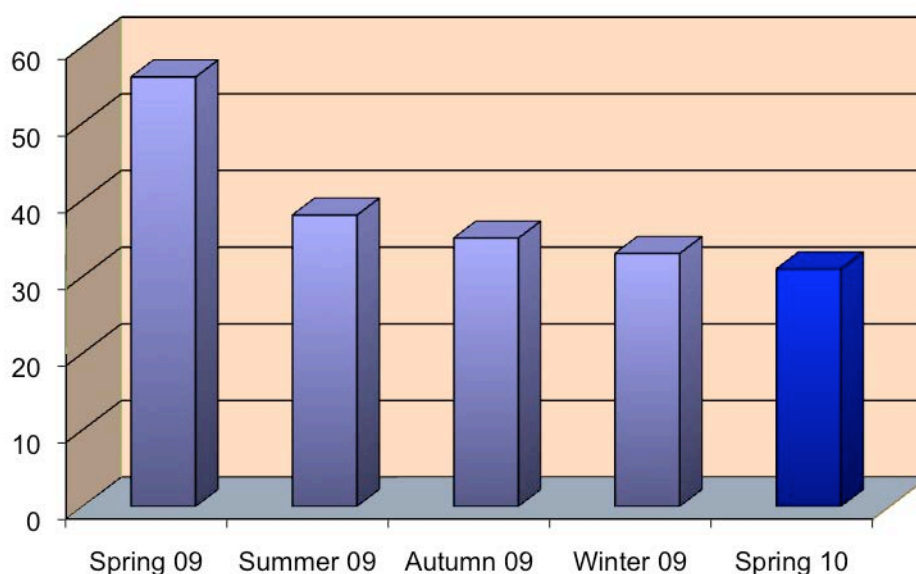
For information regarding current upgrades or connections, please contact JANET Service Desk at: connect@ja.net

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

(b) FE

England
The LSC project to implement upgrades beyond 10Mbit/s has been completed. This project funded the installation of connection upgrades for 336 colleges.

Wales
All colleges are connected to the PSBA network.

(c) Core Network

The core network ran without service interruption during the reporting period despite a number of fibre breaks affecting resilient paths to a number of Regional Networks.

C&LNMAN access links were upgraded from 2.5Gbit/s to 10Gbit/s in March. An additional 10Gbit/s capacity was provisioned to NetNorthWest in April.

(d) External Network Access Provision and Transmission

## (i) Access to the European Research Network

JANET access to European NRENs is via a 10Gbit/s connection to GÉANT from the Telecity R-PoP with a 10Gbit/s backup connection from the Telehouse® R-PoP. Traffic is steadily increasing, from around 3Gbit/s to 5Gbit/s at the end of April.

Peak traffic over connections to GÉANT (Gbit/s)
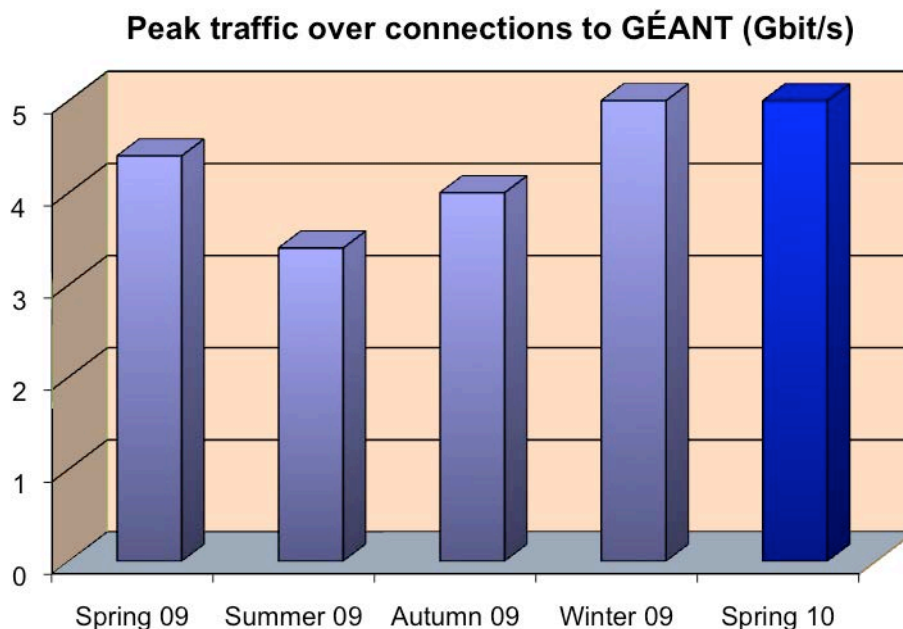
(ii) Access to the Global Internet

JANET access to the global Internet is via two global transit providers - TATA Communications and TeliaSonera. Each company provides four 10Gbit/s connection to two JANET PoPs at Telehouse® and Telecity in London. Aggregated peak traffic reached 15Gbit/s at the end of April.

**Peak traffic over connections
to Telehouse® and Telecity (Gbit/s)**
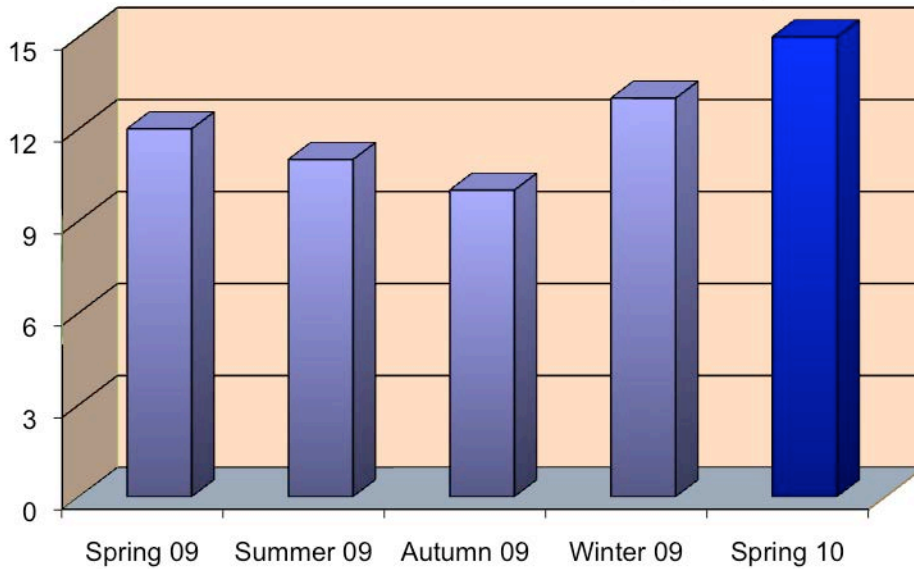
(iii) Access to the UK's Internet Exchanges

JANET access to the LINX (London Internet Exchange) is via four 10Gbit/s connections from the Telehouse® and Telecity PoP locations. Aggregated public peering traffic was maintained at around 14Gbit/s during the quarter.

Peak traffic over connections to LINX (Gbit/s)
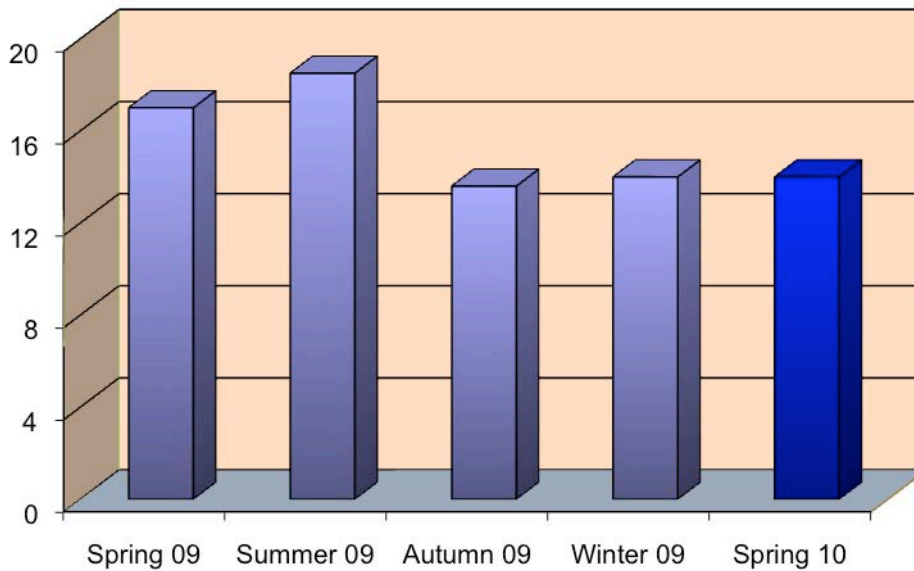
(iv) Access to CERNET

All traffic to CERNET is now via GÉANT. The service was stable during the reporting period.

(v) Access to North American Research Internets

Services are provided via GÉANT and have been stable throughout the reporting period.

(vi) Peer Networking Agreement Administration

PUBLIC PEERING CONNECTIONS					
Connection point	AS	ISP Name	Date of initial request	Date all info received	Date of accept/reject
Linx	49629	UTV Internet	19/11/2009	10/02/2010	11/02/2010
Linx	25369	KILLERCREATION	07/12/2009	10/12/2009	15/01/2010
Linx	11666	Nexicom	12/01/2010	10/02/2010	10/02/2010
Linx	47999	Transversal	07/01/2010	22/01/2010	29/01/2010
Linx	20712	Andrews & Arnold Limited	19/01/2010	29/01/2010	29/01/2010
Linx	49375	Trunks Network	20/01/2010	29/01/2010	29/01/2010
Linx	34079	Eduserv	25/01/2010	29/01/2010	29/01/2010
Linx	34816	AEG Europe	26/01/2010	29/01/2010	03/02/2010
MaNAP	42353	Simwood.com	04/02/2010	05/02/2010	05/02/2010
Linx	34441	Xifos Limited	11/03/2010	12/03/2010	16/03/2010
Linx	5580	Atrato	04/03/2010	16/03/2010	24/03/2010
Linx	35432	Cablenet Communication Systems Limited	12/03/2010	16/03/2010	16/03/2010

3.2 Fault Reporting (SLA J3.2)

The JANET Service Desk handles the fault reporting function. Fault reports should now be made to service@ja.net.

3.3 Management of Maintenance Activities (SLA J3.3)

There were a total of 14 planned maintenance sessions during the reporting period. Major activities included:

- software upgrade to optical equipment on the core network and at regional network entry points

- resilience tests carried out by a number of regional networks

- access link re-routing for NNW, C&LNMAN and WMRN

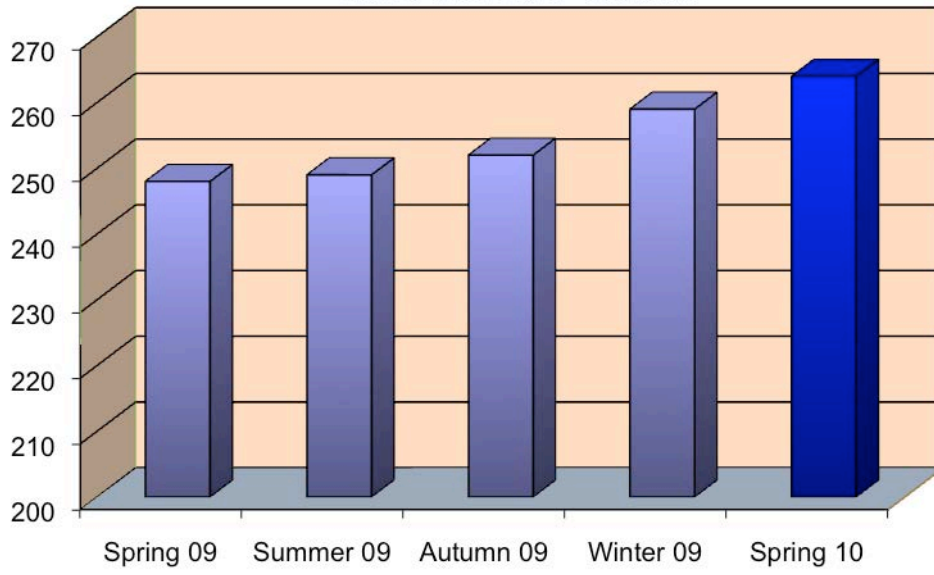- IOS upgrades to a number of backbone routers.

3.4 Network Status Information (SLA J3.4)

The support contractor continues to implement changes to improve displays and enhance JANET Netsight functionality. Investigations are also being undertaken as to how response times can be improved.

3.5 Time Reference Service (SLA J3.5) [more information]

Five more sites registered to use the JANET NTP service during the reporting period. There are a total of 264 sites using the service. Overall, it is a stable and well-used service.

Number of organisations using the JANET NTP Service

Bar chart showing the number of organisations using the JANET NTP Service across five periods. The vertical axis ranges from 200 to 270. Approximate values: Spring 09 ≈ 249, Summer 09 ≈ 250, Autumn 09 ≈ 253, Winter 09 ≈ 260, Spring 10 ≈ 265.

4. Application Services (SLA J4)

4.1 Videoconferencing Service (SLA J4.1) [more information]

The number of users of this service continues to grow steadily; currently 6361 registered venues are able to use the JANET Videoconferencing Service over IP (JVCS-IP) and 660 are able to use the service over ISDN (JVCS-ISDN). During the reporting period, 83 conferences took place using ISDN only over 153 hours, 5192 conferences took place using IP over 6102 hours, and 2619 conferences took place using the IP/ISDN gateway over 3558 hours. As expected, usage dropped during April because of the Easter holidays and the schools are one of our biggest users of the service. The overall statistical trend, however, indicates an increase in the use of videoconferencing, particularly IP videoconferencing.
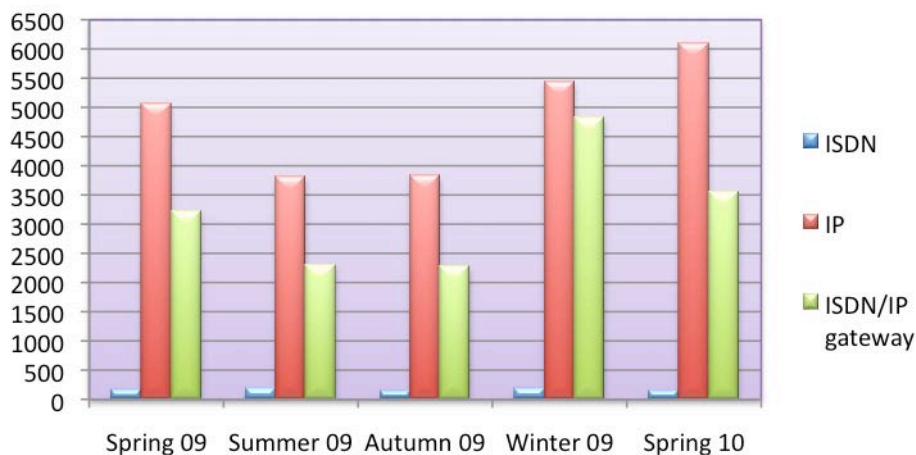

Number of venues registered to use JVCS
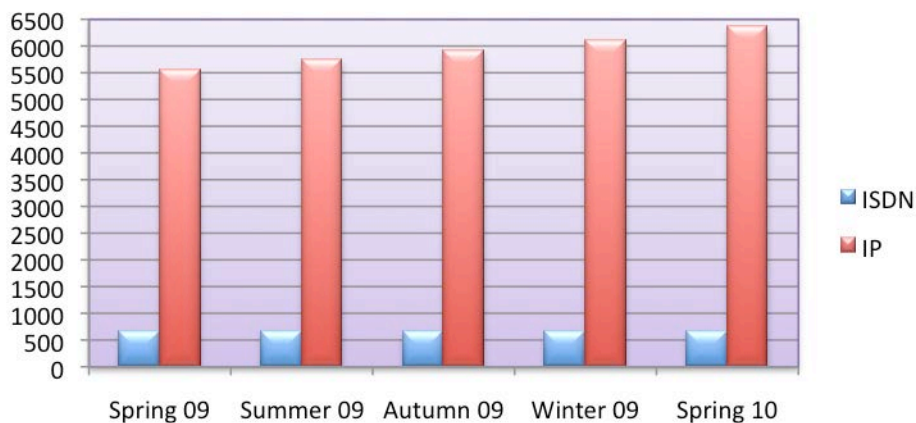
Number of videoconferences
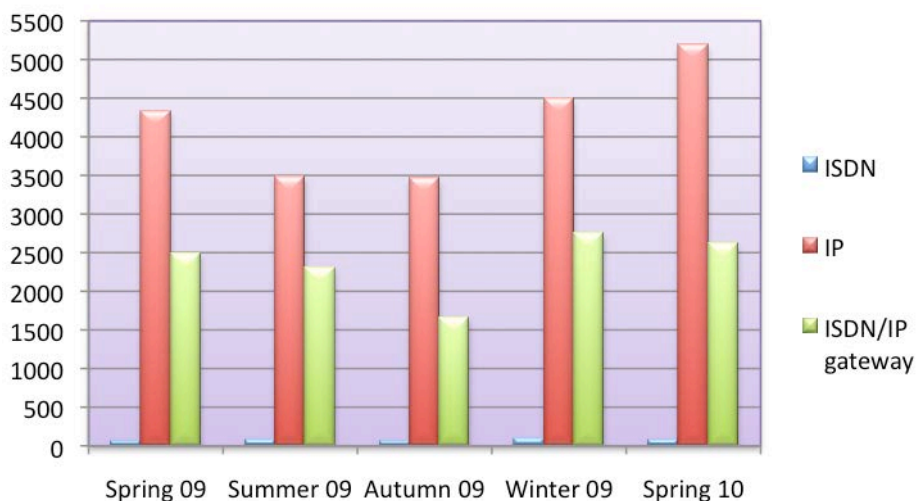
Number of videoconferencing hours over IP and ISDN

This gives a total of 7894 sessions taking place over 9813 hours between 1 February and 30 April.

Error last quarter
It was noticed that the last quarterly report contained a couple of errors. These are for the bridged hours in November and January. The correct figures are shown below:
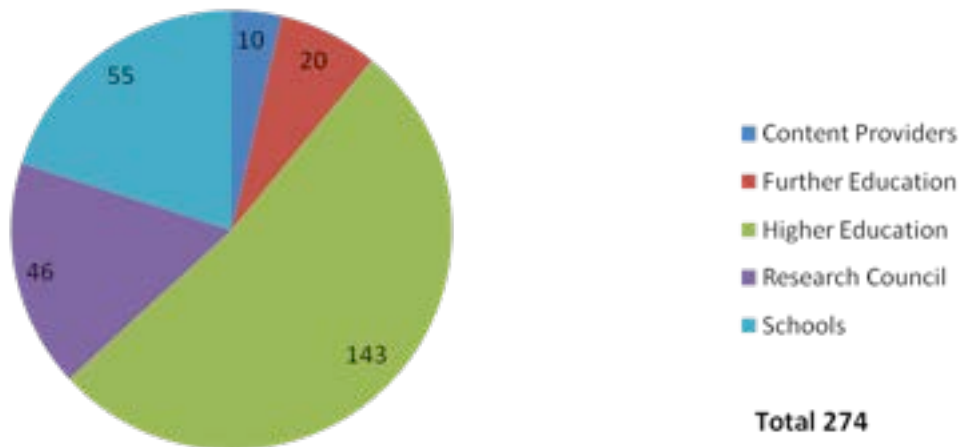
	IP sessions	Hrs	ISDN sessions	Hrs	Bridged sessions	Hours
Nov	1860	2185	45	82	1066	1336
Dec	1188	1427	28	48	727	951
Jan	1448	1828	28	52	967	1264
ToT	4496	5440	101	182	2760	3551

JVCS ([more information](#))

JVCS Desktop Videoconferencing
The JVCS Desktop feature was launched in November 2009 and already each month sees an increase in the number of participants. The following chart shows the number of desktops used per sector during the month of April.

JVCS Desktops used in VCs per sector April 2010

Content Providers: 10
Further Education: 20
Higher Education: 143
Research Council: 46
Schools: 55

Total 274

4.2 Access Grid Support Service (SLA J4.2) [more information]

Server and Bridge Activity

The number of registered UK Access Grid® (AG) nodes currently stands at 408, including the UK Academic desktop nodes, and the number of registered users stands at 669.

Total Number of Conferences Jun 08 to Apr 10

# of Uses June 08 to Apr 10
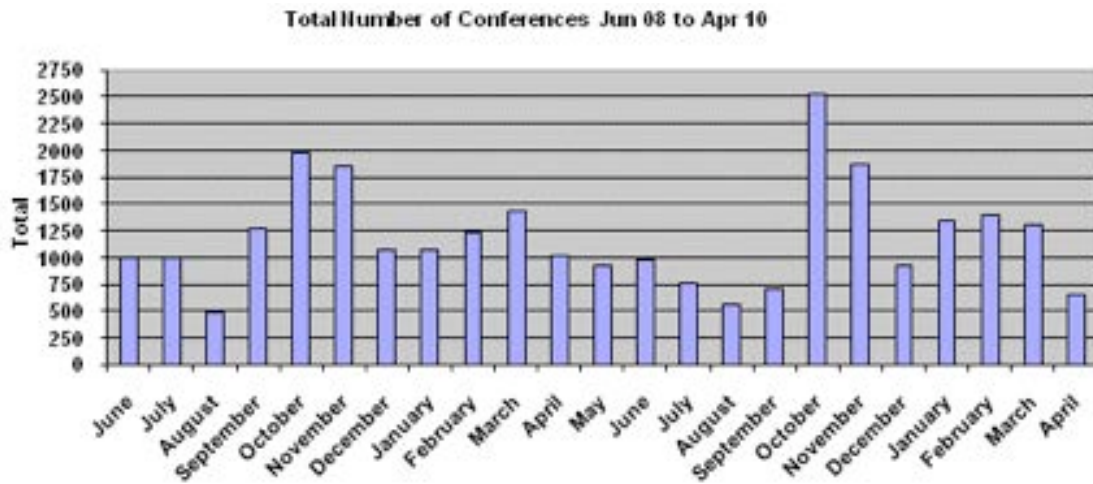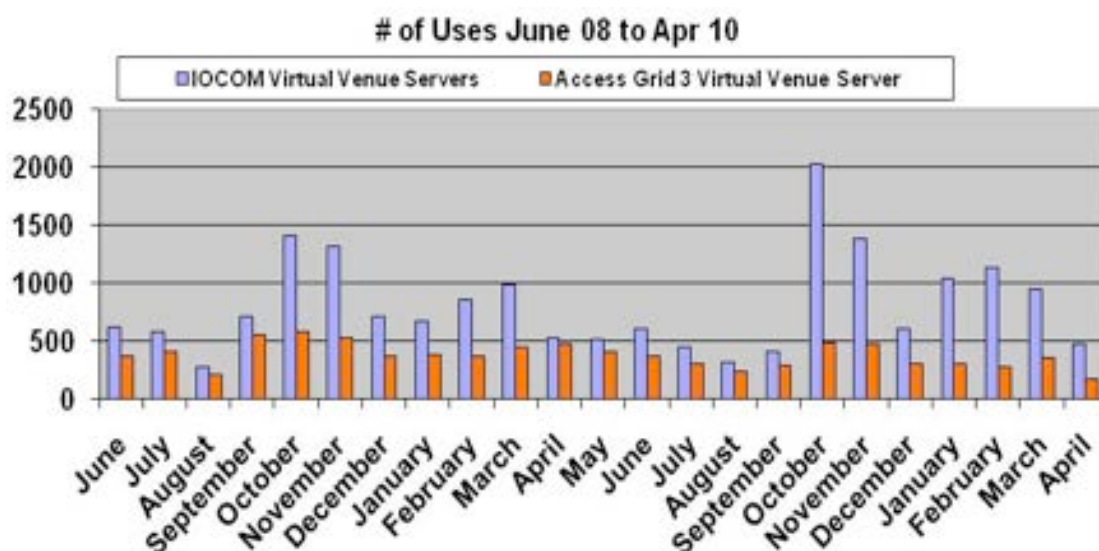
Booking Service

There were a total of 647 conferences held over AG during April 2010 (meetings under two minutes were discounted). The lower usage was due to the Easter break and a lack of lectures taking place in the spring term, and is consistent with previous April figures.

Conferences & Outreaches

AGSC is planning to attend and demonstrate AG technology using a portable AG node at a series of RSA conferences up and down the country from June 2010 onwards.

As part of our outreach programme, in March AGSC services and software were demonstrated to the RSC-NW Cumbrian eLearning Collaboration meeting at Furness College. A further linkup is now planned in May, joining the South Manchester Information Learning Technology (SMILT) meeting taking place at Ashton 6th Form College. Also in March, AG was demonstrated to the Dalton Fellow in the School of Chemistry at the University of Manchester, who is looking for a videoconferencing solution to enhance collaboration between various working groups, including the nuclear industry in Cumbria.

In February, AG technologies were showcased to Armstrong Learning, a learning service provider that delivers music courses to a range of colleges nationwide.

Customer Survey

The informal AGSC telephone survey, started in November 2009 and announced last quarter, has now been concluded and the results are summarised below. As a reminder, the aims of the survey were:

- make AGSC more visible to our users
- confirm we have up to date details about the nodes, including number of nodes, correct contact details etc.
- establish whether the technology is being used: if not, why not and offer our services to resolve any problems
- establish what types of meetings are taking place
- remind users of the services AGSC can offer.

The results from the survey indicated that many of the users thought:

- Access Grid technologies are a good way of facilitating collaborative and distributed teaching
- projects such as MAGIC Maths (a postgraduate course involving 19 universities) highlight how Access Grid has been used successfully for teaching
- the flexibility of Access Grid (multiple video feeds and collaborative tools) is one of the main features that makes AG more attractive for some users above traditional videoconferencing methods
- the Access Grid Support Centre is very helpful and quick at responding to queries submitted.

The survey also highlighted some areas where the AGSC can take action to promote and improve the service to its customers. These are in the process of being evaluated:

- some nodes at institutions are no longer used because they were installed for a particular project: once the project finished, staff moved on without passing their knowledge on to any colleagues
- start-up information and instruction provided by installers is sometimes insufficient to get users started
- staff at institutions are often not aware what Access Grid is and what it can be used for: this leads to nodes lying dormant for periods of time
- with QA tests no longer being mandatory, not all nodes operate to satisfactory standards and this can lower the quality of sessions.

Software News

IOCOM version 2.0.8 was made live at the beginning of April and all IOCOM users were required to upgrade before connecting. An offline version of IOCOM was installed onto AGSC portable demonstration nodes and laptop, enabling IOCOM to be demonstrated in places without a network connection.

EVO 2.0 was also launched: see below for further details.

Documentation

The Support Documentation page of the website has been renamed "User Guides" and the webpage was changed to a table format with subject headings in order to make it easier to find documents quickly. A significant number of user guides have been updated this quarter including revised guides following the release of EVO2 (see below) and IOCOM 2.0.8. Other quickstart guides were provided for the Booking Service AccessGrid Toolkit3, as well as guides on conferencing between JVCS and Access Grid: http://www.ja.net/services/video/agsc/AGSCHome/documentation.html.

Suggestions from the AG community on documentation which could appear on the site may be submitted to the AGSC via telephone or email. Details can be found at http://www.ja.net/services/video/agsc/AGSCHome/contactus.html.

EVO (Enabling Virtual Organizations)

The new version of EVO, EVO 2.0 (known as EVO2), now out of beta testing, was released in April. EVO is a videoconferencing and desktop sharing system that provides a collaboration platform for bridging multiple remotely located collaborators. The new version will run concurrently with EVO (EVO1) until mid May. The enhancements in this new version include:

- a simpler interface
- a new icon toolbar
- improvements to VC (H.323) connectivity
- improved booking options.

More information and a link to the EVO website can be found at
http://www.ja.net/services/video/agsc/AGSCHome/whatsnew.html.
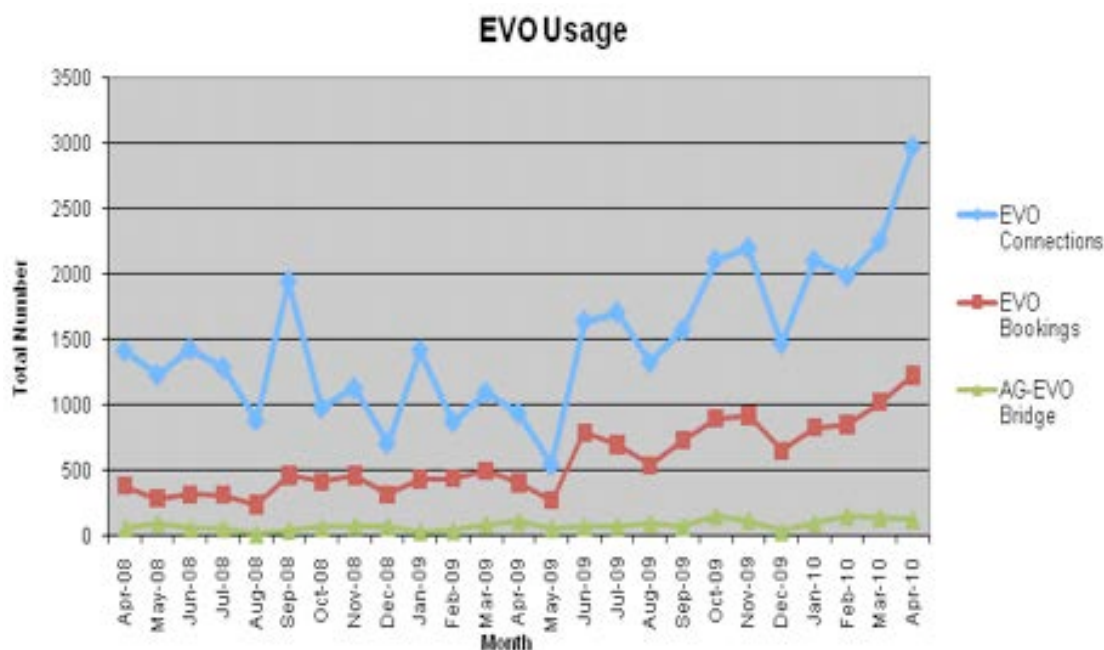
4.3 Usenet News Service (SLA J4.3) [more information]

JANET(UK) has decided that it is no longer economically viable to run the service, especially in the current financial climate. We therefore will cease to offer the service when the existing contract expires on 31 July 2010.

4.3.1 News Feed Service (SLA J4.1) [more information]

The News Feed Service continues to function well. There are currently 20 client sites connected to the service and most are taking a full News feed.

4.3.2 News Reader Service (SLA J4.1) [more information]

The News Reader Service continues to function well. There are currently 47 sites connected to the Service.

4.4 Electronic Mail Services (SLA J4.4)

4.4.1 Mailer Shield (SLA J4.4.1) [more information]

No more organisations have joined this service during this reporting period. The number of active recorded clients of the service is 20.

4.4.2 E-mail Advice and Testing Service (SLA J4.4.2) [more information]

The system continues to run reliably and effectively.

4.4.3 E-mail Abuse Protection Service (SLA J4.4.3) [more information]

The system continues to run reliably and effectively.

4.4.4 Web Mail Service (SLA J4.4.5) [more information]

There are a total of 34 sites using the service.

4.6 Nameserver Services (SLA J4.6)

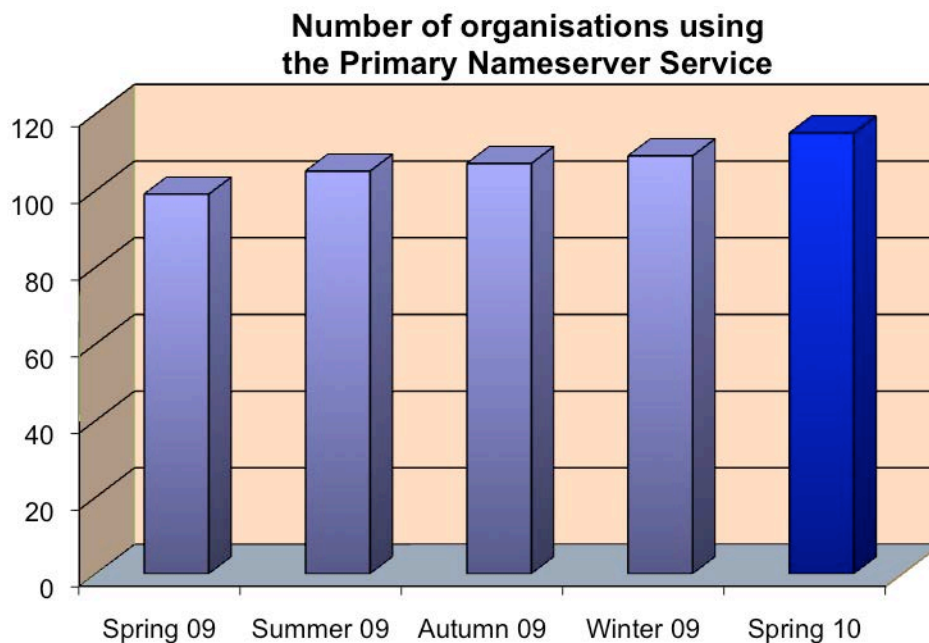### 4.6.1 Second Level Domain Service (SLA J4.6.1)

DNS (Servers)

The JANET DNS Service encountered no problems and continued to run reliably throughout this quarter.

DNS (Whois Service)

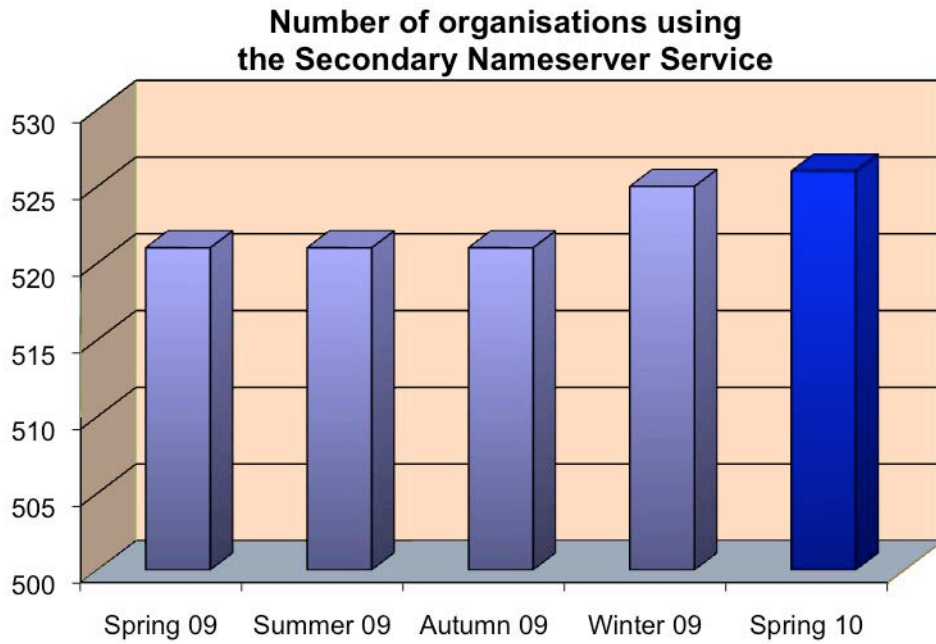During the reporting period there were no reported problems with whois.ja.net.

4.6.2 Primary Nameserver Service (SLA J4.6.2) [more information]

Six more organisations registered during the reporting period to use the JANET Primary Nameserver service. There are now a total of 115 users of the service.

Number of organisations using the Primary Nameserver Service

	Spring 09	Summer 09	Autumn 09	Winter 09	Spring 10
Value	~100	~106	~109	~109	~115

4.6.3 Secondary Nameserver Service (SLA J4.6.3) [more information]

There have been no breaks of service within this quarterly period. At the end of this reporting period the number of organisations using this service had increased to 526.

Number of organisations using the Secondary Nameserver Service

4.6.4 Off-site Resolver Service (SLA J4.6.4) [more information]

Three sites joined during the reporting period, taking the total number of users up to 113.

Number of organisations using the Off-Ste Resolver Service
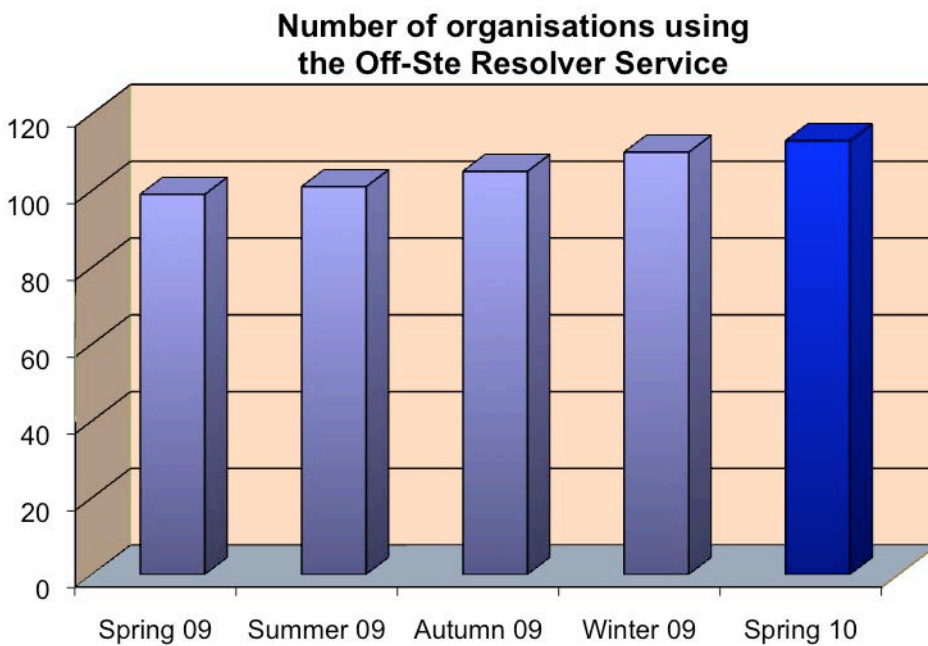
4.7 Managed Router Service (SLA J4.7) [more information]

Nothing to report.

4.8 Web-Based Services (SLA J4.8)

4.8.1 Web Hosting Service (SLA J4.8.1) [more information]

Three sites have joined the service during the reporting period, bringing the total number of sites using the service to 76.

Number of organisations using the Web Hosting Service
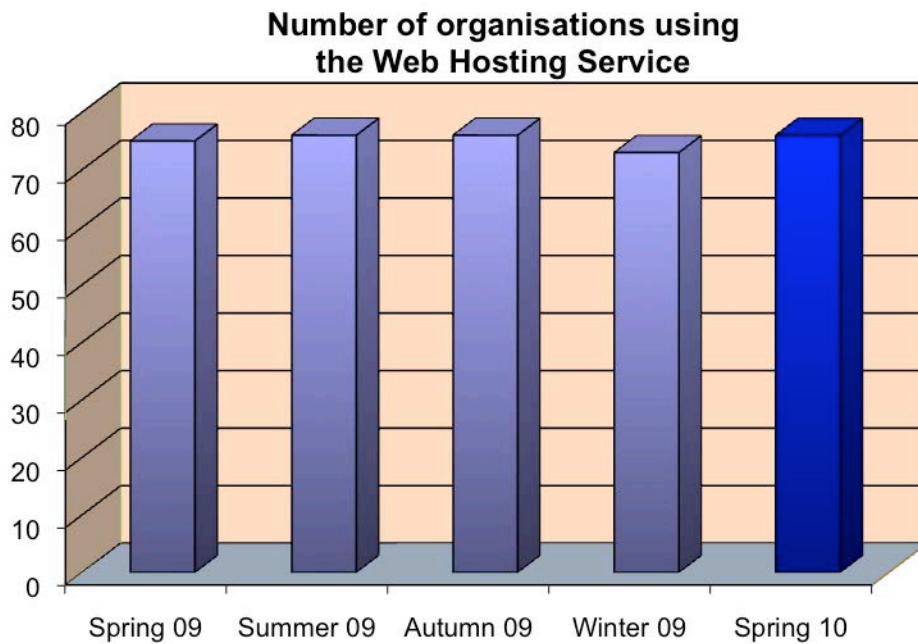
4.8.2 Web Filtering Service (SLA J4.8.2) [more information]

During the past reporting period 4 organisations joined the service and several organisations that were not actively using the service were removed. A few organisations have elected to have two filtering accounts. There are currently 86 individual organisations using the service.

Number of organisations using the Web Filtering Service
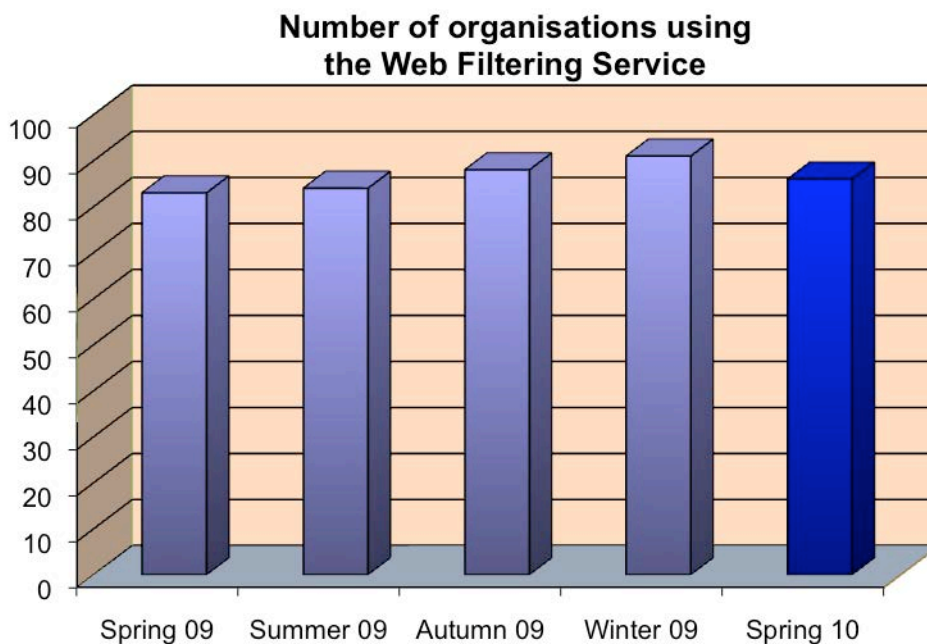
4.9 JANET Roaming Service (SLA J4.9) [more information]

The number of participating organisations now stands at 116 and sustained volumes of authentication traffic are being seen.

Major news this quarter is the adoption of a number of service performance enhancement measures and initiatives to improve user perception of the reliability of the service. These include a concerted programme to eradicate misconfigurations at participating organisation

sites which have led to problems emerging under high-load conditions. Once these have been corrected, service infrastructure protection traps can be removed on the national servers which will lead to performance improvements. User education remains a priority to ensure that users gain the maximum benefit from the diverse service types offered at the sites providing eduroam in the UK.

**Number of organisations using the JANET Roaming Service**
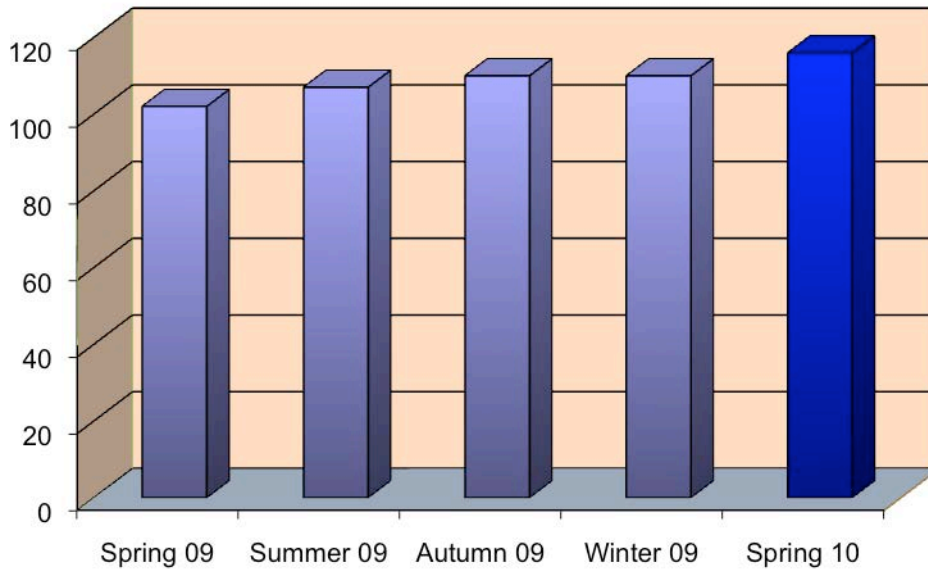
4.10 UK Access Management Federation [more information]

4.10.1 Membership of the UK federation

At the end of April there were 801 members in the UK federation, made up of organisations from UK education sectors and of commercial organisations providing online services to these sectors. A list of services available through the federation can be found at http://www.ukfederation.org.uk/content/Documents/AvailableServices.

Total UK federation membership
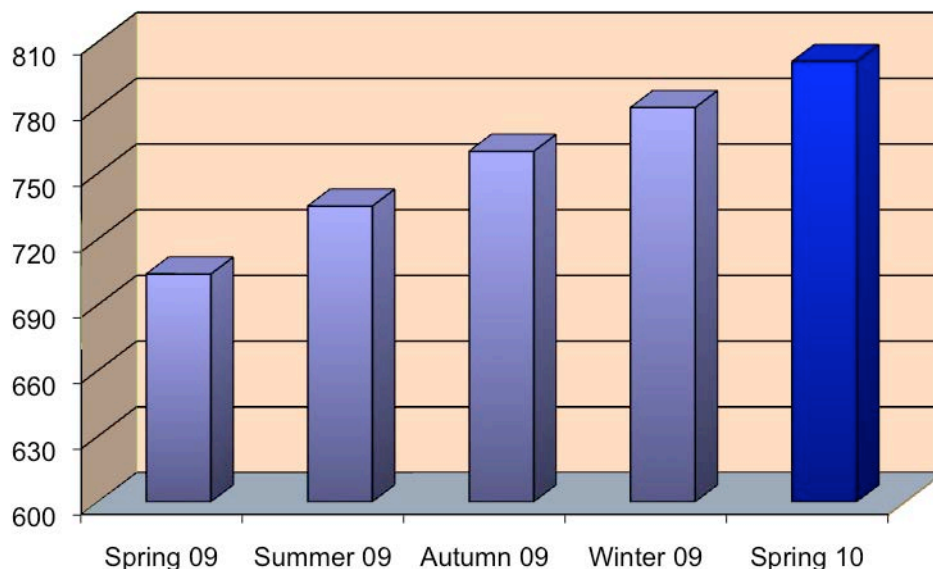
4.10.2 UK federation Support, Training and Events [more information]

To ensure that the federation continues to meet the requirements of its members and to help focus service enhancements, JANET(UK) has commissioned a survey of a sample of federation members. Telephone and online interviews were conducted by Prodata (http://www.prodata-partners.com/), a UK independent market research company. Results from the survey will be made available to UK federation members and will be published at the end of June 2010.

As the Shibboleth 1.3 software approaches end-of-life, sites using it will need to address the issue of upgrading to Shibboleth 2.x. More information on upgrading the identity provider software is available at http://www.ukfederation.org.uk/content/Documents/RollingIdPUpgrade and a case study can be found at http://www.ukfederation.org.uk/library/uploads/Documents/AS1.pdf.

The Shibboleth implementation courses, run by JANET Training, continue to be very popular. Further details of the training schedule can be found at http://www.ja.net/services/training/schedule/by-course.html.

5. Technology Advisory Services (SLA J5)

5.1 Bandwidth Management Advisory Service (BMAS) (SLA J5.1)
[**more information**]

The service is due to terminate at the end of July 2010.

5.3 Video Technology Advisory Service (VTAS) (SLA J5.3)
[**more information**]

During this quarter, one new evaluation report was published on the Polycom® HDX 6000 TM, A HD/SD CODEC.

6. Training Services (SLA J.6) [more information]

Networkshop Online was once again successful this year with over 200 registrations. The site supported Networkshop with additional information, discussion areas and media from the conference. All sessions were captured and processed as audio files and also as synchronised slides and video. All presentations are now available in EdLab.

Course development work has continued with both "IPv6 Fundamentals" and "Multicast Fundamentals" being developed to enter the schedule Q4 2010, and "JANET Roaming Implementation" and "Hands on Digital Forensics" being piloted over the summer months.
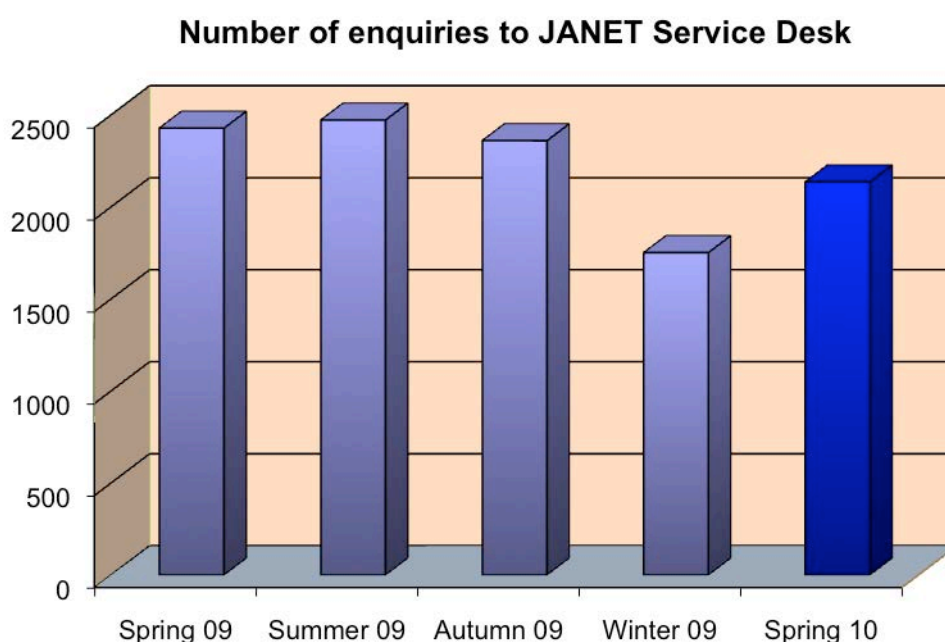
7. Administration Services (SLA J7)

7.1 JANET Service Desk (SLA J7.1) [more information]

JSD provides the primary point of contact for all enquiries concerning JANET services and requests for information.

During this reporting period the total number enquiries received was 2136. Most of these queries related to the Domain Name registration service, requests for JANET connections, and applications or queries relating to other JANET services.

Two complaints were received, one of which has been successfully concluded in this reporting period.

Number of enquiries to JANET Service Desk

7.2 Connection Services Administration (SLA J7.2)

JANET(UK) administers the procedure for the approval and commissioning of new and upgraded connections to the JANET network. This involves liaising with customers to report progress on their new or upgraded connections. All sites connected to JANET must adhere to the JANET Connection Policy that can be found at:

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

Requests for new or enhanced JANET connections should be made via the JANET Service Desk.

A list of organisations connected to JANET during the reporting period is provided in section 3.1. For information regarding current upgrades or connections, contact JSD at service@ja.net.
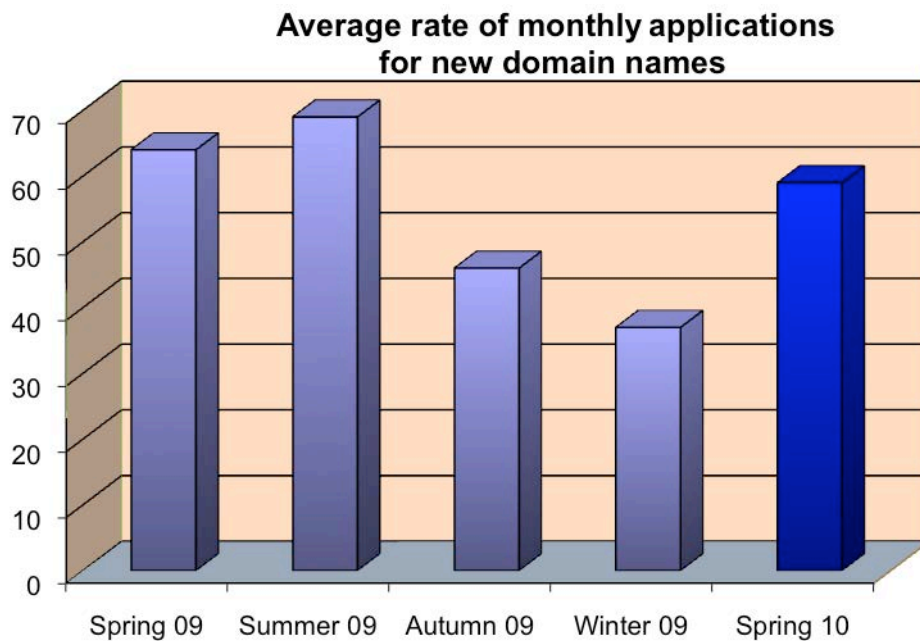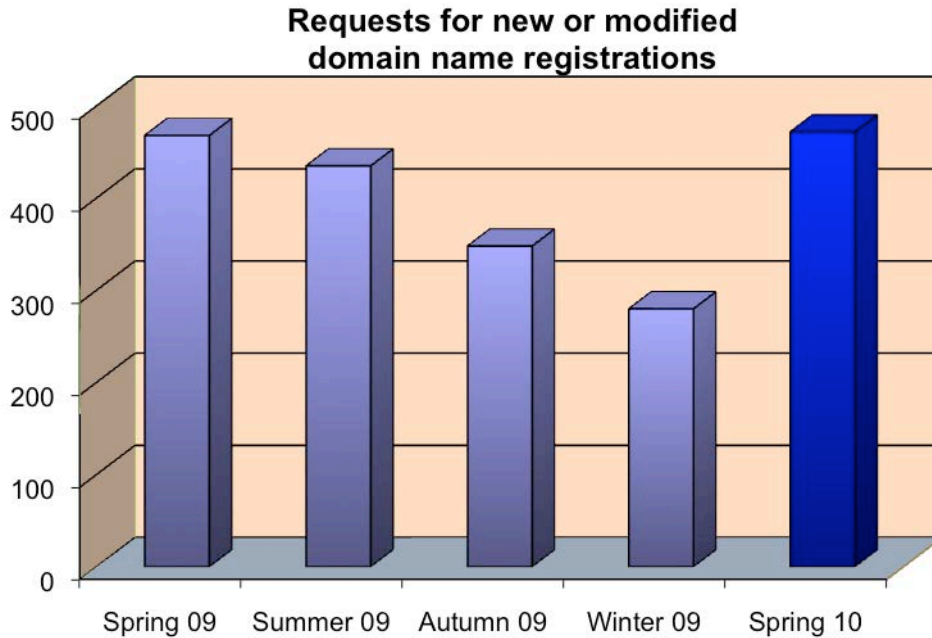
7.3 Licence Administration (SLA J7.3)

Over the past three months there have been 2 new Sponsored Connection Licences issued.

7.4 Domain Name Service Administration (SLA J7.4)

7.4.1 Domain Name Registration Service (SLA J7.4.1)

During the reporting period totals of 472 requests for both new domain name registrations and modifications to existing entries were received. The rate of applications for new domain names averaged 59 per month, with an average of 99 modifications for each month.

Requests for new or modified domain name registrations

Average rate of monthly applications for new domain names

Average rate of monthly applications for modified domain names
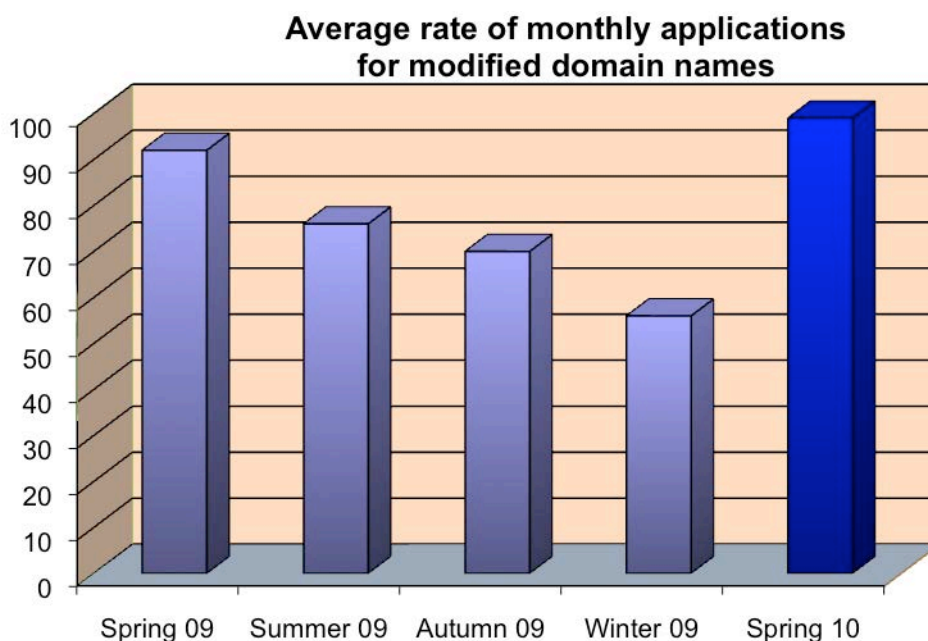
7.5 IP Address Assignment (SLA J7.5)

During the reporting period 14 applications were received and completed, including one application for IPv6.

7.6 urn:mace:ac.uk Namespace Administration (SLA J7.6)

There were no new applications during this quarter.

7.7 JANET Lightpath (SLA 7.7)

No JANET Lightpath connections were made this quarter.

JANET Certificate Service [more information]

The new JANET Certificate Service was launched on 18 November 2009. By the end of this reporting period a total of 3224 certificates had been issued under the new automated system, which is an increase of 1731 since the last quarterly report.

Total number of certificates issued by the JANET Certificate Service
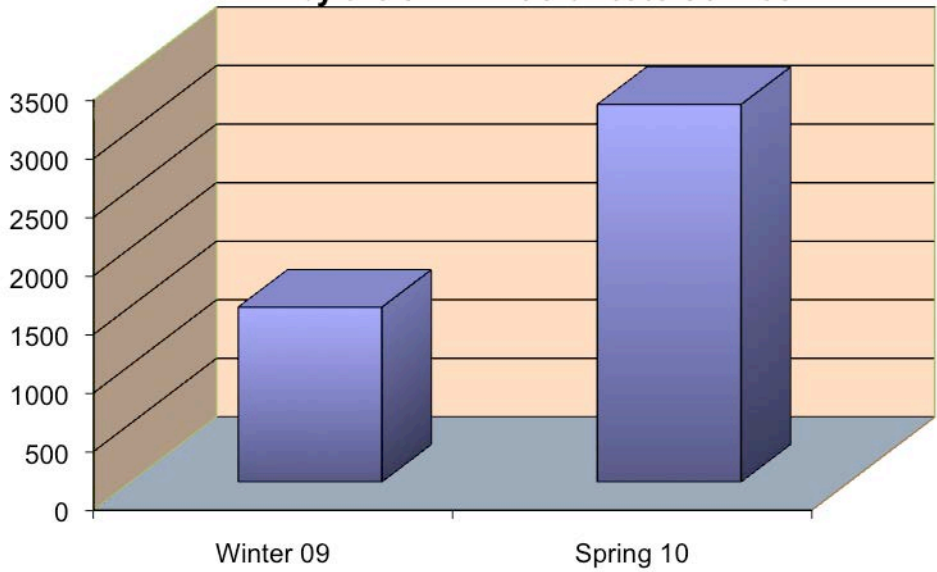
8. Security Services (SLA J8)

This quarter has been a continuance of the fight against the Conficker infection. This appears to remain constant with minor fluctuations as JANET-connected sites either turn their attention to it or are distracted from it for any amount of network management reasons. While network users are fortunate for the moment that the Conficker infection has been largely benign, it remains a matter of some importance to deal with discovered infections.

Scanning for vulnerabilities and weaknesses in password use and insecure systems continues across JANET. In particular we have seen a slightly higher than usual set of scanning for open proxies. We have recorded a higher than normal amount of phishing attempts in the last month of this quarter so users should remain vigilant for unusual requests for personal data.

9. Development

9.1 Federated Access Management [more information]

This area is now reported on as part of 4.10.

9.1.1 Expert Group on Portal Design [more information]

Project Team members met again in March 2010 and have put forward three outcomes for this group: (1) to provide guidance and best practice documentation on the deployment of a recommended WAYFless URL format; (2) to produce a learning object that will demonstrate the effective use of portals for discovery in federated access management and the utilisation of WAYFless URLs; and (3) to provide a specification for a possible online tool for the benefit of users that will help build Service Provider-side WAYFless URLs where they don't yet exist. The Project Team is due to meet at the end of May to finalise these outcomes.

9.1.1 WAYF Interface Development [more information]

The Project Team has discussed the findings of the consultants' usabilty and accessibilty reports with a view to providing a set of recommendations for design of the WAYF interface. The Team met at the beginning of March to discuss the requirements. Much work has already been done following the recommendations of the usability and accessibility reports, and the team are currently considering the statement of requirements for the few remaining design areas.

9.2 Roaming & Mobility [more information]

9.2.1 802.1X Supplicant [more information]

DOT1X Special Interest Group
The SIG group has met a further two times since the last quarterly report and now has a slightly changed focus:

1. Promotion of eduroam.
2. Improving the user experience.
3. Reducing technical barriers to adoption.
4. JANET Roaming Service development.
5. International activity update.

9.3 Network Access [more information]

9.3.1 Local-Loop Unbundling (LLU) [more information]

All deliverables from the LLU project are now available on the web at http://www.ja.net/development/network-access/llu/llu-deliverables.html. Ongoing developments in the LLU area will continue to be monitored.

9.3.2 Portable WLAN

Participants in the portable WLAN trials are preparing drafts of their deliverables as the project comes to a close. A summary of activity to date was reported at Networkshop.

9.3.3 Mobile broadband

Following delivery of the consultation results, JANET's mobile broadband strategy has been refocused away from pursuing WiMAX and re-branded 3G dongles, and more towards maximising Wi-Fi coverage through the eduroam service. During the last quarter, initial contact was made with wireless ISPs that serve public transport vehicles to discuss the feasibility of enabling access to eduroam on their wireless network.

9.3.4 Southampton Group Design Project

For the third year, JANET(UK) submitted a project for inclusion in the Southampton MSc group design project, enabling students to gain experience of a commercial environment working with JANET. This year's target is to develop a web service that will give a connected user a detailed picture of the quality and characteristics of their connection.

9.3.5 Network Access Control

Activity in this area has focused upon raising awareness of IF-MAP as a potential route to the delivery of 'next generation' access control. This work parallels activity in eduroam development as a means to enhance measurement and monitoring of the service.

9.4 Network Engineering

9.4.1 IPv6

Significant effort has been dedicated during the last quarter to developing the material for the JANET IPv6 training course, which is due to be trialled in Autumn 2010.

9.3.2 IP Multicast

Significant effort has been dedicated during the last quarter to developing the material for the JANET Multicast training course, which is due to be trialled during the last quarter of 2010.

9.5 Measurement & Monitoring [more information]

9.5.1 Netsight [more information]

See section 3.4.

9.5.2 Flow Monitoring

For over a year, JANET(UK) has been looking to replace its existing flow monitoring system with a consolidated system that provides additional functionality. Following a programme of various product evaluations, a conclusion was reached that a single commercial product (off the shelf) is currently not available in the market which can fully meet our requirements. JANET(UK) will be reviewing its netflow requirements and strategy over the coming months.

9.6 Support for Research [more information]

9.6.1. JANET Lightpath [more information]

This area is now reported on as part of 7.7.

9.7 Optical Networks [more information]

9.7.1 Technology Tracking

JANET(UK) staff members attended two events this quarter. At the MPLS World Congress (Paris, 8-11 February 2010) the aim of the event was to present new trends in the family of MPLS technologies. The main technology area addressed during the event was MPLS-TP (TP=Transport Profile). The other event attended was Ethernet Expo 2010 (London, 12-13 April 2010). This event highlighted the advancements in the Carrier Ethernet technology area, with a focus on service assurance capabilities.

Discussions with vendors continue for both Carrier Ethernet and optical transmission equipment.

9.7.2 Carrier Ethernet [more information]

The Stage 1 trials of the project test plan were successfully complete during the last quarter. Three end-to-end connections over a multi-technology and multi-domain environment between the project participants' testbeds were established. The test plan for the Stage 2 trials was discussed and agreed at a face-to-face meeting with the project participants on 15 April 2010 in London. Stage 2 tests will involve the investigation of different advanced features for Carrier Ethernet connections, such as bandwidth guarantees and QoS, resilience and multipoint-to-multipoint connectivity.

9.8 Schools Services [more information]

9.8.1 Videoconferencing

The take-up of videoconferencing by schools continues to grow. By the end of April 2010 the total number of schools sector endpoints registered with JVCS was just over 4200 (as compared with 3800 at the end of April 2009). Just under 3700 videoconferences were undertaken this quarter (a similar number to the same quarter last year), approximately half with national content providers. Of the conferences, 75% continue to be for teaching, tutorials and related educational activities; other purposes include administrative meetings, system testing and quality assurance. The growth in schools videoconferences, managed by JVCS throughout since September 2004, is illustrated below.
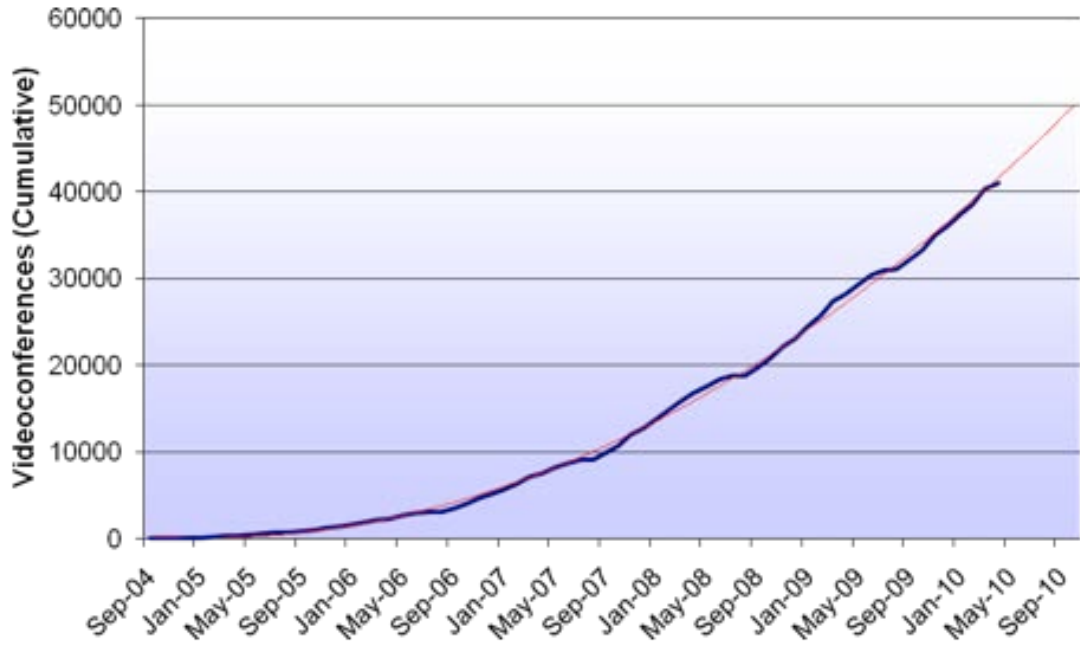
9.7.2 Connectivity

The NEN Services Group is working closely with a number of NEN Providers to explore new approaches to regional networking.

10. Community Update

(a) FE Liaison

JANET(UK) attends regular meetings with the LSC, FE organisations and others to raise awareness of new JANET initiatives, report on current progress with the English upgrade programme, and discuss future developments within the FE community.

(b) Specialist Colleges

Talks are under way with St Elizabeth's Centre to discuss the provisioning process and becoming a JANET-connected organisation. Delivery of a 2Mbit/s connection over copper is progressing.

(c) Scotland

JANET(UK) participated in the successful launch of Interconnect 2.0 on 11 February at the Stirling Management Centre. Interconnect 2.0, which is managed by Learning and Teaching Scotland, connects onto the JANET network and allows all of Scotland's state primary and secondary schools to access the Glow Intranet, web-based resources and the rest of the JANET community. JANET plays a major role in providing global Internet access and services within the backbone of the Interconnect 2.0 across Scotland.

JANET(UK) also participated in Scotland's Colleges ICT Communities of Practice Annual Conference in Reid Kerr College on 23 March. The theme of this event was how to deliver more with less, and the conference addressed how collaboration between institutions within the JANET community can enhance service delivery and ensure value for money. The JANET presentation demonstrated how JANET services such as JVCS, JANET Desktop, JANET txt and the JANET Certificate Service can help the community to achieve cost savings.

JANET(UK) staff also attended a meeting of the AbMAN Technology Group in Aberdeen on 13 April.

(d) Northern Ireland

JANET(UK) had a stand at the LSDA NI Annual Conference in the Galgorm Hotel on 21 April 2010. Chris Kelly of NiRAN manned this stand when the Account Manager's flight was cancelled.

(e) NHS/HE Connectivity Project [more information]

Work is still continuing with NHS Connecting for Health on the implementation of the jointly funded full N3 JANET Gateway service to follow on from the current early adopter. It is now expected to be in place by June 2010 after delays in delivery of the CISCO firewalls. The new N3 JANET gateway will consist of a 250Mbit/s active firewalled and monitored connection in London and an equivalent standby link in Manchester for resilience, and all traffic between N3 and JANET-connected organisations will be routed through this new gateway (traffic is only routed to the early adopter organisations with the existing gateway). Initially only sessions initiated in N3 will be supported: the use of JVCS videoconferencing across the new gateway will remain as an early adopter project for the time being. From June onwards new projects will be initiated to formally investigate sessions initiated in JANET, and strategic solutions for videoconferencing: for example, N3 announcing that there will now be an N3 videoconference service for the NHS in England, and NHS Scotland planning a hierarchical bridging structure for their Health Boards.

The next NHS-HE Forum is on 19 May 2010 in London. There is also another Scotland NHS-HE Forum meeting on 8 June 2010 in Edinburgh.

(f) Research Councils

NERC is evaluating costs of the different options for high bandwidth provision to BGS Keyworth.

11. European Activities

(a) TF-CPR & TF-MSP

The revised [PeaR HTML email Newsletter](#) has been well received.

(b) TF-Mobility

Following the presentation of our eduroam visualisation tool at the last meeting, we are currently developing a licensing model to allow us to release this code to other NRENs and the top level eduroam monitoring service.

(b) TERENA Networking Conference [[more information](#)]

The 2010 TERENA Networking Conference will take place in Vilnius in Lithuania from 31 May to 3 June 2010. The theme of the conference is "Living the network life".

(c) TERENA General Assembly

The next meeting of the TERENA General Assembly will be held on 3-4 June in Vilnius, Lithuania.

(d) TERENA Compendium

Finalisation of the Compendium has been delayed due to staffing problems at TERENA. Consideration is being given to how data for 2010 might now be included.

(e) GEANT 3 – Service Activity 3 Leadership

eduPKI: The eduPKI task has begun pilot service operations.

eduroam: Nothing to report.

eduGAIN: The eduGAIN task is expected to begin pilot service operations imminently. A number of national federations have already expressed interest, both formally and informally, in participating.

(f) GEANT 3 - JRA1 Task 1 "Carrier Class Transport Network Technologies"

The deliverable "Transport Network Technologies Study" has been finalised and JANET(UK) contributed to the following sections: Ethernet developments (QoS, 100GE and OAM), PBB-TE, General QoS, and Layer 2 Routing. A presentation on the deliverable findings will be given at TNC 2010.

Further Information

JANET(UK) manages the operation and development of JANET, the United Kingdom's education and research network, on behalf of the combined UK Higher and Further Education Funding Councils represented by JISC (Joint Information Systems Committee).

Further information on any aspect of this report can be obtained through JANET(UK)'s general enquiry point, the JANET Service Desk. This is staffed from 07.00 to 23.59 Monday to Friday, with voicemail available for calls outside these hours or if staff are temporarily unable to answer a call.

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

E-mail: service@ja.net
Telephone: 0300 300 2212
Fax: 0300 300 2213
Post: JANET Service Desk, Lumen House, Library Avenue, Harwell Science & Innovation Campus, Didcot, Oxon OX11 0SG

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