

# JANET News

JANET wins e-Government Shared Services Award

*Page 3*

Unlocking the Potential of JANET

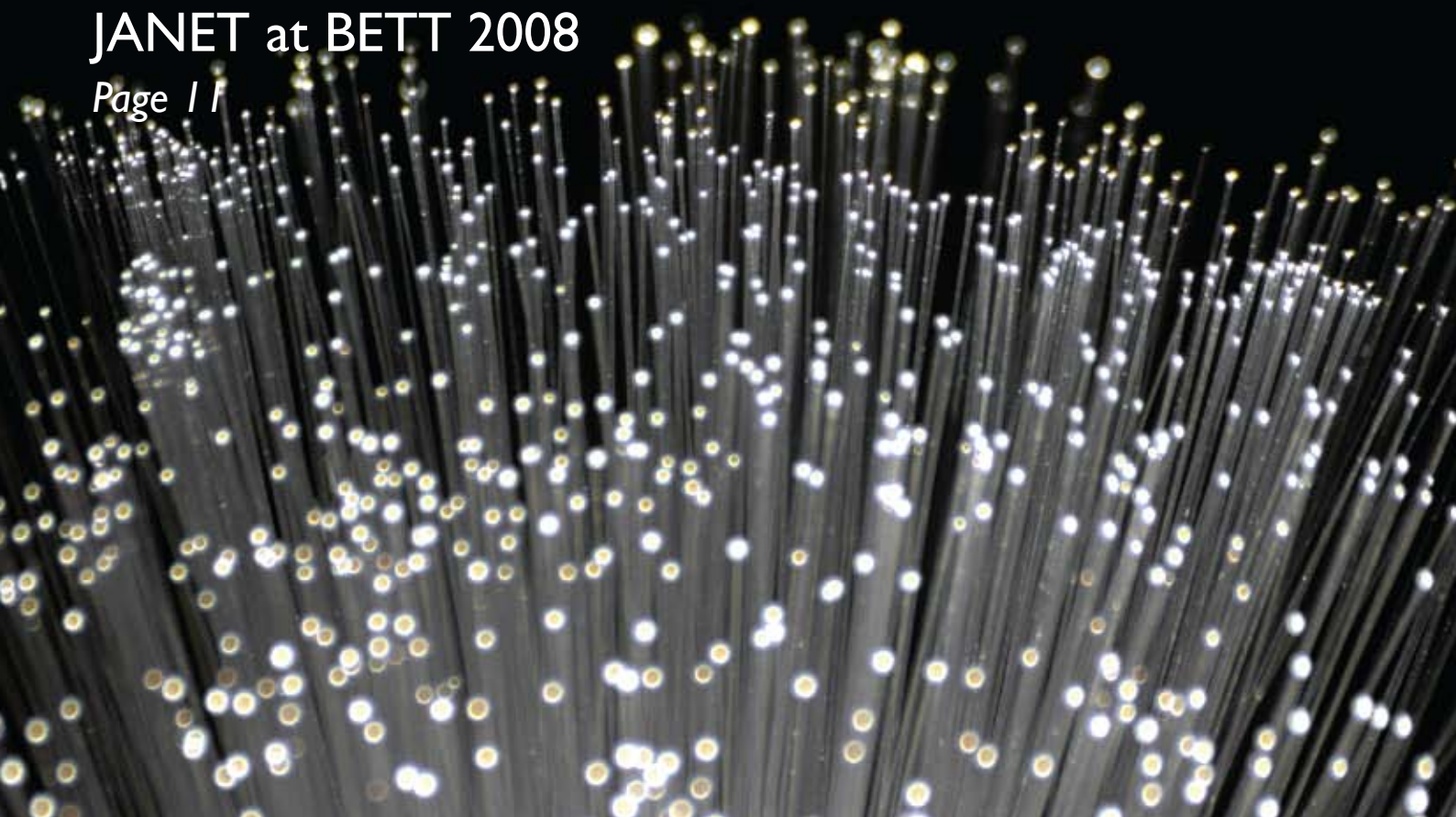
*Page 4*

New Voice and Collaboration Tool is trialled

*Page 7*

JANET at BETT 2008

*Page 11*



## Contents

<b>Main Stories</b>	<b>3</b>
JANET wins e-Government Shared Services Award	
Unlocking the potential of JANET: <i>the JANET Optical Development Programme</i>	
JANET Service Level Agreement	
A New Deal for Videoconferencing Equipment	
Networkshop Online — JANET Training launches a new online collaboration and learning site	
<b>Development Update</b>	<b>6</b>
The JANET QoS Development Project is Complete	
JANET Trials New Voice and Collaboration Tool	
JANET Mobile IP Trials Commence	
Terena EuroCAMP	
UK Access Management Federation Reaches 200	
<b>Community Update</b>	<b>10</b>
JANET and Museums & Libraries	
English Local Authorities Extend Use of JANET	
Videoconferencing and Collaboration at BETT	
NHS HE Forum News	
<b>A View from Europe</b>	<b>12</b>
AMRES: The Serbian Academic Network	
<b>Security Update</b>	<b>14</b>
Virtualisation and JANET	
<b>Training and Events Update</b>	<b>15</b>
The Networking Strategy Workshop 2007	
Plus events and training dates for your diary.	
<b>Recent Publications</b>	<b>16</b>

## Editorial

Claims that a product is 'award winning' should always be taken with a pinch of salt – the proud press releases rarely state exactly what award has been won. Worst-Compiled Software of the Year? Most Ozone Depleting Laser Printer?

So as well as announcing with great pride that JANET is officially award-winning, let us specify why. JANET was a winner in the Shared Services category at January's e-Government award ceremony. The award recognises 'proven shared services which have delivered effective services and efficiency gains.'

The shared service in question is essentially the JANET network itself, a state of the art high bandwidth fibre optic resource equally available to any university, research council, college or other eligible organisation. By removing the need to worry about their own connectivity, JANET frees its connected organisations to give a full one hundred percent of their attention to their particular research and educational needs; and by responding to these particular needs, JANET is able to develop features that are then available across the board to all its customers. Meanwhile services such as JANET Roaming and JANET(UK)'s work in areas such as mobile IP mean that our users aren't even tied to one location – the centralised benefits of JANET become available almost anywhere.

In a similar vein, all users of JANET videoconferencing can avail themselves of the benefits of a deal between JANET(UK) and DirectVisual, reported on in this issue on page 5: another example of one instance bringing benefits to many, and saving time and money in the process.

Also in this issue we announce a new programme that ties together several different research areas in optical networking. The Optical Development Programme has grown out of our experiences in recent years with the deployment and management of UKLight, and also with the SuperJANET5 procurement of the new backbone. There is enormous potential in the JANET backbone's optical infrastructure, and we intend to examine developments in optical technologies and network architectures that will inform our future approach to all our network services.

**Ben Jeapes**  
Technical Editor  
[ben.jeapes@ja.net](mailto:ben.jeapes@ja.net)

# JANET wins e-Government Shared Services Award

JANET was a winner in the Shared Services category at the e-Government award ceremony that took place on the 23rd January. The award recognises 'proven shared services which have delivered effective services and efficiency gains' and was presented by John Suffolk, Government Chief Information Officer.

Tim Marshall, Chief Executive of JANET(UK) commented: 'I am delighted to accept this award on behalf of JANET(UK). Shared services are at the heart of the transformational government agenda and something of a personal crusade. This award recognises JANET as an exemplar of the real benefits that a successful shared service can deliver to both its customers and the tax payer. Driven by the exacting demands of research and higher education the features of the network are then able to be developed further and shared to meet specific needs right across the UK's educational landscape.'

Professor David Eastwood, Chief Executive of HEFCE, said:

'Congratulations to JANET on winning this prestigious award. The higher education

sector has a long established record of shared services in many areas, including computer networking, the applications process and data collection. This award demonstrates the sector's commitment to efficiency savings and enhanced services through the use of technology to link universities and colleges in the UK and overseas.'

Professor Sir Ron Cooke, Chair of JISC, said: 'JANET is a national and international success story and this award is testament

not only to the hard work and dedication of its staff, but also to the efficiencies and economies of scale delivered through national approaches to network provision. On behalf of JISC, many congratulations to JANET for winning this well-deserved award.'



## Unlocking the Potential of JANET: *the JANET Optical Development Programme*

The conclusion of the SuperJANET5 project opened an exciting chapter for education and research networking in the UK. The latest version of the backbone now is a highly advanced hybrid optical network offering the ability to scale responsively and providing high reliability and flexibility to its users. When the network was launched in late 2006, JANET(UK) stated that it wouldn't be resting on its laurels but would be seeking to capitalise on the enormous potential of the backbone infrastructure by investigating mechanisms to improve the management and delivery of network capacity wherever it is needed, and to examine developments in optical technologies and network architectures to inform the approach to future JANET network services.

To this end, JANET(UK) has initiated an Optical Development programme.

The JANET programme is a group of related projects which aim to extend and improve the use of optical and other transmission technologies across JANET so that the potential of the network can be fully realised. The topics range from network engineering projects examining details of transmission technologies and how they might be deployed and controlled to deliver services within JANET, to case studies looking at ways in which circuit oriented services (such as JANET Lightpaths) are being managed alongside the JANET IP service within institutional networks (LANs).

The following sections highlight some of the areas that are being worked on and progress to date.

### Lightpaths in Regional Networks

Many of the JANET Regional Networks are not specifically engineered to be able to carry JANET Lightpaths in an analogous way to the JANET backbone. Although this position may change as the networks evolve, a survey has been undertaken to evaluate current Regional Network infrastructures, and to document the range of technical options which might be deployed to extend JANET Lightpaths to a higher proportion of JANET sites. This report is in the final stages of editing and will be available shortly as part of the Optical Programme documentation at:

<http://www.ja.net/development/optical-networking/index.html>

## Carrier Ethernet

Recent developments in Ethernet technology have features which show promise for its potential future use as a reliable transmission technology in carrier networks. This may make Ethernet a credible and more cost effective alternative to the current SDH framed circuits in use on JANET. In addition, the emergence and progress towards standardisation of a traffic engineered form of Ethernet called PPB-TE has the potential to replace the switched SDH equipment which is currently used for part of the JANET Lightpath service (the equipment which was incorporated from UKLight into the JANET backbone).

Lab trials are now being planned following discussions with various suppliers to identify suitable Ethernet switches which implement the features described above. If these are successful then the trials will be extended into the wide area later this year with a call for collaboration with Regional Networks to test these technologies between network domains.

## Lightpath Control and Management

Current JANET Lightpaths are rather static and require significant administrative and operational effort to implement. One of the aims of the optical programme is to investigate mechanisms which might make it simpler and quicker to deploy lightpaths so that the raw transmission capacity which is available within JANET becomes a more flexible resource available to projects and as a foundation layer for other services.

Control plane technologies have the potential to meet these requirements by providing signalling and routing functions within the network to automate the deployment of lightpaths with and between network layers and domains. As a first step towards investigating control-plane features, a small testbed has been set up at JANET(UK) with two Juniper M20i routers operating a GMPLS control plane. This will evolve and discussions with vendors are taking place to identify suitable switching equipment which supports a standards-based control plane in order to extend the testbed to more than one network layer.

## Steering Group & Dissemination Event

JANET(UK) has established a steering group with representatives from the JANET community with a brief to provide feedback on the Optical programme. This group met for the second time in early December 2007 and gave broad endorsement to the programme's approach and the projects within it. This was followed by a one-day open meeting for the JANET community which provided presentations on some of the areas described above, and also case studies on some current uses of optical technologies and lightpaths on campus and in some regional networks. This was a popular event and it is planned to hold similar meetings with an optical networking theme on an annual basis in future.

## Alien Wavelengths

The JANET backbone is implemented with dedicated optical fibres and transmission

equipment, and in principle this infrastructure can accept signals (optical wavelengths) from third-party equipment directly into the optical multiplexers which combine multiple wavelengths onto the fibres. This concept of 'alien wavelengths' appeared to have the potential to make the JANET fibre footprint usable by research groups or projects in a similar way to which they might use dedicated dark fibre, but with some constraints to avoid disruption to services being carried on other wavelengths.

Investigations have been undertaken to examine these constraints to determine to what extent alien wavelengths might be accommodated within JANET, but on closer examination it is apparent that although technically feasible, carrying alien wavelengths transparently for long distances across JANET has significant practical difficulties due to signal regeneration, amplification and compensation issues. Further details will be available in the documentation associated with the programme (available at <http://www.ja.net/development/optical-networking/index.html>), but as standard high-capacity transmission requirements are well catered for by the JANET Lightpath service, and transparent optical transmission is a highly-specialised requirement, no further work is currently foreseen on alien wavelengths.

David Salmon  
Research Support Unit Manager  
[david.salmon@ja.net](mailto:david.salmon@ja.net)

# JANET Service Level Agreement

**A new JANET Service Level Agreement came into effect on the 1 November 2007. The new document comprises:**

- a. A memorandum of understanding (MoU) that describes the relationship between JANET(UK) and JISC.
- b. A service description (SD) for JANET comprising some 39 service level definitions (SLD) providing details of individual services.

- c. An SD for the UK Access Management Federation comprising three SLDs.

Details of the new Service Level Agreement can be found at: <http://www.ja.net/services/publications/policy-documents/service-level-agreements.html>

Readers who have an interest in such documents will find the new SDs a significant improvement on the previous document both in length and understandability. One of the

main objectives of the negotiating team was to improve the readability of the documents and we believe that this has been achieved.

Additional SDs can be added to the document as additional services are added to the JANET portfolio

Shirley Wood  
Head of Communications and Support  
[shirley.wood@ja.net](mailto:shirley.wood@ja.net)

## A New Deal for Videoconferencing Equipment

The Welsh Video Network (WVN), one of the most advanced H.323 based videoconferencing networks in Europe, is to invest a further £2.2m in delivering High Definition videoconferencing to all HE institutions and FE colleges in Wales. The WVN is jointly funded by the Welsh Assembly Government's Department for Children, Education, Lifelong Learning & Skills, and the Higher Education Funding Council for Wales.

WVN, managed by JANET(UK) and operated by Swansea University in collaboration with Aberystwyth University, has over 150 studios supporting all HE institutions and FE colleges in Wales together with a number of other public sector sites. The upgrade project, expected to be ongoing for the next two years, will refresh 44 of the studios and pave the way for a time when the majority of educational establishments will adopt visual communications technology. The videoconferencing system will be the first in the industry to offer a Welsh language interface which can be toggled as required during a videoconference. The project will also deliver new videoconferencing infrastructure equipment, data collaboration tools and centralised management systems.

Phil Davison, Video Network Manager at WVN, says, "This is an exciting development for WVN. The new system will enhance the teaching and learning experience that the original WVN studios provided by delivering better quality images, reducing the equipment footprint to give more space, utilising ceiling mounted microphones to assist with flexible room layouts, and providing dual video streams to enable simultaneous transmission of content and new PC application collaboration facilities, amongst others. Over the next few months, the WVN Support Centre is looking forward to working closely with our customers, the equipment supplier and the equipment manufacturer to ensure that Wales once again leads the way and capitalises on the latest developments from the videoconferencing industry."

The latest upgrades are made possible by a framework agreement signed on 31 January between JANET(UK) and Direct Visual Ltd which provides knock-on benefits for the entire JANET community. The contract makes it possible for any eligible organisation to purchase any type of videoconferencing equipment – for example videoconferencing infrastructure equipment, the full range of videoconferencing endpoints including studio based systems, small group systems, portable

videoconferencing systems and software based systems – from Direct Visual without the need for separate EU procurement.

Tim Kidd  
Head of Operations  
[tim.kidd@ja.net](mailto:tim.kidd@ja.net)

Organisations that use the Welsh Video Network or the JANET Videoconferencing Service are eligible to use this contract.

The contract runs from 1 February 2008 for three years, and may be extended for a further two. Eligible organisations may purchase videoconferencing equipment and maintenance from Direct Visual by completing a simple order contract. Training services are also available from Direct Visual for organisations outside Wales. Enquiries should be made initially by e-mail to [contracts@wvn.ja.net](mailto:contracts@wvn.ja.net) or by calling the WVN Support Centre on 01792 295700. Organisations outside Wales can purchase items under this framework by contacting Direct Visual's education team directly on 08453 57 57 57, or via <http://direct-visual.com/janetframework.html>

## NETWORKSHOP 36 *online*

[www.ja.net/training/edlab](http://www.ja.net/training/edlab)

Delegates can make the most of their Networkshop this year by joining us in a special Networkshop Online area dedicated to registered delegates. This area, accessible via the soon to be launched EdLab, will provide access to the following areas:

- **Programme** – Prior to the conference, listen to interviews with the session chairs so you can start making decisions about your session choices. During the conference you will be able to view videos of parallel sessions you have missed or download the audio to your MP3 player.
- **Support** – Planning a 'Birds of a Feather' session or not sure if there would be enough interest in your topic? Use the discussion tools to start discussions prior to the conference and share materials of interest. This area will also provide news and updates

to the programme as well as details of what is happening in the exhibition.

- **Your NWS** – This area is for the lighter side of Networkshop. It is your opportunity to share photos, contribute to polls, see what competitions are running and share your experiences of the conference.
- **Discussion** – Linked to all these areas will be discussion facilities so that you can continue asking questions, discussing the points raised and generally publishing your thoughts on the conference and the topics covered.

We hope this site will help to enhance your overall experience of this already successful conference, but we stress that your contribution will be vital.

To gain access you will need to register on EdLab when it is launched at the start of March and follow the link on the front page to apply for

access. We can then check your Networkshop registration and open up your access to Networkshop Online. Following the conference this area will be made publicly available on EdLab and therefore available to other registered users.

EdLab is a new online collaboration and learning site being provided by JANET Training. The site provides access to free online learning resources and collaboration tools. Resources will include interactive flash animations, simulations, audio content (to play and download), video clips and links to technical documents.

JANET Training Team  
[training@ja.net](mailto:training@ja.net)



## The JANET QoS Development Project is Complete

**The JANET QoS (Quality of Service) Development Project was completed in December 2007.**

It has been decided that traffic on the JANET backbone will not be subject to QoS treatment as the backbone infrastructure is provisioned with sufficient headroom in terms of both bandwidth and router capacity to avoid congestion and therefore traffic delay or loss, effectively meaning that all traffic is treated as if it were IP Premium. However, QoS will continue to be an important area of the JANET development programme, ensuring that JANET(UK) keeps abreast of ongoing work in the standards bodies and the industry in general and that it also remains active in understanding how developments in QoS techniques can support services on JANET in the future.

The project began in 2002, to assess the benefits of QoS on JANET for a range of network applications and to define a service model that could be deployed on JANET. A number of UK universities and JANET Regional and Campus Network Operators actively participated in the project.

During Phase 1 of the project (2002–2004), the JANET backbone and participating regional and campus networks were configured for QoS in order to conduct large scale testing of three levels of service: the IP Premium service, the standard Best Effort service (the default transport service of IP networks) and the Less than Best Effort service for non-urgent bulk traffic. Trials showed obvious benefits in using different levels of service for a number of applications, such as the IP Premium service for popular delay-sensitive applications like Videoconferencing and Voice over IP over periods of network congestion on low bandwidth connections. They also showed that provisioning and monitoring QoS would be a major challenge.

Phase 2 of the project began in November 2005, primarily to investigate the feasibility of defining and deploying QoS in production for the JANET community. The focus of Phase 2 was to develop a generic QoS model which

would be stable, consistent and maintainable across the JANET core and regional networks.

By December 2006 it was possible to determine the complexities of maintaining an operationally stable QoS service across the multi network domain of JANET, and as a result the project and JANET(UK) concluded that QoS will not be established on JANET in the near future, though regional and campus network operators will have the option of increasing the level of bandwidth and router capacity and/or deploying QoS on their networks, where required. The JANET backbone will remain transparent to QoS.

### Project Deliverables

The final stage of the project was dedicated to completing individual project deliverables and producing a set of guidance documentation which will help the JANET community understand the implications of deploying QoS services.

The individual project deliverables were produced by project participants to highlight the experience they gained during the QoS project. The deliverables have been published on the JANET web site at:

<http://www.ja.net/development/network-engineering/qos/project-phase-2/documentation-and-deliverables.html>.

Below is a list of the documents produced: *JANET IP QoS Policy Framework* (<http://www.ja.net/documents/development/network-engineering/qos/qos-policy-framework.pdf>). This document aims to help technical specialists and network administrators at JANET connected organisations to deploy QoS to the standard defined for JANET.

*JANET QoS – Suggested DSCP Marking Scheme* (<http://www.ja.net/documents/development/network-engineering/qos/suggested-dscp-marking-scheme.pdf>). This document highlights in detail the use of DSCPs (Differential Services Code Points) on JANET according to the approach described in the Policy Framework. One of the principal elements of the QoS policy is the classification

of traffic flows based on IP addresses of user nodes, which is important because it allows the provision of consistent and robust QoS, thus preventing the misuse of bandwidth dedicated for QoS treatment. The document describes two types of DSCP values: one set is recommended for centralised use and the other set is for a private / experimental use.

*JANET QoS Technical Guide* (forthcoming).

The QoS Technical Guide is an extensive document which highlights both technical and practical aspects of QoS as a technology and as a network service. Along with sections dedicated to generic QoS issues it provides information on specific problems identified with the deployment of QoS across Regional Networks and JANET connected sites. The guide also includes a number of examples of QoS configurations deployed by the project participants during the project lifecycle. Finally the guide also describes the history of QoS on JANET and in academia, and gives definitions of the main QoS terms, as a lot of QoS terms have different interpretations.

The project participants and JANET(UK) hope that the documents developed will help the JANET community understand QoS as a technology, and assist with identifying and eliminating any QoS-related problems on their networks. If you wish to discuss any QoS-related matter or have a query, then please contact Victor Olifer via the JANET Service Desk at: [service@ja.net](mailto:service@ja.net). Alternatively you can join the QoS discussion mailing list: [qos-forum@jiscmail.ac.uk](mailto:qos-forum@jiscmail.ac.uk)

Victor Olifer  
Technical Specialist : Network Development  
[victor.olifer@ja.net](mailto:victor.olifer@ja.net)

- The full JANET QoS statement is available at: <http://www.ja.net/development/network-engineering/qos/qos-statement.html>
- JANET IP QoS Policy Framework <http://www.ja.net/documents/development/network-engineering/qos/qos-policy-framework.pdf>

# JANET Trials New Voice and Collaboration Tool

## JANET Talk

**JANET Talk is being developed to provide the JANET community with an effective voice and collaboration tool.** As well as voice-over-IP capabilities, JANET Talk offers a rich range of features including voice, video, instant messaging, file sharing and PSTN dial-out services in a multipoint environment.

JANET Talk removes the need for any site-located equipment as it is based around a software desktop client; additional JANET hosted equipment provides access to further collaboration features, making this a truly feature rich tool.

Equipment installation is currently underway with early testing taking place in March 2008.

## JANET Talk Trial

JANET Talk is being initially offered as a trial so that JANET(UK) can understand how it may play a part in providing voice and collaboration

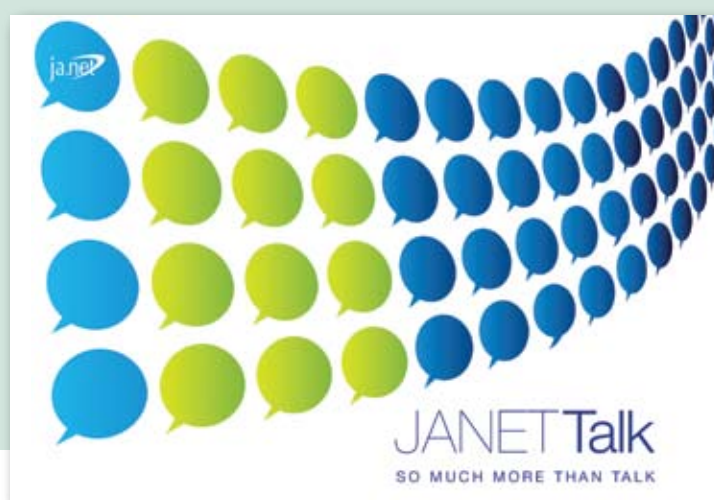
services to the JANET community. The JANET Talk trial will initially involve approximately 50 organisations from all sectors of the community, including schools, further education, higher education and research. JANET Talk trial sites will have the option of installing up to 100 clients each and will be required to provide feedback to JANET(UK).

A Call for Participation was launched in late 2007 for the trial, and organisations were selected in late January 2008 to take part in the first stage of the trial. To ensure that as many sites as possible can take part in the trial, a second Call for Participation will be launched in May 2008.

For further information on

JANET Talk or the JANET Talk Trial, please contact David Richardson ([david.richardson@ja.net](mailto:david.richardson@ja.net)), Project M-anager for the JANET Talk Trial, or visit the JANET website.

Roger Bolam  
Voice and Video Manager  
[roger.bolam@ja.net](mailto:roger.bolam@ja.net)



# JANET Mobile IP Trials Commence

**Four universities, selected following the call for participation issued in Autumn 2007,** have started work on their individual trial activities within the mobile IP programme.

Mobile IP (available for both IPv4 and IPv6) is a protocol that allows a device to retain its IP address as it undocks from one network and reconnects to another. Underlying intelligence in the routing fabric ensures that any traffic directed at the address on the home network is re-routed to the foreign network to which the device has roamed. Much of the protocol is concerned with securely communicating location changes and optimising the 'triangular routing' paths that develop.

JANET(UK) is sponsoring pilot activities with mobile IP for a number of reasons:

- Organisations are increasingly deploying large wireless LANs that must be compartmentalised to control the size of collision domains created: mobile IP is a good solution for managing seamless wireless roaming between these domains.
- Retaining a single address allows a mobile agent to act as a data source that can be reached from other networks, creating opportunities for mobile resources such as 'people cams' and sensors.
- Mobile IP facilitates roaming between network connections running on different media, so could for example enable a VoIP call to continue uninterrupted while the host devices roams between a WLAN and a 3G data network.

The current programme of trials includes deployment of a cross-JANET testbed network for mobile IP roaming, and the creation of a software testing platform with a mobile IP stack and suitable applications to act as data sources and sinks. This will be used in the trials and also made available to the community for their own experiments. Specific activities will integrate mobile IP with VoIP services, IPTV and the JANET Roaming service. Early results will be discussed at Networkshop in April 2008 and of course will also be published on the JANET website.

Mark O'Leary  
Technical Specialist : Network Access  
[mark.o'leary@ja.net](mailto:mark.o'leary@ja.net)



## Terena EuroCAMP

*TERENA hosts EuroCAMP (European Campus Architecture Middleware Planning) twice a year; the last meeting took place in Dubrovnik from 14-15 November 2007. Andy Swiffin of Dundee University attended the last meeting and has kindly written an account of his experiences.*

I was recently very pleased to be able to attend the November 2007 Terena EuroCAMP, a gathering of some 60 academic networking professionals from 30 different academic institutions or bodies and 18 different countries.

The Terena website set the goal of the meeting: 'This EuroCAMP workshop will focus on integration of identity access management services with applications' and achieved this with a full programme of 14 formal presentations and two panel discussions. However, this was no dry series of monologues, as even the formal presentations would frequently erupt into lively discussion on some point of interest or controversy!

Providing single credential login to applications within our own campus is now a well trodden path, as (we hope...) even the

dumbest of applications offers some form of LDAP authentication plugin. With the advent of the 'Global Village' we find that increasingly people from other institutions/countries/continents have a need to access our applications and we theirs. Many applications require at least some form of authentication/authorization and this gives those responsible for the maintenance of user databases somewhat of a headache. Federated Access Management offers a glimmer of hope with a mechanism for that authentication/authorization to take place at the user's home institution against their single credentials which they use there. Access to applications anywhere in the world now becomes possible without the need to register yet another new set of credentials at the application.

At EuroCAMP, we heard a presentation by Andreas Åkre Solberg of UNINETT, Norway on the federation of a wiki: Dokuwiki. In a

demonstration of true international federation, Andreas later reports:

'In a coffee break at the EuroCAMP conference in Dubrovnik, Croatia, last week, Dubravko Voncina from SRCE (the computing centre of the University of Zagreb) connected their simpleSAMLphp IdP to the eduGAIN test federation. We also configured our Feide Demo-wiki to allow access to all the Croatian users, and a successful test login was performed.



The university at Dubrovnik



Now, 527,097 Croatian educational users can login and access the Feide Demo-wiki. These users are both from higher education, high schools and elementary schools.'

There was more than just a theoretical element to this conference...

Other presentations included: federating an e-learning package (Spain), using CAS and federating the Horde webmail application (Belgium), Shibboleth-enabled WebDav (France), and how to integrate OpenID with your federation (Norway).

In the discussion sessions we were able to probe some of the difficulties we encounter in federating certain applications, perhaps those that are closed source or proprietary. One great bonus of these gatherings is that by visibly uniting in a common cause we begin to have greater leverage with vendors to make their application federation-aware.

For me, one of the highlights of the event was the first presentation of the meeting, from Michael Gettes of Internet2 (and now MIT), in which we were made to think through some of the issues of what a federation is, what it means, and the effect it will have on some of our 'local' policies and decisions which will have to be revisited in the light of this new way of working.

As is often the case, some of the real benefits of attending a meeting like this go far beyond what could have been gained by reading a published paper or even hearing a presentation by videoconference. These are the little snippets you pick up from people in the coffee breaks and the contacts you make walking back to your hotel from the bus or over dinner. I was pleased to find someone whose campus software was almost identical to ours and who had already solved the problems I am about to start looking at – an exchange of business cards took place.

Lastly, I think there is something truly inspiring about being in the same room with people from 18 different countries who are all working towards the same goals to create a federated network that will enable academics in all of those countries to co-operate more effectively. When you're focused on the tricky intricacies of your own site deployment it's



easy to lose sight of the potential that your own involvement in this could unleash; as the proverb says: 'Mighty oaks from little acorns grow.' In the closing session it was observed that, at this stage, we are very much 'putting in the plumbing' and it can be frustrating that take-up of federated access is slower than we hoped, but before long someone will notice and say 'Hey – we've got plumbing now, why don't we put in a really smart bathroom ...'

Andy Swiffin  
Dundee University

## UK Access Management Federation Reaches 200

In February, membership of the UK federation reached 200 after one year of operation. Membership is comprised of Local Authorities, Regional Broadband Consortia, FE colleges, Universities and commercial service providers such as Microsoft and the BBC.

Many organisations providing services to the UK education community, via the federation, operate at an international level. This often requires service providers to join multiple federations.

To facilitate this and increase international collaboration, JANET(UK) – in conjunction with the UK education and research community – participate in international working groups

tasked with standardising federation requirements where possible. In the words of TERENA, 'Collaboration has been a key aspect of the success of research and education networks, and indeed, it is key to the development of education and research itself.'

Louis Searchwell  
Technical Specialist : Authentication  
& Authorisation  
[louis.searchwell@ja.net](mailto:louis.searchwell@ja.net)



## JANET and Museums & Libraries

JANET(UK) presented the new JANET pilot offerings JANET txt, JANET Collaborate and JANET Talk at the Talis Insight conference – the largest conference of public librarians who are focused on IT – on 5th November at the NEC in Birmingham. There was a lot of interest in JANET txt, since it was recognised that texting for the return of books can rapidly improve a library's service to its customers. There was also significant interest in JANET Collaborate.

Roy Clare, the new CEO of the MLA (Museums, Libraries and Archives Council) acknowledged that public libraries need to embrace change and stop making a furore about the closure of some libraries, if service can be improved elsewhere.

During the two-day conference there were several presentations about the difficulty libraries and librarians were having with keeping up with the digital generation, but the most persuasive presentation was by Tim Coates, former Managing Director of Waterstones, who talked about the Hillingdon Project. Tim

talked about the difficulties of libraries in London and how only 20% of the population now uses them. The general perception of public libraries is poor, with reasons for dissatisfaction including short opening hours, poor range of books and inadequate buildings. Tim applied the "every library should be like a Borders' philosophy: always open, fresh coffee on tap, attractive buildings and friendly staff.

Zoinul Abidin spoke about the Ideas Store in Tower Hamlets. They re-branded their library and made it open to lifelong learning, FE, HE, family learning, job clubs, exhibition space, pop groups, bouncy castles and other activities. Footfall and book lending has increased three-fold.

Tony Durcan, President of the Society of Chief Librarians acknowledged that most libraries are still operating on a 1960s model and have been unable to embrace the new technologies that digital natives expect. Frances Hendrix, an independent consultant, organised a panel of young librarians, who

echoed the fact that libraries are just not delivering the Internet services necessary.

Hilary Baxter  
Head of Business  
[hilary.baxter@ja.net](mailto:hilary.baxter@ja.net)



## English Local Authorities Extend Use of JANET

Over the last three years the Learning and Skills Council has funded JANET primary connections for PCDL (Personal & Community Development Learning) purposes. This was focused on enabling or enhancing e-learning for Adult Learning that was provided by Local Authorities. It was possible for the Local Authority to self fund an upgrade beyond the initial bandwidth, to provide the opportunity for non PCDL data traffic to make use of the connection.

Nineteen local authorities to date have taken up increases in bandwidth, typically by utilising 100Mbit/s bearer circuits, and authorities which

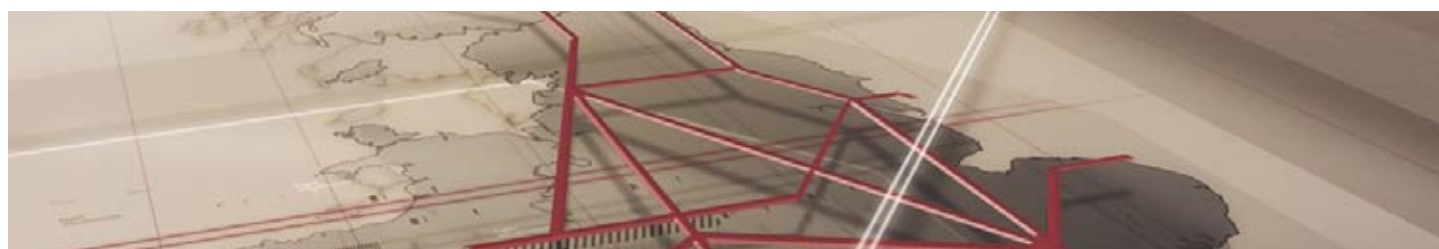
did not take up the initial JANET offering are now requesting connectivity as the advantages of being a member of the JANET community are becoming more widely understood. Authorities have taken up JANET txt and other services and a number are interested in participating in the JANET Talk trial.

In the nineteen authorities JANET is a key element in enabling change. There is an increasing agenda within local authorities to transform the way they interact with the public and central government by employing available technologies and looking at sharing services. There has been a significant shift in

the way that the public now interact with local authorities. The use of e-mail and web sites is becoming more prevalent, which is reducing costs and improving efficiencies and response times.

A series of case studies focusing on how JANET-connected local authorities are using the network and the benefits they are realising is planned during 2008.

Robert Prabucki  
Account Manager, JANET(UK)  
[robert.prabucki@ja.net](mailto:robert.prabucki@ja.net)



## Videoconferencing and Collaboration at BETT

The BETT show took place in early January and demonstrations of some of the videoconferencing opportunities on offer were shown live on the JANET stand. One of these was from a museum brand new to videoconferencing – the National Tank Museum in Dorset, who gave an excellent idea of what it would have been like to be inside a First World War tank. Absolute hell!

There were also a considerable number of international visitors to the JANET stand looking for opportunities to start videoconferencing with schools in the UK. We had requests from Cairo, South Africa, the Netherlands, France, Dubai and Spain, among others. These contacts will be using the new JANET Collaborate pilot to make contacts and offer opportunities for international videoconferencing with British schools.

The show proved an excellent place for schools and local authorities staff to meet with their Regional Broadband Consortium staff and discuss the plethora of new content and services which the RBCs are now bringing online. Most RBCs had stands at the BETT show, though some shared the new National Education Network stand. This was manned by a rota of different RBC staff, giving a unique opportunity to meet them in one place and talk about their learning resources and other services such as videoconferencing.

Kevin Sharp  
Schools Business Manager (England)  
[kevin.sharp@ja.net](mailto:kevin.sharp@ja.net)



## NHS HE Forum News

The presentations from the NHS-HE Forum in Manchester on 21st November and the Scotland NHS-HE Forum in Edinburgh are now available at [www.nhs-he.org.uk](http://www.nhs-he.org.uk). These include the latest on the early adopter N3 JANET Gateway. More news next time.

Malcolm Teague  
NHS-HE Coordinator  
[Malcolm.Teague@ja.net](mailto:Malcolm.Teague@ja.net)



## AMRES: The Serbian Academic Network

The Serbian Academic Network (AMRES) is the country's most advanced network, connecting more than 140 institutions with over 100,000 active users. The backbone, running on 2000 km of dark fibre, is operated by Belgrade University Computing Centre. Although the founding of AMRES dates back to the early 1990s, it still is not a separate legal entity.

AMRES began when several technical faculties of the University of Belgrade interconnected and began to use basic Internet services internally. At the beginning of 1996, at

the anniversary of the University of Belgrade, this internal network was connected to the Internet. Subsequent developments were slow due to the country's isolation and inconsistent governmental support. Most accomplishments during the 1990s were due to the enthusiasm of staff working at Serbian universities.

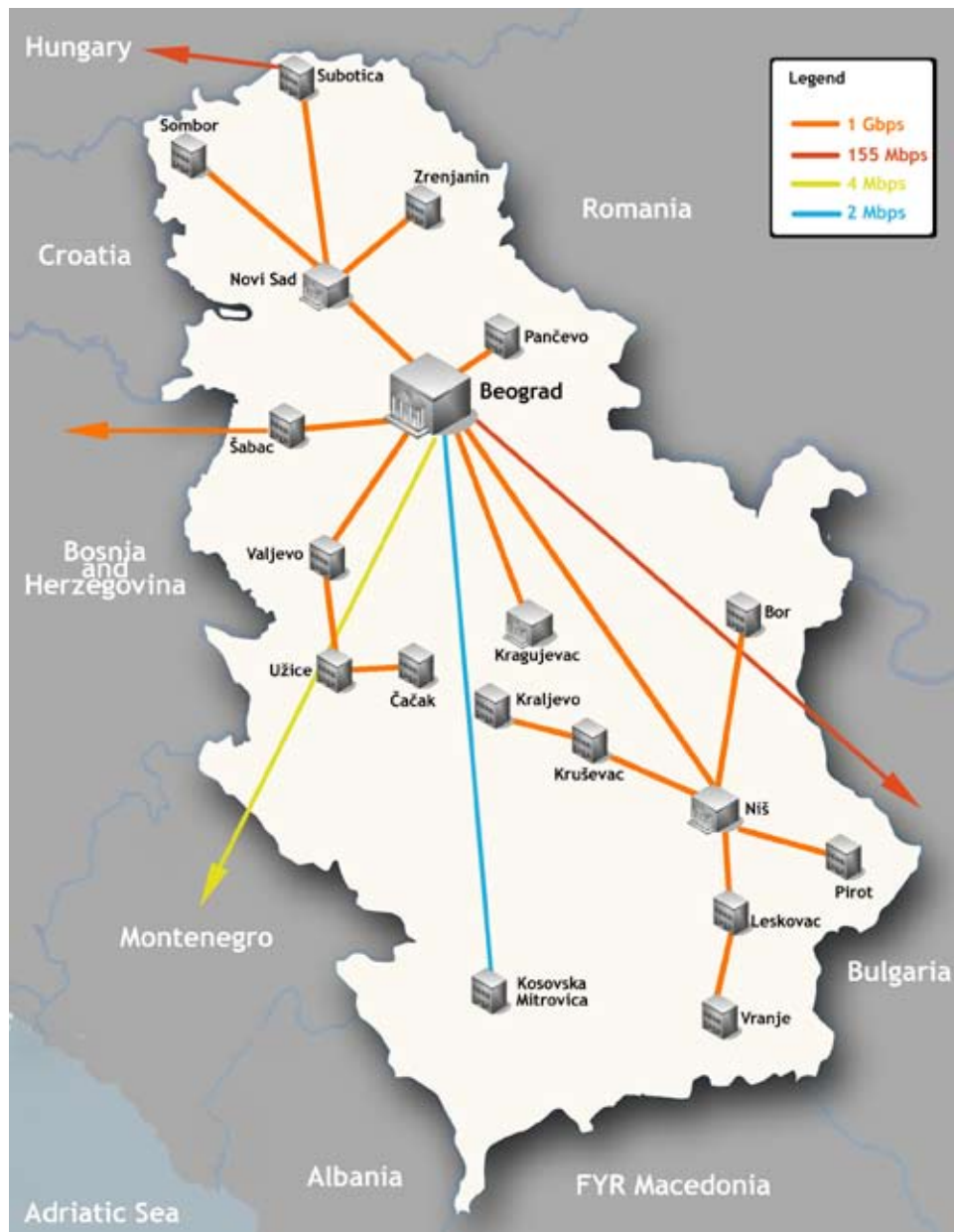
An era of rapid development began in the new millennium, supported by the Greek academic network (GRNET) and the German government. GRNET helped upgrade the international connection capacity from 1.5Mbit/s

to 7.5Mbit/s and the German Federal Ministry of Education and Science donated active equipment for main nodes, coordinated by the Max Planck Society. At the same time Serbia's Ministry of Science and Environmental Protection invested in the deployment of an optical network across Serbia. These developments facilitated the creation of a network interconnecting at gigabit rates, called gigaAMRES. This is still an ongoing project with 2000 km of dark fibre now connecting universities, larger institutes, schools, libraries and other AMRES members.

### International Collaboration

Under the coordination of GRNET, the 5th Framework Programme EC project SEEREN (Southeast European Research and Education Network) provided AMRES with a faster and reliable Internet service, easing the digital divide in the pan-European research network infrastructure. This snowballing rapid growth helped initiate more advanced projects under the EC 6th Framework Programme, including SEE-GRID (South-Eastern European Grid enabled e-infrastructure development) and SEEFIRE (South-Eastern European Fibre Infrastructure for Research and Education).

International connectivity was most recently enhanced by establishing the first regional cross-border dark fibre with the Hungarian Academic network (HUNGARNET/NIIF) via the SEEREN2 project, in addition to the upgraded 155Mbit/s link to GRNET. After GRNET, AMRES has become the second regional node providing bandwidth to GÉANT. Also through the SEEREN2 project, the Bosnia & Herzegovina network and the Montenegro national research and education network (MREN) are connected to AMRES, with an optical link of 1Gbit/s and a link of 2Mbit/s respectively.



**AMRES**  
Serbian Academic Network

## AMRES Operation

AMRES is one of Serbia's most important national research and education resources and has a leading role in the development of the country's information society. Its main objectives are:

- strategic development, implementation and maintenance of ICT for researchers and students (e-learning, grid computing)
- creating conditions for cooperation between researchers and institutes, at national and international levels, to integrate with European research
- preparation for the information society (e-Society, e-Government, e-Health).

AMRES marked its sixteenth anniversary this year and is still to become a separate legal entity. The operation of AMRES relies fully on funding from the government. The network is managed and operated through the AMRES Project, under the authority of a Ministry: until 2007, this was the Ministry of Science and

Environmental Protection but now it is under the authority of a newly established Ministry of Telecommunication and Information Society. As a contractor, the University of Belgrade is a recognised legal representative for AMRES but major decisions are made in cooperation with universities in Novi Sad, Nis and Kragujevac.

There is an idea of establishing a separate legal entity that would allow sustainable development of a Serbian NREN. Its management board would include representatives of the member institutions and the government.

Last year's budget totalled £1,000,000, with 70% invested in further development and lease of dark fibre infrastructure, 20% in acquisition of new equipment, and 10% in AMRES operations. The EC contributed an additional £200,000 for international connectivity through SEEREN2. Salaries of AMRES staff are financed by the Ministry of Education. Membership and all services offered to users are free of charge. In previous years, major activities concentrated

on dark fibre infrastructure development but now the priority is the introduction of various services and contact with end users.

Nada Mijatovic  
Public Relations, AMRES  
[nada@rcub.bg.ac.yu](mailto:nada@rcub.bg.ac.yu)

AMRES: [www.amres.ac.yu](http://www.amres.ac.yu)

GÉANT: [www.geant2.net](http://www.geant2.net)

GRNET: [www.grnet.gr/en](http://www.grnet.gr/en)

HUNGARNET: [/www.iif.hu/hungarnet.html](http://www.iif.hu/hungarnet.html)

MREN: <http://www.mren.cg.ac.yu>

SEEREN2: [www.seeren.org](http://www.seeren.org)

SEEFIRE: [www.seefire.org](http://www.seefire.org)

SEE-GRID2: [www.see-grid.eu](http://www.see-grid.eu)



## Virtualisation and JANET

**Virtualisation has become a key part of most organisational IT and business strategy.**

Virtualisation technology has its roots in the mid 1960s but has seen recent resurgence with popular products like VMware, Microsoft Virtual PC/Server, Parallels and Xen. VMware has introduced ESX Server 3i which can be integrated into hardware to provide diskless servers that can be connected and provisioned in minutes. Dell, IBM, HP, Fujitsu Siemens and NEC will all shortly be shipping VMware-enabled hardware.

At the recent VMworld 2007 conference in September, JANET Training presented an academic poster outlining their recent developments using VMware to provide authentic activities in technical training courses. The developments were very well received, with many delegates spending time to stop and discuss the recent JANET Training NetLab project. Located on the backbone of the JANET network, NetLab will provide a virtual network made up of VMware ESX servers and industry standard networking hardware. This will provide delegates with access to a live network that they can use to complete authentic activities, configurations and installations. This will be used in courses covering topics such as multicast, IPv6, security and the UK Access Management Federation. Delegates will gain access to NetLab using a wireless VPN connection from the training venue.

With the network capacity of the JANET network, the development of VM (Virtual Machine) enabled hardware, Storage Area

Networks and solutions like VMware Site Recovery Manager it is now perfectly feasible for a JANET connected organisation to provision business continuity services at another JANET connected organisation. This could be a simple Internet presence or the relocation of selected administration staff in the event of a major incident. The nature of work is changing; virtualisation is likely to bring the facilities to interact with an identical workspace on a desktop, laptop, PDA, Blackberry, smart phone or next generation iPod using the same applications and documents.

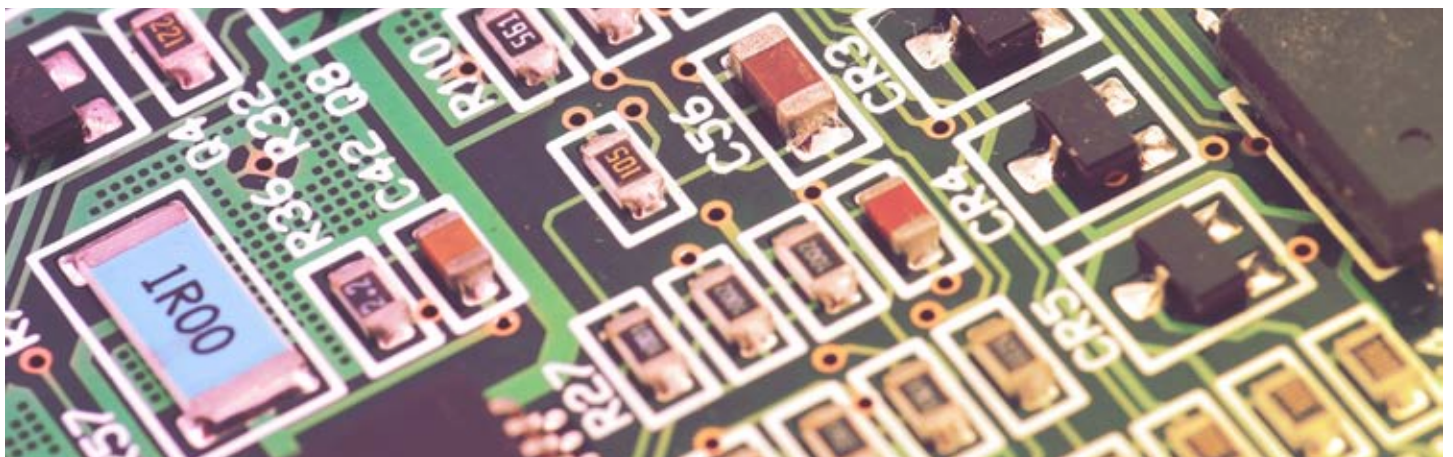
There are many key drivers for implementation of virtualisation technology, but careful consideration needs to be given to the architecture of the systems implemented. When successfully implemented, virtualisation can provide:

- consolidation of hardware, by combining the services provided by low utilised servers in the data centre. This provides savings on physical hardware costs, power, cooling, space and administration
- a swift response to requests for new server implementation and identical operating system configuration. Rapid provisioning of service lets VMs be deployed from a stock of system images
- swifter disaster recovery, when combined with suitable replicated storage repositories like a replicated Storage Area Network
- business continuity during a major incident, by the rapid provisioning of core services at another location from backup images, snapshots or from stock system images

- another way of addressing the environmental agenda, cutting power requirements, cooling plant and hardware disposal impacts
- continued management of legacy or isolated applications. In the education section, there is often a reliance on legacy applications or those which do not interact with others in a cooperative manner. These applications can still remain isolated, while running on modern, manageable infrastructure integrated with existing systems
- rapid system implementation and testing facilities, allowing upgrades to be tested, systems debugged and interoperability confirmed
- isolated sandbox areas for investigating malicious code.

There is still a requirement for the system architecture to be designed carefully; there are known methods of allowing malicious code to break from the isolation of the virtual machine. The security issues associated with server consolidation should not be seen as a barrier; but considered in the same way as a system architect who will not run a web server, SQL server and software firewall on the same hardware. These principles need to be applied to the virtualised infrastructure and the systems provisioned appropriately.

Matthew Cook  
Senior IT Security Specialist  
Loughborough University  
JANET(UK) Contracted Trainer  
[M.S.Cook@lboro.ac.uk](mailto:M.S.Cook@lboro.ac.uk)



## The Networking Strategy Workshop 2007

The Networking Strategy workshop was held on the 26-27 November 2007 at Loughborough University. As normal the event began with a dinner on the 26th which allowed speakers and delegates to network amongst themselves.

The main event consisted of a number of presentations followed by discussion groups on the challenges raised. Lynne Tucker was the first speaker on the subject of large scale data storage when she described the study investigating the feasibility of a UK Shared Data Service. Russell Altendorff followed with a stimulating talk on the challenges and requirements of using co-location facilities. Finally in this session Bill Pulford described the data storage requirements for Researchers in

the UK. The delegates split into a number of groups to discuss the following points:

- What are the risks and benefits of an organisation using external data facilities?
- What areas of an organisation's activities would be ideal to use external facilities?

The afternoon session was something totally different with speakers on Social Networking. Conor Galvin from University College Dublin began the afternoon with a thought provoking presentation on the key challenges for IT in Higher Education if Web 2.0 was embraced by the organisation. Ray Robertson from West Suffolk College followed Conor with

an entertaining presentation on how Web 2.0 was being used at his college. The original aim was to split the delegates into groups for discussion but the points raised during the afternoon presentations were seen to be of so much interest to all the delegates that discussions continued in plenary session.

My thanks go to everyone who attended the event to make it such an interesting workshop. Details of the speakers and presentations can be found on the JANET web site at: <http://www.ja.net/services/events/2007/strategy/strategy.html>

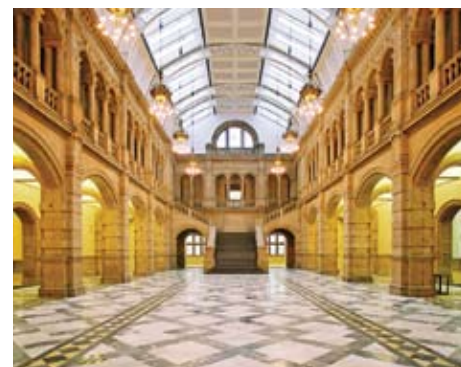
Shirley Wood  
Head of Communications and Support  
[shirley.wood@ja.net](mailto:shirley.wood@ja.net)

## Forthcoming Workshops

### Workshop 36

8-10 April 2008

Workshop 36 will take place at The University of Strathclyde from 8-10 April 2008. Further details are available at: <http://www.ja.net/services/events/2008/networkshop-36.html>



## Forthcoming Courses



### MARCH

**Introduction to DNS**

**Using Logfiles for Security**

**Wireless LAN Fundamentals**

**March 5th London**

**March 18th - Cambridge**

**March 19th - Cambridge**

### APRIL

**Information Security Policies**

**Firewalls: Planning and Implementation**

**April 16th - Newcastle**

**April 17th - Newcastle**

### MAY

**Using Logfiles for Security**

**Managing IT Security**

**May 8th - Newcastle**

**May 9th - Newcastle**

### JUNE

**Introduction to JANET**

**June 11th - Bristol**

Dates and online booking for all courses are available on our website.

A mailing list is available for the distribution of information regarding JANET training courses. Discussion of training requirements relating to the JANET network, suggestions for new courses, locations or course frequencies are also welcomed. To join this list, access the JISCmail site at: <http://www.jiscmail.ac.uk/lists/janet-training.html>

Events Calendar

<http://www.ja.net/services/events/calendar>

# Recent Publications

Requests for publications should be sent to: [service@ja.net](mailto:service@ja.net)

## Reports

**Quarterly Report to the Community  
August-October 2007**

<http://www.ja.net/services/publications/reports/quarterly-report/autumn07/index.html>

**JANET Report 2007**

<http://www.ja.net/documents/publications/reports/janet-report/report2007.pdf>

**Corporate Plan 2007-2010**

<http://www.ja.net/documents/publications/corporate-plan-2007.pdf>

## Newsletters

**JANET News 2**

<http://www.ja.net/documents/publications/news/news-2.pdf>

## Technical Documentation

**WiMAX Briefing 015(12/07)**

<http://www.ja.net/documents/development/network-access/wireless/wimax.pdf>

**JANET IP QoS Policy Framework 012(12/07)**

<http://www.ja.net/documents/development/network-engineering/qos/qos-policy-framework.pdf>

**JANET QoS – Suggested DSCP Marking Scheme 013(12/07)**

<http://www.ja.net/documents/development/network-engineering/qos/suggested-dscp-marking-scheme.pdf>

## Service Documentation

**Access to the JVCs by Content Providers 016(12/07)**

<http://www.ja.net/documents/communities/jvcs-cp-policyv2.0.pdf>

**UK Federation brochure PB/FED/002(01/08)**

<http://www.ukfederation.org.uk/library/uploads/Documents/overview.pdf>

**Federated Access Management for Schools 011(01/08)**

[http://www.ukfederation.org.uk/library/uploads/Documents/Federated\\_Access\\_Management\\_for\\_Schools.pdf](http://www.ukfederation.org.uk/library/uploads/Documents/Federated_Access_Management_for_Schools.pdf)



## How to contact JANET(UK)

JANET(UK)

Lumen House  
Library Avenue  
Harwell Science & Innovation Campus  
DIDCOT  
Oxfordshire  
OX11 0SG

Tel: +44(0) 1235 822 200

Fax: +44(0) 1235 822 399

### JANET Service Desk

Tel: 0870 850 2212

Fax: 0870 850 2213

E-mail: [service@ja.net](mailto:service@ja.net)

### JANET CSIRT

Tel: 0870 850 2340

Fax: 0870 850 2341

E-mail: [irt@csirt.ja.net](mailto:irt@csirt.ja.net)

To be added to or removed from the mailing list for JANET News, e-mail [janet-news@ja.net](mailto:janet-news@ja.net) or use the JANET(UK) contact information above.

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).

### Copyright:

This document is copyright the JNT Association trading as JANET(UK). Parts of it, as appropriate, may be freely copied and incorporated unaltered into another document unless produced for commercial gain, subject to the source being appropriately acknowledged and the copyright preserved. The reproduction of logos without permission is expressly forbidden. Permission should be sought from the JANET Service Desk.

### Trademarks

JANET® and JANET(UK)® are registered trademarks of the Higher Education Funding Councils for England, Scotland and Wales. The JNT Association is the registered user of these trademarks. Networkshop® and EdLab® are registered trademarks of the JNT Association.

### Disclaimer

The information contained herein is believed to be correct at the time of issue, but no liability can be accepted for any inaccuracies. The reader is reminded that changes may have taken place since issue, particularly in rapidly changing areas such as internet addressing, and consequently URLs and e-mail addresses should be used with caution. The JNT Association cannot accept any responsibility for any loss or damage resulting from the use of the material contained herein.

### Availability

Further copies of this document may be obtained from the JANET Service Desk at the address on the left. This document is also available electronically from: <http://www.ja.net/services/publications/janet-news/>

© The JNT Association 2008

Published by the JNT Association – ISSN 1755-2397



Printed on recycled paper