

## Call for Proposals to run Community Events at the National e-Science Centre

The National e-Science Centre is requesting proposals for workshops and meetings that aim to support and extend the e-Science development community. Examples of currently planned NeSC events include workshops on “Agent-based Grid Computing” and “Models for a sustainable National Grid Service”, workshops on campus grids and on community requirements, and also project-specific meetings.

NeSC will make all the local arrangements using our established team and procedures. In addition to the meeting rooms, we provide on-line registration for delegates, wireless networking and help arranging accommodation. We will publicise the event via our web site and newsletter. Our web site will provide means for disseminating the results of workshops – 3.5GB of our reports are downloaded daily by users across the world. We can also publish workshop reports in the UK e-Science technical report series.

For a limited number of events, NeSC can contribute to the catering costs. To qualify for this support, an event must demonstrate that it benefits a broad community (more than a single project) and promote generic technology or methods. The NeSC management will decide which events to support in this way. Other events will be hosted on a cost-recovery basis. NeSC will provide the usual support from our events team. However, we will have to charge for catering, either to the event organizers or by charging a fee for delegates.

If you are thinking of running a workshop, initial enquiries should be made by emailing [lee@nesc.ac.uk](mailto:lee@nesc.ac.uk) to check on availability. Each proposal should state the aim of the event, the intended audience, and who will organise the event programme. Proposals will then be reviewed by the NeSC management team. If you have any questions, please e-mail Dave Berry ([daveb@nesc.ac.uk](mailto:daveb@nesc.ac.uk)).

## NeSC takes Grid on the Road across Scotland

As part of NeSC's outreach programme a Grids and e-Research Workshop took place on Thursday 26th October 2006 at the University of Stirling.

The National e-Science Centre is chartered to stimulate and sustain the development of e-Science in the UK, including exchange of ideas between computing and non-computing disciplines. The aim of the workshop was to explain what grid computing is about, and how a wide variety of disciplines can benefit from it.

Staff of NeSC gave a series of talks and demonstrations during the workshop with specific focus on Grid security and its application in the life science domain. Existing users of grid computing at Stirling also talked about their experiences in using Grids in the social sciences through the GEODE project and their plans in the upcoming neuroscience EPSRC pilot project CARMEN.

More of these events are planned for the future. The next one is taking place at the University of Aberdeen on 13th December 2006.

## Study of User Priorities for e-Infrastructure for Research

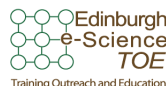
EPSRC and JISC are funding a project - Study of User Priorities for e-Infrastructure for Research (SUPER) - to discover short-term issues that can be addressed within current funding streams, and the infrastructures that are needed in the medium-term supported by new funding streams, to provide an order of magnitude increase in the use of the UK's e-Infrastructure.

The project will provide a set of preliminary findings for public comment in late January 2007 and a workshop in the late Spring to disseminate the report's conclusions to the wider community. Input for this report is being undertaken through a series of face-to-face meetings and an on-line survey <http://www.zoomerang.com/recipient/survey-intro.zgi?p=WEB225QB3ZXVKW>.

The responses from the survey will be used to determine the final set of face-to-face visits. Please take the time to provide your views - even if you have never used or are new to the world of e-Science - we value input from everyone! One respondent, selected randomly, will **win an iPod shuffle!**

Steven Newhouse (OMII-UK)  
Andrew Richards (NGS)  
Jennifer Schopf (JISC/Globus)

# Training and Education News



## UK e-EduTrain network

A network is being established of people committed to cooperate in education and training to promote UK e-research. Training builds effective user communities, primarily by teaching skills in specific technologies. Education builds the cultural awareness of e-science. This UK e-EduTrain network is a continuation of initiatives in BoFs at the last two AHM meetings. To find out more about its goals, see the wiki [http://wiki.nesc.ac.uk/read/ahm\\_bof\\_training](http://wiki.nesc.ac.uk/read/ahm_bof_training) which is a forum for the network. A newsletter will also be circulated every two months.

If you wish to be active in the network, please add your email address to the list [uk-edutrain@lists.nesc.ac.uk](mailto:uk-edutrain@lists.nesc.ac.uk). To subscribe, please email [majordomo@lists.nesc.ac.uk](mailto:majordomo@lists.nesc.ac.uk) with no subject line and only "subscribe uk-edutrain myemailname@wherever.ac.uk" in the body of the message.

If you are interested to be kept informed about the network, being notified when the newsletter is published, then please email [majordomo@lists.nesc.ac.uk](mailto:majordomo@lists.nesc.ac.uk) with no subject line and "subscribe uk-edutrain-newsletter myemailname@wherever.ac.uk" in the body of the message.

If you have any difficulties with the majordomo system, email [mjm@nesc.ac.uk](mailto:mjm@nesc.ac.uk).

## Collaboration in Education and Training Workshop, 15-16 January, NIEES

The UK e-EduTrain network will be running a workshop in Cambridge in January. It will be open to those who are active, intending to be active or are otherwise committed to establishing cooperation in education and training in the use of e-science technologies in the UK.

Objectives are

1. To share insight and best practice.
2. To build processes and structures for cooperation and collaboration to underpin future training and education efforts.
3. To build personal contacts.

Details will be published shortly, including on the NeSC and NIEES sites and via the uk-edutrain email list (see above).

## Schedule of upcoming courses in the UK

The following events are planned for the near future:

- Grid Computing, and the National Grid Service Induction, University of Reading, 20 - 21 November, 2006
- Grid Computing, EGEE and the gLite middleware Induction University of Reading, 22 - 23 November, 2006

- Porting applications to the EGEE and the NGS, using the P-GRADE/GEMMLCA portal, University of Reading, 24 November, 2006
- Introduction to the Application Hosting Environment and the National Grid Service University College London, 12 - 13 December, 2006
- Integrating Fortran and XML, NIEES Cambridge, 8-10 January 2007

For details and registration for these events see <http://www.nesc.ac.uk/training/events/index.html#mostrecent>

## Training Outreach and Education, NeSC

If you are interested in hosting or attending additional courses related to the National Grid Service, GridPP, EGEE or OMII-Europe then please email [training-support@nesc.ac.uk](mailto:training-support@nesc.ac.uk).

Mike Mineter, Training Outreach and Education, NeSC.

## Digital Libraries for Grid Computing Training

The National e-Science Centre, in collaboration with the Edinburgh University Library, has developed a range of new digital library services. The services are part of the e-learning pilot currently undertaken at NeSC for two major European grid computing projects: Enabling Grids for E-science (EGEE) and International Collaboration to Extend and Advance Grid Education (ICEAGE). The libraries contain collections of materials about grid computing, curated by the NeSC training team and partners from the EGEE and ICEAGE projects. The materials range from articles, books, tutorials, video or audio clips, web pages to presentations from training events and summer schools. You can use the libraries to discover resources, by searching or browsing, or to share your comments and resources, by creating new entries and uploading materials.

Using the library is easy. You do not need to register in any way to browse or search the library and download materials. To create new objects, you will need to log in with a digital certificate from one of the existing grid computing certification authorities. With the certificate, you can also review and edit metadata of existing resources in a wiki manner. There are various news feed (RSS) channels which you could subscribe to and keep in touch with the latest additions to the libraries. The RSS channels also facilitate a podcasting service which enables audio clips to be downloaded via news feed readers, iTunes and subsequently to iPod.

Access the digital libraries via: EGEE Library: <http://egee.lib.ed.ac.uk>, ICEAGE Library: <http://baillie.lib.ed.ac.uk>

Boon Low, NeSC



## Call for Proposals to run Meetings and Workshops at the e-Science Institute



The e-Science Institute invites proposals for meetings and workshops to be run over the next twelve months commencing in February 2007.

The e-Science Institute (eSI) situated in Edinburgh is the UK's centre for e Science meetings. Funded by the e-Science Core Programme it has been operating since August 2001 and during the first five years has run 407 meetings attended by some 12,000 delegates and has hosted 43 visitors who have stayed for varying periods from one day to a year.

eSI is actively looking to support activities across all academic disciplines and encourages new communities to take advantage of the significant expertise we can offer, in particular in putting them in touch with technical experts and computational scientists already engaged in e Science. Proposals for meetings need to show a clear link with e-Science – whether with well developed existing communities or new communities in the early stages of applying e Science techniques to their research.

Over the last two months, in addition to our series of visiting researchers' seminars and lectures, we have hosted workshops on a wide variety of topics including:

- 11/09/2006 Tenth International Workshop on Cooperative Information Agents (CIA 2006)
- 27/09/2006 Information Infrastructures and Architectures
- 02/10/2006 Biomedical Informatics Research Network (BIRN) UK Workshop
- 04/10/2006 The Fourth HPCx Annual Seminar
- 12/10/2006 The Closed World of Databases meets the Open World of the Semantic Web
- 19/10/2006 Workflow Optimisation in Distributed Environments
- 27/10/2006 Maintaining Long-term Access to Geospatial Data

We can provide support in the form of:

- a) Funding for 1 or 2 speakers a day.
- b) Assist with suggesting suitable speakers and participants.
- c) Provide means of advertising the event and disseminating the output – 3.5GB of reports and presentations are downloaded from our website daily by the worldwide community.
- d) A team of experienced staff to help with organisation of the meeting, and the use of our high quality conference facilities.

Researchers who want to organise a workshop to engage in collaborative work (e.g. 'hackathons') should also consider applying to the visitor programme for additional funds to enable them to engage a larger group of participants.

If you are thinking of running a workshop initial enquiries should be made by emailing [lee@nesc.ac.uk](mailto:lee@nesc.ac.uk) to check on availability. Proposals will be reviewed by the eSI Programme Committee which convenes in late January 2007, and should be submitted no later than 20th January 2007 for initial consideration by that committee. Further information on the eSI responsive mode is available at: [http://www.nesc.ac.uk/esi/arranging\\_events.html](http://www.nesc.ac.uk/esi/arranging_events.html)

If you have any questions, please contact Anna Kenway by email [anna@nesc.ac.uk](mailto:anna@nesc.ac.uk) or +44 (0)131 650 9818

## This month's articles

From now on, each month we will include some in-depth articles surrounding issues raised by e-Science Institute or National e-Science Centre Events or issues relevant to the e-Science Community. This month the following two articles relate to two events that the e-Science Institute hosted in October, sparking lively debate and a great opportunity for sharing ideas.

### When Worlds Collide: Databases and the Semantic Web

*There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.*

These words of Donald Rumsfeld loomed large at the e-Science Institute on the 12th and 13th of October, when eSI hosted one of its liveliest workshops to date: "The Closed World of Databases meets the Open World of the Semantic Web". Organised by Jessie Kennedy and Peter Robson, the workshop brought together researchers from the semantic web and database communities to bridge the gap between two quite different ways of looking at data – and, in doing so, to enable scientists to fully exploit the potential of web technologies.

Scientists, social scientists, and researchers of all kinds want to be able to pull together information from wherever it is stored, including the databases that form the "Deep Web", unseen by search engines. David Shotton kicked off the workshop with a presentation on Data Webs which aim to achieve just that, and Henry Thompson argued strongly in favour of maximising the network effect of sharing data by means of http URIs. Allowing computers to analyse all data on the web is at the heart of the semantic web project.

It's not enough to make a database accessible on the web – people also have to be able to find out what the data means. One problem which was debated at length in the workshop was the question of what to do about missing data. This is where the closed world and the open world collide. In Chris Date's series of presentations, he set out the closed world assumption that is intrinsic to relational databases: all

information is contained in a self-consistent database, there can be no such thing as a missing value and all queries are answered with "yes" or "no". This makes for a mathematically sound database that provides a true response to all queries. Out in the messy world of science, however, missing data crops up routinely and in the open world assumption "don't know" can be a meaningful answer. Stephen Henley's presentation on incomplete geoscience data gave the example of a drill measuring the depth to a particular geological layer: if the drill-hole never reaches that layer, the data on the depth is missing, but you do know the layer must be deeper than the drill-hole. The semantic web must reconcile these two worlds.

Three-valued logic, allowing statements to be true, false or unknown, is the simple and obvious solution to bringing databases into the open world; but, as H. L. Mencken said, every problem has a solution that is simple, obvious and wrong. Chris Date showed why three-value logic cannot be inserted into the relational database model, and in much subsequent discussion it was generally agreed that there is as yet no ideal solution to the missing data problem, though some partial solutions were offered to what is recognised as a serious issue.

Even with all data present and correct, researchers still need to be able to capture and communicate metadata that describes it, so that others can access the data for purposes which may be unimagined by its creators. Creating this semantic data – data that tells you what other data means – can be as much a social and political exercise as a scientific one. Trevor Paterson described the challenges faced by the Comparagrid project in integrating genomic mapping data using ontologies, sets of semantic restrictions that describe the data

and the possible relations between data objects. This is tantamount to automating the kind of interpretation of data that is performed by an expert scientist drawing on intuition, experience and training. Formalising this can open up fundamental scientific disagreements, which must be resolved or at least precisely defined before the ontology can be created. Even uncontroversial data can pose challenges of multiple interpretation, as Cathy Dolbear illustrated when she described her work in creating a widely useable ontology for Ordnance Survey data which was originally gathered for specific military and mapping purposes.

In the end, the workshop found that there is less of a clash between the open and closed worlds than at first appeared. Rob Shearer argued that the two worlds exist on a continuum: by adding restrictions to an ontology, an open world where anything is possible can be progressively closed down. In fact, the real differences are between the explicit assumptions made in open world ontologies, and the implicit assumptions that underlie closed world databases. When querying a relational database, all the understanding and interpretation are in the mind of the person formulating the query, while in the open world of the semantic web at least some of this interpretation is formalised in the ontology. There remain considerable challenges to be overcome before the vision of the semantic web can become a reality, but the real progress that was made in the two days of this workshop can only give grounds for optimism.

More details of the workshop, including presentation slides, are available at: <http://www.nesc.ac.uk/esi/events/701/index.cfm>

Iain Coleman, Science Writer, NeSC

## Breaking Out of the Lab: e-Research for All

How can the tools of e-Science spread out of the laboratory into other research domains, to become an infrastructure that underpins research across the full range of disciplines? Alex Voss and his colleagues hope to answer this question in their e-Science Institute theme “Adoption of e-Research Technologies”. On 25th October, Alex Voss kicked off the work of the theme with a public lecture in the e-Science Institute, in which he set out the vision of e-Research and identified the challenges that lie ahead.

e-Research is all about extending e-Science from its base in big science projects into fields such as social science, arts and humanities. This expansion has already begun, as Alex Voss illustrated with examples from census analysis to Roman archaeology, but many researchers who could benefit from these techniques find substantial barriers in their way. Understanding these barriers will be a significant element of the theme, which will tackle a range of socio-technical issues including the factors which motivate people to adopt e-Research, the similarities between the needs of different researchers, and the different cultures that exist in separate fields.

Easily useable systems can flatten the learning curve for researchers, and make e-Research much more accessible to them. This is where commodification comes in, turning individual, idiosyncratic products into systems that work in standardised ways. Web browsers are a good example of standardisation through the marketplace – there are many different browsers, but because they have evolved to work in similar ways, it is easy to switch from one to another.

It is not enough for e-Research systems to be useable, they must also be useful. This is where effective relationships between users and designers are essential. Designers of e-Research systems need to understand what researchers are trying to do, and researchers need to have reasonable expectations of what technology can achieve: they must not be over-

optimistic about technology, but they should understand the real benefits that it can bring to their research.

The ultimate extension of e-Research is in connecting up with the wider public – what Alex Voss called “Democratic e-Research”. This can mean public understanding of, and involvement in, sensitive research issues. Medical science in particular has a number of these, from matters of public concern such as stem cell research to questions of individual privacy in the use of medical data. Democratic e-Research can go further still, involving the public as active researchers through distributed computing projects like [climateprediction.net](http://climateprediction.net)

At a more fundamental level, it is important to understand the reward structures that constrain decision-making in any social system. Alex Voss touched on this issue during his lecture, and it was taken up at greater length in the questions afterwards. The effects of rewards and penalties are an important concern on all scales, from individual scientists who are rewarded for writing papers and grant proposals, to institutions which are rewarded for doing well in RAE assessments. There is a real tension for researchers between writing papers and working on the technical development that e-Research demands, and this conflict needs to be tackled if e-Research is to reach its full potential.

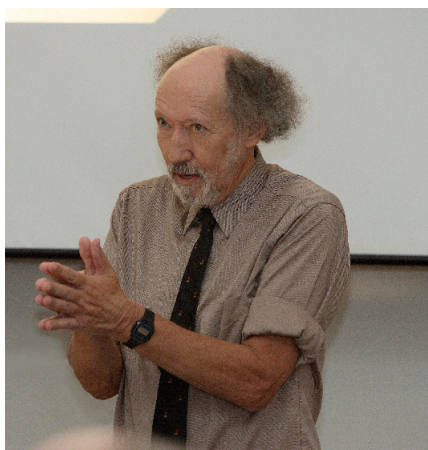
All of these topics will be addressed in the theme, which will last for a year, with workshops, targeted research studies, and more talks around the country to raise awareness of the issues. A call will be issued towards the end of November for the first workshop, “Realising e-Research Endeavours”, to take place at eSI in March 2007.

More details of the lecture, including presentation slides and a video webcast of the event, are available at: <http://www.nesc.ac.uk/esi/events/717/>

Iain Coleman, Science Writer, NeSC



Pictured (from left to right) Delegates at the Databases and Semantic Web Workshop, Chris Date presenting in the Newhaven Lecture Theatre and Alex Voss.



## Other News

### Apply now for the Edinburgh e-Science MSc/ Diploma

Applications are now open for admission to the e-Science MSc/Diploma programme at the University of Edinburgh in 2007/08. This unique degree is taught by staff from the University's School of Physics and Informatics, as well as the NeSC, and provides students with coverage of the principles underpinning e-Science and Grid computing, as well as practical experience of many of the main technologies used within academic e-Science research and analogous parts of the commercial IT sector.

Applications are welcome from students from a scientific or computer science background, and a wide range of options are available for students to tailor their individual curriculum to match their particular interests and future career plans. The MSc can be taken full-time in one year, or on a part-time basis over two or three years, while the nine-month Diploma programme may better suit those wanting to take the taught courses but not undertake the individual research project which completes the MSc.

We expect to be able to provide funding for a number of UK or other EU students, and those seeking financial support are encouraged to apply early. Further details of the programme are found at [http://www.ph.ed.ac.uk/postgraduate/degrees/msc\\_escience.html](http://www.ph.ed.ac.uk/postgraduate/degrees/msc_escience.html) Informal enquiries by email to the Programme Director, Dr Robert Mann ([rgm@roe.ac.uk](mailto:rgm@roe.ac.uk)).

### ScotGrid Meeting in Glasgow

The eight proposers of a Scottish Grid Service met in Glasgow this week to discuss the way forward with funding organisations. The collaboration aims to let all researchers requiring computing resources connect into a large-scale distributed system at each of the partner sites: Aberdeen, Dundee, Edinburgh, Glasgow (lead), Heriot-Watt, St. Andrews, Stirling and Strathclyde. The meeting also saw the official opening of Glasgow's new computing cluster.

The new cluster was opened by Prof. David Gani -- Scottish Funding Council (SFC) director of research policy and strategy -- and Prof. Robin Leake -- vice-principal of physical sciences and engineering. Gani commented, "...Today's opening of one of a series of clusters planned across Scotland marks a significant milestone in terms of enabling and enhancing a wide range of pooled, collaborative research via the grid."

Clustervision delivered and installed the new cluster, which is an upgrade on the existing facility at Glasgow and one basis of the Scottish Grid Service.

Originally established in 2002, ScotGrid now provides a resource in support of a wide variety of research areas in Scotland with a goal to offer wider computing access across the UK and internationally.

Leake added that "...This initiative is bringing together the key personnel from most Scottish Universities and will ensure that Scotland continues to be at the leading edge of international communications development."

See full release at <http://www.gridpp.ac.uk/news/-1163166140.116056.wlg>

## Newcastle E-Science Technologies win 2006 IEEE Services Computing Contest

Building on the results of several years of research in service-oriented computing at the North-East Regional e-Science Centre, a Newcastle team was recently awarded first place in the highly competitive 2006 IEEE Services Computing Contest. The competition among close to forty participating universities held its finals in September in Chicago, where the Newcastle team was selected over the other finalists from George Mason University (USA), Vienna University Of Technology (Austria), Joseph Fourier University (France), University Of Milan-Bicocca (Italy), and University Of California (USA).

The Newcastle team demonstrated software that allows for rapid creation of internet services in the real-estate industry. Using the SOAP Service Description Language developed in Newcastle, they modelled the process of house buying through a well-defined protocol detailing interactions and information flow amongst participating services. An SSDL protocol execution engine was augmented with a trusted third party solution for the corroboration of claims of the various players. Using formal methods, every newly created real-estate workflow could be checked for correctness and integrity.

The Newcastle team hopes that a range of Internet-based business opportunities will be enabled by their solution, ranging from portals for the creation of specialized services, to those bringing together participants in a given real-estate process, such as a house purchase. By automating some of these processes, and by allowing users to track many processes simultaneously, interactions between buyers, sellers and other real-estate parties can be done much more efficiently, while safeguarding against unsubstantiated claims or undesired transactions.

The team brought together members from 5 different countries, four different continents, all with connections or roots in Newcastle and the North-East Regional e-Science Centre.

<http://iscc.servicescomputing.org/2006/finalists.htm>

<http://www.cs.ncl.ac.uk/research/pubs/trs/abstract.php?number=960>

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

<http://www.cs.ncl.ac.uk/news.php?id=46> (a longer version of above)

Aad van Moorsel, University of Newcastle, UK

## 2007 Digital Preservation Award - call for entries'

The Digital Preservation Coalition is delighted to announce the call for entries for the third Digital Preservation Award.

Are you completing an exceptional digital preservation project? If so, why not apply for the Digital Preservation Award, worth £5000.

This is the eleventh anniversary of the Conservation Awards, sponsored by Sir Paul McCartney, and is the third year to include the prestigious Digital Preservation Award, which recognises the many new initiatives being carried out by museums, libraries, galleries and archives in the challenging field of digital preservation.

The Awards will be presented at the British Museum on the 27th of September 2007. Short-listed applicants attract significant publicity, and receive a certificate recognising their achievement at the presentation event.

To be eligible for the Digital Preservation Award, a project must demonstrate leadership and advancement in digital preservation which will benefit the UK. It must focus on preserving digital materials (whether "born digital" or digitised copies), rather than on the use of digitisation as a preservation reformatting tool. Only projects that have been completed by 31 March 2007 will be considered for the Award. Applicants from overseas are welcomed, providing that the project can demonstrate benefit to the UK.

The deadline for applications is 31 March 2007.

To apply for the Digital Preservation Award online, please go to [http://www.conservationsawards.org.uk/index.php?option=com\\_philaform&Itemid=15&form\\_id=6](http://www.conservationsawards.org.uk/index.php?option=com_philaform&Itemid=15&form_id=6).

Queries should be by e-mail to [carol@dpconline.org](mailto:carol@dpconline.org) or by tel. no. 01904 435 362.

Further information: [http://www.conservationsawards.org.uk/index.php?option=com\\_frontpage&Itemid=1](http://www.conservationsawards.org.uk/index.php?option=com_frontpage&Itemid=1)

## e-Science in the News

Did you see the Times Higher Education Supplement (THES) on e-Science last month? Subscribers to THES can read the October 20th/Issue no.8 Supplement which is devoted to the subject of e-Science online at [www.thes.co.uk](http://www.thes.co.uk)

## Intelligent sensors gear up for real-time flood monitoring

An intelligent flood monitoring system that could give advance warning of the type of rapid flood that engulfed the UK Cornish village of Boscastle in 2004, is under test in the Yorkshire Dales. Danny Hughes, Phil Greenwood and colleagues from Lancaster University won an award for their paper describing the system at the UK e-Science All Hands Meeting in Nottingham in September.

The system could reduce the cost of flood damage by providing warnings of local flooding in time for people to take pre-emptive action. Most current systems issue general warnings over large areas because they rely on sparsely-distributed sensors which send information to a central point for analysis. The new system, which is based on a network of intelligent sensors that can be placed in flood-prone sites, promises rapid, low-cost warnings specific to these sites.

Now undergoing trial in Yorkshire, the system consists of 13 depth sensors fixed in locations across a flood plain and a digital camera which rather like a traffic speed camera, monitors flow rate from the speed of flotsam between two points. Each sensor incorporates a powerful computer, no bigger than a packet of gum, which communicates wirelessly with other sensors in the network to form a computing grid. The software that enables the sensors to operate as a grid has been developed under the UK e-Science Core Programme (Open Overlays project). The North-West Development Agency is funding the flood monitoring work.

When flood waters are rising, the sensors can change how they operate together so that the network can continue to monitor the situation even if some sensors are submerged or swept away. The sensors are also able to adjust their power consumption so batteries are conserved during dry times and power is available for increased activity during flood. "As soon as the sensors detect water coming down the valley, the network gears up," says Danny Hughes.

In order to provide flood warnings, the system makes use of flood forecasting models which were developed at Lancaster by Professor Peter Young and colleagues. The models can be run on the sensor computing grid and adjusted so that their predictions stay in line with what the sensors are recording. "An interesting possibility is to use such a local warning system to give advanced warning, even in catchments where the response to rainfall is very fast, making flood forecasting very difficult," suggests Professor Keith Beven of Lancaster who is also involved in the project. "An example was the Boscastle flood in 2004, where a general forecast of heavy rain was issued, but the event was too localised to be able to give a warning to Boscastle residents. Fortunately, nobody was killed in that event," he says.

### Further information

<http://www.allhands.org.uk/2006/proceedings/papers/639.pdf>  
<http://www.comp.lancs.ac.uk/computing/research/mpg/projects/openoverlays/index.htm>

Judy Redfearn, JISC

## Novel workflow language tackles climate change computing challenge

A computing challenge encountered by the BBC Climate Change Experiment has led to an award-winning solution. Daniel Goodman from Oxford University won a best paper award at the UK e-Science All Hands Meeting (AHM) in Nottingham in September for devising a workflow language, Martlet, that enables the analysis of large datasets whose distribution is continually changing across a number of widely dispersed servers. Martlet uses an alternative style of programming model to that commonly used in workflow languages.

“This new approach builds on research in the computer science community over the past 40 years. For much of that time, many claimed this line of work was of academic interest, but of no practical relevance. Daniel’s paper has shown how it has real application in tackling some of the key challenges facing the world today, such as climate change” says Professor Paul Watson of Newcastle University, Chair of the AHM programme committee.

The BBC Climate Change Experiment is working with climateprediction.net, a major UK e-Science project funded by the Natural Environment Research Council. More than 200,000 people worldwide are participating in the experiment by donating spare capacity on their computers to run models of the Earth’s climate.

As the dataset containing all model runs is too big to return to one location for analysis, it is stored on a number of servers in different locations worldwide. The challenge arises because the number of pieces this dataset is split into varies for a range of reasons, including the addition or removal of servers from the experiment, and the sub-setting of runs required for a given query. Climateprediction.net needed a way of analysing the data in situ that could also cope automatically with changes to the location or sub-division of data.

“Existing workflow languages are not up to the task because they implement a style of programming where the number of data inputs and the paths of data flow through the workflow are set when the workflow is submitted. This makes them unable to cope with subsequent changes to the dataset” says Daniel. He turned to constructs inspired from functional programming to solve the problem. These allow the workflow to adjust to the requirements of the data at run time and mean that changes to the way in which a dataset is split can be accommodated dynamically, so removing the need for users to keep adjusting their workflows.

Martlet has potential for use in many e-Science applications which distribute data between servers in a similar way to climateprediction.net. Its development also suggests that there could be other powerful new algorithms awaiting discovery once people start to think in terms of this alternative programming model.

Judy Redfearn, e-Science/Research Communications Officer, e-Science Core Programme

## UK e-Science Programme wins award for leadership in grid computing

The UK e-Science Programme has won a prestigious international award in the inaugural GRIDtoday Readers’ and Editors’ Choice Awards which were presented at the GridWorld conference in Washington DC in September.

A panel of international leaders in grid and service-orientated IT voted UK e-Science the “research organisation demonstrating the most innovative grid implementation in government research”. The panel comprised contributors and editors of GRIDtoday, the weekly online publication covering developments in grid computing and service-orientated IT.

Malcolm Atkinson, UK e-Science Envoy from the National e-Science Centre at the University of Edinburgh says: “The UK e-Science Programme is delighted to receive this recognition for its innovative research, especially from such an influential community in the grid world. Since its start in 2001, the UK e-Science Programme has invested more than \$450 million on grid R&D and deployment alone. Now we have a National Grid Service and users from virtually every research discipline.”

The GridWorld conference, which runs from 11-15 September, is featuring several leading developments from the UK e-Science Programme including: Open Source software from OMII-UK (Open Middleware Infrastructure Institute); data access and integration software developed in Edinburgh; a session to explore pooling of educational and training material in grid computing; and a session on the UK’s Knowledge Transfer Network, Grid Computing Now!

The GRIDtoday Readers’ and Editors’ Choice Awards are determined through a survey of thousands of GRIDtoday readers, and will be a permanent annual feature of the publication. The UK e-Science Programme has won an Editors’ Choice Award.

More information on these awards can be found at: <http://www.gridtoday.com/>



## Forthcoming External Events

Details of important events happening in the UK and Internationally

### Call for HPDC 2007 Workshop Proposals

The HPDC 2007 Workshop Chair and the HPDC Organizing Committee invite proposals for the workshop program of the 16th International Conference on High Performance Distributed Computing. The workshops will be held on June 25th and 26th in Monterey California, prior to the main HPDC 2007 conference.

Workshops provide a forum for discussion among researchers and practitioners of areas of special interest within High Performance Distributed Computing. To foster interaction, the workshops are limited to 30-50 participants.

For details on how to submit a workshop proposal, see:  
<http://www.isi.edu/hpdc2007/workshops.htm>

### SEE Grid III

The Third SEE Grid conference will be held in Canberra on November 30 and December 1.

The program and registration forms are available on <https://www.seegrid.csiro.au/twiki/bin/view/Main/WebHome>

### Grid Computing Now!

#### Virtual Organisations and Grids: Applications, Patterns and Infrastructures, e-Science Institute, 15 South College Street, Edinburgh November 21-22, 2006

Virtual Organisations (VOs) are formed when two or more organisations work together on a common goal or project. In Grid computing, VO management tools are needed which allow organisations to join a project and authorise access to their (or their collaborators') resources according to the needs and policies of each member organisation. Several projects are investigating the best way to conceptualise and manage VOs. These projects are producing and deploying several VO management infrastructures.

The goal of this workshop is to compare different notions of "virtual organisation" and to compare tools (both existing and in development) with the requirements of several application areas. Speakers will present use cases from different applications areas and tools that have been or are being developed to address these requirements. Applications areas may include collaborative engineering (chemical, civil, automotive, and aerospace),

#### Web Seminar 1-2pm, December 5, 2006

The business case for next generation IT architecture

Grid Computing Now! will run another webinar on December 5, showing how you can improve business agility and server utilisation by re-architecting your IT provision.

The speakers, Steve Wallage of The 451 Group and Shahid Mohammed of Marsh Ltd, will explain how to make a strong business case, plan the new infrastructure, decide which applications to migrate or replace, and deal with the social issues of change.

Computer giant Sun Microsystems says it will offer programming language Java to the open source community.

Java is used in more than 3.8 billion mobile phones, computers and other devices around the world. The decision to release the code under an open licence means the world can now use, develop and share Java for free.

### Final chance to register: 2nd International Digital Curation Conference



The 2nd International Digital Curation Conference will explore the topic of Digital Data Curation in Practice.

Keynote speeches will be made by Dr Hans F Hoffmann, CMS Team Leader, CERN and Clifford Lynch, Director of the Coalition for Networked Information (CNI).

A comprehensive programme of papers, posters and demos will take place over two days along with an conference banquet at the City Chambers in the centre of Glasgow. To register and for further information please go to:  
<http://www.dcc.ac.uk/events/dcc-2006/>

### SC06, the

premier international conference on high performance computing, networking, storage and analysis, convenes this week in Tampa.

<http://sc06.supercomputing.org/about/>

For information on the UK e-Science Stand go to <http://www.nesc.ac.uk/events/sc06/>



**First Industrial Conference to take place on Nov. 30 - Dec. 1, 2006 at the ETSI headquarters in Nice (France).**

CoreGRID is the European research network on foundations, software infrastructures and applications for large-scale, distributed Grid and peer-to-peer technologies. The Network is funded by the European Commission within the EU's 6th Framework Programme for Research and Technological Development.

The theme of this two-day conference is "CoreGRID meets Industry..., Industry meets CoreGRID..." The objective is to showcase CoreGRID results and demonstrate CoreGRID's value to the European ICT Industry. During this meeting, you will hear about 8 CoreGRID demo cases selected for their scientific excellence and industrial relevance. Use cases will also be presented by members of the CoreGRID Industrial Advisory Board, focusing on Grid-enabled marketed technologies. Presentations on CoreGRID's collaboration with NESSI and other EC projects will also be made.

The CoreGRID Industrial Conference will be held during the Grids@Work week sponsored by CoreGRID. The Grids@Work series of events will start on Monday Nov. 27 and will cover several CoreGRID workshops, the BIGG meeting, the 3rd Grid Plugtests, etc.

This event will provide an opportunity for you to meet researchers and industrialists to share ideas and experiences, which will contribute to integrating and coordinating Grid research efforts across Europe and promoting close cooperation with the scientific world towards a sustainable European Research Area.

A detailed agenda is available on [www.coregrid.net](http://www.coregrid.net).

**Sixteenth International World Wide Web Conference**  
May 8-12, 2007  
Banff, Alberta, Canada  
<http://www2007.org>



### Call for Papers

Web Services form the architectural and technological basis for a broad range of today's service-oriented computing systems. Since Web Services first emerged, much has changed from the original goal of platform independent procedure calls via XML: standards have emerged, evolved and become deprecated; numerous architectural and practical lessons have been learned; and Web Services toolkits have evolved and become more sophisticated. Key non-functional requirements are now being addressed in the security, transaction, and reliability domains, while new application areas are emerging, including business process orchestration, grid computing and e-science.

As a result, Web Services technology has become a widely-used solution for intra and inter-enterprise application integration, including e-commerce. However, improving and better utilizing the technology remains an active area of interest both in the research and industrial application arenas. The Web Services track is therefore aimed at researchers, developers, and architects of Web Services who are interested in the next-generation of systems that use these technologies. They are invited to share their experiences, results, and ideas, which may lead to a better understanding of the promise and reality of pervasive, Service-Oriented computing.

The WWW2007 Web Services track is therefore soliciting papers which highlight contemporary and novel approaches in Web Services research and practice. For further information: <http://www2007.org>

Track Chair: Paul Watson, University of Newcastle upon Tyne, UK, [paul.watson@ncl.ac.uk](mailto:paul.watson@ncl.ac.uk)  
Deputy Chair: Jim Webber, ThoughtWorks, Australia  
[JWebber@thoughtworks.com](mailto:JWebber@thoughtworks.com)

Submissions due: November 20, 2006

The 16th International World Wide Web Conference (WWW2007) will be held at the world-famous Fairmont Banff Springs Hotel in Banff National Park. For more information about WWW2007 in general, please contact [www2007info@iw3c2.org](mailto:www2007info@iw3c2.org)

## Introduction to the Application Hosting Environment and the National Grid Service

University College London, 12 - 13 December, 2006

The Application Hosting Environment (AHE) is designed to provide the scientist with a simple, lightweight mechanism for launching and monitoring scientific applications, such as NAMD, LB3D, LAMMPS, Gromacs, GAUSSIAN, CASTEP and VASP, running on remote grid resources, including those provided by the UK National Grid Service. This course will provide the attendee with practical experience of deploying and hosting scientific applications on the NGS, and sharing an application with a community of users via the AHE.

This course is aimed at researchers wanting to understand the NGS and the AHE, and wanting to expose and run applications on the grid. For more information visit: <http://agenda.cern.ch/fullAgenda.php?ida=a063496>

## Forthcoming Events Timetable

### November

11-17	SC2006	Tampa Convention Centre, Florida, USA	<a href="http://www.nesc.ac.uk/events/sc06/">http://www.nesc.ac.uk/events/sc06/</a>
16-17	BEInGRID Activity 5 Meeting	National e-Science Centre, Edinburgh	<a href="http://www.nesc.ac.uk/esi/events/730/">http://www.nesc.ac.uk/esi/events/730/</a>
20-21	National Grid Service Induction Course	Reading, UK	<a href="http://www.nesc.ac.uk/training/events">http://www.nesc.ac.uk/training/events</a>
20-22	2nd Digital Curation Conference	Hilton, Hotel, Glasgow	<a href="http://www.dcc.ac.uk/events/dcc-2006/">http://www.dcc.ac.uk/events/dcc-2006/</a>
21-22	Virtual Organisations and Grids: Applications, Patterns and Infrastructures	National e-Science Centre, Edinburgh	<a href="http://www.nesc.ac.uk/esi/events/725/">http://www.nesc.ac.uk/esi/events/725/</a>
22-23	An induction into EGEE and its gLite middleware	Reading	<a href="http://www.nesc.ac.uk/training/events">http://www.nesc.ac.uk/training/events</a>
24	One-day introduction to the P-GRADE portal and GEMLCA	Reading	<a href="http://indico.cern.ch/conferenceDisplay.py?confId=a063488">http://indico.cern.ch/conferenceDisplay.py?confId=a063488</a>
27-28	Re-use or Re-invention - a Roadmap for Data Integration	e-Science Institute, Edinburgh	<a href="http://www.nesc.ac.uk/esi/events/709/">http://www.nesc.ac.uk/esi/events/709/</a>
29 - 2 Dec	IV International Conference on Multimedia and ICTs in Education	Seville, Spain	<a href="http://www.formatex.org/micte2006/">http://www.formatex.org/micte2006/</a>
30 -1 Dec	EGEE User Information Group meeting	National e-Science Centre, Edinburgh	<a href="http://www.nesc.ac.uk/esi/events/728/">http://www.nesc.ac.uk/esi/events/728/</a>
30 - 1 Dec	First Industrial Coregrid Conference	ETSI HQ, Nice, France	<a href="http://www.coregrid.net">http://www.coregrid.net</a> .
30 - 1 Dec	See Grid III	Canberra	<a href="https://www.seegrid.csiro.au/twiki/bin/view/Main/WebHome">https://www.seegrid.csiro.au/twiki/bin/view/Main/WebHome</a>
30	NeuroGrid Annual Workshop	e-Science Institute, Edinburgh	<a href="http://www.nesc.ac.uk/esi/esi.html">http://www.nesc.ac.uk/esi/esi.html</a>

### December

4-6	Second IEEE International Conference on e-Science	Amsterdam, Netherlands	<a href="http://www.escience-meeting.org/eScience2006">http://www.escience-meeting.org/eScience2006</a>
4-5	GGUS Training	Karlsruhe, Germany	<a href="http://www.nesc.ac.uk/action/registration/egee/index.cfm?id=715">http://www.nesc.ac.uk/action/registration/egee/index.cfm?id=715</a>
3 - 8	LISA '06	Washington, D.C.	<a href="http://news.taborcommunications.com/ct.jsp?uz1332368Biz2537580">http://news.taborcommunications.com/ct.jsp?uz1332368Biz2537580</a>
5 - 8	LCI Workshop	Montpellier, France	<a href="http://news.taborcommunications.com/ct.jsp?uz1332368Biz2537589">http://news.taborcommunications.com/ct.jsp?uz1332368Biz2537589</a>
12-13	Introduction to the Application Hosting Environment and the National Grid Service	University College London	<a href="http://agenda.cern.ch/fullAgenda.php?ida=a063496">http://agenda.cern.ch/fullAgenda.php?ida=a063496</a>
13	Grids and e-Research Workshop	University of Aberdeen	Contact NeSC Glasgow.

### Arrivals and Departures of Staff

- Michail Kontogiannis starts this week as Web Developer.
- Morgane Artacho will start on 27 November as Project Officer (ICEAGE), replacing Lilly Hunter who left at the end of last week.

If you would like to hold an e-Science event at the e-Science Institute, please contact:

Conference Administrator, National e-Science Centre, 15 South College Street, Edinburgh, EH8 9AA  
Tel: 0131 650 9833 / Fax: 0131 650 9819 / Email: [events@nesc.ac.uk](mailto:events@nesc.ac.uk)

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Next months deadline for articles is: 30 November 2006