OMII-UK NEWS

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ENGAGING WITH RESEARCHERS

'If more researchers are to benefit from e-Research, we must plug the gap between what is desired from e-infrastructure and what is available.' This is the belief of Neil Chue Hong, the new Director of OMII-UK. In the light of OMII-UK's new focus on 'Software Solutions for e-Research', which will be revealed this September at the UK e-Science All Hands Meeting, we asked Neil to provide his thoughts on the current state of e-Infrastructure and his hopes for the future of OMII-UK and the e-Research community.

Six years of the UK e-Science programme has seen the production of a wide range of technology, software and research. Although a considerable investment of time and money has led to the availability of a formidable level of software functionality, I believe that the further adoption of e-Research is inhibited by the gap that still exists between what is desired from e-Infrastructure and what is available. In my opinion, this is not a gap that will be filled by providing yet more functionality. Instead, we need to join up the functionality of existing components and, perhaps more importantly, provide researchers with information about the existence and capabilities of existing e-Infrastructure; something which the team at OMII-UK is well-placed to do.

In the past, there has been a reliance on researchers getting 'down and dirty' with their chosen software. As well as being experts in their own field, researchers needed to be accomplished programmers, because they were required to change the tools that they used to fit in with the Grid model. This reliance on the researcher as a developer has dramatically narrowed the e-Research user base. In response, OMII-UK is implementing new initiatives aimed at opening e-Research to all researchers. We are developing a Portlet infrastructure, which will allow researchers to use a browser – with its familiar and easy-to-use interface – to provide secure access to computational and collaborational resources. We are also developing Desktop Grid tools that provide researchers with transparent access to local and/or national computational and storage infrastructures through their desktop computer. Our *Software Solutions* will be packaged to give out-of-the-box access to Campus Grids, workflow-based analysis, and data sharing.

OMII-UK is focussing on Software Solutions for e-Research.

Do researchers want easier access, faster computation, more linked up software or something else? We can only provide researchers with what they want if we talk to them. In the coming months, OMII-UK will engage with research groups to discover how their research can benefit from the resources available to them - in particular, the National Grid Service. Our engagement with the research community, in conjunction with the work done by the e-IUS and e-Uptake projects discussed later in this Newsletter, will deliver vertical solutions for different groups working with different technology providers. This engagement will also ensure that we can develop, publish and promote best practice for integrating not only OMII-UK software, but the best examples from other producers, so that it is easy for any researcher to benefit from the e-Infrastructure out there.

OMII-UK is in an excellent position to bridge the gap between researchers and service providers. As the new Director of OMII-UK, I will ensure that OMII-UK continues to develop in line with the evolving needs of the research community. It is important that we, as an organisation, understand that software is not enough and that the ability to enable the production of high-quality research is the real goal of our community.

If you wish to discuss any of the points raised in this article, please come along to the OMII-UK stand at the UK e-Science All Hands Meeting, where you can also see demonstrations of our new *Software Solutions* and speak to our developers.

Neil Chue Hong,
OMII-UK Director

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OMII-UK's PRIZE WINNING SOFTWARE

The BPEL-Designer team, including OMII-UK funded staff, were recognised this April when they were selected from over 40 nominees to win a JAX Innovation Award. The JAX Innovation Award, which comprises a total prize money of 20,000 Euros, is awarded to the best European contributions to Java, Eclipse and SOAs. The award and prize money was presented to the BPEL-Designer team and five other winners during a ceremony in Wiesbaden, Germany.

Simon Mosner collects the JAX Award on behalf of the BPEL-Designer team.

The Business Process Execution Language (BPEL) 2.0 is powerful, but difficult to use. The JAX jury were impressed by BPEL-Designer's sophisticated modelling environment and its free availability, which they felt would lower the barriers to adoption of BPEL. The judges also noted that "the composition of web services that BPEL-Designer enables will be crucial for many SOAs. BPEL-Designer is also a very fine example of a collaboration across competing organisations and is an exemplar for the use of the extension mechanisms of the Eclipse Platform."

BPEL-Designer is a graphical editing tool that provides a set of Eclipse plugins to enable visual orchestration of web services using BPEL 2.0. Its source code provides the codebase for both commercial and open source offerings from Oracle, IBM, Jboss, and Apache. OMII-UK users have also used BPEL-Designer to orchestrate scientific workflows across service oriented grids. Other applications include workflows for polymorph simulation, cancer research, and modelling pollutant behaviour in the environment.

BPEL-Designer can be downloaded as part of the OMII-UK release.

Further information at: www.eclipse.org/bpel.

Wolgang Emmerich, OMII BPEL Project.

eIUS RAISES AWARENESS OF e-INFRASTRUCTURE

The eIUS project (e-Infrastructure Use Cases and Service Usage Models), pronounced "ey-yus", aims to raise awareness amongst UK researchers of e-Infrastructure services and show how these services may be used to achieve research goals.

Based at Oxford University Computing Services, the eIUS project seeks to identify successful and inspiring examples of the use of e-Infrastructure by UK researchers, particularly in areas of research that do not traditionally use e-Infrastructure. The project aims to understand the user community and increase the uptake of services from service providers.

Please contact the eIUS project if you are a UK researcher and you are interested in publicising the successful outcome of any research that involves the use of networked services and/or networking with like-minded colleagues. eIUS would also like to hear from you, if you run a service and are interested in working with eIUS.

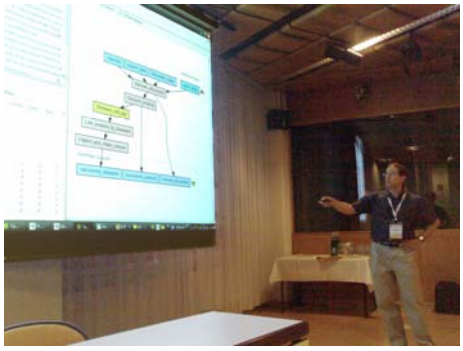
eIUS is funded by JISC and nine major UK e-Infrastructure service providers - including OMII-UK.

Further information at: www.eius.ac.uk.

Matthew Mascord, Project Manager/Analyst, eIUS Project.

TAVERNA USERS PRESENT SUCCESSES AT ISMB

Taverna was prominent at the 15th annual international conference on Intelligent Systems for Molecular Biology (ISMB) in Vienna this July.



Scott Marshall presents at ISMB

ISMB is the world's largest bioinformatics conference, attracting over 2500 delegates. The *my*Grid team presented a workflows tutorial featuring case studies from the Taverna community and organised a 'Birds of a Feather' meeting to discuss the newly released, beta version of *my*Experiment. There were numerous presentations from Taverna users. Marco Roos, an OMII-UK PAL based at the University of Amsterdam, presented a demonstration of his Text mining workflows. Teams of Taverna users presented research from the National Institute for Cancer Research, the SeaLife project and the universities of Edinburgh and Manchester.

Further information at: www.tinyurl.com/32nbye.

Katy Wolstencroft

OGF-20

This May, Manchester hosted the largest-attended Open Grid Forum (OGF) since the first meeting in 2002. The main concern of the OGF is the setting of standards, which is also a vital part of OMII-UK's business. Our deep involvement in the standards-building process means that we can ensure that our software is standards-compliant as soon as possible.

The involvement of OMII-UK in the process of setting standards covers a wide range of fields, from data management, to security, to execution services. One of the main groups within the standards' work is the Open Grid Services Architecture body (OGSA). OGSA aims to develop an architecture for a working Grid based on available standards and, where those standards do not exist, OGSA works to develop them.

Our work at OGF and other events puts OMII-UK at the forefront of the global effort to enable working Grids to be built for industry and academia.

Hugo Mills

e-UPTAKE

If academic research in the UK is to build on the foundations laid by UK e-Science, it is essential first to understand what barriers exist against the wider adoption of e-infrastructures, to devise strategies to address them and to facilitate the adoption of e-Infrastructure services.

In order to achieve this, JISC has funded the Enabling Uptake of e-Infrastructure Services (e-Uptake) project. Its aim is to develop strategies to deepen and widen the adoption of e-infrastructure, and to significantly increase the user-base of JISC-funded services. The project will provide training, outreach and education, and will also help to shape service provision and the wider socio-political context in which e-Research is taking place.

e-Uptake is led by the NCeSS in collaboration with the NeSc and the AHeSSC. Further information at: www.tinyurl.com/389soe.

Alex Voss, NCeSS

FIFTH GRID SUMMER SCHOOL

The popularity of the International Summer School in Grid Computing continues to grow, as reflected by the best ever feedback from the 64 students that attended the summer school this July.

The summer school gives young researchers a broad overview of the current state of the art in Grid computing. The teaching is delivered by the leading authorities in the fields of advanced Grid technology, applications of e-Science and distributed systems research. Four of the 36 teachers were staff from OMII-UK. Students benefited from the first public unleashing of OGSA-DAI 3.0, which was still in beta at that date, and a two-day 'data treasure hunt', during which students learnt about integrating middleware resources.

The next Summer School will be held in Hungary during July 2008. Further information at: www.issgc.org.

Amy Krause and Elias Theocharopoulos

OGSA-DAI USER GROUP MEETING

The OGSA-DAI User Group meetings are just one of the ways in which OGSA-DAI communicates with its users. The aim of the meetings, which are usually held after a release, is to gather experiences and inform users about what's in the new release (or what to look forward to). The meetings also engender a sense of community and allow users to help each other by sharing experiences.

The OGF20 meeting provided an excellent opportunity to co-locate a user group meeting, leveraging off the international presence already at OGF. Nineteen projects that use, or are involved with, OGSA-DAI were represented at the meeting, which was chaired by Professor Richard Sinnott. Eight presentations covering eight projects and an overview of what was expected in OGSA-DAI 3.0 were followed by a group discussion.

Further information at: www.tinyurl.com/2uy4yx.

Mario Antonioletti

NGS AND OMII-UK COLLABORATION BENEFITS UK e-SCIENCE

2004 saw the birth of two major organisations in the UK Grid world: the National Grid Service (NGS) and OMII-UK. Three years later, these two organisations are working together to make the vision of a united Grid a reality.

As the recent UK e-infrastructure report mentioned, interoperability and collaboration between projects is vital to the future of Grid computing in the UK. The NGS and OMII-UK aim to achieve just that. They have worked closely in the past year to make OMII-UK software available to NGS users.

The NGS is the UK's Grid for academics of all disciplines. Our users range from chemists, to bioinformaticians, to social scientists. Currently, the total number of users registered on the NGS exceeds 500, leading to a very broad range of research, such as: large simulations of drug permeations through a membrane, studies of the molecular basis for HIV drug resistance, modelling of the human heart, computational modelling of aircraft structures and simulations of the generation of magnetic fields in stars and planets. The NGS also provide an Oracle database service for the storage of large amounts of data, such as the database of possible crystal structures used by the Control and Prediction of the Organic Solid State (CPOSS) project.

Such a diversity of users and research requires a wide range of software applications and services to be available. Collaboration with OMII-UK has enabled this range of users to expand by making use of applications developed and distributed by OMII-UK.

GridSAM is a recent addition to the NGS from the OMII-UK software stack. The Belfast e-Science Centre at Queens University Belfast recently became a partner site on the NGS, offering a GridSAM instance connecting to all the NGS nodes.

OMII-UK Software features at an NGS training day

OMII-UK's Application Hosting Environment (AHE) has been used to run code on the NGS since its launch. Teams from the Reality Grid project have successfully used the AHE to run jobs on the NGS, Teragrid in the US and local clusters at UCL.

A recent example of the NGS using OMII-UK produced software to provide a service, is the OMII-UK GRIMOIRES registry. This core managed service is part of a number of services provided by the NGS to support its users.

In addition to supporting applications on the NGS, OMII-UK supports the development of software developed by the NGS. The Applications Repository (www.portal.ngs.ac.uk), initially developed by the Science and Technology Facilities Council, is to become part of the OMII-UK supported distribution.

Many users on the NGS benefit from training courses run by the training team, which comprises members of the NGS and the TOE team from the e-Science Institute in Edinburgh (see page 8). Courses cover many aspects of the NGS and Grid technologies, and those attending the induction course are trained in the use of OGSA-DAI and GridSAM. More advanced courses on the new version of OGSA-DAI are planned for the autumn. It is hoped that they will become commonplace in the NGS training plans and encourage the exploitation of OGSA-DAI and its new features.

The collaboration between the NGS and OMII-UK isn't just about using each others software. Close working relationships mean involvement of both groups in the respective user forums, creating opportunities for further integration. NGS and OMII-UK have cross representation on each others Boards and, through coordinated activities led by the JISC, work to plan future developments and software requirements to address the needs of the academic community. Further collaboration between the two organisations looks set to continue to the benefit of all in the UK e-Science community.

Katie Weeks
Grid Support Officer, NGS

TAVERNA AIDS VL-e PROJECT

The 'Virtual Laboratory for e-Science' (VL-e), based in the Netherlands, investigates and develops Grid-based infrastructure and tools for applications such as bioinformatics and food informatics. VL-e use Taverna as a tool for expert users from the above application domains, as a target platform for adopting new developments made available through web services, and for research on workflow management systems.

Taverna has been used extensively as an enactment platform for services from the AIDA (Adaptive Information Disclosure Application) Toolbox. AIDA offers services for knowledge extraction and knowledge management, currently with emphasis on biology (for example workflows, see www.myExperiment.org). The AIDA Toolbox and workflow components created for bioinformatics are also used in the Food Informatics subproject. Thus, the replication of effort in different subprojects is prevented. Taverna helps to speed up the workflow design process by acting as a prototyping environment for experimenting with new workflows and web services. We are testing workflows with services that provide various types of synonyms, such as those from Wordnet, that can assist researchers in formulating more precise search queries in order to find all of the data that they need with no redundancy. If successful, these services will extend the Research Management System that was developed for the Top Institute for Food and Nutrition.

One of the research topics in VL-e is the integration of workflow systems via a 'workflow bus'. We have constructed a workflow using VLAM ('Virtual Laboratory Amsterdam') - our own Grid-based, workflow management system available in Taverna. An example VLAM workflow, called SigWin, discovers patterns in a sequence of values, such as regions of increased gene expression in transcriptome maps. We want to use Taverna to incorporate SigWin in a more extensive bioinformatics workflow.

Reusable web services and reusable workflows are gaining in popularity due to projects like VL-e and tools such as Taverna. This is also an approach to research endorsed by the Dutch Bioinformatics Centre. Taverna has been instrumental in explaining the concept of a 'virtual laboratory' to non-experts in application domains. We look forward to the possibility of web portal access to workflows, since this make it even easier for a non-expert, such as a bench biologist or doctor, to try out a workflow. We are confident that *my*Experiment will further increase the interest in the 'e-Science approach' to research.

Further information at: www.vl-e.nl.

Marco Roos, Jan Top, Adam Belloum, and M. Scott Marshall, VL-e Project

VOMS FOR USER MANAGEMENT IN OGSA-DAI

Many OGSA-DAI users employ the simple role mapper included in the OGSA-DAI distribution to authorise service access to the underlying resources. Although this works well for small numbers of users, it may be better to use an application such as the Virtual Organisation Membership Service (VOMS) when hundreds – or more - users are involved.

OGSA-DAI provides access to data – typically in databases – using web service mechanisms. Behind the scenes, this requires Grid credentials (i.e. the Distinguished Name of the X.509 certificate used to access the service) to be mapped to a local database role (a username and password) to authenticate with the database which, when mapped to a suitable database role, provides the required level of authorisation. The simple role mapper included with OGSA-DAI provides this functionality, but it is not scalable to hundreds of users. In fact, we intended service deployers to replace the simple role mapper with a more sophisticated authorisation mechanism when using OGSA-DAI in production systems.

VOMS, currently being developed under the EGEE2 project, provides a means of managing the groups, roles and capabilities of users within a Virtual Organisation (VO). An administrative service provides a means through which users can register with a VO and then be assigned groups, roles and capabilities by the corresponding VO administrators. The assigned attributes are then released through signed assertions from an Attribute Authority Service (AAS). Using this mechanism, the user can push their attributes to the OGSA-DAI service by including signed VOMS assertions in their request. Services can use these attributes to map a user to a database login. The service no longer needs to perform direct mapping from a given user to a database role; instead it maps groups or roles to them. This greatly facilitates the management of large user bases and can be used to manage general authorisation within OGSA-DAI.

The OMII-Europe project is working to extend VOMS and OGSA-DAI so that they can inter-operate and provide the above capabilities. In addition, VOMS is being extended to support emerging authorisation standards and the AAS is being re-engineered to expose an additional interface compliant with the Security Assertion Markup Language (SAML) set of specifications. This should add additional capabilities to the types of interaction that VOMS and OGSA-DAI services can have. The coupling between OGSA-DAI and VOMS offers the possibility of effortlessly managing large user bases that wish to access data. The OGSA-DAI VOMS extensions should be available from the OMII-Europe repository in September.

Further information at: www.omii-europe.org.

Mario Antonioletti

IS OPEN SOURCE RIGHT FOR YOU?

How can you tell if open source software is right for you? We asked Matthew Pocock, a respected Open Source developer from the University of Newcastle and one of the OMII-UK PALs, to give us some tips.

Open Source (OS) is many things to many people: it is a collection of licences, a political and philosophical stand-point, a question of practicality… Are there any short-cuts to deciding if OS is for you? The answer depends on what you want out of the software.

I have been involved in a number of OS projects, and I have also used a lot of OS applications and libraries in the course of my work and play. Over the years, I have compiled a short-list to decide between OS and commercial software. There are three questions, which I will answer below.

What confidence do I have in the product?

Assuming you've tracked down an OS application or library that claims to do what you need, how can you be confident that these claims are true? Successful, well-resourced projects will have a strong web presence. Among other things, you should be able to find:

- A public web site, with information for users, tutorials, documentation, issue tracking, forums, mailing lists, chat, access to the source code repository, etc.
- Evidence that bugs are fixed, that users are happy: try a quick Google, check the time taken to resolve issues, look at the release cycle, see if the mailing list has traffic and whether the traffic is positive, see whether the guys in the irc channel are helpful.
- Sense of leadership. In other words, a core development team who have a personal stake in the success of the project.
- You may find evidence of events such as hackathons, training days, attendance at trade fairs and conferences. This is all good.

Can I do the things that I need to do?

Now that we've established that you will not be the sole user of an unsupported project with an absentee developer group and unhelpful or missing support, the next step is to eyeball the codebase. If the source is suspiciously hard to obtain, fails to build, or has not been updated for years, it may be time to walk away.

Open up some random files (there's usually no need to trawl through the entire thing). Ugly code tells you a lot, particularly about how hard the developers will find it to track down any bugs. If it looks like coursework from a first year student, run away now! If you can understand how the code works, you are on to a winner.

Now it's time to see if this funky OS code does what you need it to do. There's only one tried and trusted method for this, and that's to try it out. Remember, it may offer a thousand capabilities, but all you need to check at this stage is the show-stopper functionality that you require. If it very nearly does what you want, now is the time to test out the user support in anger. See if they can suggest how and when things can be changed so that it does more of what you want.

Am I locked into using the software for the foreseeable future?

You should now be ready to run with your chosen OS solution. It's time for the real investment of time and effort. The most important thing that you can hope for at this stage, is that if you've made a hideous mistake, it will be easy to back out of it. You must make sure that you are not locked in to the OS application or library. This means two things, standards and interfaces.

Wherever possible, the code should communicate using a community-agreed standard (i.e. W3C data formats, OASIS documents and so on). If you follow this rule, you can always drop in something else that follows the same standards and the rest of your system will be OK. Your data is still yours, it's not locked away in a vendor-specific vault.

Write an API that is exactly what you require from the application or library and then write an implementation of this interface for the OS solution you chose. The details of the API don't matter, the point is that your application talks to the API. In the future, if you need to swap out the OS code, you can just re-write the thin glue layer implementing the API and your application will be none the wiser.

There is a lot of open source software out there. The quality varies wildly. Take advantage of the openness of it to make good decisions. Try before you buy in. Don't get locked into one provider. Be sure about what functionality you are looking for. And, if you are still feeling friendly after all this, help out by submitting bug reports, patches, and generally telling the OS coders how much you appreciate them. Above all, I hope that for the OS projects you use regularly, you get the chance to become part of the community, and perhaps get the opportunity to contribute code or documentation to the project of your choice.

Matthew Pocock, OMII-UK PAL (Product/Area Liaison)

e-SCIENCE IS ABOUT SCIENTISTS TOO!

e-Science needs to empower scientists so that they can rise above infrastructural obstacles and use their creativity to conduct exciting new science by effortlessly harnessing the capabilities of Grid.

"e-Science is about global collaboration in key areas of science and the next generation of infrastructure that will enable it," wrote John Taylor at the inception of the UK e-Science Programme. At that time, the Grid technologies on the table included Condor, Globus and SRB. I felt there was a gap – a missing link – between these infrastructure pieces and the new scientific outcomes that e-Science sought. In a report in 2001, we wrote 'there is currently a major gap between these [infrastructure] endeavours and the vision of e-Science in which there is a high degree of easy-to-use and seamless automation and in which there are flexible collaborations and computations on a global scale'.

At that time, I was listening to Tim Berners-Lee promoting a vision of a future Semantic Web. Semantic Web is very compelling for science because it's about linking up data, to make data reuseable and to bring together the otherwise decoupled content of e-Science. After all, it's the data that scientists want! It is also very compelling because it provides a solution for the machine-processable metadata that is essential to achieve automation. So we promoted Semantic Web not only for scientific data but within the middleware too.

But as the Web has evolved, it hasn't just gone Semantic, it's gone Web 2.0. It's become a distributed application platform in its own right, exemplified by mashups (see programmableweb.com) and by provision of storage services (Amazon's S3) and even compute services (Amazon's Elastic Compute Cloud). Some might dismiss Web 2.0 as hype, but it turns out to be very instructive to look at the Web 2.0 Design patterns and consider e-Science in that light. For example, e-Science projects have tended to focus on small numbers of specialist users,

'I believe that **e-** should stand for ***empower*** not *enable*. e-Science is about Scientists too.'

rather than the long tail of researchers doing everyday scientific work. e-Science is data-centric, but the infrastructures haven't focused on giving scientists easy processing of the content they want. Users add value, but this requires community support for sharing the value, which again isn't in the infrastructure. Users collaborate over artefacts but we don't realise the full value of this in terms of making recommendations based on use – the social networks.

The magic of web 2.0 (or even of Web 1.0 for that matter) is that it's about building value through the participation of people. e-Science needs this too, but Grid hasn't gone there yet. Quite rightly the Grid mindset is about provision of an advanced infrastructure to **enable** science. But a service-provision mindset has a fixed view of users as consumers, and this is contrary to the Web 2.0 view of "users add value". I believe that **e-** should stand for ***empower*** not *enable*. e-Science is about Scientists too.

So what we see in Grid is lots of standards work to build well-engineered, sophisticated solutions. In Web 2.0 we see an ecosystem of simple APIs. In Grid we see a separation of content provision from data processing, while in Web 2.0 we see data motivating adoption (think google maps). In Grid we see an assumption that users will come. In Web 2.0 they do. This is not to say Grid is wrong or broken, but that we need to look to Web 2.0 in that space between Grid and scientists – and the Grid mindset doesn't naturally go there. However, the Grid mindset does deliver the robust, dependable services (utilities even) that are needed to underly Web 2.0. It follows that we should look at simple Web interfaces to Grid functionality – for example, why can't Grid be delivered through a RESTful architecture?

I believe that to achieve this shift in thinking, we should look at verticals as well as the seemingly inevitable horizontal layers. A good example of this is the Virtual Research Environments programme in the UK, where every project reaches from users to developers to providers. One of these projects is called myExperiment (see www.myexperiment.org). myExperiment provides a social space for scientists to share workflows and other digital artefacts of e-Science – or as New Scientist put it, "MySpace for the dudes in labcoats".

I see a future e-Science infrastructure which is a comfortable mix of Grid, Semantic Web and Web 2.0. The Grid is about linking things up so that people can do new stuff, so we need to empower people to do functionality mashups. And we'll use Semantic Web technologies to assist the mashing up of data, the hackability and remixibility, and working with live feeds, not just batch processing. We will learn from Web 2.0 in terms of how developers and users engage with the new capabilities – bringing new functionality to the users rather than expecting them to come to it, and creating an ecosystem of participation.

Dave DeRoure

WIN A 1Gb MEMORY STICK!

To celebrate the launch of OMII-UK's *Software Solutions for e-Research* (see the front page), we are giving away 1Gb OMII-UK memory sticks to our readers.

It's not that easy though, first of all you must correctly answer the ten questions in the quiz opposite. Either email your answers to the Newsletter team (see contact details at the bottom of page) before 21 September 2007, or hand them in at the OMII-UK stand at the AHM. We will also need your email or home address (which will only be used for the purposes of this competition). The first ten correct answers out of the hat will win a 1Gb memory stick - the perfect accessory for conferences!

Winners will be announced on our website after the AHM and will be sent their memory stick during September 2007. **Good luck!**

THE QUIZ

1. What strapline do OMII-UK use to describe their solutions-based software?

2. Which OMII-UK software component received a software innovation award this April?

3. Who is the new OMII-UK Director?

4. In August, how many downloads had Taverna registered on the Sourceforge website?

5. What are the three current OMII-UK Software Solutions called?

6. How many people comprise the OMII-UK Newsletter Editorial Team?

7. Name any of the OMII-UK Software Component that are available on the NGS?

8. OMII-UK is made up of three groups, in what cities are they based?

9. What is the email address of the OMII-UK support team?

10. What is the version number of the latest OMII-UK Release?

TRAINING WITH TOE

The Training Outreach and Education team (TOE) of the National e-Science Centre provide training courses to encourage development, uptake and proficient use of e-Science technologies. The following are just some of TOE's initiatives:

- Under JISC's e-Uptake project (see page 3), TOE are surveying the provision of training and education in e-infrastructure and providing a 'one-stop shop' for information about training and education providers, events and a training material repository. If you teach e-Science, please contact TOE (the survey can be found at: www.tinyurl.com/yrjntj).
- OMII-UK, the NGS and OMII-Europe are collaborating to prepare training on OGSA-DAI 3.0:

  The OGSA-DAI team will provide an overview at the e-Science All Hands Meeting, 2007.

  A two-day introduction course will be held on 11-12 October 2007 and a deploying OGSA-DAI Data Services course will be held on 1-2 November 2007. Both courses will be held in Edinburgh.
- TOE's digital library of training material has recently been extended with new materials for both "UK e-science" (including OMII-UK - of course) and OMII-Europe. Explore the digital library at www.tinyurl.com/22ajyk.

Find information on the above and other TOE activities at: www.nesc.ac.uk/training.

Mike Mineter, TOE

Edinburgh e-Science TOE
Training Outreach and Education

CLOSING WORDS

We hope that you have enjoyed this issue of the OMII-UK newsletter.

We would love to hear your views on this Newsletter, and any suggestions that you may have for articles, or anything else, that that you would like included in a future issue.

The OMII-UK Editorial team can be contacted at omii-newsletter@omii.ac.uk.

The Editorial Team (Mario Antonioletti, Simon Hettrick, Juri Papay and Franck Tanoh).