

e-ScienceTalk: Supporting Grid and High Performance Computing Reporting across Europe

GA No. 260733

1 September 2010 – 31 May 2013

Catherine Gater

e-ScienceTalk Project Coordinator

www.e-sciencetalk.eu

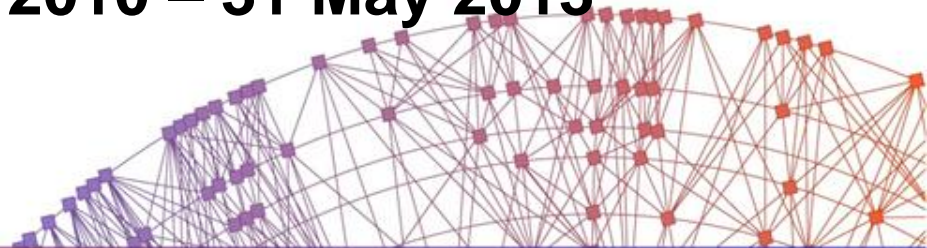
A network diagram at the bottom of the slide, showing a complex web of nodes and connections. The nodes are represented by small squares in various colors (purple, blue, red, orange) and are interconnected by thin lines, forming a dense, interconnected structure that resembles a grid or a high-performance computing network.

Aims of e-ScienceTalk

To build on the significant achievements of GridTalk in bringing the success stories of Europe's e-Infrastructure to its audiences.

The key challenges are to work with the new EGI ecosystem, maintain and enhance the quality of the existing outputs, while reaching out to new disciplines and regions.

Project dates: 1 Sep 2010 – 31 May 2013



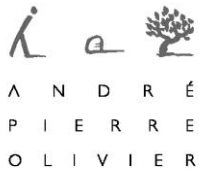
Partners



EGI.eu coordinates the pan-European distributed computing network, the European Grid Infrastructure, and leads the dissemination task



Queen Mary, University of London coordinates dissemination for GridPP, the UK Grid for Particle Physics and managed press and PR and event co-ordination for EGEE-III



APO is a web design business based in Bellegarde, France. It has worked previously on grid multimedia communication, including the GridCafé website



Imperial College is active in e-Science and created the 3-D graphical grid display tool, the Real Time Monitor



CERN is heavily involved in grid dissemination and coordinated all three phases of EGEE, including leading the outreach activity



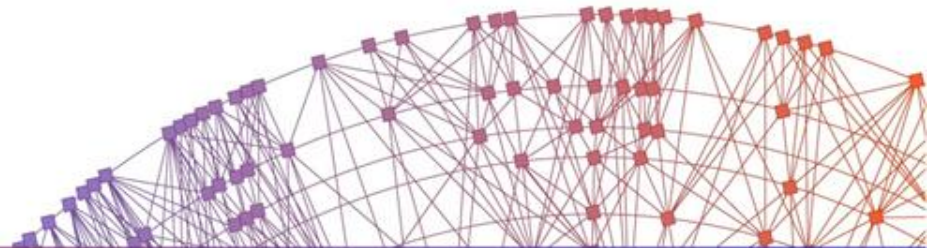
Audiences

- Influential **policy makers** in European science, government and business
- European **scientists** in a position to develop or exploit grid computing
- The **general public** in Europe and worldwide
- New audience is **university students** and final year high school students, the future users of the infrastructure



New areas

- Cover the broader e-Infrastructure eg volunteer, cloud, high performance computing and the network layer
- Work with projects from a wider geographical area, including Asia, Latin America and Africa
- Preserving the existing GridTalk consortium but also bringing on board new expertise through Imperial College and EGI.eu
- Analyse the reach and impact of longer running products, such as iSGTW and GridCafé and explore sustainability beyond the lifetime of the project for all products
- Explore new Web 2.0 technologies such as social media sites and interactive visual environments



Reaching the audiences

Grid Briefings TALK
Grid computing in five minutes

The Future of Healthcare: eHealth and Grid Computing

From a patient's heart monitor to electronic health records, eHealth has integrated itself into all aspects of healthcare. Grid computing is playing a key role in this growing area, providing storage and computing power for initiatives in several biomedical disciplines. These tools enable researchers to investigate diseases and rare conditions, as well as providing doctors with new ways to diagnose and treat patients. And by integrating the vast amount of medical data available, they could herald the beginning of personalised treatments for patients. Together, eHealth and grids are shaping the future of healthcare. This briefing examines some of the key eHealth projects in Europe, looks at the challenges involved and presents opinions from experts in the field.

Safeguarding Europe's Health
Information and Communication Technologies (ICT) are becoming more integrated into our lives, and healthcare has proved no exception. For clinicians, researchers and patients, eHealth is making healthcare more efficient, accessible and personalised.

Since the early 1990s, the EU has invested more than €300 million in the development of eHealth tools and systems. Consortia such as the Assembly of European Regions e-Health Network work together with policy makers, medical personnel and IT experts to further eHealth. And, due to a heavy emphasis on ICT research and improving public services, the EU's 2010 strategy (see box) has ensured that the subject has been firmly on Europe's agenda.

Grids for healthcare

Grid computing allows users to share computer power and data storage capacity over the internet. Today grids facilitate work done in many areas of healthcare, with initiatives such as HealthGrid working with both clinicians and researchers to promote awareness of the advantages linked to deploying grid technologies.

Grid technologies are being used in many areas:

- Researchers can use grid computing's processing power to hunt for new viruses, search for new drugs, model disease outbreaks, image the body's organs and determine treatments for patients.
- Doctors can gain access to relevant health data regardless of where it is stored.
- Patients can receive a more individualised form of healthcare.
- Healthcare workers are better able to collaborate and share large amounts of information.

The 2010 vision
The 2010 strategy is the EU policy framework for innovation, society and media. Running from 2005 to 2010, it aims to:

1. establish a single European information space
2. restore innovation and investment in ICT research
3. promote inclusion, public services and quality of life

Samuel Kruchkentian, HealthGrid - "Enhancing the capacity of the biomedical and medical communities with the power of grids and clouds provides the opportunity for new fields of operations where diagnosis, drug discovery, exchange and monitoring of health-related data will become increasingly fast, accurate and easy to handle. HealthGrids are the right innovation for health professionals to use applications saving time, money and allowing an increase in scope and results that could not be provided through traditional IT services. Grids and clouds are therefore the future for medical and biomedical applications!"

Gridcast
Blogging behind the scenes of grid computing

Latest blog posts:
Read the GridCast blog

Welcome
These GridCast podcasts and blogposts give you a grassroots view of the hottest news at the cutting edge of scientific grid computing.

What is GridCast?
GridCast takes you behind the scenes of the most exciting grid computing events. Share in the excitement as renowned speakers reveal the latest in grid technologies and grid-powered scientific results. Also check out what happens after dark at the post-conference parties - it's where much of the real networking happens...

Meet some of our GridCast blogging team...

More GridCasts...

- 23rd - 24th September 2009 EGEE 09 Barcelona, Spain
- 16th - 17th July 2009 4th BELIEF International Symposium São Paulo, Brazil
- 28 June - 1st July 2009 HealthGrid 2009

ISGTW INTERNATIONAL SCIENCE GRID THIS WEEK

News (ISGTW) 25 August 2009
Egg solution might crack CO2 shell

What do eggshell's calcium carbonate formation, atmospheric CO2, and high-performance computing have in common? Large-scale molecular modeling at the level of a nanometer - one billionth of a meter. High-performance computer (HPC) processing has enabled scientists to track the evolution of eggshell formation at the molecular level. This demonstrates the successful running of large-scale molecular modeling. Wang, Li, University of Toronto, Toronto, Ontario, Canada; and David Quisenberry identified a mechanism for the protein, called avidin, to act as a key catalyst in eggshell production. Such techniques have wide-ranging uses.

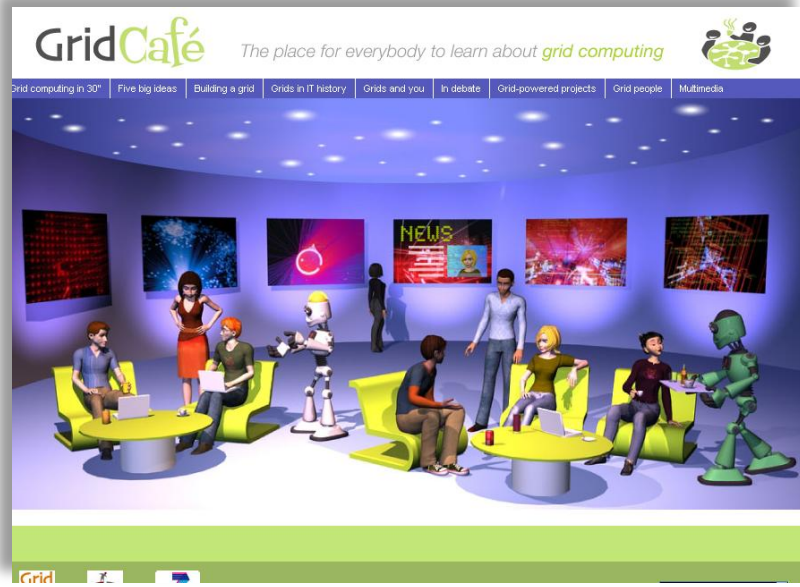
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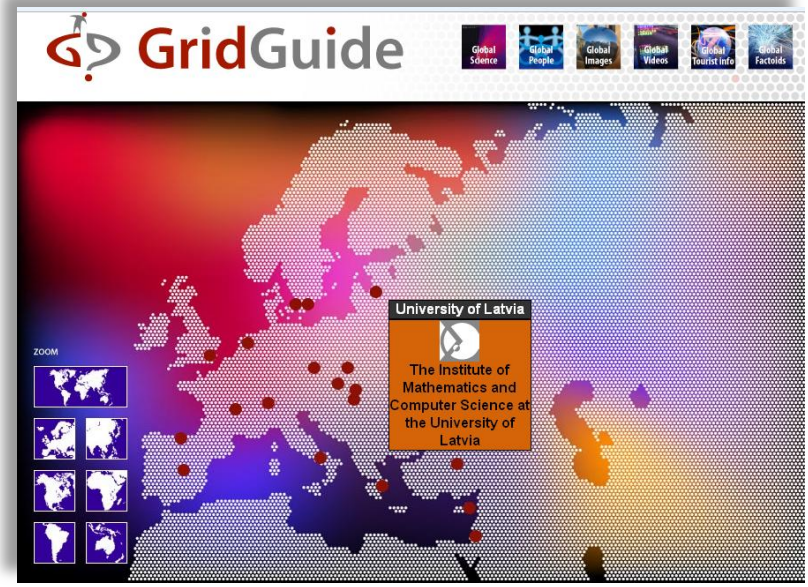
- Policy makers
- Business
- General public
- Research community
- Grid developers
- Delegates
- Scientists
- Policy makers
- Funding agencies
- Journalists



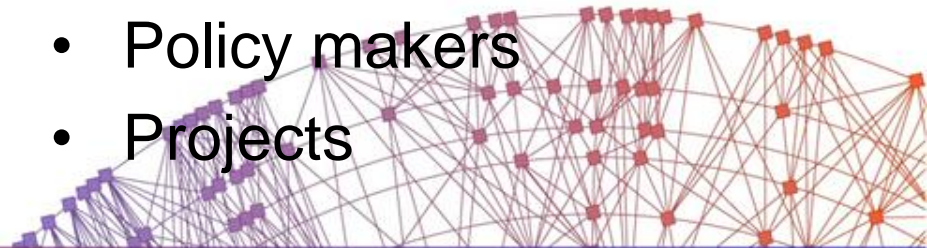
Reaching the audiences



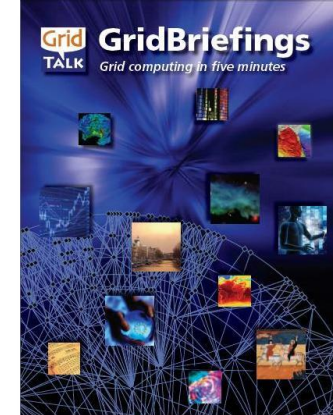
- General public
- Students
- Educators
- Projects



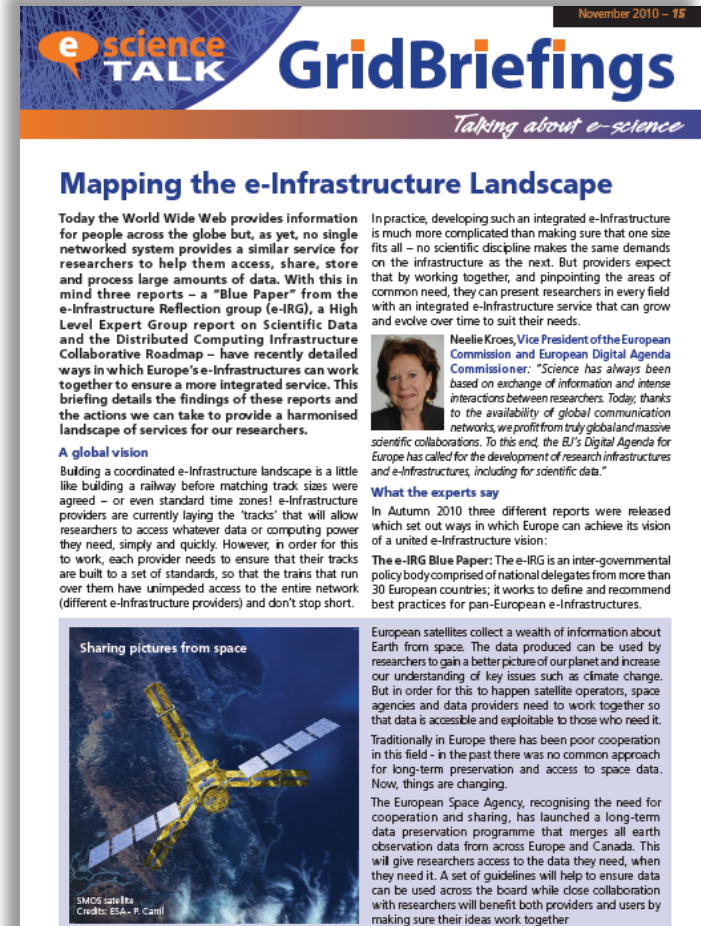
- General public
- Research community
- Policy makers
- Projects



- Reporting targeted at policy makers in government and businesses
- Expand the audience and distribution lists for these outside Europe
- Assess the impact of long running products and explore options for sustainability
- Attend events in order to influence policy makers and distribute GridBriefings
- Lead the e-concertation meetings in the e-Infrastructure area, maximising media impact



- Aimed at **policy makers** in governments, parliaments, science and business, plus scientists and public
- Four page GridBriefings:
 - Grids in business
 - What is a grid
 - European Grid Initiative
 - Grids and clouds
 - Women in ICT etc
- Innovative means of engaging policy makers
- <http://www.e-science.org/briefings.php>



November 2010 - 15

e science TALK **GridBriefings**
Talking about e-science

Mapping the e-Infrastructure Landscape

Today the World Wide Web provides information for people across the globe but, as yet, no single networked system provides a similar service for researchers to help them access, share, store and process large amounts of data. With this in mind three reports – a “Blue Paper” from the e-Infrastructure Reflection group (e-IRG), a High Level Expert Group report on Scientific Data and the Distributed Computing Infrastructure Collaborative Roadmap – have recently detailed ways in which Europe’s e-Infrastructures can work together to ensure a more integrated service. This briefing details the findings of these reports and the actions we can take to provide a harmonised landscape of services for our researchers.

In practice, developing such an integrated e-Infrastructure is much more complicated than making sure that one size fits all – no scientific discipline makes the same demands on the infrastructure as the next. But providers expect that by working together, and pinpointing the areas of common need, they can present researchers in every field with an integrated e-Infrastructure service that can grow and evolve over time to suit their needs.

A global vision
Building a coordinated e-Infrastructure landscape is a little like building a railway before matching track sizes were agreed – or even standard time zones! e-Infrastructure providers are currently laying the “tracks” that will allow researchers to access whatever data or computing power they need, simply and quickly. However, in order for this to work, each provider needs to ensure that their tracks are built to a set of standards, so that the trains that run over them have unimpeded access to the entire network (different e-Infrastructure providers) and don’t stop short.

What the experts say
In Autumn 2010 three different reports were released which set out ways in which Europe can achieve its vision of a united e-Infrastructure vision:
The e-IRG Blue Paper: The e-IRG is an inter-governmental policy body comprised of national delegates from more than 30 European countries; it works to define and recommend best practices for pan-European e-Infrastructures.

Sharing pictures from space
European satellites collect a wealth of information about Earth from space. The data produced can be used by researchers to gain a better picture of our planet and increase our understanding of key issues such as climate change. But in order for this to happen satellite operators, space agencies and data providers need to work together so that data is accessible and exploitable to those who need it. Traditionally in Europe there has been poor cooperation in this field – in the past there was no common approach for long-term preservation and access to space data. Now, things are changing.
The European Space Agency, recognising the need for cooperation and sharing, has launched a long-term data preservation programme that merges all earth observation data from across Europe and Canada. This will give researchers access to the data they need, when they need it. A set of guidelines will help to ensure data can be used across the board while close collaboration with researchers will benefit both providers and users by making sure their ideas work together

Neelke Kroes, Vice President of the European Commission and European Digital Agenda Commissioner: “Science has always been based on exchange of information and intense interactions between researchers. Today, thanks to the availability of global communication networks, we profit from truly global and massive scientific collaborations. To this end, the EU’s Digital Agenda for Europe has called for the development of research infrastructures and e-Infrastructures, including for scientific data.”

SMOS satellite
Credit: ESA - P. Canal

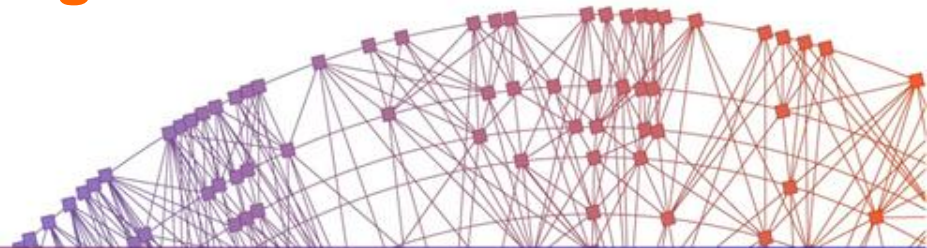


EC Concertation Meetings



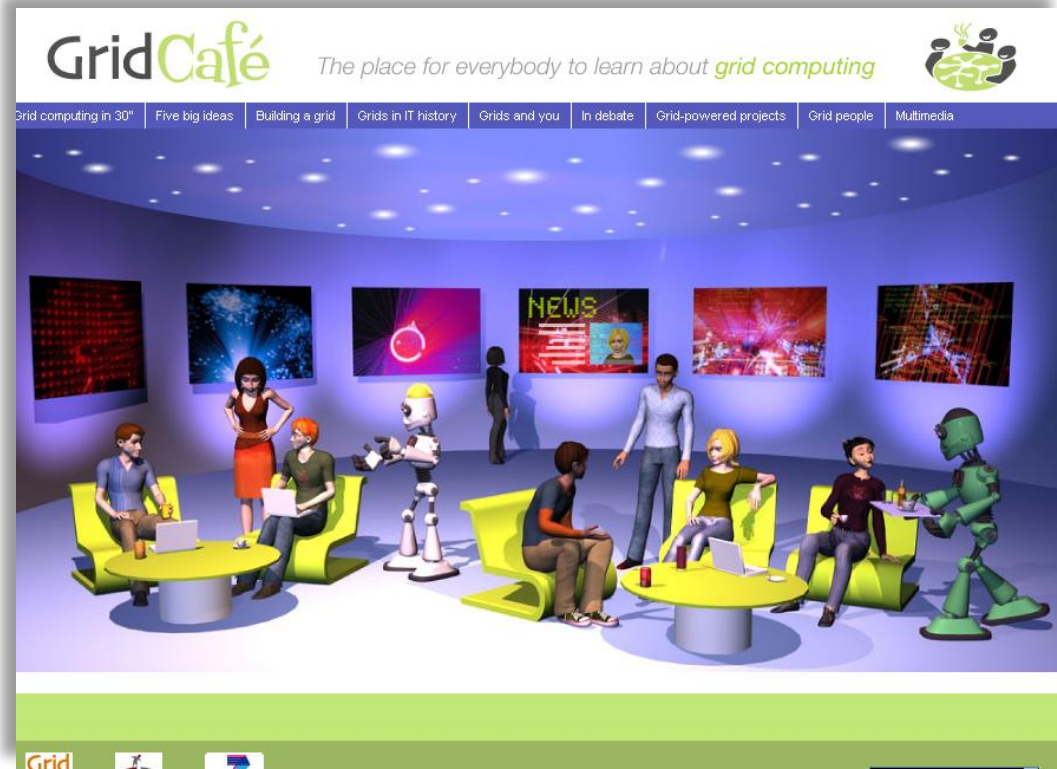
8th e-Infrastructure Concertation Meeting
4-5 Nov 2010, CERN

www.e-science.org/concertation



GridCafé

- Keep the website at the cutting edge, developing new areas and exploring interactive 3D environments
- Award winning website, produced in 2004 to inform the public about grids
- Updated website launched November 2008.
- Translated into several languages, including Spanish and French
- Over 280,000 visits since November 2008



www.gridcafe.org



GridCast

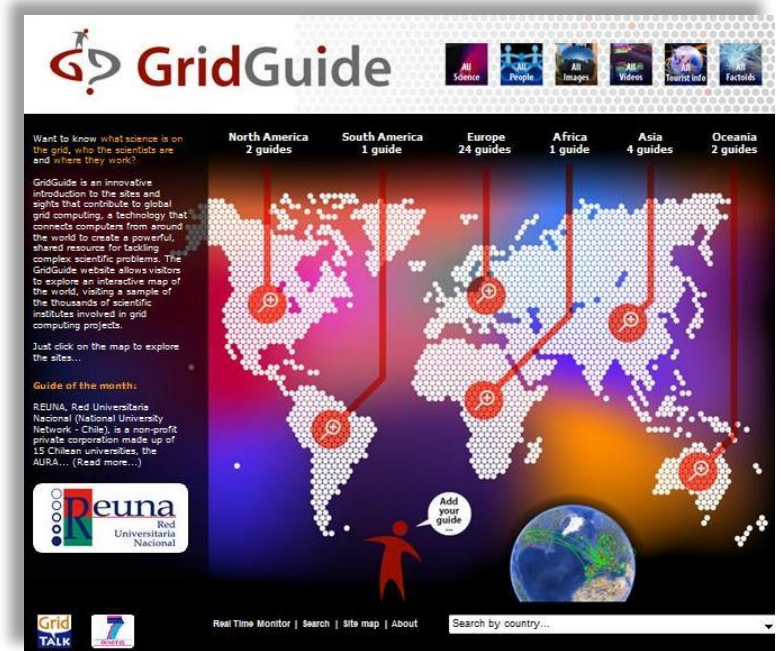
- Update the GridCast website and market it widely to the e-Infrastructure community and beyond
- Grid users and developers blog at grid-related conferences and events
- Recent events include Citizen Cyberscience, ICT2010, EGITF2010, eChallenges
- Videocasts of demos and interviews
- 700 blog posts, 120 podcasts, slideshows, competitions, tours



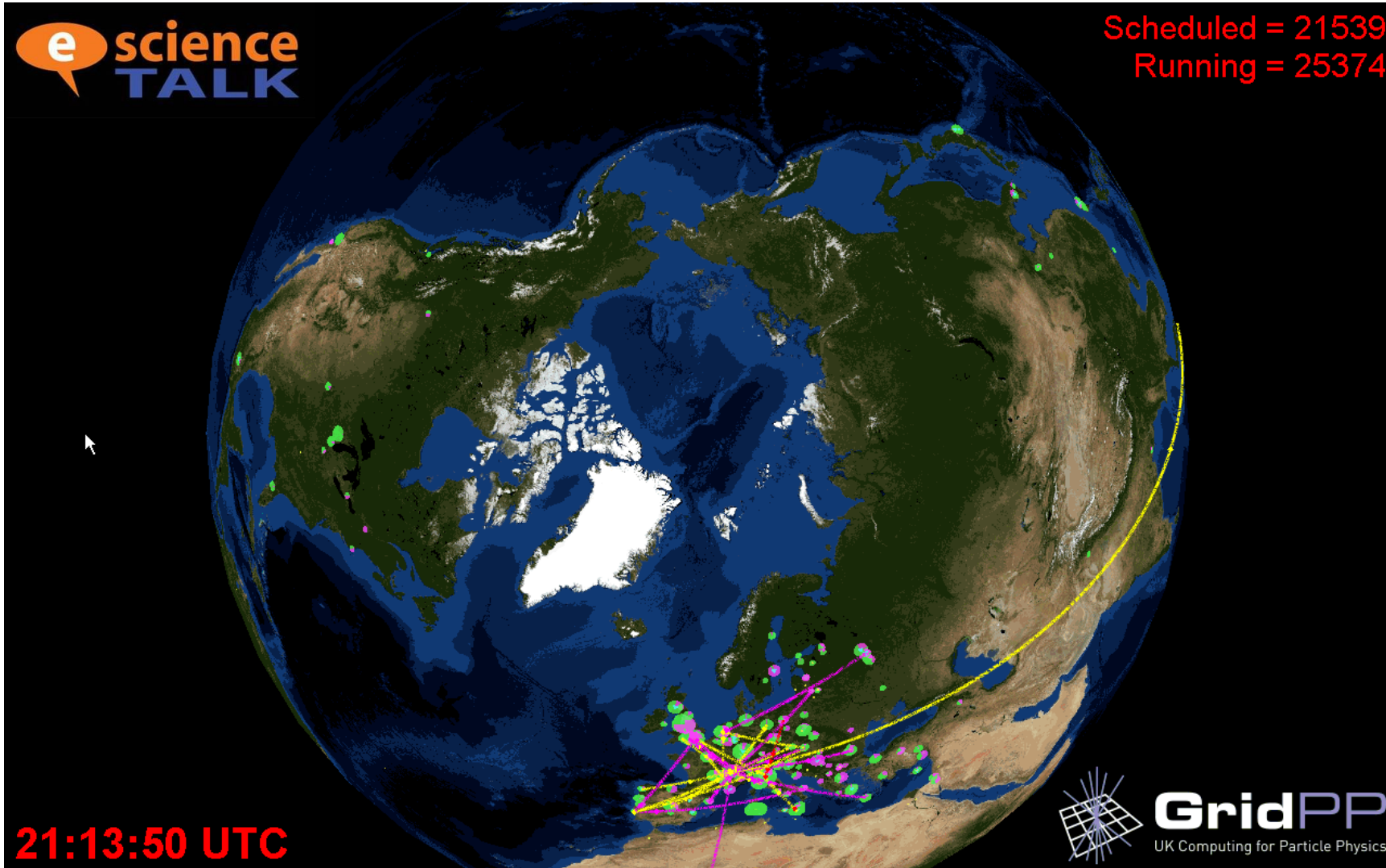
www.gridcast.org
<http://twitter.com/escitalk>

GridGuide

- Expand the GridGuide to cover more sites and develop further interactivity with the Real Time Monitor
- Shows the human face to the grid. Features interviews with scientists, articles from grid sites, news and images.
- Launched March 2009
- Real Time Monitor shows traffic on the grid running in real time
- 34 site guides in Europe, US, South Africa, Asia and South America



Real Time Monitor



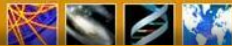
International Science Grid This Week

- Produce a weekly electronic newsletter in partnership with the US Editor about grid and e-Infrastructure projects around the world
- Expand the coverage of iSGTW to report from geographic regions outside Europe and the US, particularly Asia and Latin America
- Expand the coverage to other forms of distributed computing, such as clouds, volunteer grids, high performance computing, networks and data
- Over 6600 subscribers worldwide



International Science Grid This Week

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SPECIAL ISSUE: GRID IN SOUTH AMERICA

Conserving bio-diversity at Peru's CIP

What do the objects at right have in common?

They're all potatoes.

And all their genetic diversity is being conserved, partly because of the grid.

The International Potato Center (known by its Spanish acronym, CIP) seeks to ensure the biodiversity of this staple food crop. The organization also seeks to reduce poverty and achieve food security on a sustained basis in developing countries through scientific research and related activities — not just on the potato, but on other root and tuber crops as well.

In addition, CIP research includes protecting potato seed, studying better methods of pest management, managing mountain agro-ecosystems, and using genetic resources to improve crops, among other activities.

To help it do so, the CIP installed the first cluster/grid high performance computing system in Peru.

[Read more >>](#)

Climatology



Forecasting an El Niño — a half-century ahead

Researchers in South America use the grid to help run long-range climate forecasts, using 3 scenarios: "pessimistic," "normal" & "optimistic."

[Read more >>](#)

Link of the week



BELIEF, live from Brazil

Want to know what's happening at the "Bringing Europe's electronic Infrastructures to Expanding Frontiers-Phase II" conference in São Paulo?

[Read more >>](#)

Latin America and



[Read more >>](#)

Image of the week - Argentinian



It's a bird, it's a plane.

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Feature - Rough waters: fighting modern-day pirates with technology

In the past year, maritime shipping has suffered a resurgence of piracy, at a level that the world has not seen since the early 18th century. Sailors working off the Horn of Africa have been particularly hard hit: last year, records show that 125 ships were attacked and 45 seized.

Real numbers are likely much higher, as piracy is believed to be widely under-reported. One of the world's busiest shipping lanes, about 20,000 ships annually pass through the Gulf of Aden on their way to and from the Suez Canal — carrying a tenth of world trade.

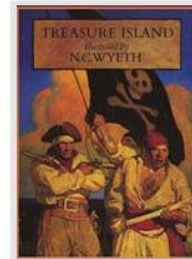
Unlike the popular image of pirates seen in movies and books, **modern pirates** are more likely to wield machine guns than muskets; the crime remains as difficult to fight as it ever did. Piracy is an extremely profitable and attractive occupation in a region characterized by lawlessness, bringing in multi-million dollar ransoms for the release of hostages, ships and cargoes.

Piracy has nearly cut off humanitarian aid deliveries to Somalia and has caused ship insurance rates to skyrocket. Regional economies suffer as ships increasingly choose around the Cape of Good Hope. Given the number of oil tankers in the region, it seems a matter of time before we see an environmental disaster of the Exxon-Valdez scale.

However, just as technology may have helped to promote the fall of the Robert Louis Stevenson-type of pirate, say **historians** (increased size and speed may have helped merchant vessels evade pursuing pirates), there is hope that technological advances help protect cargo, vessels and crews.



Map of reported pirate incidents in the Gulf of Aden, off the Somali coast. (Click for large, high-resolution version.) Image courtesy of UNCTAD. Image on front page courtesy of AFP.



Pirates have a romantic image, partly because of the famous scenes of parlaying by *Treasure Island* — based on the 18th-century "pirate of Arabia" that illustrated one of the earliest

Unosat aids monitoring, tracking and evading

Satellite-based maps produced by using grid technology promising anti-piracy tool. Different versions of maps can tell the location of reported incidents and where they occurred, the identity and location of high-risk vessels, and the geographic areas with the highest density of attacks — accurate to within 100 meters. Some are offered in 3-D imagery.

UNOSAT, a co-operative project between the United Nations Institute for Training and Research (UNITAR) Operational Satellite Applications Program, and the European Organization of High Energy Physics (CERN) delivers satellite images to relief and development organizations. For the past five years, UNOSAT has monitored Somali pirate activity since last June as per UN Security Council resolution.

Typically, computer-intensive UNOSAT raw images

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Feature - Ancient musical instrument comes back to life

An ancient musical instrument can now be heard for the first time in centuries, due to the grid and a computer modelling project.

ASTRA (Ancient Instruments Sound/Timbre Reconstruction Application) has recreated the sounds of the Epigonion, a harp-like musical instrument from ancient Greece.

Most of our knowledge of the Epigonion is based on archaeological finds, historic pictures and ancient literature. It was apparently a wooden stringed instrument with a sound that modern musicians guess sounded like a modern harp or a harpsichord. The ASTRA team members compiled the sounds of four Epigonion instruments to recreate a medieval musical piece, making this the first time that these instruments have been **heard performing together**.

Using archaeological data as a starting point, ASTRA team members created a virtual model of the instrument, and then reproduced the sound the instrument made by simulating its behaviour as a mechanical system.

The physical modelling process required large volumes of computing power, typically about four hours to correctly reproduce a sound lasting only 30 seconds. To bring together sufficient power, the ASTRA project used the **GILDA** and **EUMEDGRID** grid computing infrastructures, which link computing resources across the Mediterranean area up to 2.5 Gbps through the **GÉANT2** and **EUMEDCONNECT** research networks.

"The combination of GÉANT2 and EUMEDCONNECT networks and grid computing infrastructures provide the immense computing power vital for this exciting project," commented Giuseppe La Rocca, co-ordinator for ASTRA, "Previously the amount of computing power needed to recreate ancient music was unobtainable, but the use of high capacity research networks provides us with the ability to turn our research into reality."



Image courtesy of Scott Kim, arXiv



Image courtesy of Yejun Kim, arXiv

Synthetic Epigonion

"The success of the ASTRA project demonstrates how high-speed networking technology can underpin research collaboration across a wide range of subjects and allow the academic world to work together across multiple locations," said Dai Davies, General Manager of the British non-profit organization Delivery of Advanced Network Technology to Europe, or **DANTE**. "This project is delivering a fascinating glimpse into the music of the past for the benefit of the students and researchers of today—we look forward to hearing more music as ASTRA develops."

Search

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- [Feature - Lining up new grid users with goals](#)
- [Feature - EELA-2 conference](#)
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- [Video of the week - Telemjamming over the net](#)

Announcements

- [Call for papers: eChallenges, 27-29 October](#)
- [Call for proposals: PRACE prototype access](#)
- [Call for papers: Journal of Grid Computing special issue on clouds and grids](#)
- [Apply for computational time on TerraGrid by January 15, 2010](#)
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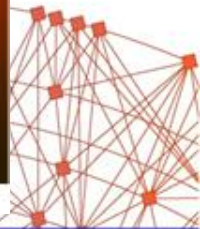
- January 2010**
- 16, [ALENEX10](#)
- 18-21, [Australasian Computer Science Week](#)
- 25-27, [CS 2010](#)

Coming soon...

iSGTW INTERNATIONAL SCIENCE GRID
THIS WEEK

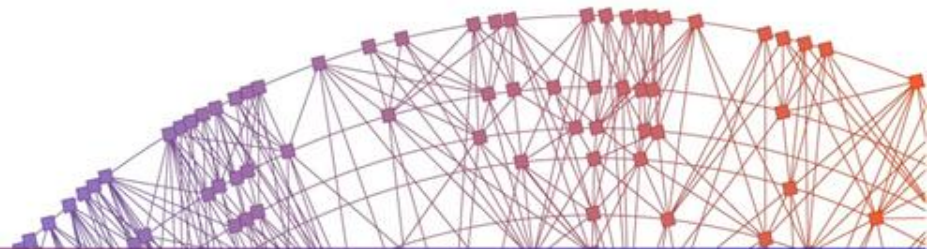
Coming soon...

••• the new, improved iSGTW,
with a new name, and a whole new website:
The Digital Scientist www.thedigitalscientist.org



Management

- Ensure the effective coordination and running of the project, manage activities and monitor progress.
- Handle all reporting on behalf of e-ScienceTalk to the EC services.
- Compile and organise the assessment of the project's results and produce an overall guide to dissemination for EU projects, based on the lessons learnt.
- Assist the EC in the organisation of information days, concertation and brainstorming activities with access to videoconferencing activities.



Coordination Actions and Policy Support

e-ScienceTalk will disseminate e-Infrastructure success stories to policy makers, the scientific community and general public



Provides operational support to e-Infrastructure Reflection Group (policy committee on e-Infrastr)



Coordination of further extension of the European e-Infrastructure to a number of regions in the world

CHAIN

Coordination & Harmonisation of Advanced eINfrastructures CHAIN

European Commission
Information Society and Media



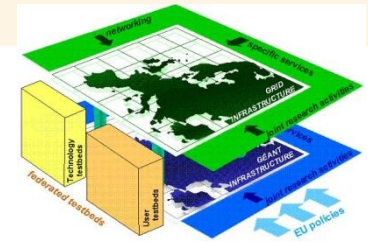
e-infrastructure



Coordination Actions and Policy Support

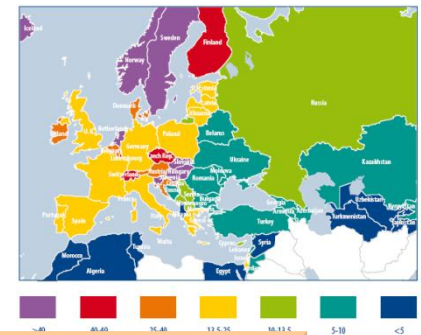


Optimisation and application of self-assessment methodology for e-Infrastructure projects



European
eInfrastructures
Observatory

eNventory establishes European eInfrastructures Observatory to monitor the development and impact of e-infrastructures



Provides a bridge between current e-infrastructures and interoperability requirements of user communities



European Commission
Information Society and Media



Coordination Actions and Policy Support



Support IPv6 deployment in Europe and developing regions and catalyse global IPv6 expertise.



Stimulating development of National Research and Education Networks (NRENs) in Central, Eastern, Southern Europe and Central Asia.



Transatlantic cooperation toward one unique worldwide facility for studies of neurodegenerative diseases.



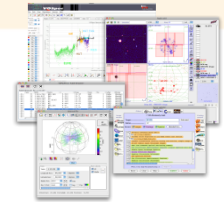
European Commission
Information Society and Media



Coordination Actions and Policy Support



Sharing Euro-VO's concepts with other scientific disciplines with international, European, and national perspectives



INDICATE

Co-ordinate policy and best practice to use e-Infrastructures for digital cultural heritage in Mediterranean countries



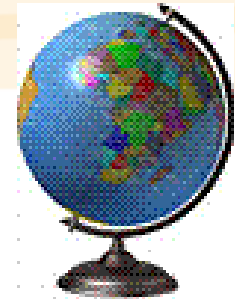
Support development of a sustainable data infrastructure for European Neutron and Photon laboratories



Coordination Actions and Policy Support



Creation of new Desktop Grids for e-Science in ICPC countries and in Europe



gSLM

Ensuring high-level Service Delivery & Service Level Management in Grid Infrastructures



Support action to build a European vision and roadmap for extreme performance computing



