

Open e-IRG Workshop

14-15 October, 2009, Uppsala

Around 60 participants attended the open e-IRG Workshop in Uppsala, on 14-15 October 2009. This two-day event was organised by SNIC, the Swedish National Infrastructure for Computing, under the auspices of the Swedish Presidency of the European Union, and was held in the city's famous Evolutionary Biology Centre. The workshop focused on three main issues, in line with the Swedish agenda and priorities in the area of e-Infrastructures: accountability and prioritization, user involvement, and transparent access.

Wednesday, 14 October

After a warm welcome of the participants by **Sverker Holgrem**, director of SNIC and e-IRG delegate for Sweden, and by Prof. **Ingemar Kaj**, dean of the department of mathematics and computer science of the University of Uppsala, **Leif Laaksonen** (e-IRG chair) was pleased to announce that the work of the e-IRG was gaining more and more visibility, and that the pioneering reflection initiated by e-IRG on many aspects of the e-Infrastructure was now bearing fruit. There is an increasing demand for e-IRG's input and contribution in many key areas (as an example, the emergence of the new e-Infrastructure user communities will unavoidably force them to tackle issues such as authentication and authorisation policies, on which e-IRG has worked extensively). Laaksonen looked very positively to the development of the collaboration between the e-IRG and ESFRI, and also between the e-IRG and the European e-Infrastructure Forum (EEF) which offers new possibilities to reach the e-Infrastructure end-users.

Session 1: Accountability and Prioritization

The first session of the workshop focused on accountability and prioritization. As e-Infrastructures are used in an increasing number of fields, it has become essential to provide mechanisms to measure and compare the scientific impact of different types of e-Infrastructures.

Lars Börjesson (Swedish Research Council and ESFRI Executive Board) presented the research infrastructure landscape in Europe, and the European Strategy Forum on Research Infrastructures (ESFRI) roadmap. Pan-European research infrastructures (RIs) reduce fragmentation of research, and thus are a backbone of the European Research Area (ERA). The role of ESFRI, which was set up in 2002 by the European Council of Ministers, is to support a coherent and strategy-led approach to policy making on RIs in Europe, and to facilitate multilateral initiatives leading to a better use and development of RIs. The ESFRI Roadmap has identified new pan European RIs or major upgrades that are needed, and has selected 44 projects across all scientific disciplines on the basis of their scientific quality and technical feasibility. ESFRI also decided to ask the e-IRG to assist in developing systematic e-Infrastructures approaches for all pan-European RIs. Asked about the future ESFRI priorities, Börjesson mentioned the implementation of the new RIs, the evaluation of the existing RIs, and the governance of the ERA. Börjesson was also supportive of the European Research Infrastructure Consortium (ERIC), the new legal framework that has been prepared by ESFRI and the European Commission (EC) to support RIs.

Jacko Koster (UNINETT, Sigma) addressed in the second presentation of the session the issue of peer-review in e-Infrastructures. After providing a definition of this process, presenting its justification for scientific research, and the different types of peer-review that can be implemented, Koster looked at peer-review mechanisms for research infrastructures, and presented some concrete examples. The guiding principles for peer-review in research infrastructures are the scientific quality of the proposed project, the proven need to use the infrastructure, and the adequacy of the project to use the infrastructure. The main aim of this process is to maximise the impact of the major investments made into the infrastructure: expensive infrastructures must be used by projects that have the highest scientific and economic potential. In many European countries, peer-review is used to determine access to national HPC resources. Koster described the peer-review process to be implemented in PRACE, in scientific data infrastructures, and at national level in Switzerland and Denmark. In addition to illustrating the wide variety of approaches already in use, he also highlighted the challenges for implementing this kind of process in distributed computing infrastructures consisting of a very wide range of different resource types.

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Thomas Schaff (LMU Munich) addressed the field of e-Infrastructures from a management point of view, focusing on requirements and future challenges. He presented the main objectives and key concepts in “traditional” IT service management, and gave an overview of management frameworks and standards for process-oriented infrastructure management, such as the IT Infrastructure Library (ITIL), the Microsoft Operations Framework (MOF), ISO/IEC 20000, the Enhanced Telecom Operation Map (eTOM). Schaff outlined what could be learned from these frameworks for the management of e-Infrastructures, and presented the Service Delivery Problem in grids as one important, yet unsolved issue in e-Infrastructures management. As a concrete example of the challenge, in the traditional IT infrastructure domain about 80% of service outages are related to “*people and process issues*”, not to the reliability of the soft- or hardware solutions. Building cross-organisational e-Infrastructures makes it even more challenging to device service level management processes that work in absence of central authorities or hierarchic service chains.

The South-East European Research Area for e-Infrastructures (SEERA-EI) project was then presented by **Xenofon Tsilibaris** (GRNET). This FP7 project started in April 2009 and aims to develop and strengthen the coordination and cooperation of national e-Infrastructures programmes in the region of south west Europe. It seeks to engage national key programme owners in the field of research infrastructures in common dialogue and planning, and to establish a sustainable communication platform, and joint activities, to build the common regional research infrastructures vision, strategy and action plan. In the discussion it was noted that it is important to start developing a common approach between projects trying to highlight the importance of the e-Infrastructure at policy level.

The first session ended with a panel discussion to which **J. Koster, D. Vandromme, T. Schaaf, and X. Tsilibaris** were invited to participate. Various issues were addressed during this discussion, such as the visibility of the e-Infrastructures to their users, the different funding and costs models implemented in European countries to access these infrastructures, the involvement of the users in the governance of the e-Infrastructure, etc. Peer-review procedures were again discussed, together with the criteria to use in order to select the projects, processes and funding policies that apply to usage of the infrastructure. As a general comment it was noted that applying any model blindly would not produce optimal results.

Thursday, 15 October

Session 2: User Involvement

The second session of this open e-IRG workshop focused on user involvement. It is of highest priority that the e-Infrastructure services provided are adapted to the needs of the researchers using e-Science tools. This calls for effective, user-driven processes when building e-Infrastructures, and strong user involvement when operating them.

Kyriakos Baxevanidis (European Commission) began this second series of talks by providing an overview of the world’s major trends, tensions and challenges for the next few years, calling for a proactive European research. “Bolder”, “Better”, and “Bigger” are the three words characterizing the Swedish proposed orientations for future European R&D. Baxevanidis recalled the objectives set by the Lund Declaration in July 2009 in the area of research infrastructures, and presented a vision of how science will be in 2030, and how this should affect the role of e-Infrastructures. Baxevanidis then detailed the EU calls that have been implemented since 2008, and presented the new data infrastructure projects supported by the EC. According to the EC, grand challenges are calling for new orientations of European research policies to sustain the present living standards and world position. Research infrastructures play a central role in supporting the knowledge triangle (research-education-innovation). The transition to e-Science (e-Infrastructure enabled) is expected to accelerate over the next years, and shall trigger a scientific renaissance.

Juni Palmgren (ESFRI e-Infrastructure working group and the Swedish Research Council) presented the e-Infrastructure Transverse Working Group (e-IWG) dealing with the e-Infrastructure aspect of proposals put forward for the update of the ESFRI Roadmap, and the collaboration activities between this group and the e-IRG. As an example of the challenges related to the e-Infrastructure aspects of the projects, she noted that the e-IWG reviewed 26 preparatory phase project proposals, of which only 4 were deemed mature with regard to e-Infrastructure aspects.

The ESFRI project EISCAT-3d was then presented by **Ian McCrea**, (Rutherford Appleton Laboratory). The main goal of this project is to build Europe’s next generation radar system for ionospheric and atmospheric research in northern Europe. Data issues related to this project were addressed by McCrea, as well as the e-Infrastructures needs by ESFRI projects. The complexity and scale of the data management in the project is very challenging, which has lead to an approach based on multi-level archival of the data.

Hermann Lederer (RZG, DEISA) further examined the question of user involvement by presenting the collaboration of leading European e-Infrastructures in user requirements. Lederer presented the European e-Infrastructure Forum (EEF) that was created in 2008, gathering major projects such as EGEE, EGI, DEISA, PRACE, Terena and GEANT, to discuss principles and best practices to create synergies for distributed infrastructures. The forum focuses on the needs of the user communities that require services which can only be achieved by a strong collaboration between the various infrastructures. One of the main goals of this initiative is to create a platform for interaction of the large infrastructures as a whole with multi-national user communities that are interested in making use of the infrastructures.

A panel discussion on user needs and involvement followed, with **H. Lederer, S. Girona, I. McCrea, and K. Baxevanidis** answering the questions of the audience. The main issue discussed was how to ensure a good and sustainable relationship between the infrastructures and the user communities. “Collaboration is the magic word” Lederer said, pointing at the importance of building links within e-Infrastructures, projects, and among the various key players in the field. According to McCrea, the collaboration between scientists and the e-Infrastructure communities should be developed. As scientists are not always experts on e-Infrastructures, it is crucial to facilitate their involvement, for example through interaction and training programmes. The initial step to start this process might only happen if the e-Infrastructure providers go and participate in the conferences and workshops of the user communities. According to Baxevanidis, the focus on user needs and representation is now clearly acknowledged, and shall be implemented in all the new projects supported by the EC, including PRACE and EGI. This will also include reviewing the user satisfaction, which eventually will lead to benchmarking the NGIs and comparing them to each other.

Session 3: Transparent access

The third main theme of the workshop focused on transparent access within and between e-Infrastructures.

The session began with a presentation of the Future Internet Research and Experimentation (FIRE) initiative, monitored by the European Commission and part of the Future Internet Research Strategy of the EU ICT Programme. **Max Lemke** (European Commission) presented this important initiative. Future Internet is now recognised as a priority at European and international levels, and a comprehensive set of initiatives and tools are in place to pool the necessary resources. According to Lemke, Europe can and should take the lead in Future Internet developments. Experimentation and testing has a crucial role in those developments, and is at the heart of the FIRE experimental facility which aims to support research for the Future Internet at different stages of the R&D cycle based on the design principle of “open coordinated federation of testbeds”.

Leif Johansson (NORDUnet) gave a presentation on authentication and authorization focusing on “digital identity”, the various types of identities, as well as the different business models for this costly tool (around 40-60 €/identity /year, for identity vetting, credential resets, and helpdesk). Johansson emphasised the need and value of collaboration in this field, and presented some current projects in the field.

Michael Gronager (Nordic DataGrid Facility, NDGF) closed this series of talks on transparent access by presenting some examples of coordination activities in the Nordic countries. Gronager described the different problems related to the administration, authentication and authorisation of user access, and then presented some common initiatives implemented in the Nordic countries.