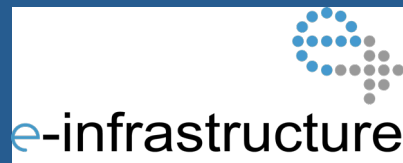


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## Helix Nebula Workshop on Interoperability among e-Infrastructures and Commercial Clouds

19 September 2012 (11-17:30)  
Room Leo, Clarion Conference Center  
Prague, Czech Republic

Brochure: <http://go.egi.eu/hnws1-brochure>

Online agenda: <http://go.egi.eu/hnws1>

Helix Nebula: <http://www.helix-nebula.eu>

EGI.eu: <http://www.egi.eu>

Twitter hashtag: #hnws1

Agenda V.8



# Overview

The EC-funded Helix Nebula project is a step towards a European cloud-based scientific e-Infrastructure composed of resources and services from commercial and publicly owned providers. This workshop is the first of three to bring together the appropriate technology and policy representatives to address the integration and interoperation of their respective infrastructures.

The first session focuses on requirements for **technical interoperability** among publicly owned e-Infrastructures and commercial cloud providers. The session kicks off with an initial list of current and potential use cases for using integrated clouds infrastructures. Then, describes the technical architecture of the EGI Federated Cloud and Helix Nebula. The expected outcome of this session is an initial list of meaningful use cases, a set of agreed technical requirements and the identification of working groups that should be started in order to analyse them towards the definition of a roadmap for their implementations [<http://go.egi.eu/hnws1-p1>].

The second session dives into the topic of **networking services** covering coordination with GEANT and the NRENs to ensure network connectivity and policy compliance for the data-intensive use cases and presentations on commercial networking solutions from Helix Nebula suppliers. As the evaluation criteria and key performance metrics for the Helix Nebula cloud offering will be defined based on the specific goals of each flagship application, networking performance will also be a key aspect. It will also allow EGI to fine-tune with the agenda of GEANT/NRENs in terms of next steps for activities related to cloud services and to discuss common issues in this area [<http://go.egi.eu/hnws1-p2>].

The final session of the workshop looks at **potential business** for integrated e-infrastructures with commercial clouds and the **legal and policy issues** around scientific data in publicly owned and private infrastructures. In addition, preliminary results from a study on the cost of e-Infrastructures will be presented. The expected outcome of this session includes a preliminary list of usage models for hybrid clouds and a possible identification of cost models as well as of scenarios to operate cloud services in current and changing regulatory environment. The workshop will close with an overall summary including agreements, open issues and actions [<http://go.egi.eu/hnws1-p3>].

# Program

<http://go.egi.eu/hnws1>

## Technical Interoperability (convener: S. Andreozzi)

- 11:00-11:10 Introduction and Goals (S. Andreozzi, EGI.eu)
- 11:10-11:30 Use Cases for using integrated clouds infrastructures (S. Andreozzi, EGI.eu)
- 11:30-11:50 EGI FedCloud Architecture (M. Turilli, OeRC)
- 11:50-12:10 The Helix Nebula Technical Architecture (M.E. Begin, SixSq; Charles Loomis, CNRS/LAL)
- 12:10-12:30 Discussion on the technical interoperability requirements (Moderator: S. Andreozzi)

## Networking Connectivity (convener: C. Asero)

- 14:00-14:05 Introduction and Goals (C. Asero, EGI.eu)
- 14:05-14:25 Connecting commercial cloud providers with NRENs/GEANT (N. Hersoug, DANTE)
- 14:25-14:45 Commercial Networking Solutions - Helix Nebula Supplier (U. Schäfer, Alcatel-Lucent)
- 14:45-15:05 Network Connectivity - Scientific Clouds (J. de la Mar, T-Systems)
- 15:05-15:30 Discussion (Moderator: C. Asero)

## Business Models and Legal Aspects (convener: S. Andreozzi)

- 16:00-16:05 Introduction and Goals (S. Andreozzi, EGI.eu)
- 16:05-16:25 Business models for integrated e-infrastructures with commercial clouds (J. Doll, SAP; M. Symonds, Atos)
- 16:25-16:45 Scientific data in publicly-owned/private infrastructures: Legal and Policies Issues (E. Pelino & P. Balboni, ICT Legal Consulting)
- 16:45-17:05 Cost of e-Infrastructures (F. Karagiannis, AUEB)
- 17:05-17:30 Discussion / Workshop Wrap-up / Action Summary (Moderator: S. Andreozzi)

# Abstracts & Biographies

## **Use cases for using integrated clouds infrastructures**

E-Infrastructures for science have been built to support scientific collaborations and enable digital research to tackle modern grand challenges. On the other side, the commoditisation of virtualisation technologies and the emerging of cloud computing from commercial providers is becoming attractive to some scientific domains or groups. This presentation introduces a number of initial use cases that would benefit from the integration of commercial and publicly-funded infrastructure. The goal is to stimulate the discussion on technical, legal, policy and business aspects.

**Sergio Andreozzi** has been involved in grid computing since 2002, when he joined INFN to work on interoperability aspects. Since 2007, he has co-chaired the GLUE Working Group in OGF and contributed to several standard activities. In June 2010, he joined EGI.eu as Strategy and Policy Manager to steer the policy development process and support strategic planning of the European Grid Infrastructure. Sergio holds a PhD in Computer Science from the University of Bologna and a MSc in Computer Science Engineering from the University of Pisa.

**Sy Holsinger** studied Business Communications in the U.S. focusing on project and financial management, business development, marketing and communication messaging. He has been involved in R&D projects covering both management and support roles such as leading the commercial activities in the series of EGEE projects. His previous experiences in both the U.S. Air Force and Teaching have molded a set of both work ethic and communication skills.

## **EGI FedCloud Architecture.**

*To be added*

**Matteo Turilli**

*To be added*

## **The Helix Nebula Technical Architecture**

*To be added*

**Marc-Elian Begin**

*To be added*

## **Connecting commercial cloud providers with NRENs/GEANT**

*To be added*

**Niels Hersoug** joined DANTE as General Manager in 2011. A Certified Project Manager and Master of Science and Business Administration, Niels is highly experienced in management and technology. Prior to DANTE, Niels worked in a number of senior management roles in a range of technology-driven companies

## **Commercial Networking Solutions - Helix Nebula Supplier**

The limiting factor in the adoption and success of Cloud Computing today is moving from IT towards the WAN infrastructure, where Internet – even if it is high speed – is not any more good enough. It is about guaranteed transfer rates, latency at the speed of light – all together without losing any bit of transferred data. This and inherent security of all data while being in WAN transit can be facilitated by commercial networking solutions.

**Udo Schäfer** joined Alcatel-Lucent in February 1992. He studied computer science and received his degree from the University of Stuttgart. In different roles within the company he worked on networking solutions as the German research & education network G-Win built with SDH in 2000, the WDM based Géant2 built in 2005 and the IP based ESnet now in 2012. Today he leads the customer marketing team in Alcatel-Lucent's Global Account organization focusing on the Deutsche Telekom Group.

## **Network Connectivity - Scientific Clouds**

*To be added*

**Jurry de la Mar**

*To be added*

# Abstracts & Biographies

## **Business models for integrated e-infrastructures with commercial clouds**

Insights to business models i.e. definition, analysis, design and evaluation as foreseen by Work Package 7 of the Helix Nebula project. First the concept of business models is explained on the basis of the Osterwalder model. Secondly, steps to analyze and understand business models are explained. Thirdly, methods to design innovative business models and to evaluate a set of potential models are presented. In the end a few insights on the expected business case calculations are shown. Further, the slides highlight how Work Package 6 could collaborate to address the business case of publicly-funded infrastructures integrated with commercial providers.

**Julia Doll** holds a Master of Science majoring in Management Information Systems from the University of Mannheim and a Master of Business majoring in Marketing from the University of Queensland, Australia. Julia has been working at SAP since 2007 in several areas comprising: Product Management, Business Development and Business Model Innovation Research. Since 2012 she joined SAP Switzerland as Project Lead for Business Model Innovation. She has coached several projects regarding analysis, design and evaluation of business models at SAP. Her current research focuses on business model elements and their correlation.

## **Scientific data in publicly-owned/private infrastructures: Legal and Policies Issues**

*To be added*

**Enrico Pelino**, attorney at the bar of Bologna since 2003, is specialised in data protection and IT law, which have been his core interests all over his career as a professional. A deep supporter of the need of thoroughly understanding the technical IT issues in order to address them in a legal way, he has worked closely with computer science experts, e.g. concerning e-Health and distributed computer systems. Recently he has dealt with cloud computing-tied problems, which are also the subject of a legal study written together with his colleagues Balboni, Bolognini and Fulco. Besides involving himself in IT-related legal issues, he actively practices private and commercial litigation and contracts, ranging from a variety of issues, his clients being enterprises for the most part. He is also a consultant in the same areas. Graduated at Parma University with honours, after a longstanding collaboration with a cross-disciplinary centre of research (Cirsfid) at the University of Bologna, in 2005 he got a Ph.D. in IT law from that University. He is and has been speaker at legal venues, in Italy and abroad, and taught in master classes and regular University courses.

**Cost of e-Infrastructures.** The presentation summarises the current findings of the e-FISCAL project about evaluating the cost of e-Infrastructures. These findings are based on questionnaire data received from a mix of computing centres belonging to EGI, PRACE or purely national e-Infrastructures. In addition, a survey of the state of the art in financial analysis of ICT infrastructures will be presented, as well as some initial results of the benchmarking efforts of the project that compare commercial cloud offerings with research e-Infrastructures. The presentation will exploit the workshop as an opportunity to get feedback from the participants, especially on the financial front and the related business models.

**Fotis Karayannis** has 18 years of experience in the ICT research, focusing mainly in Research Networking and Computing e-Infrastructures. He received his PhD in 1998 in the fields of Integrated Communications and Management of Broadband Networks from NTUA, Greece. He participated in multiple European research projects working for commercial or research entities such as now OTEPlus, GRNET, CERN, CESNET, Microsoft Research Cambridge and Microsoft Innovation Center Greece, ATHENA Research Center, and Athens University of Economics and Business. He has worked for major e-Infrastructure projects such as the GEANT, EGEE series, EGI Design Study, PRACE, and the e-IRG support projects.