HEALTHGRID
2009
CONFERENCE
BERLIN

Conference Guide

7th Annual HealthGrid
International Conference

29 June – 1 July, 2009
Berlin, Germany

Conference Center

dbb forum berlin
Friedrichstraße 169/170
D-10117 Berlin, Germany
Tel.: +49 30 40814500
www.dbb-forum-berlin.de

How to get there

From the airports:

- Flughafen Tegel
  10 km, 20 min by bus ‚TXL'
- Flughafen Schönefeld
  22 km, 40 min by regional railway line / S-Bahn

From the ICE-train stations:

- Hauptbahnhof
  3 km, 10 min, any S-Bahn direction
  ‚Friedrichstraße'
- Ostbahnhof 4 km, approx. 10 min, any S-Bahn direction ;Friedrichstraße'

Via public transportation:

- S-Bahn : S1, S2, S25, S5, S7, S75, S9, regional railway line, Station ‚Friedrichstraße'
- Underground: U2 Station ‚Stadtmitte' or U6 Station ‚Französische Straße'
- Bus:
  TXL Stop ‚Unter den Linden / Friedrichstraße'
  100 Stop ‚Unter den Linden / Friedrichstraße'
  200 Stop ‚Unter den Linden / Friedrichstraße'
  147 Stop ‚Französische Straße'

Parking:

Public parking is available in the Behrenstraße across from the Komische Oper and in the public parking garage ‚Friedrichstadtpassagen', entrance via Jäger- or Taubenstraße.

Organizers' Hotline

During the conference you can reach our on-site team via +49 173 6141664
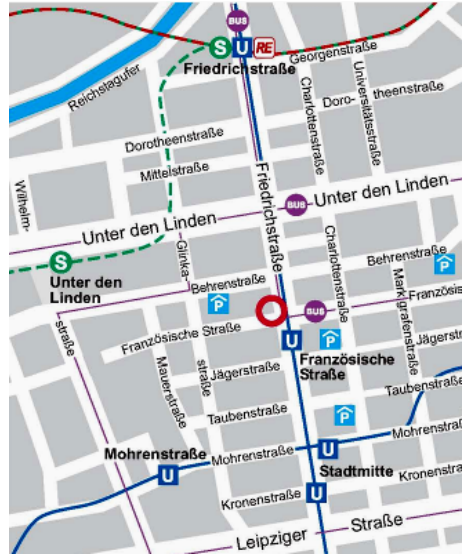
The HealthGrid 2009 organizers are thankful to their partners and sponsors who supported the organization of this event.

The Conference at a Glance

SUNDAY

06:00 PM | | | 08:00 PM	Registration, incl. handover of conference bags and badges at Melia Hotel (Friedrichstr. 103, 10117 Berlin) near the public transport station "S/U Friedrichstraße" (www.melia.berlin)

MONDAY JUNE 29, 2009

Time			
08:00 AM 08:15 AM 08:30 AM 08:45 AM 09:00 AM 09:15 AM	Registration		
09:30 AM 09:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM 11:30 AM 11:45 AM 12:00 PM 12:15 PM 12:30 PM 12:45 PM	Workshop 1 **Life Sciences Specific Support Center** Room "Friedrichshain" incl. Coffee Break	Workshop 2 **1st RADICAL Expert Workshop** Room "Kreuzberg" incl. Coffee Break	Workshop 3 (invitees only) **TMF - Grid Forum** Room "Köpenick" incl. Coffee Break
01:00 PM 01:15 PM 01:30 PM 01:45 PM	Lunch		
02:00 PM	Welcome Address		
02:15 PM 02:30 PM 02:45 PM 03:00 PM	Demo 1 **Health-e-Child**		
03:15 PM 03:30 PM 03:45 PM 04:00 PM	Demo 2 **ACGT**		
04:15 PM 04:30 PM	Coffee Break		
04:45 PM 05:00 PM 05:15 PM 05:30 PM	Demo 3 **@neurIST**		
05:45 PM 06:00 PM 06:15 PM 06:30 PM	Demo 4 **D-GRiD / MediGRID**		
06:45 PM 07:00 PM | |	Welcome Reception		

Session	Item	Time
	Welcome Address + Introduction	09:00 AM
		09:15 AM
	Key Note: Carole Goble	09:30 AM
	University of Manchester	09:45 AM
APPLICATIONS	Wolf: DockFlow – a prototypic PharmaGrid for Virtual Screening…	10:00 AM
	Zhou: Running Medical Image Analysis on GridFactory Desktop Grid	10:15 AM
	Krefting: Grid computing for detailed hemodynamics-simulation-based planning of…	10:30 AM
	Maheshwari: Towards Production-level Cardiac Image Analysis with Grids	10:45 AM
	Coffee Break	11:00 AM
		11:15 AM
	Zhou: An Easy Setup for Parallel Medical Image Processing: Using Taverna and ARC	11:30 AM
	Assel: A Collaborative Environment Allowing Clinical Investigations on…	11:45 AM
	Olabarriaga: Crossing HealthGrids Borders: Early Results in Medical Imaging	12:00 PM
	Krefting: Enabling of Grid based Diffusion Tensor Imaging using…	12:15 PM
	Canisius: Application of Grid technology for automated detection of sleep disordered	12:30 PM
		12:45 PM
	Lunch	01:00 PM
		01:15 PM
		01:30 PM
	Key Note: Joël Bacquet	01:45 PM
	European Commission, Brussels	02:00 PM
CORE TECHNOLOGIES & DATA INTEGRATION	Rüping: Metadata Extraction using Text Mining	02:15 PM
	Knoch: The GLOBE 3D Genome Platform	02:30 PM
	Blanquer: Using Grid-Enabled Distributed Metadata Database to Index DICOM-SR	02:45 PM
	Corradi: XTENS – an eXTensible Environment for NeuroScience	03:00 PM
	Buchan: Preserving consent-for-consent with feasibility-assessment and recruitment…	03:15 PM
	Coffee Break	03:30 PM
		03:45 PM
	Key Note: Carl Kesselman	04:00 PM
	University of Southern California	04:15 PM
		04:30 PM
	Global Public Health Grid	04:45 PM
	Mary Kratz, Joan Dzenowagis, Muzna Mirza		
	Guided Walk to Dinner Location	07:00 PM
	Dinner Event: "Sandsation"	08:00 PM

Session	Item	Time
	Key Note: Jonathan Silverstein	09:00 AM
	University of Chicago	09:15 AM
ACCESSIBILITY	Doherty: Semantic Security: Specification and Enforcement of Semantic Policies…	09:30 AM
	Shahid: A Robust Framework for Rapid Deployment of a Virtual Screening Laboratory	09:45 AM
	Weisbecker: Service Engineering for Grid Services in Medicine and Life Science	10:00 AM
	Hoyle: Shared Genomics: High Performance Computing for distributed insights…	10:15 AM
	Coffee Break	10:30 AM
		10:45 AM
	Rahmouni: Ontology-Based Privacy Compliance on European Healthgrid Domains	11:00 AM
	Olive: Variance Analysis as Practice-Based Evidence	11:15 AM
	Key Note: Peter Coveney	11:30 AM
	University College London	11:45 AM
POSTER SESSION	Presentation of posters selected during the Call for Papers	12:00 PM
		12:15 PM
		12:30 PM
		12:45 PM
	Lunch	01:00 PM
		01:15 PM
		01:30 PM
ECONOMICS & FUTURE	Dobrev: Economic Performance and Sustainability of HealthGrids…	01:45 PM
	Scholz: Business Aspects and Sustainability for Healthgrids – an Expert Survey	02:00 PM
	Dickmann: Perspectives of MediGRID	02:15 PM
	HealthGrid and	02:30 PM
	Creative Commons - a Discussion	02:45 PM
	Moderation: Tony Solomonides	03:00 PM
	Best Paper Award Ceremony / Closing Remarks / Outlook on 8th HG Conf.	03:15 PM
	(HealthGrid Association: Board of Directors Meeting)	03:30 PM
		03:45 PM
	HealthGrid Association Meeting (members only)	04:00 PM
		05:30 PM

Welcoming Remarks

Martin Hofmann, Dr. rer. nat.

Head of the Department of Bioinformatics
Fraunhofer Institute for Algorithms and Scientific Computing (SCAI)
http://www.scai.fraunhofer.de/bio.html?L=1

and

Professor for Applied Life Science Informatics
Bonn-Aachen International Center for Information Technology (B-IT)
www.b-it-center.de

Welcome to Berlin and welcome to HealthGrid 2009! As the conference chair I am pleased to welcome scientists from all over the world to this year's HealthGrid conference which takes place in Berlin, 20 years after the breakdown of the Berlin Wall that separated not only Germany but entire Europe. The breakdown of the Berlin Wall actually teaches us one important fact: borders (even iron fences) cannot stop the progress of a development when its time has come.

Grid computing is essentially based on a paradigm that goes beyond borders, irrespective of whether they appear as physical, informational, legal or political entities. But even though we are all belonging to one scientific community and a substantial fraction of our work is done in international collaborations (e.g. EU-projects), we are still struggling with all sorts of borders in our day-to-day work as scientists.

As a matter of fact, borders still exist between the disciplines that contribute to HealthGrids. Medical informatics and bioinformatics have not yet really joined forces and there are still significant differences in the ways how we approach scientific problems.

The eScience paradigm, namely collaborative research in a service-oriented IT environment, requires that we cross the borders of disciplines and start listening to each other carefully before we actually start working on large HealthGrid infrastructures. My personal experience from the EU project @neurIST is that it took me two years until I understood what my respected colleague Rod Hose from the University of Sheffield was doing in his work package. He is a physicist who somehow made his way into multiphysics simulation with medical relevance; I am a biologist who made his way into data- and knowledge-driven IT approaches, which are strongly influenced by statistics and semantics. Now, more than 3 years after the start of the project we have a sort of shared understanding of how we can join forces to make synergistic use of our technologies. It really takes that long.

Beyond all the promising achievements in projects such as caBIG, myGrid, Health-e-Child, ACGT or @neurIST (just to name some of them, apologies to those that are not listed here) we still see lots and lots of challenges ahead of us, amongst them scientific challenges such as distributed, heterogeneous data integration, querying and mining, but also challenges that cannot be solved by scientists such as ethical and political issues. As both, the scientific challenges as well as the political and ethical issues will accompany us for the next years, we should expect from HealthGrid conferences a status report on developments in our community and not the ultimate solution to the eHealth problem. Having said this, I welcome you again as part of our active community and I am looking forward to fruitful discussions with you.

I do not want to finish this short statement without acknowledging and thanking the people who really did most of the work behind HealthGrid 2009 in Berlin. I would like to express my special gratitude to Mathias Freudigmann and Sebastian Semler and all the TMF folks involved who did a fabulous job as the local organization team. Furthermore, I thank all the members of the programme committee and the scientific reviewing committee for their contributions, and in particular I would like to acknowledge the substantial contributions made by Tony Solomonides, Mary Kratz, Howard Bilofsky, Yannick Legre and Vincent Breton. Those I forgot to list may please forgive me …

Martin Hofmann, Conference Chair HealthGrid 2009

Contents

1st Day

Workshop 1: Life Sciences Specific Support Center

Monday, 9:30 am – 1:00 pm
Room "Friedrichshain" (4th floor)

Yannick Legré

Requirements for a Life Sciences Specific Support Center
The EGEE project is going to come to an end in April 2010. In less than one year from now, it will be replaced by a federation of National Grid Initiatives. The European Grid Initiative (http://www.egi.org) aims at fostering synergy between the NGIs at different levels: middleware, training, user support, etc. Research communities currently exploiting the resources of EGEE and its related projects are being encouraged to set up Specific Support Centres which would act as scientific gateways to the central EGI services and to the NGIs. The life sciences community, ranging from healthcare to bioinformatics through medical informatics, is currently very active on EGEE, representing more than 5% of the overall CPU usage. The goal of the workshop is to discuss the requirements for a Life Sciences Specific Support Centre. The workshop is an opportunity to enlarge the discussions around the needs for life sciences in Europe, to discuss the pros and cons of the different middlewares deployed on the European NGIs and to define a common strategy for the coming years.

Workshop 2: 1st RADICAL Expert Workshop

Monday, 9:30 am – 1:00 pm
Room "Kreuzberg" (3rd floor)

Zaharya Menevidis

1st RADICAL Expert Workshop - Security and privacy challenges in personalised healthcare for the 21st century
While the integration of recorded medical and genetic data in distributed databases (i.e. genomic, pathologic, imaging and clinical data) is essential for the technologies and processes within the Virtual Physiological Human (VPH) framework, the broad use of personal data gives cause for reconsidering the secure access and comprehensive protection of privacy and choices.

With this workshop RADICAL invites experts from the field and also the wider European audience to reflect the current state of privacy and security in the VPH and related clinical fields and as well to intensify collaboration in the framework of the VPH-NoE.

Workshop 3: TMF – Grid Forum (invitees only) (German language)

Monday, 09:30 am – 1:00 pm
Room "Köpenick" (3rd floor)

Anette Weisbecker, Otto Rienhoff

Meeting of the TMF Grid Forum (invitees only)
The German Grid projects in the fields of medicine, medical research and life sciences collaborate in the TMF Grid Forum. Together, the projects in this forum serve to enhance national cooperation

within D-Grid as well as international cooperation with HealthGrid at European level and caBIG in the US. The Grid Forum was established in January 2008 as part of a joint workshop involving TMF and the biomedical Grid projects (MediGrid, Services@MediGrid, MedInfoGrid) together with representatives from caBIG (US) and D-Grid.

Programme:

Legal aspects in cloud computing
Presentation of new biomedical D-Grid projects (PneumoGrid, WissGrid)
Closing of the MediGrid project (2005-2009)

Lunch (1:00 pm – 2:00 pm)

Welcome Address

Monday, 2:00 pm – 2:15 pm
Atrium

Conference Chair: Martin Hofmann-Apitius

Demo 1: Health-e-Child

Monday, 2:15 pm – 3:15 pm
Atrium

Jörg Freund, David Manset

Health-e-Child – Grid enabled applications for clinical decision support
The Health-e-Child (HeC) project started in 2006 with the aim of developing a Grid-based healthcare platform for European pediatrics, providing seamless integration of traditional and emerging sources of biomedical information; the long-term goal being to deliver uninhibited access to universal biomedical knowledge repositories for personalized and preventive healthcare and large-scale biomedical research and training.

In particular, the project is focusing on individualized diagnosis, therapy, and follow-up of pediatric heart diseases, inflammatory diseases, and brain tumors for which it is developing innovative software tools. In order to overcome the fragmented nature of the information available, HeC allows handling all relevant medical data, information and knowledge ranging from genetics to imaging and clinical by synthesizing those in a cohesive unified whole. This harmonized view of the data forms the basis of personalized treatment, comparison, and identification of different individuals' classes based on biomedical profiles.

State-of-the-art Grid technology is used to interconnect clinical centers and to allow the integration, analysis and seamless flow of information between institutions, while preserving patients' privacy. The HeC platform enables healthcare workers and clinicians to navigate a large international repository of anonymized patient data, to share relevant information and to discover novel knowledge. The system provides advanced facilities to search for similar patient cases supporting clinical decision making and personalized treatment, to validate arbitrary hypothesis over the entire population, and to further extend medical records with extracting new meaningful features.

This new cutting-edge research platform and its main use cases are what the partners propose to demonstrate. Two concrete and revolutionary usages of the data are planned to be performed in a

visual, interactive and pedagogical way, where HeC's underlying large European Grid infrastructure is accessed and challenged live to supply physicians with timely and relevant information.

Demo 2: ACGT

Monday, 3:15 pm – 4:15 pm
Atrium

Manolis Tsiknakis, Thierry Sengstag, Lefteris Koumakis

A Semantic Grid Services Platform in Support of Efficient Knowledge Discovery from Multilevel Biomedical Data
The objective of the ACGT (Advancing Clinico-Genomic Clinical Trials on Cancer: Open Grid Services for improving Medical Knowledge Discovery) integrated project is to develop a grid enabled unified technological infrastructure which will facilitate the seamless and secure access and analysis, of multi-level clinical and genomic data enriched with high-performing knowledge discovery operations and services in support of multi-centric, post-genomic clinical trials.

The project builds on open software frameworks based on Web services, (WS)-Resource Framework (WSRF) and Open Grid Services Architecture (OGSA), the de facto standards in grid computing.

In the current session the ACGT and Grid based data mining and knowledge discovery environment will be demonstrated in a typical bioinformatics related scenario. More specifically parts of the ACGT platform that will be presented include:

− The ACGT VO management and the user registration process
− The ACGT portal as the main entrance to the ACGT computational environment
− The Grid based facilities: file management, Grid job monitoring
− The GridR interactive sessions through the portal
− Dynamic data access services: connecting users' databases to the ACGT Data Architecture
− The ACGT Workflow environment: a web based graphical "Problem Solving Environment" that allows the interconnection and composition of the various data sources and analytical services to create new complex functional units (workflows) and to execute them.

<div align="center">Coffee Break (4:15 pm – 4:45 pm)</div>

Demo 3: @neurIST

Monday, 4:45 pm – 5:45 pm
Atrium

Antonio Arbona

Grid-enabled clinical image access and processing in @neurIST
The demo will present results from the FP6 project @neurIST, in which we develop tools for analysis of clinical images (such as magnetic resonance or computational tomography scans) within the context of diagnosis and treatment planning of cerebral aneurysms. The demonstration will be based on the tool known as @neuFuse, installed on the presenter's laptop. From @neuFuse clinical data from a remote hospital will be accessed and downloaded using Grid services. This data comprises textual data associated to the patient history as well as radiological images. The images will be processed through different steps, either local (on the presenter's

laptop) or remote (on the Grid computational infrastructure of @neurIST). As a result the raw image will be the basis for derived data, that will be useful in diagnosis and treatment planning, and on epidemiological studies. The demo will be complemented with a short presentation on the architectural basis of the @neurIST project.

Demo 4: D-GRiD / MediGRID

Monday, 5:45 pm – 6:45 pm
Atrium

Dagmar Krefting, Tobias A. Knoch

Workflow based medical image processing applications with webbased access / GLOBE 3D Genome Platform

A) Workflow based medical image processing applications with webbased access

Medical image processing applications may benefit strongly from grid integration, but often require at least some user interaction or user control. Furthermore, users within clinical environments are frequently limited to basic internet connections via http/https. The demonstration shows an example application from the MediGRID portal, that realizes webbased user interaction and 3D visualization for hemodynamic simulations of a patient's vessel geometry, obtained from computer tomography (see also Conference Proceedings, Beronov et al.: "Grid computing for detailed hemodynamics-simulation-based planning of endovascular interventions").

B) GLOBE 3D Genome Platform

The system-biological complexity of genomes remains still largely mysterious, despite immense sequencing achievements and huge advances in the understanding of the general sequential, three-dimensional and regulatory organization. Here, we present the GLOBE 3D Genome Platform, a completely novel grid based virtual "paper" tool and in fact the first system-biological genome browser integrating the holistic complexity of genomes in a single easy comprehensible platform: Based on a detailed study of biophysical and IT requirements, every architectural level from sequence to morphology of one or several genomes can be approached in a real and in a symbolic representation simultaneously and navigated by continuous scale-free zooming within a unique three-dimensional OpenGL and grid driven environment (see respective article in the HealthGrid 2009 Conference Proceedings for futher details).
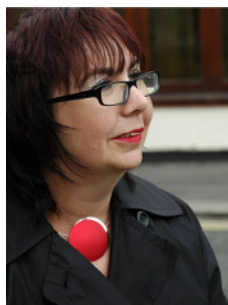
Welcome Reception

Monday, 6:45 pm
Hall

A get-together with drinks, canapés and snacks.

2nd Day

Key Note: Carole Goble

University of Manchester, Manchester, UK

Tuesday, 9:15 am – 10:00 am
Atrium

Carole Goble is a Professor of Computer Science at the University of Manchester, UK where she has been based throughout her entire academic career. Over the past 20 years she has worked on data intensive applications in e-Science, enabling scientists to access, integrate and share knowledge in all its forms, focusing primarily, but not exclusively, on the Life Science and Healthcare. She currently directs the myGrid consortium made up of the universities of Manchester and Southampton and the EMBL-EBI, and incorporating many international collaborators. She co-leads the Information Management Group of over 60 researchers, and was the founding chair of the UK's Open Middleware Infrastructure Institute which takes prototype scientific software to production level. In 2008 she was the inaugural winner of the Microsoft-sponsored Jim Gray award for outstanding contributions to e-Science.

Carole's technical research interests include: the Semantic Web, knowledge technologies and ontologies, the Semantic Grid and the application of semantic technologies in e-Science and middleware, distributed computing, Scientific Workflows and workflow design, data integration, service interoperability, scientific data provenance, service discovery and social computing.

Paper Presentations: Applications

Tuesday, 10:00 am – 11:00 am
Tuesday, 11:30 am – 12:45 pm
Atrium

DockFlow – A Prototypic PharmaGrid for Virtual Screening Integrating Four Different Docking Tools

Antje Wolf, Martin Hofmann-Apitius, Moustafa Ghanem, Nabeel Azam, Dimitrios Kalaitzopoulos, Kunqian Yu and Vinod Kasam
Speaker: Antje Wolf
Conference Proceedings: Page 3

Running Medical Image Analysis on GridFactory Desktop Grid

Frederik Orellana, Marko Niinimaki, Xin Zhou, Peter Rosendahl, Henning Mueller and Anders Waananen
Speaker: Xin Zhou
Conference Proceedings: Page 13

Grid Computing for Detailed Hemodynamics-Simulation-Based Planning of Endovascular Interventions

Kamen Beronov, Olga Dzhimova, Thomas Tolxdorff, Michal Vossberg and Dagmar Krefting
Speaker: Dagmar Krefting
Conference Proceedings: Page 82

Towards Production-Level Cardiac Image Analysis with Grids

Ketan Maheshwari, Tristan Glatard, Joël Schaerer, Bertrand Delhay, Sorina Camarasu-Pop, Patrick Clarysse and Johan Montagnat
Speaker: Ketan Maheshwari
Conference Proceedings: Page 31

<div align="center">Coffee Break (11:00 am – 11:30 am)</div>

An Easy Setup for Parallel Medical Image Processing: Using Taverna and ARC

Xin Zhou, Hajo Krabbenhöft, Marko Niinimäki, Adrien Depeursinge, Steffen Möller and Henning Müller
Speaker: Xin Zhou
Conference Proceedings: Page 41

A Collaborative Environment Allowing Clinical Investigations on Integrated Biomedical Databases

Matthias Assel, David van de Vijver, Pieter Libin, Kristof Theys, Daniel Harezlak, Breanndán Ó Nualláin, Piotr Nowakowski, Marian Bubak, Anne-Mieke Vandamme, Stijn Imbrechts, Raphael Sangeda, Tao Jiang, Dineke Frentz and Peter Sloot
Speaker: Matthias Assel
Conference Proceedings: Page 51

Crossing HealthGrid Borders: Early Results in Medical Imaging

Sílvia D. Olabarriaga, Tristan Glatard, Andreas Hoheisel, Aart J. Nederveen and Dagmar Krefting
Speaker: Silvia Delgado Olabarriaga
Conference Proceedings: Page 62

Enabling of Grid Based Diffusion Tensor Imaging Using a Workflow Implementation of FSL

Ralf Lützkendorf, Johannes Bernarding, Frank Hertel, Fred Viezens, Andreas Thiel and Dagmar Krefting
Speaker: Dagmar Krefting
Conference Proceedings: Page 72

Application of Grid Technology for Automated Detection of Sleep Disordered Breathing

Sebastian Canisius, Thomas Penzel, Karl Kesper and Dagmar Krefting
Speaker: Sebastian Canisius
Conference Proceedings: Page 22

<div align="center">Lunch (12:45 pm – 1:45 pm)</div>

Key Note: Joël Bacquet

European Commission, Brussels, Belgium

Tuesday, 1:45 pm – 2:15 pm
Atrium

Joël Bacquet is working at the European Commission in Brussels, as head of sector "health infrastructure" in the "ICT for heath" unit of Directorate General "Information Society and Media". Before working in this field, Joël was coordinator of the Network and Information Security Policy. From 1999 to 2003, he was head of the sector "networked organisations" in the eBusiness unit. He started working with the European Commission in 1993, in the Software Engineering Unit of the

ESPRIT Programme.

Joël started his carrier as visiting scientist for Quantel a LASER company in San José, California in 1981. From 1983 to 1987, he was with Thomson CSF (Thales) as software development engineer for a RADAR System. From 1987 to 1991, he worked with the European Space Agency as software engineer on the European Space shuttle and international Space platform programmes. From 1991 to 1993 he was with Eurocontrol where he was Quality manager of an Air Traffic Control system.

Joël Bacquet is an engineer in computer science from Institut Supérieur d'Electronique du Nord (ISEN) and he has an MBA from Webster University, Missouri.

Paper Presentations: Core Technologies & Data Integration

Tuesday, 2:15 pm – 3:30 pm
Atrium

Metadata Extraction Using Text Mining
Shivani Seth, Stefan Rüping and Stefan Wrobel
Speaker: Stefan Rüping
Conference Proceedings: Page 95

The GLOBE 3D Genome Platform: Towards a Novel System-Biological Paper Tool to Integrate the Huge Complexity of Genome Organization and Function
Tobias A. Knoch, Michael Lesnussa, Nick Kepper, Hubert B. Eussen and Frank G. Grosveld
Speaker: Tobias A. Knoch
Conference Proceedings: Page 105

Using Grid-Enabled Distributed Metadata Database to Index DICOM-SR
Ignacio Blanquer, Vicente Hernandez, José Salavert and Damià Segrelles
Speaker: Ignacio Blanquer
Conference Proceedings: Page 117

XTENS – An eXTensible Environment for NeuroScience
Luca Corradi, Gabriele Arnulfo, Andrea Schenone, Ivan Porro and Marco Fato
Speaker: Luca Corradi
Conference Proceedings: Page 127

Preserving Consent-for-Consent with Feasibility-Assessment and Recruitment in Clinical Studies: FARSITE Architecture
John Ainsworth and Iain Buchan
Speaker: Iain Buchan
Conference Proceedings: Page 137

Coffee Break (3:30 pm – 4:00 pm)

Key Note: Carl Kesselman

University of Southern California

Tuesday, 4:00 pm – 4:45 pm
Atrium

Carl Kesselman is an Information Sciences Institute Fellow, the Institute's highest honor, and a professor in the Daniel J. Epstein Department of Industrial and Systems Engineering at the University of Southern California. He is one of the fathers of Grid computing and the GLOBUS open-source toolbox, the de facto Grid standard for the world's most resource-intensive computing tasks.

Kesselman has received numerous honors for his pioneering research. Kesselman is co-director of the Center for Health Informatics, co-director of the Medical Information Systems Davison at ISI, and a world leader in research and development of information processing, computer and communications technologies. Associated with the University of Southern California's Viterbi School of Engineering, ISI is one of the nation's largest - and most successful - university-affiliated computer research institutes.

He is also is chief scientist and a co-founder of Univa Corp., a high-performance computing systems management and data center automation software provider. He joined ISI in 1997 as a USC Viterbi research associate professor. Kesselman received his Ph.D. in Computer Science from the University of California at Los Angeles.

Session: Global Public Health Grid

Tuesday, 4:45 pm – 6:45 pm
Atrium

Mary Kratz, Joan Dzenowagis, Muzna Mirza
Thomas G Savel (remote via webconference)

Global Public Health Grid (GPHG) – A WHO/CDC Initiative in Support of Public Health
The past decade has seen significant technological advances and the adoption of information systems by many countries. Yet the integration of these systems towards supporting global public health goals has not been achieved. Systems remain non-interoperable, leading to data and application silos, duplication of work, and costly efforts to integrate data. To address this, the World Health Organization (WHO) and the Centers for Disease Control and Prevention's National Center for Public Health Informatics (CDC/NCPHI) have jointly undertaken the Global Public Health Grid (GPHG) initiative, with the goal of advancing effective and efficient health information exchange. GPHG aims to improve global public health by advancing standards-based, globally interoperable and low-cost, multi-channel public health information services that can be readily used across different jurisdictions and resource settings. GPHG goals, structure and architecture will be described in the presentation.

Guided Walk to Dinner Location

Tuesday, 7:00 pm
Departure at
"dbb forum berlin"

After the scheduled programme on the second conference day professional city guides will take you from dbb forum to our dinner location "Sandsation" near Central Station, passing famous city monuments such as the "Brandenburger Tor" and the "Reichstag".

Dinner Event

Tuesday, 8:00 pm
"Sandsation"
(near Main Railway Station, Europaplatz / Invalidenstraße, Berlin-Tiergarten)
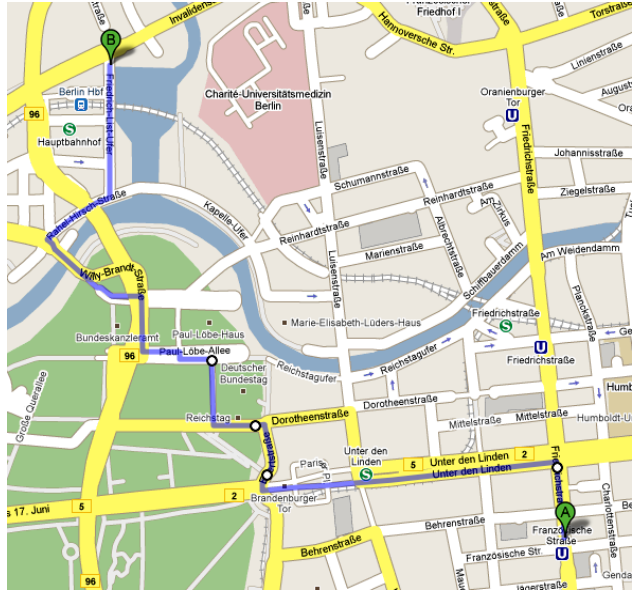
Sandsation is a man-made city beach at the riverside where every year in summer an International sand sculptures festival takes place. This fantastic location will be reserved exclusively for conference participants. Dinner will be served in a huge tent. Chill out with a free cocktail and enjoy a guided tour around the sculptures, which are formed by the most renowned sand sculpture artists from all over the world. (www.sandsation.com)

3rd Day

Key Note: Jonathan Silverstein

Computation Institute at University of Chicago, Michigan, USA

Wednesday, 9:00 am – 9:30 am
Atrium

Jonathan C. Silverstein, associate director of the Computation Institute of the University of Chicago and Argonne National Laboratory is associate professor of Surgery, Radiology, and The College, scientific director of the Chicago Biomedical Consortium, and president of the HealthGrid.US Alliance. He focuses on the integration of advanced computing and communication technologies into biomedicine, particularly applying Grid computing, and on the design, implementation, and evaluation of high-performance collaboration environments for anatomic education and surgery. He holds an M.D. from Washington University (St. Louis) and an M.S. from Harvard

School of Public Health. He is a Fellow of the American College of Surgeons and a Fellow of the American College of Medical Informatics. Dr. Silverstein provides leadership in information technology initiatives intended to transform operations at the University of Chicago Medical Center and is informatics director for the University of Chicago's Clinical and Translational Science Award (CTSA) program. He has served on various national advisory panels and currently serves on the Board of Scientific Counselors for the Lister Hill Center of the NIH National Library of Medicine.

Paper Presentations: Accessibility

Wednesday, 9:30 am – 11:30 am
Atrium

Semantic Security: Specification and Enforcement of Semantic Policies for Security-Driven Collaborations

R.O. Sinnott, T. Doherty, N. Gray and J. Lusted
Speaker: Tom Doherty
Conference Proceedings: Page 201

A Robust Framework for Rapid Deployment of a Virtual Screening Laboratory

Mohammad Shahid, Martin Hofmann-Apitius, Oliver Wäldrich and Wolfgang Ziegler
Speaker: Mohammad Shahid
Conference Proceedings: Page 212

Service Engineering for Grid Services in Medicine and Life Science

Anette Weisbecker and Jürgen Falkner
Speaker: Anette Weisbecker
Conference Proceedings: Page 222

Shared Genomics: High Performance Computing for Distributed Insights in Genomic Medical Research

David C. Hoyle, Mark Delderfield, Lee Kitching, Gareth Smith and Iain Buchan
Speaker: David Hoyle
Conference Proceedings: Page 232

Coffee Break (10:30 am – 11:00 am)

Ontology-Based Privacy Compliance on European Healthgrid Domains

Hanene Boussi Rahmouni, Tony Solomonides, Marco Casassa Mont and Simon Shiu
Speaker: Hanene Boussi Rahmouni
Conference Proceedings: Page 183

Variance Analysis as Practice-Based Evidence

Mark Olive and Tony Solomonides
Speaker: Mark Olive
Conference Proceedings: Page 190

Key Note: Peter Coveney

University College London, London, UK

Professor P.V. Coveney holds a Chair in Physical Chemistry, is Director of the Centre for Computational Science (CCS) and an Honorary Professor in Computer Science at UCL. His group performs research in atomistic, mesoscale and multiscale modeling, including quantum and classical molecular dynamics, dissipative particle dynamics, lattice gas and lattice-Boltzmann techniques, and exploits state of the art high performance computing and visualisation methods. Coveney has been leading the large EPSRC RealityGrid e-Science Pilot Project (2001-05) which is funded from 2005 through to 2009 as a Platform Grant; he is also the PI and co-Investigator on several other current grants funded by EPSRC, BBSRC and the U.K. Open Middleware Infrastructure Institute (OMII) which involve grid computing and/or high performance computing (HPC) research. He has held several major NSF funded supercomputing grants (under the PACI and NRAC programs), and currently holds an MRAC allocation under the same program which provides roaming access to the entire set of computational resources on the US TeraGrid. Coveney is the recipient of an HPC Challenge Award at Supercomputing 2003 for the TeraGyroid Project, an inaugural HPC Analytics Challenge Award at SC05 for the SPICE Project, and International Supercomputing Conference Awards in 2004 and 2006, which have helped to promote the global competitiveness of the UK in high performance computing. Coveney is Chairman of the UK Collaborative Computational Projects (CCP) Steering Panel and is a member of the UK High-End Computing Strategy Committee, for which he chaired a Working Group that produced it's a new HEC Strategic Framework. He was a partner in the EU's 6th Framework Programme STEP (Strategy for the EuroPhysiome; www.europhysiome.org) Project, a Coordination Action funded which wrote the Road Map for the development of the Virtual Physiological Human (VPH).

Poster Session

Does the number of sequences determine the characterization of a Biological system? A study with the PhyloGrid application
Raúl Isea, Juan L. Chaves, Esther Montes, Antonio J. Rubio-Montero and Rafael Mayo
Speaker: Rafael Mayo
Conference Proceedings: Page 245

Conception of an Image Data Base for Cell Nuclei and Geometric Algorithms for Diagnosis and Therapy Monitoring
Eberhard Schmitt, Stefan Stein and Michael Hausmann
Speaker: Frank Nikolaus Kepper
Conference Proceedings: Page 251

A Distributed Security Policy for Neuroradiology Data Sharing

Alban Gaignard and Johan Montagnat
Speaker: Alban Gaignard
Conference Proceedings: Page 257

Medical Applications for High-Performance Computers in SKIF-GRID Network

Alexey Zhuchkov and Nikolay Tverdokhlebov
Speaker: Nikolay Tverdokhlebov
Conference Proceedings: Page 263

e-Human Grid Ecology: Understanding and Approaching the Inverse Tragedy of the Commons in the e-Grid Society

Tobias A. Knoch, Volkmar Baumgärtner, Luc V. de Zeeuw, Frank G. Grosveld and Kurt Egger
Speaker: Tobias A. Knoch
Conference Proceedings: Page 269

Workflows for Intelligent Monitoring Using Proxy Services

Stefan Rüping, Dennis Wegener, Stelios Sfakianakis and Thierry Sengstag
Speaker: Stefan Rüping
Conference Proceedings: Page 277

Reusable Services from the neuGRID Project for Grid-Based Health Applications

Ashiq Anjum, Peter Bloodsworth, Irfan Habib, Tom Lansdale, Richard McClatchey, Yasir Mehmood and The neuGRID Consortium
Speaker: Yasir Mehmood
Conference Proceedings: Page 283

Grid-Enabled Sentinel Network for Cancer Surveillance

Paul De Vlieger, Jean-Yves Boire, Vincent Breton, Yannick Legre, David Manset, Jérôme Revillard, David Sarramia and Lydia Maigne
Speaker: Dr. Lydia Maigne
Conference Proceedings: Page 289

Lunch (12:45 – 1:45 pm)

Paper Presentations: Economics & Future of Grids

Wednesday, 1:45 pm – 2:30 pm
Atrium

Economic Performance and Sustainability of HealthGrids: Evidence from Two Case Studies

Alexander Dobrev, Stefan Scholz, Dainis Zegners, Karl A. Stroetmann and Sebastian C. Semler
Speaker: Alexander Dobrev
Conference Proceedings: Page 151

Business Aspects and Sustainability for Healthgrids – An Expert Survey

Stefan Scholz, Sebastian C. Semler and Michael H. Breitner
Speaker: Stefan Scholz
Conference Proceedings: Page 163

Perspectives of MediGRID

Frank Dickmann, Mathias Kaspar, Benjamin Löhnhardt, Tobias A. Knoch and Ulrich Sax
Speaker: Frank Dickmann
Conference Proceedings: Page 173

Session: Creative Commons – a Discussion

Wednesday, 2:30 pm – 3:15 pm
Atrium

Chair: Tony Solomonides

The commons: tragedy and creativity

The tragedy of the commons was a 1968 essay by UCSB biology professor Garrett Hardin in the journal Science. It has become a signature phrase for the selfish (over-)exploitation of a resource held in common; this leads to its depletion, to the detriment of all, including the original abuser.

Ownership in common takes many forms well short of communism. One of these is the form espoused by the Creative Commons movement (now a non-profit corporation),

▪ dedicated to making it easier for people to share and build upon the work of others, consistent with the rules of copyright.

and which provides

▪ licenses and other legal tools to mark creative work with the freedom the creator wants it to carry, so others can share, remix, use commercially, or any combination thereof.

For us in HealthGrid, it is of more than passing interest that this concept was in part inspired by The Free Software Foundation's GNU General Public License for "open source" software. The open source model is particularly attractive to those working in publicly funded research, but protection is also necessary, since some of this work occasionally proves very profitable in business.

At this conference, we have a contribution (see Knoch et al e-Human Grid Ecology) which argues that in our time we are also witnessing an "inverse tragedy of the commons", in the form of the vast processing, storage and communication capacities of our infrastructures that goes unused. Indeed, early arguments for grid computing were based on the assumption that we would bring all this unused power to join other resources and address bigger problems than we would ever be able to address on our individual clusters.

This short session will launch a debate between interested HealthGrid participants which we hope will be extended electronically and at future events.

Best Paper Award Ceremony, Closing Remarks and Outlook

Wednesday, 3:15 pm – 3:30 pm
Atrium

The winner of the Best Paper Award will be elected by the members of the Programme Committee.
Speaker: Martin Hofmann-Apitius

End of Official Conference Programme

HealthGrid Association Meeting (members only)

Board of Directors Meeting
Wednesday, 3:30 pm – 4:00 pm
Atrium

The Board of Directors meeting will proceed just before the Annual General Meeting. Agenda:

1. Activity report and plan for the future
2. Financial report
3. Renewal of the Board of Directors (Validation of the candidates list)
4. Next HealthGrid conference location
5. Call for bid for the HealthGrid conference 2011
7. AOB

Annual General Meeting
Wednesday, 4:00 pm – 5:30 pm
Atrium

1. Activity report and plan for the future
2. Financial report
3. Renewal of the Board of Directors (Vote)

Everyone who is member of the association and who has paid the membership fees at the date of the election could vote to appoint the new board of directors. You can become member of the association simply by ticking the appropriate box in the HG09 registration form. To apply for a position in the board of directors please send your application by email with "return receipt" enabled to yannick.legre@healthgrid

4. Next HealthGrid conference location
5. Call for bid for the HealthGrid conference 2011
6. AOB

Committee Members

Chairs

Programme Committee Chair

Martin Hofmann-Apitius
Fraunhofer SCAI, St. Augustin, Germany

Scientific Review Committee Chair

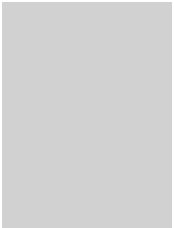Tony Solomonides
UWE, Healthgrid, Bristol, UK

Local Host

Sebastian C. Semler
TMF, Berlin, Germany

HealthGrid President

Yannick Legré
Maat-G, Spain

Members of the Programme Committee and the Scientific Reviewing Committee

Antonio Arbona
Grid Systems, Palma de Mallorca, Spain

Joël Bacquet
European Commission, Brussels, Belgium

Robert Beck
Fox Chase Cancer Center, Philadelphia, USA

Johannes Bernarding
Universität Magdeburg, Magdeburg, Germay

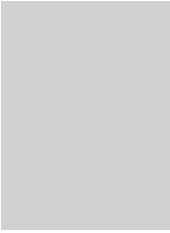Howard Bilofsky
University of Pennsylvania, USA

Ignacio Blanquer
Universidad Politécnica de Valencia, Valencia, Spain

Vincent Breton
CNRS-IN2P3, Clermont-Ferrand, France

Joan Dzenowagis
CDC/WHO, Geneva, Swizzerland

Hadas Lewy
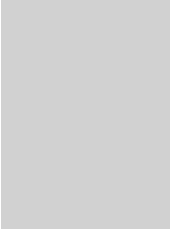Maccabi Institute for
Health Services
Research, Israel

Ian Foster
University of
Chicago/Argonne
National Laboratory,
Argonne, USA

Alejandro Frangi
UPF (Universitat
Pompeu Fabra),
Barcelona, Spain

Jörg Freund
Siemens AG,
Erlangen, Germany

Jochen Hampe
Universitätsklinikum
Schleswig-Holstein,
Kiel, Germany

Tamas Hauer
Geneva, Switzerland

Vicente Hernandez
Garcia
Valencia, Spain

Rod Hose
Sheffield, UK

Tobias Knoch
DKFZ,
Heidelberg/Rotterdam,
Germany/Netherlands

Mary Kratz
University of Michigan
Medical School,
Michigan, USA

Dagmar Krefting
Charité, Institute of
Medical Informatics,
Berlin, Germany

Yannick Legré
Maat-G, Spain

Ulf Leser
Humboldt-Universität
zu Berlin, Berlin,
Germany

Guy Lonsdale
NEC Laboratories
Europe, St. Augustin,
Germany

David Manset
Maat G knowledge,
Madrid, Spain

Fernando Martin-
Sanchez
IMIA, Spain

Richard McClatchey
Bristol, UK

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Sebastian C. Semler
TMF, Berlin, Germany

Jonathan Silverstein
Computation Institute
University of Chicago,
Michigan, USA

Anette Weisbecker
Fraunhofer IAO,
Stuttgart, Germany

Max Wilkinson
NCRI, London, UK

Local Organizing Committee (TMF, Berlin)

Sebastian C. Semler

Mathias Freudigmann

Verena Dorst

Josefine Wagner

The Association – About HealthGrid

The HealthGrid Association, based in France, is an initiative that brings together people from a variety of disciplines to promote awareness and use of Grid technologies in the biomedical sector. The HealthGrid community emphasizes a strong relationship among the private sector, government agencies, clinicians, and researchers. These connections foster the integration of Grid practices and tools into the fields of biology, medicine, and health. Technologies and techniques come from both academic research and industry. This enables HealthGrid to include scientific tracks with heterogeneous data from the molecular to the population level. While the short-term goal of HealthGrid is to increase awareness of the power of grid technologies, the worldwide use of healthgrids is the ultimate aim.

Benefits of HealthGrid membership include:

- Participating in face-to-face and electronic collaborations witb colleagues;
- Attending the annual HedhGrid Conference to advance partnerships;
- Learning about the latest developments in eHealth from HealthGrid annual IOS publication of scientific papers;
- Recieving immediate and timely news about developments in the field of eHealth from the HealthGrid website and ernail distribution lists;
- Participating in on-going dialogues and developing professional and personal nehxroxks at meetings and in on-lint discussions via HealthGrid projects and programs;
- Engaging in the changing public policy debate or participating in advocacy events;
- Discovering job openings and fmd valuable employees and employers;
- Increasing your visibility by being listed in the HealthGrid community Directory of Members;
- Accessing the most updated information from HealthGrid members through the on-line membership knowledgebase.

The Conference Host – About TMF

TMF is an umbrella organization for medical research communities in Germany, inititated and funded by the German Federal Ministry of Education and Research (BMBF) in 1999. Most of TMF's members are multicentre or virtual institutions, each of them bringing together experts from all over Germany who seek support for solving technical, organizational and legal issues which are typical for networked medical research. Thus, TMF produces expert opinions, studies, concepts, requirements specifications, services and tools regarding

- legal and ethical frameworks for networked medical research, patient registries, biobanks and molecular medicine
- development of specific IT infrastructure needed for networked medical research

- development and assessment of specific data protection and security concepts for networked medical research projects
- quality management activities for investigator initiated clinical trials, research on medical devices, and registries for clinical research and patient outcomes research
- intermeshing of medical research and medical care
- dedicated research infrastructures for the new-established German national platform for research on zoonoses
- TMF also regularly invites expert groups to meet in order to develop ideas and concepts to further improve networked medical research in Germany.

One of these groups is the Grid Forum, a national cooperation forum for Grid technology in biomedical research. The German Grid projects in the fields of medicine, medical research and life sciences collaborate in the TMF Grid Forum. Together, the projects in this forum serve to enhance national cooperation within D-Grid as well as international cooperation with HealthGrid at European level and caBIG in the US.

The Grid Forum was established in January 2008 as part of a joint workshop involving TMF and the biomedical Grid projects (MediGrid, Services@MediGrid, MedInfoGrid) together with representatives from caBIG (US) and D-Grid.

TMF – Telematikplattform für Medizinische Forschungsnetze e.V., Neustädtische Kirchstr. 6, D-10117 Berlin, Germany / +49 30 31011950 / info@tmf-ev.de / www.tmf-ev.de

Useful Information

Organizers' Hotline
During the conference you can reach our on-site team via **+49 173 6141664.**

Registration and Conference Bags
If you have not yet registered online via http://berlin2009.healthgrid.org you may use the following registration opportunities where you also receive your badge and conference bag:

- Sunday, 28 June 2009 from 6 pm – 8 pm at the Melia Hotel (Friedrichstr. 10310117 Berlin) near the public transport station "S/U Friedrichstraße" (www.melia.berlin).
- During the whole conference from Monday, 29 June 2009, 8 am at the conference registration desk near the entrance of the conference location (dbb forum berlin).

Badges as Entrance Passes
Attendees are asked to wear their badges at all times when attending meeting sessions and events. This indicates that you are appropriately registered for HealthGrid 2009. If you should lose or misplace your badge, please go to the registration desk for a replacement.

Public Transportation
A plan of the public transportation network is included in the conference bags. Ask at the conference registration desk if you need further support or try http://www.bvg.de/en/.

Taxi
To call a taxi dial +49 800 22222 55 (+49 800 CABCALL) or +49 30 210101.

Wireless LAN
Free Wireless LAN is available throughout the whole conference (unsecured, no key required).

Power Plugs / Charging of technical devices
On the left hand side of the entrance to the Atrium (plenary room) there are tables equipped with power plugs.

Restaurant "Bocca di Bacco"
From the main hall you have access to the restaurant „Bocca di Bacco" with an excellent menu and a bar. You may order drinks and meals **for your own account**.

Speaker Ready Room
Please ask our team at the registration desk if you need a quiet place, e.g. to prepare your presentation or demonstration.

No Smoking Policy
Smoking is not permitted inside the dbb forum.

Attendance Policy at Program Sessions
All attendees at any conference session must be registered either for the full conference or as a daily registrant specifically for the day of an activity they are attending and must show their badge for entrance.

Online-Registration & Further Information
http://berlin2009.healthgrid.org

Fees
Regular (until June 15)
1 d: 150 € | 2 d: 300 € | 3 d: 420 €
Late (after June 15)
1 d: 180 € | 2 d: 360 € | 3 d: 500 €
On-site
1 d: 225 €| 2 d: 450 € | 3 d: 600 €

Organizers' Main Office
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