Welcome Message from Conference Chairs and Program Chairs………………………………………………xix

e-Science 2006 Conference Organization…………………………………………………………………………..xx

Workshop Organizers……………………………………………………………………………………………...xxi

Plenary

Benefits of e-Science for the Physiome Project..............................................................................................001
P. Hunter
University of Auckland, New Zealand

Grid Enabling Data De-Duplication ..................................................................................................................002
Jim Austin, Aaron Turner, and Sujeeva Alwis

Emerging Technologies and Applications for e-Science................................................................................003
E. Seidel
Louisiana State University, USA

Grid Based Flood Prediction Virtual Organization ..........................................................................................004
Ladislav Hluchy, Ondrej Habala, Martin Maliska, Branislav Simo, Viet Tran,
Jan Astalos, and Marian Babik

Complex Dynamics in the Plankton: Computational Science Applied to the World's Oceans..........................005
J. Huisman, B. Sommeijer, N.N. Pham Thi

National Grid Initiatives: Lessons Learned and Recommendations .............................................................006
W. Gentzsch
D-Grid Germany and RENCI, USA

Dynamic Infrastructure for Systems Level Science......................................................................................007
Carl Kesselman
USC, USA

e-Infrastructures for e-Science......................................................................................................................008
F. Gagliardi
Microsoft Corporation, USA

From Bioinformatics towards e-Bioscience......................................................................................................009
L.O. Hertzberger
Universiteit van Amsterdam, The Netherlands

Session 1 on Workflows and Knowledge Management

Designing Workflow Components for e-Science ............................................................................................010
Frank Terpstra and Pieter Adriaans
VLE-WFBus: A Scientific Workflow Bus for Multi e-Science Domains
Zhiming Zhao, Suresh Booms, Adam Belloum, Cees de Laat, and Bob Hertzberger

Semantic Composition of Scientific Workflows Based on the Petri Nets Formalism
Tomasz Gubała, Daniel Herzęłak, Marian Bubak, and Maciej Malawski

Using High-Level Petri Nets for Hierarchical Grid Workflows
Martin Alt, Sergei Gorlatch, Andreas Hoheisel, and Hans-Werner Pohl

Session 2 on Workflows and Knowledge Management

Managing Large-Scale Workflow Execution from Resource Provisioning to Provenance
Ewa Deelman, Scott Callaghan, Edward Field, Hunter Francoeur, Robert Graves,
Nitin Gupta, Vipin Gupta, Thomas H. Jordan, Carl Kesselman, Philip Maechling,
John Mershing, Gaurang Mehta, David Okaya, Karan Vahi, and Li Zhao

K-WfGrid Distributed Monitoring and Performance Analysis Services for
Workflows in the Grid
Hong-Linh Truong, Peter Brunner, Thomas Fahringer, Francesco Nerieri,
Robert Samborski, Bartosz Baliś, Marian Bubak, and Kuba Rozkwitalski

Grid Organizational Memory: A Versatile Solution for Ontology Management in the Grid
Bartosz Kryza, Jan Pieczykolan, and Jacek Kitowski

Workflow-Driven Ontologies: An Earth Sciences Case Study
Leonardo Salayandia, Paulo Pinheiro da Silva, Ann Q. Gates, Flor Salcedo

Session 3 on Workflows and Knowledge Management

Kalipy: A Tool for Online Performance Analysis of Grid Workflows through Event
Correlation
Francesco Nerieri, Radu Prodan, and Thomas Fahringer

Interactive Workflows in a Virtual Laboratory for e-Bioscience: The SigWin-Detector Tool
for Gene Expression Analysis
Márcia A. Inda, Adam S. Z. Belloum, Marco Roos, Dmitry Vasunin, Cees de Laat,
L. O. Hertzberger, and Timo M. Breit

Adapting and Evaluating Commercial Workflow Engines for e-Science
Sharanya Eswaran, David Del Vecchio, Glenn Wasson, and Marty Humphrey

Communication over a Secured Heterogeneous Grid with the GriddLeS Runtime
Environment
Jagan Kommineni, David Abramson, and Jefferson Tan

Session 1 on Virtual Organizations
Supporting Decentralized, Security Focused Dynamic Virtual Organizations Across the Grid ........................................... 022

CROWN-ST: A Security and Trustworthiness Architecture for CROWN ........................................................................ 023
Qin Li, Jianxin Li, Jinpeng Huai, Xingang Liu, and Chunming Hu

Domain Based Access Control Model for Distributed Collaborative Applications ..................................................... 024
Yuri Demchenko, Cees de Laat, Leon Gommans, and Rene van Buuren

A European Legal Approach to Grid Computing ........................................................................................................ 025
Nikolaos Volanis and Jos Dumortier

Session 2 on Virtual Organizations

OWER: Practical Trust Negotiation Framework for Grids ................................................................................................. 026
Jianxin Li, Jinpeng Huai, Jie Xu, Yanmin Zhu, and Wei Xue

Job Failure Analysis and its Implications in a Large-scale Production Grid ................................................................. 027
Hui Li, David Groep, Lex Wolters, and Jeff Templon

Introducing Risk Management into the Grid .................................................................................................................... 028
Karim Djemame, Iain Gourlay, James Padgett, Georg Birkenheuer, Matthias Hovestadt, Odej Kao, and Kerstin Voß

Authorizing Remote Job Execution Based on Job Properties ....................................................................................... 029
Sang-Min Park, Glenn Wasson, and Marty Humphrey

Session 1 on e-Science Applications

Grid-Based Data Stream Processing in e-Science .............................................................................................................. 030
Richard Kuntschke, Tobias Scholl, Sebastian Huber, Alfons Kemper, Angelika Reiser, Hans-Martin Adorf, Gerard Lemson, and Wolfgang Voges

Integrating Data Grid and Web Services for E-Science Applications: A Case Study of Exploring Species Distributions .................................................................................................................. 031
Jianting Zhang, Ilkay Altintas, Jing Tao, Xianhua Liu, Deana D. Pennington, and William K. Michener

Automating Climate Science: Large Ensemble Simulations on the TeraGrid with the GriPhyN Virtual Data System ......................................................................................................................... 032
Veronika Nefedova, Robert Jacob, Ian Foster, Zhengyu Liu, Yun Liu, Ewa Deelman, Gaurang Mehta, Mei-Hui Su, and Karan Vahi

How Open is e-Science? ......................................................................................................................................................... 033
Paul A. David, Matthijs den Besten, and Ralph Schroeder
Session on e-Science Applications and Workflows and Knowledge Management

Presenting Scientific Legacy Programs as Grid Services via Program Synthesis .................................................................034
  Jürgen Hofer and Thomas Fahringer

Achievements and Experiences from a Grid-Based Earthquake Analysis and Modelling Study..........................................................035
  Jian Guo Liu, Moustafa Ghanem, Vasa Curcin, Christian Haselwimmer, Yike Guo, Gareth Morgan, and Kyran Mish

A Unified Model of Batch and Interactive Scientific Workflow and its Implementation Using Windows Workflow ................................................................................................................036
  Asbjørn Rygg, Jiro Sumitomo, and Paul Roe

Knowledge Evolution Supporting Automatic Workflow Composition.............................................................................................037
  Renata Słota, Joanna Zięba, Bartosz Kryza, and Jacek Kitowski

The Role of Workflow in Next Generation Business Oriented Grids: Two Different Approaches Leading to a Unified Vision ..................................................................................................................038
  Stefano Beco, Barbara Cantalupo, and Annalisa Terracina

GRISINO: Combining Semantic Web Services, Intelligent Content Objects and Grid Computing .................................................................................................................................039
  Ioan Toma, Tobias Bürger, Omair Shafiq, Daniel Doegl, Wernher Behrendt, and Dieter Fensel

Session 3 on Virtual Organizations

Using Lambda Networks to Enhance Performance of Interactive Large Simulations.................................................................040
  Matt Harvey, Shantenu Jha, Mary-Ann Thyveetil, and Peter Coveney

A Synchronous Multimedia Annotation System for Secure Collaboratories ..........................................................................................041
  Ronald Schroeter, Jane Hunter, Jonathon Guerin, Imran Khan, and Michael Henderson

The Design and Implementation of the Transatlantic Mission-Oriented Production and Experimental Networks ...............................................................................................................................................042
  Harvey Newman, Dimitri Bourilkov, Julian Bunn, Richard Cavanaugh, Iosif Legrand, Steven Low, Shawn McKee, Dan Nae, Sylvain Ravot, Conrad Steenberg, Xun Su, Michael Thomas, Frank van Lingen, and Yang Xia

User Programmable Virtualized Networks .............................................................................................................................................043
  Robert J. Meijer, Rudolf J. Strijkers, Leon Gommans, and Cees de Laat

Session 1 on Frameworks for e-Science

A Distributed Information Services Architecture to Support Biomarker Discovery in Early Detection of Cancer .............................................................................................................................................044
  Daniel Crichton, Sean Kelly, Chris Mattmann, Qing Xiao, J. Steven Hughes,
Jane Oh, Mark Thornquist, Donald Johnsey, Sudhir Srivastava, Laura Essermann, and William Bigbee

GridBeans: Supporting e-Science and Grid Applications .................................................................................................................045
Ralf Ratering, Alexander Lukichev, Morris Riedel, Daniel Mallmann, A. Vanni, C. Cacciari, S. Lanzarini, K. Benedyczak, M. Borcz, R. Kluszczynski, Piotr Bala, and Gert Ohme

Grid-based System for Product Design Optimization ..........................................................................................................................046
Tomasz Haupt, Anupama Voruganti, Anand Kalyanasundaram, and Igor Zhuk

A Flexible Grid Framework for Automatic Protein-Ligand Docking ......................................................................................................047
David Abramson, Celine Amoreira, Kim K. Baldridge, Laura Berstis, Chris Kondrick, and Tom Peachey

Session 2 on Frameworks for e-Science

Grid Support for HLA-based Collaborative Environment for Vascular Reconstruction ..............................................................................048
Katarzyna Rycerz, Marian Bubak, Maciej Malawski, and Peter Sloot

A Fault Tolerant and Multi-paradigm Grid Architecture for Time Constrained Problems.
Application to Option Pricing in Finance .............................................................................................................................................049
Sébastien Bezzine, Virginie Galtier, Stéphane Vialle, Françoise Baude, Mireille Bossy, Viet Dung Doan, and Ludovic Henrio

Facilitating User Access to the Grid: A Lightweight Application Hosting Environment for Grid Enabled Computational Science ..................................................................................................................050
S. J. Zasada, R. Saksena, P. V. Coveney, M. Mc Keown, and S. Pickles

Worqbench: An Integrated Framework for e-Science Application Development ........................................................................................051
Donny Kurniawan and David Abramson

Session 3 on Frameworks for e-Science

A Unified Data Grid Replication Framework .........................................................................................................................................052
Tim Ho and David Abramson

Virtual Lab for fMRI: Bridging the Usability Gap ........................................................................................................................................053
Silvia D. Olabarriaga, Peter T. de Boer, Ketan Maheshwari, Adam Belloum, Jeroen G. Snel, Aart J. Nederveen, and Maurice Bouwhuis

Towards User-Defined Performance Monitoring of Distributed Java Applications .................................................................................................................054
Wlodzimierz Funika, Piotr Godowski, Piotr Pęgiel, and Marian Bubak

X-SIGMA: XML Based Simple Data Integration System for Gathering, Managing, and Accessing Scientific Experimental Data in Grid Environments .................................................................................................................055
Dongkwang Kim, Karpjoo Jeong, Suntae Hwang, and Kum Won Cho

Distributing the Sloan Digital Sky Survey Using UDT and Sector .................................................................................................................056
Session 4 on Frameworks for e-Science

Grid Approach to Embarrassingly Parallel CPU-Intensive Bioinformatics Problems

Heinz Stockinger, Marco Pagni, Lorenzo Cerutti, and Laurent Falquet

Information Delivery in Computational Mineral Science: The eMinerals Data Handling System


Including SMP in Grids as Execution Platform and Other Extensions in GRID Superscalar

Josep M. Perez, Rosa M. Badia, and Jesus Labarta

Satin++: Divide-and-Share on the Grid

Gosia Wrzesinska, Jason Maassen, Kees Verstoep, and Henri E. Bal

GriCoL: A Language for Scientific Grids

Natalia Currle-Linde, Panagiotis Adamidis, Michael Resch, Fabian Bös, and Jürgen Pleiss

Session on Frameworks for e-Science and Resource Discovery

A Discovery Service for Very Large, Dynamic Grids

Jaka Močnik, Marko Novak, Gregor Pipan, and Piotr Karwaczynski

RCT: A Self-adaptive Overlay for Efficient Computational Resource Discovery in Grid Systems

Hailong Sun, Jinpeng Huai, Gongwei Fu, and Yunhao Liu

Towards a Framework for Monitoring and Analyzing QoS Metrics of Grid Services

Hong-Linh Truong, Robert Samborski, and Thomas Fahringer

ServOSims: A Service Oriented Framework for Composing and Executing Multidisciplinary Simulations

Evangelos Floros and Yiannis Cotronis

Building Simple, Easy-to-Use Grids with Styx Grid Services and SSH

J. D. Blower and K. Haines

Facilitating Collaboration and Application Sharing with MAST and the Access Grid
Session on Resource Discovery

Monitoring the Earth System Grid with MDS4 .......................................................... 069
   Ann Chervenak, Jennifer M. Schopf, Laura Pearlman, Mei-Hui Su, Shishir Bharathi,
   Luca Cinquini, Mike D’Arcy, Neill Miller, and David Bernholdt

Characterization of Computational Grid Resources Using Low-level Benchmarks ....... 070
   George Tsouloupas and Marios D. Dikaiakos

Soft Benchmarks-Based Application Performance Prediction Using a Minimum
Training Set ................................................................................................................. 071
   Farrukh Nadeem, Muhammad Murtaza Yousaf, Radu Prodan, and Thomas Fahringer

An Adaptive Algorithm for Information Dissemination in Self-Organizing Grids ........ 072
   Deger Cenk Erdil, Michael J. Lewis, and Nael B. Abu-Ghazaleh

Session on Resource Reservation and Virtual Organizations

Using Checkpointing to Enhance Turnaround Time on Institutional Desktop Grids .... 073
   Patricio Domingues, Artur Andrzejak, and Luis Moura Silva

Resource Management Using Untrusted Auctioneers in a Grid Economy .................. 074
   Kris Bubendorfer and Wayne Thomson

ShibGrid: Shibboleth Access for the UK National Grid Service ................................ 075
   David Spence, Neil Geddes, Jens Jensen, Andrew Richards, Matthew Viljoen,
   Andrew Martin, Matthew Dovey, Mark Norman, Kang Tang, Anne Trefethen,
   David Wallom, Rob Allan, and David Meredith

A DHT-Based Infrastructure for Sharing Checkpoints in Desktop Grid Computing ...... 076
   Patricio Domingues, Filipe Araújo, and Luis Moura Silva

GridBuilder: A Tool for Creating Virtual Grid Testbeds .......................................... 077
   Stephen Childs, Brian Coghlan, and Jason McCandless

Session on Resource Reservation

On Resource Volatility in Enterprise Desktop Grids .................................................. 078
   Derrick Kondo, Gilles Fedak, Franck Cappello, Andrew A. Chien, and Henri Casanova

Communication-Aware Job Placement Policies for the KOALA Grid Scheduler ........ 079
Ozan Sonmez, Hashim Mohamed, and Dick Epema

Market-Based Resource Allocation in Grids.............................................................................................................080
  B. Pourebrahimi, K. Bertels, G. M. Kandru, and S. Vassiliadis

Fine Grained Resource Reservation in Open Grid Economies................................................................................081
  Kris Bubendorfer

Session on Resource Reservation and Scheduling

Applying Advance Reservation to Increase Predictability of Workflow Execution on the Grid..................................................082
  Marek Wieczorek, Mumtaz Siddiqui, Alex Villazón, Radu Prodan, and Thomas Fahringer

Application-level Resource Provisioning on the Grid.................................................................................................083
  Gurmeet Singh, Carl Kesselman, and Ewa Deelman

Provisioning and Scheduling Resources for World-Wide Data-Sharing Services..........................................................084
  Alexandru Iosup, Pawel Garbacki, and D.H.J. Epema

Extending a Resource Broker for Advance Reservation and Charging........................................................................085
  Marco Fargetta, Donal Fellows, and Dean Kuo

Session on Scheduling

Capacity Planning and Stochastic Scheduling in Large-Scale Grids.............................................................................086
  Ali Afzal, John Darlington, and A. Stephen McGough

Reusable Cost-Based Scheduling of Grid Workflows Operating on Higher-Order Components........................................087

The Effectiveness of Threshold-Based Scheduling Policies in BOINC Projects ..............................................................088
  Trilce Estrada, David A. Flores, Michela Taufer, Patricia J. Teller, Andre Kerstens, and David P. Anderson

DIANA Scheduling Hierarchies for Optimizing Bulk Job Scheduling .............................................................................089
  Ashiq Anjum, Richard McClatchey, Heinz Stockinger, Arshad Ali, Ian Willers, Michael Thomas, Muhammad Sagheer, Khawar Hasham, and Omer Alvi

Economy-Based Data Replication Broker..................................................................................................................090
  Henry Lin, J. H. Abawajy, and Rajkumar Buyya

Main Track Poster Session

DESHL — Standards Based Access to a Heterogeneous European Supercomputing Infrastructure.................................................091
  T. M. Sloan, R. Menday, T. P. Seed, M. Illingworth, and A. S. Trew
Workshop on Innovative and Collaborative Problem Solving Environment (PSE) in Distributed Resources

Keynote: Jylab: A System for Portable Scientific Computing over Distributed Platforms .........................................................097
  Giorgos Kollias and Efstratios Gallopoulos

Keynote: Mathematical Modeling Support in a Distributed Problem Solving Environment for Scientific Computing .................................................................098
  Shigeo Kawata, Takayuki Teramoto, Hideaki Sugiura, Yuichi Saitoh,
  and Yoshikazu Hayase

A Problem Solving Environment for Automatic Matlab 3D Finite Element Code Generation and Simplified Grid Computing .................................................................099
  Zhou Jun and Yukio Umetani

Automatic Viewpoint Selection for a Visualization I/F in a PSE .................................................................................................100
  Machiko Nakagawa, Masami Takata, and Kazuki Joe

Computational Engineering on the Grid: Crafting a Distributed Virtual Reactor .........................................................................................101
  V.V. Krzhizhanovskaya, V.V. Korkhov, A. Tirado-Ramos, D.J. Groen, I.V. Shoshmina,
  I.A. Valuev, I.V. Morozov, N.V. Malyskin, Y.E. Gorbachev, and P.M.A. Sloot

Design and Implementation of NAREGI Problem Solving Environment for Large-Scale Science Grid .................................................................................................102
  Hiroyuki Kanazawa, Yasuyoshi Itow, Motohiro Yamada, Yutaka Miyahara, Yoshikazu Hayase,
  Shigeo Kawata, and Hitohide Usami

LabGrid: Integrated Problem Solving Environment System for High Throughput Computing .................................................................................................103
Young Jun Choi, Takashige Oroguchi, Yoshinori Kato, Makoto Takeda, and Yoshio Tago

Clayworks: A System for Collaborative Real-Time Modeling and High-Performance Simulation................................................................. 104
   Jens Müller, Martin Alt, Jan Dünneveer, and Sergei Gorlatch

A Middleware Framework for Maximum Likelihood Evaluation over Dynamic Grids................................................................. 105
   Wei-Jen Wang, Kaoutar El Maghraoui, John Cummings, Jim Napolitano, Boleslaw K. Szymanski, and Carlos A. Varela

Grid Enabled Problem Solving Environments for Text Categorization ........................................................................................................... 106
   Jian Mei, Wu Zhang, and Suge Wang

The Datacrossing DSS: A Data-GRID Based Decision Support System for Groundwater Management .................................................................................................................. 107
   Simone Manca, Pierluigi Cau, Ernesto Bonomi, and Alessandro Mazzella

Performance of Grid-based PDE.Mart......................................................................................................................................................... 108
   Xiaobin Zhang, Mo Mu, Guoyong Mao, and Wu Zhang

Scientific Simulation Execution Support on a Closed Distributed Computer Environment............................................................. 109
   Hideaki Fuji, Shigeo Kawata, Hideaki Sugitani, Yuichi Saitoh, Yoshikazu Hayase, Hitohide Usami, Motohiro Yamada, Yutaka Miyahara, Hiroyuki Kanazawa, and Takashi Kikuchi

Grid Service Platform: Design and Implementation of Grid Middleware for Telecom Carriers .................................................................................................................. 110
   Soichi Shigeta, Nobutaka Imamura, Haruyasu Ueda, Hiromichi Kobashi, Miho Murata, Taketoshi Yoshida, Atsushi Kubota, Akira Asato, and Yoshimasa Kadooka

Workshop on Biologically-inspired Optimisation Methods for Parallel and Distributed Architectures: Algorithms, Systems and Applications

Dynamic Problems and Nature Inspired Meta-heuristics ................................................................................................................................. 111
   Tim Hendtlass, Irene Moser, and Marcus Randall

Using the Multi-start and Island Models for Parallel Multi-objective Optimization on the Computational Grid .............................................................................. 112
   M. Mezmaz, N. Melab, and E-G. Talbi

Robust Handling of Multiple Multi-objective Optimisations ................................................................................................................................. 113
   Wolfgang Ponweiser and Markus Vincze

An Extended Extremal Optimisation Model for Parallel Architectures ............................................................................................................. 114
   Marcus Randall and Andrew Lewis

Niching for Population-Based Ant Colony Optimization ................................................................................................................................. 115
   Daniel Angus

Hybrid Particle Guide Selection Methods in Multi-objective Particle Swarm Optimization .................................................................................. 116
Multiobjective Tuning of Grid-Enabled Earth System Models Using a Non-dominated Sorting Genetic Algorithm (NSGA-II)

Evaluation of Parallel EDAs to Create Chemical Calibration Models
A. Mendiburu, J. Miguel-Alonso, and J. A. Lozano

A Differential Evolution Based Algorithm to Optimize the Radio Network Design Problem
Silvio Priem Mendes, Juan A. Gómez Pulido, Miguel A. Vega Rodríguez, María D. Jaraíz Simón, and Juan M. Sánchez Pérez

Bio-Inspired Control Approach to Multiple Spacecraft Formation Flying
Liguo Weng, Wenchan Cai, Ran Zhang, and Y. D. Song

Evolutionary Optimization of Forging Anvils Using Grid Based on Alchemi Framework
Waclaw Kuś

Workshop on Collaborative Remote Laboratories

A Grid-Based Architecture for the Composition and the Execution of Remote Interactive Measurements
Andrea Bagnasco, Arianna Poggi, and Anna Marina Scapolla

Remote Control of Web 2.0-Enabled Laboratories from Mobile Devices
Diego López-de-Ipiña, Javier García-Zubia, and Pablo Orduña

Virtual Laboratory as a Remote and Interactive Access to the Scientific Instrumentation Embedded in Grid Environment

CIMA Based Remote Instrument and Data Access: An Extension into the Australian e-Science Environment
Ian M. Atkinson, Douglas du Boulay, Clinton Chee, Kenneth Chiu, Tristan King, Donald F. McMullen, Romain Quilici, Nigel G.D. Sim, Peter Turner, and Mathew Wyatt

A Collaborative Virtual Computer Security Lab
Jörg Keller and Ralf Naues

Toward Standards for Integration of Instruments into Grid Computing Environments
Donald F. McMullen, Ian M. Atkinson, Ken Chiu, Peter Turner, Kianosh Huffman, Romain Quilici, and Mathew Wyatt

Advanced Techniques for Scheduling, Reservation, and Access Management for Remote Laboratories
Philipp Wieder, Oliver Wäldrich, and Wolfgang Ziegler
Networked Instrumentation for Nanotechnologies Using WS-Resources and WS-Notification

Jungwook Seo and Ernie W. Hill

Enabling e-Research in Combustion Research Community

Tran Vu Pham, Peter M. Dew, Lydia M.S. Lau, and Michael J. Pilling

Workshop on e-Humanities – An Emerging Area of Concern

Towards a Linguist's Workbench Supporting eScience Methods

A. Dimitriadis, M. Kemps-Snijders, P. Wittenburg, M. Everaert, and S. Levinson

A Grid of Language Resource Repositories

Daan Broeder, Remco van Veenendaal, David Nathan, and Sven Strömqvist

TextGrid and eHumanities

Peter Gietz, Andreas Aschenbrenner, Stefan Büdenbender, Fotis Jannidis, Marc W. Küster, Christoph Ludwig, Wolfgang Pempe, Thorsten Vitt, Werner Wegstein, and Andrea ZIELINSKI

GuangQunFangPu: e-Humanities Combining Textual and Botanic Information

Shu-Kai Hsieh, Shu-Ming Chang, Chun-Han Chang, Yi-Shuan Zhou, Chu-Ren Huang, Feng-Ju Lo, and Ru-Ying Chang

Educating the Humanities for e-Science

Sven Strömqvist

The Arts and Humanities e-Science Initiative in the UK

Tobias Blanke and Stuart Dunn

ODIN: A Model for Adapting and Enriching Legacy Infrastructure

William D. Lewis

Workshop on e-Science in and Beyond the Classroom: Usability, Practicability and Sensability

eScience, Science Education and Technology Integration in the Classroom: Some Practical Considerations

Dawn Woodgate and Danaë Stanton Fraser

Designing a Multipurpose Virtual Laboratory to Support Communities of Practice in Physics

Silvia Gabrielli, Markus Hodapp, and Roberto Ranon

Identifying Tools to Support Schools’ Collaborative Teaching and Learning

Hilary Smith, Joshua Underwood, Geraldine Fitzpatrick, Rose Luckin, and Danaë Stanton Fraser

Evolution of a Remote Access Facility for a PLL Measurement Course

Workshop on Healthgrid

Data Access Service in a Computational Grid Platform Applied to the Monitoring and Control of Epidemics on Georeferenced Dynamic Maps ................................................................. 142

*Virgilio Caviechioli Neto, Henrique Fabricio Gagliardi, Alexandre Rezende, Erick Sobreiro Gonçalves, Eduardo Gallo, Fabricio Alves Barbosa Silva, Ivan Torres Pisa, and Domingos Alves*

Workshop on Scientific Workflows and Business Workflow Standards in e-Science

Triana Generations ............................................................................................................. 143

*Ian Taylor*

Managing Large-Scale Scientific Workflows in Distributed Environments: Experiences and Challenges .................................................................................................................. 144

*Ewa Deelman and Yolanda Gil*

Scientific Workflows: More e-Science Mileage from Cyberinfrastructure ....................... 145

*Bertram Ludäscher, Shawn Bowers, Timothy McPhillips, and Norbert Podhorski*

EMBRACE: Bioinformatics Data and Analysis Tool Services for e-Science .......................... 146

*Peter M. Rice, Alan J. Bleasby, Syed A. Haider, Jon C. Ison, Shaun McGlinchey, and Mahmut Uludag*

Workshop on Running Production Grids

Production Storage Resource Broker Data Grids ................................................................ 147

*Reagan Moore, Sheau-Yen Chen, Wayne Schroeder, Arcot Rajasekar, Michael Wan, and Arun Jagatheesan*

The SwissBioGrid Project: Objectives, Preliminary Results and Lessons Learned ................ 148

*Michael Podvinec, Sergio Maffioletti, Peter Kunszt, Konstantin Arnold, Lorenzo Cerutti, Bruno Nyffeler, Ralph Schlaphbach, Can Türker, Heinz Stockinger, Arthur J. Thomas, Manuel C. Peitsch, and Torsten Schwede*

Agent-Based Negotiation Techniques for a Grid: The Prophet Agents ................................ 149

*Massimo Orazio Spata, Giuseppe Pappalardo, Salvatore Rinaudo, and Tonio Biondi*

A Novel Approach To Workload Allocation of QoS-constrained Workflow-Based Jobs in a Utility Grid ................................................................................................................ 150

*Yash Patel and John Darlington*

BABAR Experience of Large Scale Production on the Grid .................................................. 151

*C. A. J. Brew, F. F. Wilson, G. Catselli, T. Adye, E. Luppi, and D. Andreotti*

RISE: A Grid-based Self-Configuring and Self-Healing Remote System Image
Workshop on Engineering e-Infrastructures for the Benefits of e-Science

Enabling HPC E-Science via Integrated Grid Infrastructure ................................................................. 156
Phil Andrews, Martin Margo, Amit Chourasia, and John Towns

FAME: Adding Multi-level Authentication to Shibboleth ....................................................................... 157
Aleksandra Nenadic, Ning Zhang, Jay Chin, and Carole Goble

Complex Data-Intensive Systems and Semantic Grid: Applications in Satellite Missions .................. 158
M. Sánchez-Gestido, L. Blanco-Abruña, M. S. Pérez-Hernández, R. González-Cabero,
A. Gómez-Pérez, and Ó. Corcho

Grid Services Toolkit for Process Data Processing ........................................................................... 159
T.O. Müller, T. Jejkal, R. Stotzka, M. Sutter, V. Hartmann, and H. Gemmeke

SGSIA-in-Network Data Preprocessing for Secure Grid-Sensor Integration ................................ 160
Zubair A. Baig, Mohamed Baqer, and Asad I. Khan

Author Index .......................................................................................................................................... 161