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Abstract: This document describes various occasions where the CrossGrid project was presented to public (industrial) bodies as part of its dissemination and exploitation activities in the period September 2002 – February 2003.



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## 1. INTRODUCTION

Among the activities of the CrossGrid project are so-called “dissemination and exploitation activities”. These include various events where the partners of CrossGrid have the chance to meet with industry and research representatives, in order to present their experiences and findings from working within the Project, and - in many cases - to receive valuable feedback from both of these areas.

This document describes two such events of major significance which occurred in the second half year of the project:

- The 2<sup>nd</sup> Cracow Grid Workshop, Poland
- the 1<sup>st</sup> European AcrossGrids Conference, Santiago de Compostela, Spain

We also give an account of a few other significant occasions where CrossGrid was presented to the public (chronologically):

- PVM-MPI Conference, Linz, Austria
- E-science initiative, Cantabria, Spain
- the IST2002 event, Copenhagen, Denmark
- Meeting on Grid initiatives, Salamanca, Spain

For each of the main events we supply information regarding its venue, schedule, participants and agenda. In addition, CrossGrid participation in each event is detailed.

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## 2. THE CRACOW GRID WORKSHOP '02

This section details the Cracow Grid Workshop '02 (also called CGW'02), a CrossGrid event conceived by the co-ordinators of CrossGrid and organized in Cracow, Poland (home to ACC CYFRONET UMM). Further information can be found at <http://www.cyfronet.krakow.pl/cgw02/>. CGW is a recurring event and organizers are already planning another edition for late 2003.

### 2.1. VENUE, DATES AND ORGANIZERS

The Cracow Grid Workshop was a conference organized jointly by the Institute of Nuclear Physics, the UMM Institute of Computer Science and ACC CYFRONET in Cracow, Poland. The event took place at the Institute for Nuclear Physics and lasted for four days, from 11 to 14 December 2002. In addition, several tutorials were held at the ICS computer labs.

### 2.2. ATTENDANCE

CGW'02 was intended mainly for CrossGrid partners and other Polish researchers; however, foreign guests were also welcome (including high-ranking representatives of the EDG project, who attended and gave lectures). In all, about one hundred participants from Poland and several EU countries (Slovakia, Denmark, Austria, Switzerland and the United Kingdom) took part in the workshop. This number was joined by approximately 20 students, wishing to familiarize themselves with Grid technology in general

### 2.3. AGENDA

The Workshop can be divided into three parts:

#### 2.3.1. Invited lectures

Four of these were delivered at the start of the conference:

- Piotr Bała (ICM, Poland) from the EuroGrid project opened the Workshop with a presentation concerning the seamless access to computer resources with Unicore – a science and engineering Grid combining resources of HPC centers and making them available through the Internet.
- Jarek Nabrzyski (PSNC, Poland), the representative of GridLab, presented his project, which develops and implements the Grid Application Toolkit (GAT) together with a set of services to enable easy and efficient use of Grid resources.
- Steve Fisher (RAL, UK) from DataGrid described R-GMA - a monitoring and information service for distributed resource management. It exposes a relational model with SQL support to provide static as well as dynamic information about Grid resources for use within application monitoring.
- Fabrizio Gagliardi (Cern, Switzerland), the manager of DataGrid, started his lecture by presenting the current state of his project in various aspects: common testbeds with ATLAS

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and CMS, DataGrid tutorials and interaction with other similar projects. Mr. Gagliardi then discussed his plans for involvement in EGEE (Enabling Grids for E-Science in Europe) – a new initiative under EU 6FP, which will aim to create a general European Grid production quality infrastructure on top of present and future EU RN infrastructures.

### 2.3.2. Contributed lectures

The lecture session spanned three days and included some 30 lectures, which fall into three categories:

- papers describing Grid projects and their present status (CrossGrid, PROGRESS, VALIS/Valkyrie),
- papers addressing some selected Grid issues like middleware development, performance measurements and analysis, application monitoring, distributed visualization, testbed status etc. This was the most numerous group of papers, prepared by representatives of various projects (see section 4.4),
- two general presentations providing information on European Grid research: "Short Overview of EU-Funded Grid Projects" and "Comparisons of Grid Middleware in European Grid Projects" (work in progress).

### 2.3.3. Tutorials

The following three tutorials were organized as part of CGW'02:

- The EDG tutorial, aimed at users wishing to make their applications “Grid-enabled” using EDG software. Information was also provided for people wishing to learn how to use EDG middleware components to submit jobs to the Grid, manage data files and obtain information about their jobs and the testbed itself. The one-day agenda of the tutorial comprised lectures on Grid computing and the DataGrid project, information about security, testbeds, job submission and data management as well as hands-on exercises involving job submission and data management.
- The GridLab/Cactus tutorial, entitled "Developing HPC Scientific and Engineering Applications: From the Laptop to the Grid". Participants learned about Cactus - an open source problem-solving environment designed for scientists and engineers, with ports to many architectures. Applications developed for standard workstations or laptops, can be seamlessly run on clusters or supercomputers.
- The UNICORE tutorial, where users learned to:
  - install and configure the UNICORE client on a workstation and log in to it,
  - create jobs and look for resource information,
  - specify script task to be executed,
  - submit jobs, query their status and retrieve job output,
  - delete jobs from Virtual Sites (Vsite).

## 2.4. COMPLETE LIST OF CGW PAPERS

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"A Framework for Event Filtering and Reconstruction for the DESY H1 Experiment"

Alan Cambell, Ralf Gerhards, Christoph Grab, Janusz Martyniak, Tigran Mkrtchyan, Sergey Levonian, Jacek Nowak, Max Vorobiev

"A Proposal of the Services For Managing Interactive Grid Applications"

K. Zajac, M. Bubak, M. Malawski, P. M.A. Sloot and A. Tirado-Ramos, Z. Zhao

"ATLAS data challenges using Cyfronet cluster"

T. Bold, A. Kaczmarek, T. Szymocha

"Authorization Mechanisms for Portal Accessible Services"

Pawel Slowikowski, Kzimirz Balos, Krzysztof Zielinski

"Comparison of Grid Middleware in European Grid Projects - work in progress"

Jarek Nabrzyski, Ariel Oleksiak

"Component-Expert Architecture as Flexible Environment for Selection Data-handlers and Data-Access-Estimators in CrossGrid"

Lukasz Dutka, Renata Slota and Jacek Kitowski

"Current Status of the CrossGrid Architecture"

Marian Bubak, Maciej Malawski, and Katarzyna Zajac

"Data Access Time Estimation for HSM systems in Grid Environment"

Darin Nikolow, Renata Slota, Jacek Kitowski

"EuroGrid - Seamless Access to Computer Resources with Unicore"

Piotr Bala

"General Framework for Virtual Laboratory"

Marcin Lawenda, Norbert Meyer, Tomek Rajtar

"GridLab - Enabling Applications on the Grid"

Jarek Nabrzyski

"GridLab Resource Management System"

Jaroslaw Nabrzyski, Juliusz Pukacki, Krzysztof Kurowski, Bogdan Ludwiczak, Tomasz Piontek

"GVK - Visualization Services for the Grid"

Paul Heinzlreiter, Dieter Kranzlmüller, Jens Volkert

"Integration of the CrossGrid Services into OGSA Model"

Maciej Malawski, Marian Bubak, Katarzyna Zajac

"Jiro Based Grid Infrastructure Monitoring - first prototype functionality"

B. Lawniczek, G. Majka, K. Zielinski, S. Zielinski

"Medical Image Reconstruction in a Grid Environment"

Siegfried Benkner, Aleksandar Dimitrov, Gerhard Engelbrecht, Rainer Schmidt, Nikolay Terziev

"Mobile Users Support in the GridLab Project"

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Bartosz Lewandowski, Piotr Grabowski, Jaroslaw Nabrzyski

"Monitoring of Multithreaded Applications on SGI Computers"

Bartosz Balis, Marian Bubak, Włodzimierz Funika, Roland Wismueller, and Grzegorz Kaplita

"Network Performance Measurements for Massive Data Transfers Between CERN  
Geneva and Cyfronet Cracow"

Krzysztof Korcyl, Grzegorz Sladowski, Robert W. Dobinson, Catalin Meirosu, Mihail Ivanovici,  
Marcia Losada Maia

"OCM-G -- a Grid Application Monitoring System: Towards the First Prototype"

Bartosz Balis, Marian Bubak, Tomasz Szepieniec, Roland Wismueller, and Marcin Radecki

"On Models of Distributed Scientific Visualization"

Witold Alda, Jacek Kitowski

"Optimisation of the Usage of Mathematical Libraries in the Grid Environment"

Maciej Brzezniak, Norbert Meyer

"PC-Based LINUX Metaclusters as Key Elements of Grid Infrastructure"

Roman Wyrzykowski, Norbert Meyer, Maciej Stroinski

"Performance Analysis of Grid Interactive Applications with G-PM tool"

Marian Bubak, Włodzimierz Funika, Roland Wismueller, Tomasz Arodz, Marcin Kurdziel,

"Presentation of ATM" (SGI Representative – Sponsor of the Workshop)

Jacek Madajczyk

"PROGRESS - Access Environment to Computational Services Performed by Cluster of SUN  
Systems"

Michal Kosiedowski, Cezary Mazurek, Maciej Stroiński

"R-GMA: a Relational Grid Information and Monitoring System"

Steve Fisher

"Roaming Access and Migrating Desktop"

Mirosław Kupczyk, Rafał Lichwała, Norbert Meyer, Bartek Palak, Marcin Płóciennik, Paweł  
Wolniewicz

"Short Overview of EU Funded Grid Projects"

Marian Bubak, Piotr Nowakowski, and Robert Pajak

"Testbed Status at Cyfronet Krakow"

Andrzej Oziebło, Piotr Nyczyk and Mieczysław Pilipczuk

"The Authorization Service for Grid Environments"

Marcin Adamski, Michał Chmielewski, Sergiusz Fonrobert, Jaroslaw Nabrzyski and Tomasz Ostwald

"Update on EU DataGrid Progress and Plans for EGEE"

Fabrizio Gagliardi

"VALIS/Valkyrie"

Michal Chmielewski, Adam Gowdiak, Sergiusz Fonrobert, Norbert Meyer and Tomasz Ostwald

## **2.5. OTHER INFORMATION**

The lectures presented during the Workshop were transmitted live over the Internet in multicast. The Workshop also saw the symbolic opening of a new CrossGrid cluster at CYFRONET. All proceedings were published as a CYFRONET report.

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### 3. THE FIRST EUROPEAN ACROSSGRIDS CONFERENCE

#### 3.1. VENUE, DATES AND ORGANIZERS

The 1<sup>st</sup> European AcrossGrids Conference took place on the February 13-14, 2003, at the FEUGA building of the University of Santiago de Compostela, Galicia, Spain (<http://grid.cesga.es>).

The organization of the conference was undertaken jointly by the following bodies:

- the CrossGrid project consortium
- the University of Santiago de Compostela
- the University of A Coruna
- the Supercomputing Center of Galicia (CESGA)

the last three being based in Galicia, Spain.

#### 3.2. STATED OBJECTIVES AND AIM

The objective of the event, as stated in the website, was: "... to bring together and support a collaboration of all people participating in European and other Projects, researchers, developers, practitioners and potential users of grid technologies."

The conference would cover the following:

- an overview of main European grid projects
- a presentation of hot research problems in Grid technology
- examples of Grid applications
- Grid infrastructure, middleware, quality of service and other tools
- other Grid-related topics

The organizers, again through their website, encouraged all those working in the field of Grid technology to present their research at this conference.

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### 3.3. PROMOTION OF THE EVENT

As stated earlier on, the website <http://grid.cesga.es> was set up as the main information source for those wishing to participate in the conference. This website featured:

- information on submission of abstracts
- information on important dates
- the conference agenda
- the composition of the programme committee, the international advisory committee and the organizing committee
- information on registration and accommodation
- information on transportation from the local airport, as well as flight times
- weather information
- useful maps
- links to sites relating to the city of Santiago de Compostela

The AcrossGrids Conference was advertised in:

- Grid Today
- several user forums around Europe
- the "Cordis News" newsletter
- the "Research Infrastructure" newsletter (published by the European Union)

A total of three hundred e-mail messages, advertising the conference, were sent to companies in Galicia.

The conference announcement was published in five mailing lists relating to Grid technology and distributed computing.

A reference to the conference was entered into a database of scientific events.

### 3.4. AGENDA

The AcrossGrids conference featured the following:

- the presentation of up to 32 different peer-reviewed research papers
- key note addresses from researchers from leading institutions in Grid technology development
- poster sessions

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- a Globus Toolkit 3 tutorial
  - a user forum intended to stir up debate about the social implications of the application of Grid technologies in various fields such as medical research and intervention, corporate life and business or public administration
  - a specially designed booth, staffed by CrossGrid and DataGrid dissemination officers, who provided brochures and displayed presentations corresponding to both projects; these were shown using projection screens

The program follows:

**Thursday February 13, 2003**

Official Conference Opening and Welcome

Senén Barro Ameneiro, President of the Universidade de Santiago de Compostela

"Grids Enabled Infrastructures in Europe - an FP6 Perspective"

Mario Campolargo- DG INFSO, European Commission

"High Energy Physics applications in the European DataGrid project: present and future"

Mario Reale, CNAF-INFN, Bologna and INFN, Department of Physics, University of Rome

"The CrossGrid Architecture: Applications, Tools, and Grid Services".

Marian Bubak, Maciej Malawski and Katarzyna Zajaç

"First prototype of the CrossGrid testbed".

Jesus Marco

"An Authorization System for Virtual Organizations"

R. Alfieri, R. Cecchini, V. Ciaschini, L. Dell' Agnello, A. Frohner, A. Gianoli, L. Karoly, F. Spataro

"An Advanced Security Infrastructure for Heterogeneous Relational Grid Data Sources".

Javier Jaen Martinez and Jose H. Canós

"Experiences on Grid Resource Selection Considering Resource Proximity"

Ruben S. Montero, Eduardo Huedo and Ignacio M.Llorente

"High-performance Stream-oriented GRID Database Manager for Scientific Data"

Milena Gateva Koparanova and Tore Risch

"Decentralized vs. Centralized Economic Coordination of Resource Allocation in Grids"

T. Eymann, M. Reinicke, O. Ardaiz, P. Artigas, L. Díaz de Cerio, F. Freitag, R. Messeguer, L. Navarro, D. Royo

"RAID-1 and Data Stripping Across the GRID"

Jesus Marco

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"The EU-CrossGrid Approach for Grid Application Scheduling".

Elisa Heymann, Alvaro Fernandez, Miquel A. Senar

"Optimization of Data Access for Grid Environment".

Dutka, L., Slota, R., Nikolow, D., Kitowski, J.

"Job Scheduling and Resource Management Techniques in Dynamic Grid Environments"

Rafael Moreno Vozmediano

"MAPFS: A Flexible Infrastructure for Data-Intensive Grid Applications".

María S. Pérez, Jesús Carretero, Félix García, José M. Peña and Víctor Robles

"Search Engines for the Grid: A Research Agenda"

Marios Dikaiakos, Yannis Ioannidis, Rizos Sakellariou

"A Parallel I/O Middleware to Integrate Heterogeneous Storage Resources on Grids"

José M. Pérez, Félix García, Jesús Carretero, Alejandro Calderón, Javier Fernández

"ULabGrid, an infrastructure to develop distant laboratories for undergrad students over a Grid"

O. Ardaiz, P. Artigas, L. Díaz de Cerio, F. Freitag, R. Messeguer, L. Navarro, D. Royo

"InnerGrid Demo"

Joan Massó, President Gridsystems.

### **Grid User Forum: "Social Implications of New Developments in Grid Technologies"**

Official User Forum Opening

Gonzalo León Serrano, Secretary General for Scientific Policy, Spanish Ministry of Science and Technology

"Overview of EU Grid projects"

Mark I. Parsons, National e-Science Centre, The University of Edinburgh

"e-Science. Grids and Grid Infrastructures"

Manuel Delfino, Port d'Informació Científica, Barcelona

"Grid Problem Solving Environments for Bio-Medicine"

Peter M.A. Sloot, Computational Science Section, University of Amsterdam, Netherlands

"Grid in Industry - Business Applications"

Joan Massó, Gridsystems Co

Panel Discussion - Round Table

"GRID Potential: Promises and Limitations of an Emerging Technology"

Globus ToolKit 3 Tutorial

Lisa Childers, Globus ToolKit 3 Project, Argonne National Laboratory

**Friday February 14, 2003**

"Grid Services for HLA-based Distributed Simulation Frameworks"

Katarzyna Zajac, Alfredo Tirado-Ramos, Zhiming Zhao, Peter Sloot and Marian Bubak

"Performance Prediction in a Grid environment"

Rosa M. Badia, Francesc Escalé, Edgar Gabriel, Judit Gimenez, Rainer Keller, Jesús Labarta, Matthias S. Müller

"Grid-Enabled Visualization with GVK"

Dieter Kranzlmüller, Paul Heinzlreiter, Jens Volkert

"The G-PM Tool for Grid-oriented Performance Analysis"

Marian Bubak, Wlodzimierz Funika, Roland Wismüller, Tomasz Arodz and Marcin Kurdziel

"A Grid-Enable Air Quality Simulation"

J.C. Mouriño, M.J. Martín, P. González, M. Boullón, J.C. Cabaleiro, T.F. Pena, F.F. Rivera and R. Doallo.

"Dynamic Grid Catalog Information Service"

Giovanni Aloisio, Euro Blasi, Massimo Cafaro, Italo Epicoco, Sandro Fiore, Maria Mirto

"GRID Oriented Implementation of Self-Organizing Maps for Data Mining in Meteorology"

F. Luengo, A. Cofiño, J. M. Gutiérrez

"Automatic services discovery, monitoring and visualization of grid environments: the MapCenter approach"

Franck Bonmassieux, Robert Harakaly and Pascale Primet

"A grid representation for Distributed Virtual Environments"

Pedro Morillo, Marcos Fernández, Nuria Pelechano

"Grid-enabled OMIS Compliant Monitoring System"

Bartosz Balis, Marian Bubak, Wlodzimierz Funika, Tomasz Szepieniec, Roland Wismüller and Marcin Radecki

"Mobile Work Environment for Grid Users"

Mirosław Kupczyk, Rafał Lichwała, Norbert Meyer, Bartek Palak, Marcin Plociennik, Paweł Wolniewicz

"TCP behaviour on transatlantic Lambda's"

Antony Antony, Johan Blom, Cees de Laat, Jason Lee and Wim Sjouw

"Network performance measurements as part of feasibility studies on moving part of the ATLAS Event Filter to off-site Institutes"

Krzysztof Korczyk, Grzegorz Sładowski, Razvan Beuran, Robert W. Dobinson, Catalin Meirosu, Mihail Ivanovici, Marcia Losada Maia

**Poster Session**

"Grid Uses and Characteristics: a Grid Definition"

Miguel L. Bote-Lorenzo, Yannis A. Dimitriadis and Eduardo Gómez-Sánchez

"An Overview of EU-Funded Grid Projects"

Marian Bubak, Piotr Nowakowski and Robert Pajak

"Comparison of Grid Middleware in European Grid Projects"

Jarek Nabrzyski, Ariel Oleksiak

"A flexible multi-level grid monitoring architecture"

Gabor Gombas

"Interactive Distributed Data Access in a GRID environment"

David Rodríguez, Rafael Marco, Jesus Marco

"Jiro Based Grid Infrastructure Monitoring System - State of Development Report"

Bartosz Lawniczek, Grzegorz Majka, Krzysztof Zielinski and Slawomir Zielinski

"A grid-based architecture for Multimedia services management"

Dario Bruneo, Mirko Guarnera, Angelo Zaia and Antonio Puliafito

"Design and Implementation of a Grid. Enabled Component Container for CORBA Lightweight Components" Diego Sevilla Ruiz

"Wireless Java-enabled MIDP devices as peers in Grid infrastructure"

Miika Tuisku

"A Grid Framework for Optimistic Resource Sharing"

Norlaily Yaacob, Rahat Iqbal

"Grid Computing in Structure Determination of Biological Specimens by Electron Microscope Tomography"

J.J. Fernandez, J.R. ilbao-Castro, R. Marabini, J.M. Carazo, I. Garcia

"ATLAS Data Challenges in GRID Environment on CYFRONET Cluster"

Tadeusz Szymocha

"Grid-based Visualization of Medical Images and Vascular Reconstruction"

Dick van Albada, Elena V. Zudilova, Peter M. A. Sloot, Dieter Kranzlmüller, Paul Heinzlreiter, Jens Volkert

### 3.5. PROCEEDINGS

Links to the presentations are available through the official conference website. Specifically, one may consult the address: <http://grid.cesga.es/multicast.html>. This subpage displays the above agenda and each presentation time slot is displayed with a link to the presentation itself.

### 3.6. THE GRID USER FORUM

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As mentioned earlier on, a special Grid User Forum took place in the afternoon of the first day of the conference. This was entitled “Social Implications of New Developments in Grid Technologies” and contained a number of presentations on aspects of Grid technology that were of a more general and less technical nature.

The last event of this forum was a panel discussion entitled: "GRID Potential: Promises and Limitations of an Emerging Technology". The panel consisted of:

- Michal Turala, Coordinator of the CrossGrid project at Cyfronet and professor at the Institute of Nuclear Physics, Krakow, who also moderated the discussion
- Stefano Beco, of Datamat s.p.A., Rome, a partner of both CrossGrid and DataGrid
- Mark Parsons, Commercial Director of the National e-Science Centre, University of Edinburgh
- Peter Sloot, Professor at the Computational Science Section of the University of Amsterdam
- Joan Massó, President of Gridsystems Co, Mallorca
- Manuel Delfino, Head of the Port de Informació Científica (PIC) and professor at the Autonomous University of Barcelona
- Martin Antony Walker, Scientific Research Segment Manager at HP Invent - EMEA

Some key points addressed during the discussion were the following:

- What is the Grid?
- What is it for? What could it be for?
- When will it be available?
- Will it work? Is it a myth (i.e. an oversell)?
- Is it an opportunity for business?
- The difficulties of bringing Grid technology to industry and the need to convince it that it will benefit from this technology.
- At this point in time, we don't really know where this technology will go.

### 3.7. CONCLUSIONS

A good number of EU-funded Grid projects were represented at the AcrossGrids Conference and, of course, CrossGrid was among them.

The presentations were stimulating and addressed a wide range of topics on Grid technology. The exceptionally high standard of preparation put in by the organizers contributed to a very smooth procession of events and a friendly atmosphere in which to appreciate the information available.

The Grid User Forum was also of particular interest and proved to be a very good idea altogether.

### 3.8. PERFORMANCE INDICATORS

#### 3.8.1. Analysis of Participants

A total of 145 people attended the AcrossGrids Conference. Specifically, the User Forum was attended by people coming from local Galician businesses and public administration services, the universities of Vigo, A Coruna, Santiago de Compostela and Aveiro (this last one is actually in Portugal), ICT companies, and the areas of animated film production.

An analysis of the participants according to country (including the European Union) is given in the following table:

Country	Number of Participants
Austria	1
Belgium	1
Cyprus	1
European Union	1
France	1
Germany	7
Greece	3
Hungary	2
Ireland	1
Italy	7
Netherlands	3
Poland	22
Portugal	5
South Korea	1
Spain	79
Switzerland	4
United Kingdom	3
United States of America	2
Venezuela	1
<b>Total</b>	<b>145</b>

### **3.8.2. Media Coverage**

The whole conference was broadcast live over the Internet via VRVS.

A local television network interviewed one of the organizers.

A number of articles have been published in the local newspapers.

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## 4. OTHER CROSSGRID PRESENTATIONS

The CrossGrid papers presented during the various events:

- **9<sup>th</sup> Euro PVM-MPI Conference**

Linz, Austria September 27-29, 2002 (<http://www.gup.uni-linz.ac.at/pvmmpi/index.php>)

"Problem Solving Environment for Flood Forecasting"

L. Hluchy, V. D. Tran, O. Habala, J. Astalos, D. Froehlich

"Training of Neural Networks: Interactive Possibilities in a Distributed Framework"

O. Ponce, J. Cuevas, A. Fuentes, R. Marco, J. Marco, C. Martinez-Rivero, R. Menendez and D. Rodriguez

"The CrossGrid Performance Analysis Tool for Interactive Grid Applications"

Marian Bubak, Wlodzimierz Funika, and Roland Wismueller

"An Infrastructure for Grid Application Monitoring"

Bartosz Balis, Marian Bubak, Wlodzimierz Funika, Tomasz Szepieniec and Roland Wismueller

"An Infrastructure for Grid Application Monitoring"

B. Balis, M. Bubak, W. Funika, T. Szepieniec, R. Wismüller

"The CrossGrid Performance Analysis Tool for Interactive Grid Applications"

M. Bubak, W. Funika, R. Wismüller

"Application of Component-Expert Technology for Selection of Data-handlers in CrossGrid"

Lukasz Dutka, Jacek Kitowski

"The CrossGrid Performance Analysis Tool for Interactive Grid Applications"

Roland Wismüller

"Training of Neural Networks: Interactive Possibilities in a Distributed Framework"

David Rodriguez

- **The 4<sup>th</sup> DAPSYS Workshop**

Linz, Austria, September 2002:

"Interactive Virtual Reality Volume Visualization on the Grid"

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Paul Heinzlreiter, Andreas Wasserbauer, Hans-Peter Baumgartner, Dieter Kranzlmüller, Gerhard Kurka, Jens Volkert

"Interactive Virtual Reality Volume Visualization on the Grid"

Paul Heinzlreiter

- **The Workshop on Clusters and Computational Grids for Scientific Computing,**  
Le Chateau de Faberges de la Tour, France, September 13, 2002:

"A Performance Analysis Tool for Interactive Applications on the Grid"

Roland Wismüller

- On October 22, 2002, in Santander, Spain, IFCA, a partner of CrossGrid, organized a presentation of the **E-Science initiative** in Cantabria. Among those present were the Counselor in Education of the regional government and the Research Vicepresident, Rector and Research Vicerector of CSIC\*. Several talks related to CrossGrid, grids, and e-Science were given. Regional press and technical press, with 5 reporters invited by IBM, were present. Cluster installations were also shown.

- On November 4-6, 2002, the yearly IST event was held. **IST 2002** was a 3 day conference and 4500 m2 exhibition. The event was organized by the Information Society Directorate-General of the European Commission and the Danish Ministry of Science, Technology and Innovation and was held at the Bella Center, Copenhagen, Denmark from the 4<sup>th</sup> until the 6<sup>th</sup> of November 2002. According to organizers, nearly 4700 people – from both academia and industry took part in the event. A large number of exhibition booths had been set up at the Bella Center. One of these was dedicated to the GridStart project. All projects belonging to GridStart, including CrossGrid, were represented there.

Three CrossGrid partners, two from Cyfronet and one from Algosystems, were present and ready to answer any questions regarding the Project. The CrossGrid stand received adequate attention from visitors. Questions ranged from very general in nature (i.e. „what’s a Grid?”) to highly technical ones (regarding versions of Globus middleware that would be used by our Project, the architecture of storage elements, etc.) Many visitors inquired as to the future use of CrossGrid applications, following the development phase.

CrossGrid representatives distributed brochures and a CrossGrid poster was on display. Five multimedia presentations were being continually shown on a computer (one general CG presentation and four CG applications demos).

- On November 7, 2002, in Salamanca, Spain, a meeting on **Grid initiatives in Spain** was held and organized by Jesus Marco of IFCA.

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\* Consejo Superior De Investigaciones Científicas

There were many Spanish groups (more than 20 institutions) present who were interested in Grid technology and setting up an e-Science initiative in Spain. The meeting took place in the framework of the Jornadas Tecnicas de redIRIS.

It is worth mentioning that, apart from the events described in the previous sections, Datamat has included a description of CrossGrid as part of its general company/divisional presentation and together with the description of other Grid activities in which it engages.