Preface

On behalf of the Program Committee, it is a pleasure for us to introduce the proceedings of the 1st European Across Grids Conference. This event was held in Santiago de Compostela, Spain, February 13–14, 2003. The conference, organized by the University of Santiago (USC), the University of A Coruna (UDC) and the Supercomputing Center of Galicia (CESGA), was promoted by the European CrossGrid project and supported by the GridStart Cluster.

The idea of organizing this event was born within the CrossGrid community. CrossGrid is developing its middleware, tools and applications in collaboration with DataGrid and GridLab and is open to collaboration with other Grid projects. USC, UDC and CESGA enthusiastically supported the conference idea. We consider the Across Grids Conference to be an important contribution to the objectives of the GridStart project.

The aim of this 1st European Across Grids Conference was to forge an annual forum in which researchers linked to European projects could present their research results in the field of Grid computing. This conference does not intend to replace the Global Grid Forum. However, we do find that research being conducted within European projects deserves a special meeting in which all researchers participating in the Grid development challenge can exchange ideas, experiences and, chiefly, results. We would like the effort of organizing this forum to find continuity in the following years in other European cities.

Our first interest was to bring together as many European Grid projects as possible. We believe we have been successful in attaining this aim. Papers and posters from DataGrid, CrossGrid, Damien, DataTAG, GridWay and GridLab were presented, as well as results of research funded by national Grid projects, including NORDUGRID and several Spanish Grid initiatives, such as RedeGrid. Our second interest was to show all topics being dealt with in Grid computing research. We believe that this objective was also achieved: research work on testbeds, QoS, network performance, resource brokers, input/output, databases, and security issues was presented.

Finally, we wanted authors and attendees to come from all over Europe. Many institutions from Spain, Poland, Cyprus, Greece, France, Germany, Slovakia, Austria, Ireland, Romania, Hungary, Sweden, Finland, Italy and the Netherlands were represented at the conference.

As a research forum, the quality of the contents is an extremely important issue. Due to the short period of time in which we had to organize this event (less than 6 months), we begun by requesting a short abstract (no more than 4 pages) about the work to be defended. Every abstract was reviewed by a panel of experts from several countries around Europe, as well as by local researchers in the field. Every abstract underwent at least 2 reviews, and many of the abstracts were reviewed by up to 5 experts. The Program Committee selected the 28 best abstracts to be presented in oral sessions, and 11 more abstracts for poster

presentations. The contributed papers were divided into four oral sessions (A, B, C and D) plus a poster session.

Papers presented in session A addressed Grid middleware architecture, tools, evaluating possible migration to the OGSA model, authorization in VOs, and resource management. Resource management for Grids is an important topic as the Grid is a heterogeneous, geographically distributed, and inherently dynamic system, so efficient algorithms for resource discovery selection, and co-ordination, as well as job scheduling, monitoring and migration are of great practical importance.

Session B comprised experiences with Grid testbed deployment and operation, data management and optimization of data access, middleware for parallel I/O on Grids, and Grid-based distant e-learning. Most papers in this session present various aspects of data management such as secure ways of publishing metadata, stream-oriented database management, data stripping for access to and processing of large databases, optimizations to use local resources, and multiagent approaches to accessing data repositories.

Session C was devoted to the deployment of large applications on Grids; in particular to Grid services for interactive applications that were built on top of the HLA, Grid services for visualization of simulations, development of the Grid-enabled air quality parallel simulation with MPICH-G2, investigations of the implementation on a Grid of self-organizing maps for data mining, partitioning problems, and, finally, a migrating desktop for Grid-enabled applications.

The main topics of Session D dealt with performance and monitoring on the Grid. These papers present concepts and tools for the analysis and prediction of performance characteristics of applications running on Grid environments. This, in turn, requires an efficient infrastructure for monitoring the Grid and the applications. Two papers present experiments with network performance measurements.

Contributions presented as posters addressed the concept of the Grid, an overview of European Grid projects, Grid infrastructure and application monitoring, multimedia service management based on Grid middleware, a component model based on CORBA for Grid computing, a combination of the Mobile Internet and the Grid for large-scale computing, and resource sharing, as well as applications of Grid computing in bioinformatics and particle physics.

Last, but not least, we want to thank all of the members of the International Advisory Committee who encouraged us to go ahead with this conference project, the Program Committee, and all of the people at USC, UDC and CESGA who worked hard to make this conference a successful event. Of course, none of this would have been possible without support from our sponsors: HP Invent, GridSystems and RedeGrid.

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Organization

The 1st European Across Grids Conference was organized by the Department of Electronics and Computing, University of Santiago de Compostela, the Department of Electronics and Systems, University of A Coruña, and CESGA (the Supercomputing Center of Galicia) in cooperation with the CrossGrid Project.

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