Coordination Abstractions for Worldwide Computing
Call For Papers
Software Technology Mini-Track, HICSS-38
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The Internet and the Web have created a revolution in modern communications. Future generation Grid cyberinfrastructures have the potential to revolutionize the way we live to a much larger extent. While current grid services development represents an excellent starting point to accomplish worldwide computing, there remain a number of important challenges largely unaddressed today. These include:

- Advanced programming models that simplify the development of applications by providing high-level abstractions and algorithms so that programmers do not have to explicitly deal with distribution issues such as data placement, data replication, load balancing, quality of service, and fault tolerance.

- Advanced middleware infrastructures that support the aforementioned programming abstractions, profile the network, and adapt programs to highly dynamic and evolving grids to meet the needs of applications that range from those having real-time requirements to those requiring massive levels of computation.

This mini-track solicits original research contributions in the following (non-exhaustive) list of topics:

- Programming models and languages for worldwide computing.
- Coordination abstractions for large-scale distributed computations.
- Dynamic program reconfiguration and adaptation through migration based on adaptive runtime architectures.
- Generic libraries for high-performance messaging over heterogeneous networks.
- Middleware infrastructure to deal with non-functional or para-functional aspects of distributed applications.
- Fault-tolerance models and strategies for computing over unreliable networks.
- Heterogeneous devices and standards for interoperability (e.g. XML, Web services).
- Dependable distributed computing with quality-of-service guarantees (e.g., real-time, predictable execution).
- Software evolution in long-lived computations, version control.
- Security infrastructures for safe open distributed systems.

Best papers will be invited for publication in a Special Issue of the Scientific Programming journal published by IOS Press, Netherlands.

Program Committee:
Franck Cappello, INRIA, France
Paolo Ciancarini, University of Bologna, Italy (co-chair)
Toshibo Endo, University of Tokyo, Japan
John Field, IBM T.J. Watson Research Lab, U.S.
Gregor von Laszewski, Argonne National Lab, U.S.
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Carlos Varela, Rensselaer Polytechnic Inst., U.S. (chair)

Key Dates:
June 15, 2004 Full paper deadline
August 15, 2004 Notification of accepted papers
September 15, 2004 Final (revised) paper submission
January 3-6, 2005 HICSS-38 Conference, Hawaii