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Foreword

This year's edition of the international federated conferences on Distributed Computing Techniques took place in Lisbon during June 9–11, 2009. It was hosted by the Faculty of Sciences of the University of Lisbon and formally organized by Instituto de Telecomunicações.

The DisCoTec conferences jointly cover the complete spectrum of distributed computing subjects ranging from theoretical foundations to formal specification techniques to practical considerations. The event consisted of the 11th International Conference on Coordination Models and Languages (COORDINATION), the 9th IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS), and the IFIP International Conference on Formal Techniques for Distributed Systems (FMOODS/FORTE). COORDINATION focused on languages, models, and architectures for concurrent and distributed software. DAIS emphasized methods, techniques, and system infrastructures needed to design, build, operate, evaluate, and manage modern distributed applications in any kind of application environment and scenario. FMOODS (11th Formal Methods for Open Object-Based Distributed Systems) joined forces with FORTE (29th Formal Techniques for Networked and Distributed Systems), creating a forum for fundamental research on theory and applications of distributed systems.

In an effort for integration, each of the three days of the event started with an invited talk suggested by one of the conferences in a plenary session, and, furthermore, one of the technical sessions was composed of the papers from the three conferences. The common program also included the first tutorial series on Global Computing, a joint initiative of the EU projects Mobius (Mobility, Ubiquity and Security) and Sensoria (Software Engineering for Service-Oriented Overlay Computers), which contributed to a very interesting program. I would like to thank all the invited speakers for accepting to give talks at the event, and all the authors for submitting papers.

As satellite events, there were two workshops; the Second Workshop on Context-Aware Adaptation Mechanisms for Pervasive and Ubiquitous Services (CAMPUS 2009), focusing on approaches in the domain of context-aware adaptation mechanisms supporting the dynamic evolution of the execution context, and the Third Workshop on Middleware-Application Interaction (MAI 2009), focusing on middleware support for multiple cross-cutting features such as security, fault tolerance, and distributed resource management. Co-located with DisCoTec were the 10th International Conference on Feature Interactions in Telecommunications and Software Systems (ICFI) and meetings of the EU COST action on Formal Verification of Object-Oriented Software and the Sensoria project.

I hope this rich program offered every participant interesting and stimulating events. It was only possible thanks to the dedicated work of the members of the Organizing Committee—Ana Matos, Carla Ferreira, Francisco Martins,

João Seco and Maxime Gamboni—and to the sponsorship of the Center of Informatics and Information Technology (CITI), the Portuguese research foundation Fundação para a Ciência e a Tecnologia (FCT), the Instituto de Telecomunicações (IT), and the Large-Scale Informatics Systems Laboratory (LaSIGE).

June 2009   António Ravara

Preface

This volume contains the proceedings of DAIS 2009, the 9th IFIP WG. 6.1 International Conference on Distributed Applications and Interoperable Systems. The conference was held in Lisbon, Portugal during June 9-11, 2009 as part of the federated event on Distributed Computing Techniques (DisCoTec), together with the 11th International Conference on Coordination Models and Languages (CO-ORDINATION) and the IFIP International Conference on Formal Techniques for Distributed Systems (FMOODS/FORTE). The conference was organized by the Instituto de Telecomunicações and hosted by the Faculty of Sciences of the University of Lisbon.

The conference program presented the state of the art in research on various aspects of distributed and interoperable application systems. Significant hardware and software developments and advances in communications and global networking have made distributed application systems an integral part of the socio-economic ecosystem of our everyday environment. The confluence of these technological developments and emerging usage modes provides motivation for evolving such systems into ones with seamless provision of services to heterogeneous user domains and requirements. Challenging issues include service orientation, interoperability, autonomy, and dependability of distributed architectures, models, technologies, and platforms.

The papers at DAIS 2009 addressed service orientation, quality of service and service contracts, business processes, Web services, service components, algorithms and protocols supporting dependability, fault tolerance, data replication, group communication, adaptive and collaborative systems, context awareness, model-driven development, middleware for ubiquitous computing and sensor networks, ad hoc network protocols, peer-to-peer systems, and overlays. This year the technical program of DAIS drew 32 submissions. From these, 12 regular papers were accepted for presentation. All submitted papers were reviewed by at least four reviewers, coordinated by our International Program Committee. The conference program also included three keynote addresses, in conjunction with the other two DisCoTec conferences, from Raghu Ramakrishnan, Research Fellow at Yahoo! Research and Professor of Computer Sciences at the University of Wisconsin-Madison, USA, titled "Data Management in the Cloud," Manuel Serrano of INRIA Sophia-Antipolis, France, titled "Semantics and Implementation of the HOP Programming Language," and Jayadev Misra, Professor and Schlumberger Centennial Chair in Computer Sciences at the University of Texas at Austin, USA, titled "Structured Application Development over Wide-Area Networks."

We would like to take this opportunity to thank numerous people whose work made this conference possible. We wish to thank the Instituto de Telecomunicações and the Faculty of Sciences, University of Lisbon, for organizing and

hosting the conference, and also António Ravara for acting as the General Chair of DisCoTec. Many thanks go to António's team for organizing the event and to Hartmut König and Martin Steffen for their help with the publicity tasks. Useful advice from DAIS Steering Committee on many occasions is truly appreciated. Finally, we wish to express our gratitude to the authors of all submitted papers and to all Program Committee members as well as external reviewers for their technical contributions towards another successful DAIS.

June 2009   Twittie Senivongse
                                                              Rui Oliveira

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Table of Contents