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# Dependable Computing

Third Latin-American Symposium, LADC 2007 Morelia, Mexico, September 26-28, 2007 Proceedings



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### Foreword

The Latin-American Symposium on Dependable Computing, LADC, is the main Latin-American event dedicated to the discussion of the many issues related to dependability in computer systems and networks. It is a forum for researchers and practitioners from all over the world to present and discuss their latest results and experiences in this field. LADC 2007, the third edition of this event, followed on the success of LADC 2005, which took place in Salvador, Bahia, Brazil, and LADC 2003, which took place at the Polytechnic School of the University of São Paulo.

LADC 2007 was co-located with the Mexican Annual Computing Conference (ENC), and AdHoc NOW 2007. It was organized by Universidad Autónoma Metropolitana (UAM) and Universidad Nacional Autónoma de México (UNAM). It was co-sponsored by the Brazilian Computer Society (SBC), the Mexican Society for Computer Science (SMCC), and IEEE TC on Dependable Computing and Fault Tolerance. It was organized in cooperation with IFIP Working Group 10.4 'Dependable Computing and Fault Tolerance,' the Chilean Computer Science Society (SCCC), and the Argentine Society for Informatics and Operations Research (SADIO). LADC 2007 included the following activities:

- Five Technical sessions: Fault-Tolerant Algorithms, Software Engineering of Dependable Systems, Networking and Mobile Computing, Experimental Dependability Evaluation, Intrusion Tolerance and Security
- Two keynote speeches: Philip Koopman (CMU, USA), Jean Arlat (LAAS-CNRS, France)
- Three tutorials: Lorenzo Alvisi (UT Austin, USA), Eduardo B. Fernandez (FAU, USA), Marco Vieira and Henrique Madeira (U Coimbra, Portugal)
- Two panels, chaired by: Henrique Madeira (U Coimbra, Portugal), Rogério de Lemos (U Kent, UK). The latter was a joint panel with AdHoc NOW 2007.

We would like to thank the LADC 2007 Organizing Committee and the support staff of ENC 2007 for having helped us with the organizational tasks, the Steering Committee for their advice, and the Program Committee Co-chairs for their cooperation. Special thanks go to Rogério de Lemos, who was a source of constant support and suggestions. Additionally, we would like to thank the invited guests, all the authors of submitted papers, the sponsoring partners, and Springer for accepting to publish the LADC proceedings in the LNCS series.

We hope all present at LADC 2007 enjoyed the symposium and their stay in Morelia.

#### **Preface**

The Latin-American Dependable Computing Conference is in its third edition. LADC is the major Latin-American event dedicated to discussing the many issues related to computer system dependability. This symposium succeeded the well-established Brazilian Symposium on Fault-Tolerant Computers. Its objective is to provide a forum for international and Latin-American scientists and engineers to present their latest research results and application experience in this very dynamic field. The first LADC was held in São Paulo, Brazil, in October 2003, while the second was held in Salvador, Brazil, in October 2005. In its third edition the symposium took place in Morelia, Mexico.

This edition of LADC was co-organized by the Universidad Nacional Autónoma de México (UNAM) and the Universidad Autónoma Metropolitana (UAM). It was co-sponsored by SBC—Brazilian Computer Society, SMCC—Mexican Society for Computer Science, and IEEE TC on Dependable Computing and Fault Tolerance. Furthermore, committees of several global professional organizations, such as IFIP Working Group 10.4 'Dependable Computing and Fault-Tolerance', SCCC—Chilean Computer Science Society and SADIO—Argentine Society for Informatics and Operations Research, supported the symposium. LADC is thus the forum for Latin-American researchers in dependability and is extending towards a world-wide dimension as researchers from all over the world show their interest by choosing LADC to submit their manuscripts and present their work.

The selection process was very careful. Each manuscript was sent out for review to three PC members plus two external reviewers. Thirty-seven submissions from 17 countries were received and the 32 members of the Program Committee and 29 external reviewers returned on time a total of 150 reviews. This made the selection process very comprehensive. The committee met in cyberspace to arrange the technical program. A total of 14 papers were selected to appear in the proceedings. The rest of the technical program was defined to include two panels, a forum for 'Fast Abstracts' to report on very recent work and two invited talks by two distinguished scholars: Phil Koopman and Jean Arlat.

We would like to thank the Program Committee members for their help in putting together the final program. They helped us in many ways, right from the beginning, including topic identification, suggestion of external reviewers, refereeing and attending the virtual PC meeting in large numbers. We also thank all of the external reviewers for making available their time and their technical knowledge and the authors of all the manuscripts for their contributions and the timely submissions. Special thanks go to Sergio Rajsbaum, LADC 2007 General Chair, Fabíola Greve, the Fast Abstract Chair, Rogério de Lemos, and Henrique

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Madeira, who took leadership in organizing two panels. Finally, we would like to acknowledge the support of the Steering Committee.

We hope you find these conference Proceedings interesting and stimulating.

September 2007

Andrea Bondavalli Francisco Brasileiro

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### XII Organization

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