Mario Dal Cin
Mohamed Kaâniche
András Pataricza (Eds.)

Dependable Computing – EDCC-5

5th European Dependable Computing Conference
Budapest, Hungary, April 2005
Proceedings

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Foreword

It is always a special honor to chair the European Dependable Computing Conference (EDCC). EDCC has become one of the well-established conferences in the field of dependability in the European research area. Budapest was selected as the host of this conference due to its traditions in organizing international scientific events and its traditional role of serving as a meeting point between East and West.

EDCC-5 was the fifth in the series of these high-quality scientific conferences. In addition to the overall significance of such a pan-European event, this year's conference was a special one due to historic reasons. The roots of EDCC date back to the moment when the Iron Curtain fell. Originally, two groups of scientists from different European countries in Western and Eastern Europe – who were active in research and education related to dependability – created a joint forum in order to merge their communities as early as in 1989. This trend has continued up to today. This year's conference was the first one where the overwhelming majority of the research groups belong to the family of European nations united in the European Union. During the past 16 years we observed that the same roots in all the professional, cultural and scientific senses led to a seamless integration of these research communities previously separated artificially for a long time.

EDCC has become one of the main European platforms to exchange new research ideas in the field of dependability. Its pillars are three national groups: the SEE Working Group "Dependable Computing" in France, the GI/ITG/GMA Technical Committee on Dependability and Fault Tolerance in Germany, and the AICA Working Group on Dependability of Computer Systems in Italy. Additionally, several professional international organizations of worldwide scope, like IEEE and IFIP, graciously supported this conference from the very beginning.

Obviously, a conference has to follow the development of its focus area. This year, the trend to incorporate new topics was observable in the number of submissions and in the variety of topics. At the same time, a main objective of the organizers was to strengthen the pan-European nature of this scientific event according to the tradition of EDCC. An additional objective was – as defined in the guidelines of the Steering Committee – to attract more young people to contribute to the conference not only through the presentation of their research work but also through organizing important events. This objective was served by inviting new members to the Program Committee who had already proven their scientific abilities but previously did not take an active part in organizing EDCC.

In addition to the traditional forms of presentations such as fast abstracts and invited speakers presenting the state of the art in industrial practice, new

forums were introduced to this year's conference. Special attention was paid to educational aspects. A panel was organized to identify future challenges in research and harmonize the evolution of dependability-related education with the ongoing Bologna process. A special track for student papers was organized in order to support young researchers in contributing to one of the major international conferences. Representative projects from all over Europe were invited to present their work in progress and to provide a forum for discussing their results and help the dissemination of the main achievements.

The large number of contributions necessitated that, for the first time in the EDCC series, EDCC-5 was held in two tracks. We hope that the impact of this splitting will be that everybody in the audience will find a topic that best fits his or her personal professional interests.

The preparation of such an important international conference requires always enthusiastic support from supporting teams. We had the full support offered by excellent teams. We hope that the conference chairs helped not only to share the wide spectrum of responsibility but also to reach a synergetic effect between their particular fields. The organizing teams including their Chairs, Wolfgang Hohl, Tamás Bartha and Dániel Varró, and numerous members were extremely helpful; their work contributed to the success of the conference. The website was maintained by László Gönczy. Their enthusiastic work is acknowledged.

Our special thanks goes to Mohamed Kaâniche, the Program Chair, for his thoughtful planning of the Program Committee Meeting. His efforts were instrumental in setting up an excellent scientific program. A large number of referees helped the Program Committee in evaluating the papers and special thanks should be dedicated to all of them, not only for carefully judging the quality of the papers but also for providing the authors with feedback which will hopefully help in their future work as well.

We would also like to thank the Education and Perspectives Chair, Henrique Madeira, and the Student Forum Chair, Miroslaw Malek, for their work.

The host institutions of the Chairs offered valuable help for the conference. LAAS-CNRS helped us to organize the Program Committee Meeting held in Toulouse; the Friedrich-Alexander-Universität in Erlangen and the Budapest University of Technology and Economics helped us in every imaginable way. Without their general support the conference would not have been as successful as we hoped it would be. The Budapest University of Technology and Economics, as host institution, was supported by Öt Évszak Ltd., a conference organizing enterprise, in all the preparations of the conference, including the management of finances.

For us to organize this conference was a challenge and we hope that the participants were satisfied with both the scientific quality and the organization of the conference.

February 2005   Mario Dal Cin
                                                                     András Pataricza

Preface

On behalf of the Program Committee of the fifth edition of the European Dependable Computing Conference (EDCC-5), it was my pleasure to welcome attendees to Budapest, Hungary.

EDCC aims to provide a European venue for researchers and practitioners from all over the world to present and discuss their latest research results and developments. The conference aims to cover the many dimensions of dependability and fault tolerance, encompassing fundamental theoretical approaches, practical experimental projects, and commercial components and systems.

In recent years, the importance of dependability has been increasing beyond the classical critical application domains (telecommunications, transportation, space, etc.) as many other domains of the economy (commerce, finance, energy distribution) are recognizing the dependability of worldwide information and communication infrastructures to be one of their top problems. Besides traditional hardware and software faults, concerns include human interaction faults, they being accidental or malicious. The contributions received this year aim at addressing these problems and challenges, and cover various dimensions of dependable computing, including architecture design, protocols, verification, measurement and evaluation.

I express my thanks to the 33 Program Committee members for their hard work and continual involvement, starting with their assistance in advertising the conference. This resulted in the second largest number of submissions, from a broad range of institutions from academia and industry, since the conference was established. Overall, we received 90 submissions, originating from 27 countries; 58 submissions were from Europe, 19 from USA and North and South America, and the other submissions were from Asia.

All the submissions were thoroughly reviewed and discussed by the PC members with the support of 147 external reviewers. The entire process was handled electronically. This greatly helped in reducing delays while allowing good information exchange among the reviewers and the Program Committee. A total of 317 reviews were received and all papers were reviewed by at least 3 referees. I am very thankful to all the reviewers for their help and valuable inputs.

The Program Committee met in Toulouse on December 16–17, 2004 at LAAS-CNRS to select those papers judged to be of sufficiently high standard to be presented at the conference and to be included in the proceedings. Among the 90 submissions, we selected 30 contributions, corresponding to 21 regular papers, 5 practical experience reports and 4 prototype description tools. The selected papers cover many different areas of dependable computing, including fault tolerance, verification, analysis and evaluation, in both hardware and software.

In addition to regular sessions organized into two parallel tracks, the conference offered various opportunities for interaction and discussion through the or-

ganization of a Student Forum, Fast Abstracts sessions, and an invited session for presenting ongoing dependability-related projects. Two keynote addresses and a panel on dependability challenges and education perspectives complemented the technical program.

EDCC-5 would not have been possible without support and participation from numerous individuals and organizations. I would like to thank all authors who submitted their work to the conference, the EDCC-5 Program Committee members, and the external reviewers for their outstanding help, support and effort in elaborating this year's program. I would like to express my appreciation to the Steering Committee and the Organizing Committee members whose support was essential for making EDCC-5 a success.

Special thanks go to Mario Dal Cin and András Pataricza, the General Chairs, and to Luca Simoncini, the Steering Committee Chair, for their constructive contributions and helpful advice. Also, I want to explicitly thank Tamás Bartha, Wolfgang Hohl, Henrique Madeira, Miroslaw Malek for their dedication in handling the Fast Abstracts, the Proceedings, the Panel and the Student Forum. Finally, I would like to express my gratitude to several people at LAAS-CNRS for their efficient help and support: Jean Arlat, Yves Crouzet, Karama Kanoun, Jean-Claude Laprie, Joëlle Penavayre and Jean-Michel Pons.

I hope that the participants benefited from the conference, and that the exchange of information that took place will help the dependable computing community to advance the engineering practice, research and standards.

Toulouse, February 2005

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