

Foreword

The Fifth International Conference on Reliable Software Technologies, Ada-Europe 2000, took place in Potsdam, Germany, June 26–30, 2000. It was organized by Ada Deutschland and sponsored by Ada-Europe, the European federation of national Ada societies, in cooperation with ACM SIGAda and the Gesellschaft für Informatik (GI). We gratefully acknowledge additional sponsorship by the DFG, the German Research Foundation, and by the Forschungszentrum Karlsruhe.

This year's conference marked the 20th anniversary of consecutive annual Ada-Europe conferences and the fifth year of a conference focusing on the general area of software reliability, in which Ada excels as one of the supporting technologies.

The Y2K problem has put the importance of software reliability into the limelight of media and political attention. Luckily, the dire predictions about potentially disastrous failures of critical systems did not prove true at the turn of the year, most likely because an incredible effort was made to update existing software, modernize systems, check-out backup mechanisms, and so on. One cannot but wonder how much more reliable the software could have been if only a percentage of the funds spent on the Y2K problem had gone into enhancements of reliability during the development and maintenance of the software.

We are witnessing a rapid growth of software components in cars, trains, planes, phones, control of biological, chemical, and manufacturing plants, and many other products and processes, where reliability is not just a nice-to-have but a hard requirement. It is not an overstatement to note that our daily life is beginning to literally depend on the reliability of the software embedded in products. Yet such reliability does not come about by accident. It needs to be infused into the software and the processes of the software life cycle by the application of appropriate techniques and technologies.

The conference on Reliable Software Technologies provides the forum for researchers, developers, and users to share their research results, present tools, report on experiences, and discuss requirements that have recently arisen from the ever-changing application domains. As in past years, the conference comprised a three-day technical program, at which the papers contained in these proceedings were presented, along with short presentations on related topics. The technical program was bracketed by two tutorial days, when attendees had an opportunity to catch up on a variety of topics related to the field, at both introductory and advanced levels. Further, the conference was accompanied by an exhibition at which vendors presented their reliability-related products. The notably increased size of the exhibition demonstrates that the market place is beginning to react to the importance of reliability engineering.

This year's conference comprised a truly international program. Authors from Argentina, Australia, Austria, Canada, China, France, Germany, Italy, Japan, Norway, Spain, Sweden, Switzerland, United Kingdom, and the USA presented

their results. A total of 23 papers were accepted for the proceedings and eight additional contributions were accepted for presentation at the conference. Two conference sessions were reserved for presentations by vendors of products supporting the development and management of reliable software.

Each conference day was opened by a keynote presentation. The keynote speakers and their themes were:

- Rainer Zimmermann, Head of Unit E2, Directorate General Information Society, European Commission, Brussels, Belgium:
Support of Technology Development in the Information Society
- Reto Weiss, Kingcat MCAS Project Manager, Paranon AG, Wählendorf, Switzerland:
Kingcat MCAS – Monitoring, Control and Alarm System for a Luxury Motor Yacht Implemented in Ada and Java
- Brian Pflug, Chief Engineer, Simulation & Software Engineering, Boeing Commercial Airplanes, Seattle, USA:
Ada after 10 Years of Usage – Is There a Commercial Future?

We would like to express our sincere gratitude to these distinguished speakers, well known to the community, for sharing their insights and information with the audience.

The tutorial program featured international experts presenting introductory and advanced material on a variety of subjects relevant to software engineers:

- *Java for Ada Programmers*, Ben Brosgol
- *Real-Time POSIX*, Michael González Harbour
- *Ada95 for Beginners and Ada95 for Ada83 Programmers*, David Cook and Les Dupaix
- *Software Metrology Basics – Measurement, Assessment, and Certification of Procedures, Objects, and Agents*, Hans-Ludwig Hausen
- *The HOOD 4 Design Method*, Jean-Pierre Rosen
- *Tree-Based Reliability Models (TBRMs) for Early Reliability Measurement and Improvement*, Jeff Tian
- *Implementing Design Patterns in Ada95*, Matthew Heaney
- *High Integrity Ada Tasking*, John Harbaugh
- *GtkAda, An Ada95 Object-Oriented Graphic Toolkit*, Emmanuel Briot
- *Building Ada Development Tools with ASIS for GNAT*, Sergey Rybin and Vasily Fofanov
- *Windows Development with Ada*, Örjan Leringe
- *Developing Ada Applications for the Java Platform with JGNAT*, Franco Gasperoni

Many people contributed to the success of the conference. The program committee spent part of their Christmas vacation carefully reviewing all the papers and providing detailed evaluations. A subcommittee comprising Lars Asplund, Johann Blieberger, Michael González, Hubert Keller, Erhard Plödereder, and Jürgen Winkler met on a Sunday in January to compose the program based on

the reviews. Some committee members shepherded papers to their final versions. We thank the committee for its dedication and hard work. A great help in organizing the paper review were the Start Conference Manager, provided free of charge by Rich Gerber, and Michael Hüdepohl who administered this WWW-based paper submission and review system at the University of Stuttgart.

The organizing committee deserves special mention. Peter Dencker put together an exhibition of unprecedented scope. Theodor Tempelmeier composed the attractive tutorial program. And always helping the organizers was Alfred Strohmeier, Ada-Europe's Conference Liaison.

We also would like to thank Christine Harms, who handled the registration and the local organization at Potsdam.

Foremost, however, we express our appreciation to the authors of the papers submitted to the conference, and to the participants who came to exchange their ideas and results. Without you, there would be no conference. We hope that you were satisfied by the technical program of the conference and enjoyed the social events of this Fifth International Conference on Reliable Software Technologies.

April 2000

Hubert Keller
Erhard Plödereder