

Foreword

ETAPS 2002 was the fifth instance of the European Joint Conferences on Theory and Practice of Software. ETAPS is an annual federated conference that was established in 1998 by combining a number of existing and new conferences. This year it comprised 5 conferences (FOSSACS, FASE, ESOP, CC, TACAS), 13 satellite workshops (ACL2, AGT, CMCS, COCV, DCC, INT, LDTA, SC, SFEDL, SLAP, SPIN, TPTS, and VISS), 8 invited lectures (not including those specific to the satellite events), and several tutorials.

The events that comprise ETAPS address various aspects of the system development process, including specification, design, implementation, analysis, and improvement. The languages, methodologies, and tools which support these activities are all well within its scope. Different blends of theory and practice are represented, with an inclination towards theory with a practical motivation on one hand and soundly-based practice on the other. Many of the issues involved in software design apply to systems in general, including hardware systems, and the emphasis on software is not intended to be exclusive.

ETAPS is a loose confederation in which each event retains its own identity, with a separate program committee and independent proceedings. Its format is open-ended, allowing it to grow and evolve as time goes by. Contributed talks and system demonstrations are in synchronized parallel sessions, with invited lectures in plenary sessions. Two of the invited lectures are reserved for “unifying” talks on topics of interest to the whole range of ETAPS attendees. The aim of cramming all this activity into a single one-week meeting is to create a strong magnet for academic and industrial researchers working on topics within its scope, giving them the opportunity to learn about research in related areas, and thereby to foster new and existing links between work in areas that were formerly addressed in separate meetings.

ETAPS 2002 is organized by the Laboratoire Verimag in cooperation with
Centre National de la Recherche Scientifique (CNRS)
Institut de Mathématiques Appliquées de Grenoble (IMAG)
Institut National Polytechnique de Grenoble (INPG)
Université Joseph Fourier (UJF)
European Association for Theoretical Computer Science (EATCS)
European Association for Programming Languages and Systems (EAPLS)
European Association of Software Science and Technology (EASST)
ACM SIGACT, SIGSOFT, and SIGPLAN

The organizing team comprises

Susanne Graf - General Chair
Saddek Bensalem - Tutorials
Rachid Echahed - Workshop Chair
Jean-Claude Fernandez - Organization
Alain Girault - Publicity
Yassine Lakhnech - Industrial Relations

Florence Maraninchi - Budget
Laurent Mounier - Organization

Overall planning for ETAPS conferences is the responsibility of its Steering Committee, whose current membership is:

Egidio Astesiano (Genova), Ed Brinksma (Twente), Pierpaolo Degano (Pisa), Hartmut Ehrig (Berlin), José Fiadeiro (Lisbon), Marie-Claude Gaudel (Paris), Andy Gordon (Microsoft Research, Cambridge), Roberto Gorrieri (Bologna), Susanne Graf (Grenoble), John Hatcliff (Kansas), Görel Hedin (Lund), Furio Honsell (Udine), Nigel Horspool (Victoria), Heinrich Hußmann (Dresden), Joost-Pieter Katoen (Twente), Paul Klint (Amsterdam), Daniel Le Métayer (Trusted Logic, Versailles), Ugo Montanari (Pisa), Mogens Nielsen (Aarhus), Hanne Riis Nielson (Copenhagen), Mauro Pezzè (Milan), Andreas Podelski (Saarbrücken), Don Sannella (Edinburgh), Andrzej Tarlecki (Warsaw), Herbert Weber (Berlin), Reinhard Wilhelm (Saarbrücken)

I would like to express my sincere gratitude to all of these people and organizations, the program committee chairs and PC members of the ETAPS conferences, the organizers of the satellite events, the speakers themselves, and finally Springer-Verlag for agreeing to publish the ETAPS proceedings. As organizer of ETAPS'98, I know that there is one person that deserves a special applause: Susanne Graf. Her energy and organizational skills have more than compensated for my slow start in stepping into Don Sannella's enormous shoes as ETAPS Steering Committee chairman. Yes, it is now a year since I took over the role, and I would like my final words to transmit to Don all the gratitude and admiration that is felt by all of us who enjoy coming to ETAPS year after year knowing that we will meet old friends, make new ones, plan new projects and be challenged by a new culture! Thank you Don!

January 2002

José Luiz Fiadeiro

Preface

This volume contains the proceedings of the eighth International Conference on *Tools and Algorithms for Construction and Analysis of Systems* (TACAS 2002). TACAS 2002 took place in Grenoble, France, from April 8th to April 11th, as part of the fifth *European Joint Conference on Theory and Practice of Software* (ETAPS 2002), whose aims, organization, and history are detailed in the separate forward by José Luiz Fiadeiro.

TACAS is a forum for researchers, developers, and users interested in rigorously based tools for the construction and analysis of systems. The conference serves to bridge the gaps between different communities – including but not limited to those devoted to formal methods, real-time, software engineering, communications protocols, hardware, theorem proving, and programming languages – that have traditionally had little interaction but share common interests in, and techniques for, tool development. In particular, by providing a venue for the discussion of common problems, heuristics, algorithms, data structures, and methodologies, TACAS aims to support researchers in their quest to improve the utility, reliability, flexibility, and efficiency of tools for building systems.

Tool descriptions and case studies with a conceptual message and theoretical papers with a clear link to tool construction are particularly encouraged. As TACAS addresses a heterogeneous audience, potential authors are always strongly encouraged to write about their ideas in general and jargon-independent, rather than application- and domain-specific, terms.

TACAS 2002 comprises

- Invited Lectures by Dr Michael Lowry on Software Construction and Analysis Tools for Future Space Missions and by Daniel Jackson on Alloy: A New Technology for Software Modeling.
- Regular Sessions featuring 29 papers selected out of 95 submissions, ranging from foundational contributions to tool presentations including online demos, and
- ETAPS tool demonstrations, featuring four short contributions selected from nine submissions.

TACAS 2002 was organized by the Laboratoire Verimag; being part of ETAPS it shared the sponsoring and support described in José Luiz Fiadeiro's forward. With ETAPS, TACAS will take place in Warsaw next year.

As the program committee chairpeople we warmly thank the program committee and all the referees for their hard work in selecting the papers. All papers were reviewed by at least three reviewers, and many were further reviewed and discussed. We were helped in our organization of the reviewing process by the open-source conference management system Cyberchair (www.cyberchair.org). We thank Ric Klaren for his assistance in setting up and running the Cyberchair system.

Especially, we thank Hubert Garavel, who as Tools Chair managed the selection process for the ETAPS tool demonstrations that form part of TACAS 2002.

We also thank the ETAPS steering committee, the TACAS steering committee, and last but by no means least the local organizers, especially Susanne Graf, the General Chair of the Organizing Committee.

January 2002

Joost-Pieter Katoen & Perdita Stevens

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Rance Cleaveland
Kim G. Larsen
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SUNY at Stony Brook, USA
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Gerd Behrmann	Paul Jackson	Solofo Ramangalahy
Johan Bengtsson	Roby Joehanes	Anders P. Ravn
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Kousha Etessami	Tiziana Margaria	Ashish Tiwari
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