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# Mechanisms for Autonomous Management of Networks and Services

4th International Conference on Autonomous Infrastructure,  
Management and Security, AIMS 2010  
Zurich, Switzerland, June 23-25, 2010  
Proceedings

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Library of Congress Control Number: Applied for

CR Subject Classification (1998): C.2, D.2, H.4, C.2.4, D.4, D.1.3

LNCS Sublibrary: SL 5 – Computer Communication Networks and Telecommunications

ISSN 0302-9743  
ISBN-10 3-642-13985-X Springer Berlin Heidelberg New York  
ISBN-13 978-3-642-13985-7 Springer Berlin Heidelberg New York

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Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India  
Printed on acid-free paper 06/3180

## Preface

The International Conference on Autonomous Infrastructure, Management and Security (AIMS 2010) was a single-track event integrating regular conference paper sessions, tutorials, keynotes, and a PhD student workshop into a highly interactive event. The main goal of AIMS is to look beyond borders and to stimulate the exchange of ideas across different communities and among PhD students. AIMS 2010 collocated the International Summer School in Network and Service Management (ISSNSM 2010). This unique summer school offers hands-on learning experiences in network and service management topics, which requires attendees to work in practical on-site courses combined with preceding short tutorial-like teaching sessions.

AIMS 2010—which took place during June 23–25, 2010, in Zürich, Switzerland and was hosted by the Communication Systems Group CSG, Department of Informatics IFI, of the University of Zürich UZH—followed the already established tradition of an unusually vivid and interactive conference series in terms of the fourth conference, after successful instantiations in Oslo, Norway 2007, Bremen, Germany 2008, and Enschede, The Netherlands 2009. AIMS 2010 focused especially on autonomous management aspects of modern networks and their services. The set of mechanisms, peer-to-peer-based schemes, scalability aspects, and autonomous approaches are of major interest. In particular the design, monitoring, management, and protection of networked systems in an efficient, secure, and autonomic manner are key to commercially viable and successful networks and services.

Like all of its predecessors, AIMS 2010 and ISSNSM 2010 provided a single-track and five-day program, which proved especially suitable for stimulating the interaction with and the active participation of the conference's audience. Summarized briefly, the summer school started with a practical introduction to 6LoWPAN, a programming of IPv6-based Wireless Sensor Networks with Contiki. Secondly, the embedded automation systems and device manageability instrumentation was experimented with. And thirdly, traffic mining for packets in an IP network was investigated.

The AIMS conference continued with a keynote presentation delivered by Metin Feridun, internationally recognized as a distinguished research fellows in the area. The three technical sessions—covering peer-to-peer, autonomous management, and management mechanisms—of AIMS 2010 included a total of nine full papers, which were selected after a thorough reviewing process out of a total number of 27 submissions. Furthermore, five short papers complemented the program on interesting management aspects.

Additionally, the AIMS PhD workshop was a venue for doctoral students to present and discuss their research ideas, as well as, and most importantly, to obtain feedback from the AIMS audience about their investigation carried out so far. This year, the PhD workshop was organized in two PhD paper sessions, where selected investigations were presented and discussed. All PhD papers included in this volume describe the current state of these investigations, including their research problem statements,

investigation approaches, and outline those results achieved so far. This year, 22 PhD papers were submitted to the PhD workshop. Each of them was assigned for review to members of the PhD Workshop's Technical Program Committee, composed of experienced researchers in the field of network and services operations and management, resulting in 11 high-quality papers included in these proceedings and presented during the PhD Workshop.

The present volume of the Lecture Notes in Computer Science series includes those papers presented at AIMS 2010 and the overall resulting final program of AIMS 2010 and ISSNSM 2010 demonstrates again the European scope of this conference series, while including papers mainly from Europe.

Many thanks go to the two PhD Workshop Co-chairs, Lisandro Granville, University Federal do Rio Grande do Sul, Brazil and Aiko Pras, University of Twente, The Netherlands, for organizing the PhD Workshop sessions, and to the two ISSNSM 2010 Co-chairs, Cristian Morariu, University of Zürich, Switzerland, and Martin Waldburger, University of Zürich, Switzerland, for setting up and organizing the summer school topics and test-bed hardware.

Special thanks go to the local organizers for enabling the logistics and hosting of the AIMS 2010 and the ISSNSM 2010 event, especially to the local Co-chairs Hasan and Evelyne Berger, the Web master Andrei Vancea, and the additional local support team of Peter Racz, Fabio Hecht, and Guilherme Machado, all from CSG@IFI, University of Zürich, Switzerland.

Finally, the editors would like to address their thanks to Springer and in particular Anna Kramer, for a smooth cooperation on finalizing these proceedings. Additionally, special thanks go to the support of the European FP6 NoE, "EMANICS" (No. 26854) and to the FP7 project, "SmoothIT" (No. 216259).

April 2010

Burkhard Stiller  
Filip De Turck



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A set of very detailed and constructive reviews for papers submitted to AIMS 2010 was provided by all of our reviewers, which correspond to the Technical Program Committee members as well as the PhD Workshop Committee as stated above and

additionally Stefan Beauport, Archi Delphinanto, George Exarchakos, Jeroen Famaey, Tiago Fioreze, Alberto Gonzalez, Fabio Victora Hecht, Steven Latré, Nikolay Melnikov, Vlado Menkovski, Cristian Morariu, Anuj Sehgal, Anna Sperotto, Iyad Tumar, and Martin Waldburger.

Therefore, it is of great pleasure to the Technical Program Co-chairs and the PhD Student Workshop Co-chairs to thank all those reviewers for their important and valuable work.



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