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Autonomic Communication

Second International IFIP Workshop, WAC 2005
Athens, Greece, October 2-5, 2005
Revised Selected Papers

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Preface

The Second IFIP Workshop on Autonomic Communication (WAC 2005) took place on October 2–5, 2005, in Athens, Greece. The previous (and first) edition of WAC took place in Berlin in 2004 and its next (and third) edition in Paris in 2006. The workshop was organized by the National and Kapodistrian University of Athens and was supported by the EU-funded IST-FET Autonomic Communication Coordination Action (ACCA – IST-6475). Additional support was provided by the EU-funded IST Network of Excellence E-NEXT (IST-506869). Finally, IFIP TC6 provided scientific sponsorship through Working Groups IFIP WG6.6 (Management of Networks and Distributed Systems) and IFIP WG6.3 (Performance of Communication Systems).

The workshop was organized at a time when the – yet to be well defined – field of autonomic communication (AC) is attracting the interest of both the scientific community and the research funding organizations. The latter is manifested, on one hand, by the numerous recent relevant research exploratory forums, workshop panels, preliminary forward-looking position papers, research outlooks and frameworks and, on the other hand, by the commitment of the FET program of the European Commission in Europe to funding long-term research in this area for the next four years. Consequently, the second edition of WAC was highly exploratory and included a nice mix of technical work addressing some already identified problems and well-articulated ideas on the direction this field should take and the fundamental problems whose solution would enable autonomicity.

For a relatively new – and not yet established – workshop series that also focuses on an immature field, it is important that every effort is put into securing and establishing its quality. For this reason, the Technical Program Committee (TPC), the paper evaluation process and the overall program were all carefully set up. The 35-member TPC included predominately highly regarded, established researchers, with a few highly recommended and trusted younger and promising researchers with quality record. The TPC members were asked to review from two to five papers, depending on the thematic area, the amount of work affordable by the reviewer at the time and the desire to identify (through re-assignments) the most appropriate reviewer. The TPC co-chairs did not formally review any paper, but read some of them as needed and took care of the paper selection process. All papers received at least three reviews, and some papers received four reviews. The review scores were summarized in a table, containing for each paper: the scores for each of the questions asked and for each of the reviewer, numerical averages by each reviewer, names of reviewers and major comments by each reviewer. There was no pre-set cut-off threshold or number of papers to admit. Papers were classified in three groups based on the grades and the consistency of the grades and comments: (A) clearly accepted; (B) to be discussed carefully; (C) rejected. There were 13 papers in category A, 15 papers in category B and 7 in category C. Papers in category B were carefully considered, by reading the reviews carefully, reading the paper briefly and discussing extensively the paper and the reviews between the TPC co-chairs; 9 papers from this second class were accepted. All reviews were returned to the authors and the authors of the accepted

papers were required to return a response document to the reviewers' comments, indicating how they took the criticisms (if any) into account in the final paper and pointing to and discussing any criticism they disagreed with. The previous step is an unusual one encountered typically in journal editorial processes (responses to the comments of the reviewers) and helped improve the quality of the papers that were finally presented at the workshop. Finally, the authors were given ample time and were requested to revise their paper after the workshop taking into consideration the feedback from the paper presentation at the workshop and any latest enhancements to their work or its presentation.

In addition to the 22 technical paper presentations (organized in 7 sessions) selected by following the aforementioned evaluation process, the program also included 1 keynote presentation, 3 invited presentations and 2 panels.

The keynote talk was delivered by Paul Spirakis (University of Patras - Research Academic Computer Technology Institute, Greece) and addressed algorithmic aspects of sensor networks with emphasis on complexity. The first invited presentation discussed research challenges on opportunistic spectrum access for wireless ad hoc networks and was delivered by Cesar Santivanez (BBN Technologies, USA). The second invited presentation discussed incentive schemes in memory-less P2P systems and was delivered by Costas Courcoubetis (Athens University of Economics and Business, Greece). The third invited presentation focused on coordination and resilience in ad hoc and sensor networks and was delivered by Leandros Tassiulas (University of Thessaly, Greece). Summaries of all the above presentations are included in these proceedings.

The first panel in WAC 2005 focused on the relation between autonomicity and complexity and discussed the extent to which autonomicity reduces management complexity and possibly increases overall (system) complexity. The panel was composed of the following researchers from academia, research organizations and the industry: Paul Spirakis of the University of Patras - Research Academic Computer Technology Institute in Greece (coordinator), Radu Popescu-Zeletin and Mikhail Smirnov of Fraunhofer FOKUS in Germany, David Lewis of Trinity College Dublin in Ireland, Tom Pfeifer of Waterford IT in Ireland, Stefan Schmid of NEC Europe in Germany and Cesar Santivanez of BBN Technologies in USA. An extended report on the deliberations and conclusions of this panel is included in this volume.

The second panel posed several interesting questions on presented ideas in an effort to discuss and define a meaningful and effective autonomic communication roadmap. The panelists were predominately researchers participating in the IST FET Autonomic Communication Coordination Action (ACCA) who have been involved in the last year or two in a European-wide effort to define and promote this research field. Specifically, these panellists were: Mikhail Smirnov of Fraunhofer FOKUS in Germany (Chair), Lidia Yamamoto of the University of Basel in Switzerland, Spyros Denazis of the University of Patras in Greece and Hitachi SAL in France, Simon Dobson of University College Dublin in Ireland, Ioannis Stavrakakis of NKUA in Greece, James Scott of Intel Corporation (UK) Ltd., David Lewis of Trinity College Dublin in Ireland, Jaouhar Ayadi of CSEM in Switzerland, and Serge Fdida of UPMC in France. In addition to the aforementioned ACCA researchers, the following speakers were invited: Fabrizio Sestini of European Commission Future and Emerging Technologies and Nancy Alonistioti of NKUA in Greece, also representing

the IST integrated project E2R. An extended report on the deliberations and conclusions of this panel is included in these proceedings.

The help and contributions of several people – that made WAC 2005 possible and successful – are highly appreciated and acknowledged: the TPC members and the reviewers, the authors and presenters of the papers, the invited speakers and the panelists, as well as the officers of the Future and Emerging Technologies (FET) Program European Commission, the researchers of the EU-funded IST-FET Autonomic Communication Coordination Action (ACCA), the EU-funded IST Network of Excellence E-NEXT, the Autonomic Communication Forum (ACF), IFIP TC6 and all the individuals involved from the National and Kapodistrian University of Athens.

December 2005

Ioannis Stavrakakis
Michael Smirnov

About This Book

This is the post-workshop proceedings of the Second IFIP TC6 WG6.3 and WG6.6 International Workshop on Autonomic Communication (WAC2 2005); it includes 22 full papers presented at WAC 2005 and revised by the authors based on the workshop discussions, and summaries of the one keynote talk and three invited talks and two panel reports.

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