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# Applying Formal Methods: Testing, Performance, and M/E-Commerce

FORTE 2004 Workshops The FormEMC, EPEW, ITM  
Toledo, Spain, October 1-2, 2004  
Proceedings



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# Preface

This volume contains the refereed proceedings of the first edition of three workshops colocated with the International Conference on Formal Techniques for Networked and Distributed Systems (FORTE). The workshops took place in Toledo (Spain) on the 1st and 2nd of October of 2004, and they dealt with different topics related to the application of formal methods. The names of the workshops were the following:

- TheFormEMC: 1st International Workshop on Theory Building and Formal Methods in Electronic/Mobile Commerce
- EPEW: 1st European Performance Engineering Workshop
- ITM: 1st International Workshop on Integration of Testing Methodologies

In total, the calls for papers of the workshops attracted 62 high-quality submissions. The program committees of the workshops selected 27 papers after a rigorous review process in which every paper was reviewed by at least three reviewers. In these proceedings, the papers are grouped according to the workshop they belong to. In addition to the selected papers, there was a keynote speech by Prof. Rob Pooley, from the Heriot-Watt University, UK.

We want to express our gratitude for their financial support both to the Universidad de Castilla-La Mancha and to the Junta de Comunidades de Castilla-La Mancha. Besides, we are in debt to all the authors who submitted high-quality papers to the workshops: Without their effort and interest, it would have been impossible to organize the workshops. We would also like to thank the program committee members of the three workshops for their collaboration during the reviewing process. Last, but not least, we would like to thank the organizers of each of the workshops for their fine work.

In the next pages of this preface, the main characteristics of each of the workshops are described. We hope that these proceedings will be interesting not only for the workshop attendants, but also for a wider community of researchers working on the application of formal methods.

October 2004

Manuel Núñez  
Zakaria Maamar  
Fernando L. Pelayo  
Key Pousttchi  
Fernando Rubio

## TheFormEMC

Electronic commerce (e-commerce) places new demands not only on support and delivery information technology, but also on the way business processes have to be designed, implemented, monitored, and maintained. Reliability, efficiency, scalability, and fault-tolerance are among the features that have to be embedded into e-commerce processes. Initially, research focused on how to deal with the technical issues. However, the increasing challenges of deploying reliable, efficient, secure, and fault-tolerant applications have highlighted the added value of having theoretical foundations and rigorous formal methods for specifying and validating the design of such applications. In addition, new possibilities extend *static* systems with mobility capabilities. In this sense, the TheFormEMC workshop tried to get together researchers working on theoretical aspects that can be applied to e-commerce and m-commerce systems.

The TheFormEMC workshop attracted 16 high-quality submissions from 9 different countries. The multidisciplinary nature of e-commerce and m-commerce technologies presents challenges for evaluating technical papers. The program committee comprised of experts from several disciplines selected 8 papers after a rigorous double-blind review process in which every paper was reviewed by at least three reviewers.

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## EPEW

EPEW is a new European forum for the presentation of all aspects of performance modelling and analysis of computer and telecommunication systems. The EPEW workshop attracted 36 high-quality submissions from 15 different countries. The program committee comprised of experts from several disciplines selected 14 papers after a rigorous review process in which every paper was reviewed by at least three reviewers. The 14 accepted papers cover a broad range of topics including performance modelling and analysis of computer systems and networks, performance engineering tools, formal modelling paradigms and methods for performance prediction.

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## ITM

Even though testing activities are considered to be rather important, we have to overcome the problem that different testing communities use different methods. We may roughly identify two testing communities: testing of software, and testing of communicating systems. Until very recently, research had been carried out with almost no interactions between these two communities, even though they have complementary know-how. The ITM workshop has born to help find a synthesis between the different techniques developed by each community.

The ITM workshop attracted 10 high-quality submissions from 7 different countries. The program committee selected 5 papers after a rigorous review process in which every paper was reviewed by at least three reviewers. The papers present a well-balanced view of testing technologies, combining both theoretical and practical issues.

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