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# Testing Software and Systems

26th IFIP WG 6.1 International Conference, ICTSS 2014
Madrid, Spain, September 23-25, 2014
Proceedings

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# Preface

This volume contains the proceedings of the 26th IFIP International Conference on Testing Software and Systems, ICTSS 2014. The conference was held in Madrid, Spain, during September 23–25, 2014. The purpose of the ICTSS conference is to bring together researchers, developers, testers, and users from industry to review, discuss, and learn about new approaches, concepts, theories, methodologies, tools, and experiences in the field of testing of software and systems.

We received 36 submissions. After a careful reviewing process, the Program Committee accepted 11 regular papers and 6 short papers. Therefore, the acceptance rate of the conference stayed close to 47%. The conference program was enriched by the keynotes of Franz Wotawa, on "On the boundary between testing and fault localization", and Salvador Ignacio Folgado Bellido, on "Advanced solutions for automation of functional test".

Several people contributed to the success of ICTSS 2014. We are grateful to the Steering Committee for its support. Its chair, Professor Rob Hierons, deserves a special mention for his guidance and valuable advice. We would like to thank the general chair Manuel Núñez, the Program Committee, and the additional reviewers, for their work on selecting the papers. The process of reviewing and selecting papers was significantly simplified through using EasyChair. Finally, the proceedings have been published through Springer-Verlag and we are grateful for the assistance provided by Alfred Hofmann and Anna Kramer.

On behalf of the ICTSS organizers, we welcome all attendants to the conference and hope that you find the conference's program useful, interesting, and challenging.

September 2014

Mercedes G. Merayo
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# Organization

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# Invited Talk
# (Abstracts)

# On the Boundary between Testing and Fault Localization

Franz Wotawa

Graz University of Technology

**Abstract.** Debugging comprises the activities of fault detection, localization, and correction, which we usually consider to be carried out separately during program development. In testing and here in particular automated test case generation, the question is more on how to generate effective tests that most likely reveal bugs instead of how such tests might help to locate and fix a bug once revealed. In this talk I discuss the relationship between testing and fault localization. Besides giving an introduction into the current state of the art in debugging, I introduce a method for computing tests in order to facilitate debugging. The key idea behind the method is to construct test cases that allow distinguishing bug candidates. In the talk I introduce the basic ideas, empirical results obtained, and focus also on current research questions that has to be tackled in order to further increase automation in fault localization and correction.

# Advanced Solutions for Automation of Functional Test

Salvador Ignacio Folgado Bellido

Bull Spain S.A.

**Abstract.** It is common knowledge that the most efficient solution to obtain high quality systems is to perform test automation. However, does not it sound like unfinished business, unresolved? Is it a utopia to achieve a high degree of test automation? Are we creating a new problem of developing and maintaining evidence? What actual the coverage that we have or that we can get? And what about mobile devices, smartphone, tablets? 80% of organizations attempting to address automation of functional tests fail. The main reason is that the acquisition of a test automation tool does not solve the problem (actually, it generates a new one!). This objective must be addressed based on a sustainable strategy that addresses the reality of the organization (changing their requirements, more frequent deployments, business oriented). This talk discusses BullŠs approach on how to carry out automation of functional tests, based on the following principles: reusability, consistency and productivity. I will present data and results of projects (case studies) in order to draw the best strategic approach to functional test automation and also will address the future of testing related to new technologies and platforms.

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