



Proceedings of the
Seventh International Workshop on
Software Quality and Maintainability

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Bridging the gap between end user expectations,
vendors' business prospects,
and software engineers' requirements on the ground
(SQM 2013)

Preface

3 pages

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We are very pleased to present you with the accepted papers of the 7th International Workshop on Software Quality and Maintainability. Continuing the debate of *Is software quality in the eye of the beholder?* started seven years ago, this workshop offers a forum to researchers to present their original work and to practitioners to relate their experiences on issues pertaining to software quality and maintainability. Moreover, the theme of the workshop invites discussion on how to bridge the gap between end user expectations, business requirements, vendor performance, and engineering constraints regarding software quality.

SQM 2013 was a satellite event of the 17th European Conference on Software Maintenance and Reengineering (CSMR 2013). In this volume, you find the articles accepted and presented at the workshop. After a rigorous peer-reviewing process, 4 out of 9 submissions were selected. In addition, our invited speaker Bram Adams provided an overview of studies into the impact of release engineering on software quality.

This year, the papers brought in original topics to the discussion, ranging from code analysis to design:

- **Does fixing a bug in one instance of code clones really fix the problem completely?** Martin Pölmann and Elmar Juergens examined six software systems from their version history to see what percent of bug fixes in clones leads to incomplete changes and potential bug candidates.
- **Can software quality concepts be applied to the design of a robot control framework, and can quality considerations of such a design guide the quality control of software in general?** Max Reichardt, Tobias Föhst and Karsten Berns used their own robot control framework to give a positive answer to both questions.
- **How much does a source code element such as classes or methods contribute to the maintainability index relatively?** Péter Hegedüs, Tibor Bakota, Gergely Ladányi, Csaba Faragó and Rudolf Ferenc measured the drilled down metrics and compared the ratings to human experts.
- **How to make architecture styles conform to a quality model?** Andreas Goeb adapted the Quamoco quality modeling approach to enforce the conformance between a service-oriented architecture style with quality goals.

We very much enjoyed all of the presentations, the matched expectations and the lively discussions. Moreover, we are grateful to all members of the Program Committee and their sub-reviewers for helping to make SQM 2013 a success.

Eric Bouwers and Yijun Yu,
SQM 2013 Chairs, March 2013



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Invited Keynote by Bram Adams

So, you are saying that our software quality was screwed up by ... the release engineer?!

Businesses spend a significant amount of their IT budget on software application maintenance. Each firm's portfolio of applications helps them run their daily operations, report their financials, and help them market and sell their products. Therefore, a firm's ability to improve the quality and maintainability of these applications will have a significant impact on their bottom line as well as establish credibility with their shareholders and customers. However, even though firms have spent significant time and money addressing this, they have achieved mixed results. Why?

Software release engineering is the discipline of integrating, building, testing, packaging and delivering qualitative software releases to the end user. Whereas software used to be released in shrink-wrapped form once per year, modern companies like Intuit, Google and Mozilla only need a couple of days or weeks in between releases, while lean start-ups like IMVU release up to 50 times per day! Shortening the release cycle of a software project requires considerable process and development changes in order to safeguard product quality, yet the scope and nature of such changes are unknown to most practitioners. This presentation will touch on the major sub-fields of release engineering (integration, build and delivery) and their interaction with software quality. We will explore state-of-the-art results in this domain, as well as open challenges for the SQM community. In the end, we hope to convey the message that seemingly innocent factors like shorter release cycles or version control branching structure have a major impact on software quality.