Introduction to the 4th International ERCIM Workshop on Software Evolution and Evolvability (Evol ’08)

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Research in software evolution and evolvability has been thriving in recent years, with a stream of new formalisms, tools, techniques and development methodologies. Some of these new techniques aim to facilitate the way long-lived successful software systems can be changed in order to cope with demands from users, as well as the increasing complexity and volatility of the contexts in which such systems operate. Others aim to improve our understanding, and if possible improve our control, of the processes by which demand for these changes come about.

This workshop brings together these two strands of research for the first time. It is the result of a merger between the ERCIM Workshops on Software Evolution and the IEEE International Workshops on Software Evolvability. Historically, the ERCIM workshops have dealt with the practicalities of developing software that can be changed to meet evolving needs and the tools and methods by which this can be best achieved, while the Software Evolvability workshops have generally addressed issues at a more abstract level, advancing the understanding of the causes and effects of software evolution using means such as analogies and models from biology, the sociology of technology and other areas.

Evol ’08 aims to exploit the synergies to be found when these two communities unite in a shared event. This led both to the merger of the two workshop series and to the theme of this workshop of “bridging boundaries”.

Having agreed to combine our workshops, we wanted to co-locate our event with a relevant larger conference. Researchers have also increasingly been looking at the past evolution of systems, in order to understand that history and to learn lessons for their future evolution. Due to the size of historical repositories and the complexity of current software systems, much of the research and practice in software evolution is supported or driven by tools that automate various processes, like management of software versions, mining source code and bug repositories, and detecting bad smells to guide refactoring opportunities, among many other processes. Co-locating Evol ’08 with the IEEE/ACM International Conference on Automated Software Engineering (ASE 2008) at L’Aquila, Italy has brought the software evolution and the automated software engineering communities together for mutual benefit: both communities have many tools and domains of application to offer each other.

The goal of Evol ’08 is to bring together a diverse spectrum of participants, working on different activities in, and approaches to, software evolution and evolvability, in order to discuss how
different sub-fields of research and practice can learn from each other. The wide range of themes and topics within the scope of the workshop has attracted academic and industrial participants interested in the theoretical, technological or managerial aspects of software evolution.

Towards achieving our goal we solicited three types of paper for the workshop. These were research papers describing original research, tool papers describing academic, not commercial, tools, and position papers presenting speculative or less-fully-developed ideas. All these are represented in these proceedings.

As we prepared the programme for the workshop and the content of these proceedings, a number of themes emerged. These include design- and code-related research, the analysis of changes in evolution processes and the use of their products, the use of analogies in exploring software evolution, and work focusing on the practice of software evolution and evolvability as seen by academics and practitioners.

We believe that the papers reproduced in these proceedings show the range and quality of work in the area of software evolution and evolvability. We have found organising Evol ’08 rewarding and enjoyable, and hope you will share these feelings as you read our authors’ contributions.

We would like to express our thanks to the organisers of ASE for assistance in organising Evol ’08, and to ERCIM for providing sponsorship for the event. We also extend our thanks to the programme committee members, authors and participants for making Evol ’08 possible.