# Workshop on Self-Awareness in Reconfigurable Computing Systems (SRCS)

**1. September 2012**
**Oslo, Norway**

edited by
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# Preface

The current landscape of computing sees a continuing trend towards increasingly complex, heterogeneous and distributed systems. This does not only raise the question of how to efficiently develop applications for such systems, but also how to cope with dynamic changes in the application requirements or the system itself. Self-awareness is an emerging field of research in computing that considers systems and applications that gather and maintain information about their current state and environment, reason about their behaviour, and adapt themselves if necessary.

Reconfigurable hardware, such FPGAs, is a technology that is becoming increasingly relevant to embedded and high-performance applications. Being able to adapt the functionality through dynamic reconfiguration is an inherent benefit of reconfigurable devices. Over the past decade, significant progress has been made in tools and methods for approaches that require the exchange of a number of functional units in a pre-defined scenario. However, it is still an open question how we can harness the benefits of reconfigurable technology for systems that automatically adapt to changing requirements or environments. Recent research has investigated several so-called self-* properties such as self-modifying, self-optimising or self-healing as a means of improving flexibility, performance or reliability of applications targeting reconfigurable hardware. Self-awareness extends this line of research and includes aspects such as reasoning, learning and intelligence to a run-time adaptive system.

The Workshop on Self-Awareness in Reconfigurable Computing Systems (SRCS) was created to bring together researchers who are active in this field, present their current work, and share their concepts and visions of self-aware systems. The topics of interest for this workshop are:

- Concepts and foundations of self-aware systems.
- Architectures, control and infrastructure for self-aware systems.
- Algorithmic approaches for self-awareness.
- Engineering self-aware reconfigurable systems.
- Advanced autonomous and self-adaptive systems.
- Applications using self-awareness or self-adaptivity.

The workshop was held on 1. September 2012 in Oslo, Norway, and co-located with the 2012 International Conference on Field Programmable Logic and Applications (FPL). Of all papers submitted to this workshop, 6 were selected for regular presentations and 6 were accepted as posters. In addition, we were able to attract 3 invited speakers from industry and academia, resulting in a diverse program that covers many aspects of self-aware systems. We would like to thank all authors for submitting their work to the workshop. We would also like to thank the program committee for reviewing papers and helping with the paper selection. We gratefully acknowledge the financial support of Awareness, a FET coordination action funded by the European Commission under FP7. Special thanks go the the FPL organisers who helped us co-locating this workshop with FPL 2012.

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