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Cryptographic Hardware and Embedded Systems - CHES 2007

9th International Workshop, Vienna, Austria
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Proceedings

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Preface

CHES 2007, the ninth workshop on Cryptographic Hardware and Embedded Systems, was sponsored by the International Association for Cryptologic Research (IACR) and held in Vienna, Austria, September 10–13, 2007. The workshop received 99 submissions from 24 countries, of which the Program Committee (39 members from 15 countries) selected 31 for presentation. For the first time in the history of CHES, each submission was reviewed by at least four reviewers instead of three (and at least five for submissions by PC members, those now being limited to two per member) and many submitted papers have received plenty of extra reviews (some papers received up to nine reviews), thus totalling the unprecedented record of 483 reviews overall.

The papers collected in this volume represent cutting-edge worldwide research in the rapidly evolving fields of crypto-hardware, fault-based and side-channel cryptanalysis, and embedded cryptography, at the crossing of academic and industrial research. The wide diversity of subjects appearing in these proceedings covers virtually all related areas and shows our efforts to extend the scope of CHES more than usual. Although a relatively young workshop, CHES is now firmly established as a scientific event of reference appreciated by more and more renowned experts of theory and practice: many high-quality works were submitted, all of which, sadly, could not be accepted. Selecting from so many good works is no easy task and our deepest thanks go to the members of the Program Committee for their involvement, excellence, and team spirit. We are grateful to the numerous external reviewers listed below for their expertise and assistance in our deliberations.

In addition to the contributions appearing in these proceedings, the workshop program included two invited lectures given by Kim Nguyen and Pankaj Rohatgi. The program also included the traditional rump session, chaired by Nigel Smart, featuring short informal talks on late-breaking research news. This year's rump session was augmented with a parallel demo and poster session welcoming informal presentations of prototypes, attack demos and research works. The Program and Steering Committees commonly agreed on giving the CHES 2007 Best Paper Award to two papers: "Arithmetic Operators for Pairing-Based Cryptography" by Jean-Luc Beuchat, Nicolas Brisebarre, Jérémie Detrey and Eiji Okamoto (University of Tsukuba, Université Monnet and École Normale Supérieure de Lyon) and "Side Channel Cryptanalysis of a Higher Order Masking" by Jean-Sébastien Coron, Emmanuel Prouff and Matthieu Rivain (University of Luxembourg and Oberthur Card Systems). The purpose of the award is to formally acknowledge authors of outstanding papers and to recognize excellence in their research works. Interestingly, these two works represent well the two sides of our field: efficient implementations and hardware-based cryptanalysis.

Ingrid and myself deeply thank Elisabeth Oswald (University of Bristol, UK, and Graz University of Technology, Austria), the General Chair of CHES 2007, for her excellent work managing the local organization and orchestrating the conference logistics. We are grateful to Thomas Herlea (KUL, Belgium) for diligently maintaining the Web system. The review and discussion process was run using e-mail and the WebReview software by Wim Moreau and Joris Claessens. We also owe our gratitude to Lejla Batina (also from KUL) for her help in preparing the call for papers and the proceedings. We would like to deeply thank the Steering Committee and personally Jean-Jacques Quisquater (UCL, Belgium) for his support, trust and kind advice at many occasions. We would also like to thank the Institute for Applied Information Processing and Communications (IAIK) of Graz University of Technology for assisting with local arrangements. Our gratitude also goes to our generous sponsors, namely, Cryptography Research, Comodo, Novacard, Thomson, Infineon and IBM. We heartily thank all those who have contributed to make this workshop a reality: we are forever in your debt.

Finally, we would like to profoundly thank and salute all those who, from all over the world, submitted their work to this workshop as well as all the speakers who provided the scientific contents of CHES 2007: the success of the CHES series is their success and reflects every year the vitality of our community.

July 2007

Pascal Paillier
Ingrid Verbauwhede

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