

## Preface

This special issue contains revised and extended versions of a selection of articles from the Sixth International Workshop on Security and Trust Management, STM'2010, held in Athens, Greece, September 23–24, 2010, back-to-back with ESORICS. This series of Workshops is organized by ERCIM (European Research Consortium in Informatics and Mathematics) Working Group on Security and Trust Management, that was established in 2005 to foster collaborative work on all theoretical and practical aspects of security, trust and privacy in ICT within the European research community and to increase co-operation of the research community with the European industry.

The four articles in this Special Issue were selected from the 17 papers that were accepted for presentation at the Workshop, out of 40 submissions. The articles cover representative topics of STM, such as access control, privacy, security and trust policies, or formal methods.

The paper “Scalable automated symbolic analysis of administrative role-based access control policies by SMT solving” by Armando and Ranise considers the problem of automatically analysing administrative role based access control (ARBAC) policies. Such analyses are extremely useful to understand the subtle implications of complex combinations of authorizations, and more generally to ensure that ARBAC systems are scalable and can evolve gracefully. Authors isolate a new class of properties (user-role reachability) for ARBAC policies and leverage state-of-the-art SMT solvers to check automatically their validity. Finally, the strength of their approach is demonstrated through extensive experimental evaluation.

In their paper “Stateful authorization logic – proof theory and a case study”, Garg and Pfenning embark on the proof-theoretical study of logics for stateful authorization policies; that is, policies that depend on externally controlled conditions. They introduce an expressive logic, called BL, for reasoning about stateful authorization policies. The expressiveness of the logic is achieved through the adoption of a modal connective that allows delegation, and through an explicit modeling of time. Thanks to a careful design that crisply separates between the validity of state predicates and BL judgments, the authors provide an elegant treatment of the meta-theory of BL, and prove that it enjoys admissibility of cut, an essential property that entails consistency. The BL logic is empirically validated through a detailed case study of the US authorization policies for accessing to sensitive intelligence information.

The paper “Modeling and preventing inferences from sensitive value distributions in data release” by Bezzi, De Capitani di Vimercati, Foresti, Livraga, Samarati and Sassi considers the following setting: assume a database contains many entries, each of which in its own is considered non-sensitive and can be declassified, but some

aggregate statistic (averages or clusters, for instance) may be used to infer sensitive information. The idea is to have a decision procedure to determine when the release of a single record will not lead to a potential inference of the sensitive information. Several metrics for this kind of possible inferences are proposed and evaluated.

Finally, in their paper “A trust-augmented voting scheme for collaborative privacy management”, Sun, Zhang, Pang, Alcalde and Mauw propose to implement the enforcement of privacy policies in social network sites based on combined rankings of the preferences of multiple owners of a resource. The computation of the vote’s winning candidate can be done by a brute-force attack or by approximations that the authors provide.

We would like to take this opportunity to thank the local organization team of STM 2010 at University of Piraeus for their invaluable help in making the event a success. Special thanks to the members of the Program Committee and external reviewers for all their hard work during the review and the selection process of the papers of the Workshop and of this Special Issue. Last, but certainly not least, our thanks go to all the authors who submitted papers and, very specially, to those who worked exhaustively on the revision and extension of the high quality papers included in this issue.

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