

Commenced Publication in 1973

Founding and Former Series Editors:

Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Alfred Kobsa

University of California, Irvine, CA, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

University of Dortmund, Germany

Madhu Sudan

Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Steven Furnell Sokratis K. Katsikas
Antonio Lioy (Eds.)

Trust, Privacy and Security in Digital Business

5th International Conference, TrustBus 2008
Turin, Italy, September 4-5, 2008
Proceedings



Volume Editors

Steven Furnell

University of Plymouth

School of Computing, Communications and Electronics

A310, Portland Square, Drake Circus, Plymouth, Devon PL4 8AA, UK

E-mail: sfurnell@jack.see.plymouth.ac.uk

Sokratis K. Katsikas

University of Piraeus

Department of Technology Education and Digital Systems

150 Androutsou St., 18534 Piraeus, Greece

E-mail: ska@unipi.gr

Antonio Lioy

Politecnico di Torino

Dipartimento di Automatica e Informatica

Corso Duca degli Abruzzi 24, 10129 Torino, Italy

E-mail: lioy@polito.it

Library of Congress Control Number: 2008933371

CR Subject Classification (1998): K.4.4, K.4, K.6, E.3, C.2, D.4.6, J.1

LNCS Sublibrary: SL 4 – Security and Cryptology

ISSN 0302-9743

ISBN-10 3-540-85734-6 Springer Berlin Heidelberg New York

ISBN-13 978-3-540-85734-1 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

springer.com

© Springer-Verlag Berlin Heidelberg 2008

Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 12511266 06/3180 5 4 3 2 1 0

Preface

This book contains the proceedings of the 5th International Conference on Trust, Privacy and Security in Digital Business (TrustBus 2008), held in Turin, Italy on 4–5 September 2008. Previous events in the TrustBus series were held in Zaragoza, Spain (2004), Copenhagen, Denmark (2005), Krakow, Poland (2006), and Regensburg, Germany (2007). TrustBus 2008 brought together academic researchers and industrial developers to discuss the state of the art in technology for establishing trust, privacy and security in digital business. We thank the attendees for coming to Turin to participate and debate upon the latest advances in this area.

The conference program included one keynote presentation and six technical paper sessions. The keynote speech was delivered by Andreas Pfitzmann from the Technical University of Dresden, Germany, on the topic of “Biometrics – How to Put to Use and How Not at All”. The reviewed paper sessions covered a broad range of topics, including trust and reputation systems, security policies and identity management, privacy, intrusion detection and authentication, authorization and access control. Each of the submitted papers was assigned to five referees for review. The program committee ultimately accepted 18 papers for inclusion in the proceedings.

We would like to express our thanks to the various people who assisted us in organizing the event and formulating the program. We are very grateful to the program committee members and the external reviewers for their timely and thorough reviews of the papers. Thanks are also due to the DEXA organizing committee for supporting our event, and in particular to Gabriela Wagner for her assistance and support with the administrative aspects.

Finally we would like to thank all the authors that submitted papers for the event, and contributed to an interesting set of conference proceedings.

September 2008

Steven Furnell
Sokratis Katsikas
Antonio Lioy

Organization

Program Committee

General Chairperson

Antonio Lioy

Politecnico di Torino, Italy

Conference Program Chairpersons

Steven Furnell,
Sokratis Katsikas

University of Plymouth, UK
University of Piraeus, Greece

Program Committee Members

Vijay Atluri	Rutgers University, USA
Marco Casassa Mont	HP Labs Bristol, UK
David Chadwick	University of Kent, UK
Nathan Clarke	University of Plymouth, UK
Richard Clayton	University of Cambridge, UK
Frederic Cuppens	ENST Bretagne, France
Ernesto Damiani	Università degli Studi di Milano, Italy
Ed Dawson	Queensland University of Technology, Australia
Sabrina De Capitani di Vimercati	University of Milan, Italy
Hermann De Meer	University of Passau, Germany
Jan Eloff	University of Pretoria, South Africa
Eduardo B. Fernandez	Florida Atlantic University, USA
Carmen Fernandez-Gago	University of Malaga, Spain
Elena Ferrari	University of Insubria, Italy
Simone Fischer-Huebner	University of Karlstad, Sweden
Carlos Flavian	University of Zaragoza, Spain
Juan M. Gonzalez-Nieto	Queensland University of Technology, Australia
Rüdiger Grimm	University of Koblenz, Germany
Dimitris Gritzalis	Athens University of Economics and Business, Greece
Stefanos Gritzalis	University of the Aegean, Greece
Ehud Gudes	Ben-Gurion University, Israel
Sigrid Gürgens	Fraunhofer Institute for Secure Information Technology, Germany
Carlos Gutierrez	University of Castilla-La Mancha, Spain

VIII Organization

Marit Hansen	Independent Center for Privacy Protection, Germany
Audun Jøsang	Queensland University of Technology, Australia
Tom Karygiannis	NIST, USA
Dogan Kesdogan	NTNU Trondheim, Norway
Hiroaki Kikuchi	Tokai University, Japan
Spyros Kokolakis	University of the Aegean, Greece
Costas Lambrinoudakis	University of the Aegean, Greece
Leszek Lilien	Western Michigan University, USA
Javier Lopez	University of Malaga, Spain
Antonio Mana Gomez	University of Malaga, Spain
Olivier Markowitch	Université Libre de Bruxelles, Belgium
Fabio Martinelli	CNR, Italy
Chris Mitchell	Royal Holloway College, University of London, UK
Guenter Mueller	University of Freiburg, Germany
Eiji Okamoto	University of Tsukuba, Japan
Martin S. Olivier	University of Pretoria, South Africa
Rolf Oppliger	eSecurity Technologies, Switzerland
Maria Papadaki	University of Plymouth, UK
Ahmed Patel	Kingston University, UK
Guenther Pernul	University of Regensburg, Germany
Andreas Pfizmann	Dresden University of Technology, Germany
Hartmut Pohl	FH Bonn-Rhein-Sieg, Germany
Karl Posch	University of Technology Graz, Austria
Torsten Priebe	Capgemini, Austria
Gerald Quirchmayr	University of Vienna, Austria
Christoph Ruland	University of Siegen, Germany
Pierangela Samarati	University of Milan, Italy
Matthias Schunter	IBM Zurich Research Lab., Switzerland
Mikko T. Siponen	University of Oulu, Finland
Adrian Spalka	CompuGROUP Holding AG, Germany
A Min Tjoa	Technical University of Vienna, Austria
Allan Tomlinson	Royal Holloway College, University of London, UK
Christos Xenakis	University of Piraeus, Greece
Jianying Zhou	I2R, Singapore

External Reviewers

Carlos A. Gutierrez Garcia	University of Castilla-La Mancha, Spain
Andrea Perego	University of Insubria, Italy

Table of Contents

Invited Lecture

Biometrics – How to Put to Use and How Not at All?	1
<i>Andreas Pfitzmann</i>	

Trust

A Map of Trust between Trading Partners	8
<i>John Debenham and Carles Sierra</i>	
Implementation of a TCG-Based Trusted Computing in Mobile Device	18
<i>SuGil Choi, JinHee Han, JeongWoo Lee, JongPil Kim, and SungIk Jun</i>	
A Model for Trust Metrics Analysis	28
<i>Isaac Agudo, Carmen Fernandez-Gago, and Javier Lopez</i>	

Authentication, Authorization and Access Control

Patterns and Pattern Diagrams for Access Control	38
<i>Eduardo B. Fernandez, Günther Pernul, and Maria M. Larrondo-Petrie</i>	
A Spatio-temporal Access Control Model Supporting Delegation for Pervasive Computing Applications	48
<i>Indrakshi Ray and Manachai Toahchoodee</i>	
A Mechanism for Ensuring the Validity and Accuracy of the Billing Services in IP Telephony	59
<i>Dimitris Geneiatakis, Georgios Kambourakis, and Costas Lambrinoudakis</i>	

Reputation Systems

Multilateral Secure Cross-Community Reputation Systems for Internet Communities	69
<i>Franziska Pingel and Sandra Steinbrecher</i>	
Fairness Emergence through Simple Reputation	79
<i>Adam Wierzbicki and Radoslaw Nielek</i>	

Combining Trust and Reputation Management for Web-Based Services.....	90
<i>Audun Jøsang, Touhid Bhuiyan, Yue Xu, and Clive Cox</i>	

Security Policies and Identity Management

Controlling Usage in Business Process Workflows through Fine-Grained Security Policies	100
<i>Benjamin Aziz, Alvaro Arenas, Fabio Martinelli, Ilaria Matteucci, and Paolo Mori</i>	
Spatiotemporal Connectives for Security Policy in the Presence of Location Hierarchy	118
<i>Subhendu Aich, Shamik Sural, and Arun K. Majumdar</i>	
BusiROLE: A Model for Integrating Business Roles into Identity Management	128
<i>Ludwig Fuchs and Anton Preis</i>	

Intrusion Detection and Applications of Game Theory to IT Security Problems

The Problem of False Alarms: Evaluation with Snort and DARPA 1999 Dataset	139
<i>Gina C. Tjhai, Maria Papadaki, Steven M. Furnell, and Nathan L. Clarke</i>	
A Generic Intrusion Detection Game Model in IT Security	151
<i>Ioanna Kantzavelou and Sokratis Katsikas</i>	
On the Design Dilemma in Dining Cryptographer Networks	163
<i>Jens O. Oberender and Hermann de Meer</i>	

Privacy

Obligations: Building a Bridge between Personal and Enterprise Privacy in Pervasive Computing	173
<i>Susana Alcalde Bagüés, Jelena Mitic, Andreas Zeidler, Marta Tejada, Ignacio R. Matias, and Carlos Fernandez Valdivielso</i>	
A User-Centric Protocol for Conditional Anonymity Revocation	185
<i>Suriadi Suriadi, Ernest Foo, and Jason Smith</i>	
Preservation of Privacy in Thwarting the Ballot Stuffing Scheme	195
<i>Wesley Brandi, Martin S. Olivier, and Alf Zugenmaier</i>	

Author Index	205
--------------------	-----