

Curriculum Vitae

Dr.-Ing. Matthias Schunter

Diplom-Informatiker

Master of Business Administration

Address: Dangelstr. 2
CH-8038 Zürich, Switzerland

Contact: Tel. +41 (44) 7 24 83 29,
Fax +49 (721) 1 51 29 97 92
<http://www.zurich.ibm.com/~mts>,
<schunter@acm.org>, <mts@zurich.ibm.com>

Date of birth: 07/16/1968 in Hechingen, Germany.

Nationality: German

Languages: German, English (fluent), French, Latin (basic)

Current Position: Research Staff Member of the “Security and Assurance” research group at IBM Research, Zürich, Switzerland.

Track Record: 8 awards, 16 program committees,
6 refereed journal and 41 refereed conference papers, 8 book chapters,
6 granted patents and 16 pending patent applications,
2 standardization groups, advised students,
lectures & academic teaching experience.

Contents

1	Education	2
2	Professional Experience	2
3	Professional Activities including Program Committees	4
4	Honors and Awards	6
5	Publications and Patents	7

1 Education

- 06/2010 Master of Business Administration with distinction (MBA)
from Warwick Business School, UK wbs.ac.uk
Master Thesis: Strategic Implications for Software-as-a-Service
for the Financial Services Sector (see [1]).
- 10/2000 Dr.-Ing. in Computer Science at Saarland University
(Grade “sehr gut”; lat. *magna cum laude*)
Ph.D. Thesis: Optimistic Fair Exchange (see [2]).
Advisors: Prof. Birgit Pfitzmann, Prof. Joachim Biskup.
- 09/1989-01/1994 Dipl.-Inform. in Computer Science (comparable to M.S.)
at Universität Hildesheim (Grade 1.0 with honors).
Fields of application: Marketing and Logistics
Medical Informatics
Master Thesis: Specification of Secrecy Properties for
Reactive Cryptographic Systems (in German; see [3]).

2 Professional Experience

My research topics are computer security assessment and management, enterprise privacy management, secure electronic commerce, security protocols, formal security models.

2.1 IBM Zurich Research Laboratory (since 05/2001)

- As technical leader, I have lead the creation of the proposal for the FP7 TLOUDS Integrated Project. This EUR 10M project has been accepted and starts October 2010. The goal of the project is to develop a cloud infrastructure that is resilient enough to host critical infrastructures.
- In 2010, I was main author of two IBM services products that offer “IBM Cloud Security Assessment” and “IBM Cloud Security Strategy Workshop”.
- I have represented IBM in multiple EU proposals for FP7 and acted as a core team member for designing these proposals. Approx 70% of proposals were successful. This includes MASTER (granted in 2005) and PrimeLife (granted 2005).
- I’ve lead IBM’s team in OpenTC www.opentc.net between 2006 and 2009. OpenTC has developed a virtualized machine infrastructure that is protected using trusted computing. We have contributed security policy management, secure virtual networking, and secure storage components.
- Assignment to Research Headquarters (09/2006-12/2006). I’m currently working at the IBM Watson Research Centers in Yorktown Heights, NY. My responsibility includes quality assurance and internal review of IBM’s research.
- Research Staff Member (Since 07/2005) In 2006, I lead IBM’s part of the OpenTC project on open trusted computing (see www.opentc.net).

In 2005, I've lead a team that has defined a Business Continuity Maturity Assessment Framework that will be used by our Business Continuity Practice to assess customers.

Since 2005, I am leader of the IBM Privacy Research Institute www.research.ibm.com/privacy.

- Manager of the research group “Identity Management and Privacy” (12/2003-06/2005) in the department “Network Security and Cryptography” of Dr. Michael Waidner.

I lead of a team of senior researchers, postdocs, and PhD students. I am responsible for setting research directions as well as obtaining funding from various departments of IBM as well as third parties such as the European Commission and IBM Customers. I represented IBM in various successful EU proposals, I successfully completed several customer and IBM internal projects.

I am actively participating in two standardization groups: The Trusted Computing Group defines secure hardware to enable security verifiability. The W3C Platform for Privacy Preferences enables consumers to evaluate whether an enterprise satisfies given security requirements.

Research Focus: After my promotion to group manager, I shifted the focus of my group towards secure platforms and trust management. A particular focus has been flow policy enforcement and integrity management of platforms.

- Research Staff Member (Postdoc 05/2001-12/2001, Research Staff Member 01/2002-11/2003) in the “Network Security and Cryptography” group of Dr. Michael Waidner.

I was leading the research on Enterprise Privacy Management. We developed an architecture and the Enterprise Privacy Authorization Language for enterprise privacy enforcement.

Research Focus: My research focused on enterprise privacy management and privacy policy languages. I applied my research in product architectures for IBM products as well as consulting engagements such as the Government of Alberta Privacy Architecture.

2.2 Saarland University (09/1998-04/2001)

- Member of the research group “Cryptography and Computer Security” chaired by Prof. Birgit Pfitzmann (see <http://www-krypt.cs.uni-sb.de>).
- Group leader of the MAFTIA¹ project team. The goal of the MAFTIA project was to use advanced cryptographic protocols to close the gap between fault-tolerance and cryptography.
Research Focus: Formal evaluation of cryptographic and security protocols.
- Design of a generic semantics defining the security of reactive cryptographic systems [40,101].

¹“Malicious- and Accidental-Fault Tolerance in Internet Applications” (see <http://www.maftia.org>). Funded under the IST program of the European Commission.

- Seminars and programming classes. Adviser of master theses.

2.3 University of Dortmund (09/1996-08/1998)

- Member of the research group “Information Systems and Security” chaired by Prof. Joachim Biskup (see <http://ls6.cs.uni-dortmund.de/issi/>).
- Group leader of the SEMPER² teams at Dortmund and Saarbrücken. SEMPER developed a framework and a prototype for secure electronic commerce over the Internet.
Research Focus: Design of the overall architecture. Design and implementation of the SEMPER Transfer and Fair Exchange Layer.
- Design of security protocols for efficient fair exchange [15,58]. Design of the SEMPER framework for secure electronic commerce [9,52].

2.4 University of Hildesheim (02/1994-08/1996)

- Member of the research group “Information Systems and Security” chaired by Prof. Joachim Biskup.
- Researcher in the CAFE³ project. The project designed and implemented a privacy-protecting digital payment system on PDAs and smartcards.
Research Focus: Untraceable off-line digital cash. Fault- and loss-tolerance of digital payments.

3 Professional Activities including Program Committees

2011 Program Committee: 8th International Conference on Trust, Privacy & Security in Digital Business (TrustBus 11).

Program Committee: European Workshop on System Security (EUROSEC) 2011.

2010 Program Committee: Workshop on Isolation and Integration for Dependable Systems (IIDS), Co-located with EuroSys '2010, Paris, France, April 13, 2010.

Program Committee: 7th International Conference on Trust, Privacy & Security in Digital Business (TrustBus 10).

The ACM Cloud Computing Security Workshop (CCSW 2010), in conjunction with the 17th ACM Conference on Computer and Communications Security (CCS), 8 October 2010, Hyatt Regency Chicago, Chicago, IL.

2009 Program Committee: 6th International Conference on Trust, Privacy & Security in Digital Business (TrustBus 09)

Program Committee: VTDS 09: EuroSys Workshop on Virtualization Technology for Dependable Systems

²“Secure Electronic Marketplace for Europe” (see <http://www.semper.org>). Funded under the ACTS program of the European Commission.

³“Conditional Access for Europe”. Funded under the ESPRIT program of the European Commission.

- 2008** Program Committee: SICHERHEIT 2008, 4. Jahrestagung des Fachbereichs "Sicherheit Schutz und Zuverlässigkeit" der Gesellschaft für Informatik e.V. (GI).
5th International Conference on Trust, Privacy & Security in Digital Business (TrustBus 08)
- 2007** Program Committee: 22th IFIP International Information Security Conference (IFIP SEC 2007).
- 2006** Program Committee: 21th IFIP International Information Security Conference (IFIP SEC 2006), Karlstad, Sweden, May 2006.
Program committee: "Workshop on Trust and Privacy in Digital Business (Trust-Bus)", Copenhagen, Denmark, August 2005.
- 2005** Program Committee: "Workshop on Privacy-enhancing Technologies" (PET2005) Dubrovnik (Cavtat), Croatia, June 2005.
Program committee: "Workshop on Privacy in the Electronic Society (WPES2005), Washington DC, October 2005.
Program committee: "Workshop on Trust and Privacy in Digital Business (Trust-Bus)", Copenhagen, Denmark, August 2005.
Standardization: IBM representative in the Infrastructure Working Group of the Trusted Computing Group (TCG infra_wg).
Standardization: IBM representative in the Platform for Privacy Preferences 1.1 Working Group of the World-wide Web Consortium (W3C P3P 1.1).
Chair of the IBM Academy of Technology Study on "Future Enterprise Privacy Challenges".
- 2004** Program Committee: "Workshop on Privacy-enhancing Technologies" (PET2004).
Program Committee: "ACM Conference on Computer and Communications Security (ACM CCS)", Washington DC, October 2004.
Program Committee: "WHOLESALES (A Multiple View of Individual Privacy in a Networked World)", Stockholm, Jan 2004.
Program committee: "Workshop on Privacy in the Electronic Society (WPES2004), Washington DC, October 2004.
Program Committee: "New Security Paradigms Workshop (NSPW 2004)", Toronto, Canada, 2004.
Standardization: IBM representative in the Infrastructure Working Group of the Trusted Computing Group (TCG infra_wg).
Standardization: IBM representative in the Platform for Privacy Preferences 1.1 Working Group of the World-wide Web Consortium (W3C P3P 1.1).
Chair of an IBM Academy of Technology Study on "Integrity-based Computing".

- 2003** Program Committee: “Workshop on Privacy-enhancing Technologies (PET2003)”, Dresden, Germany, April 2003.
 Program Committee and Local Chair: “New Security Paradigms Workshop (NSPW 2003)”, Ascona, Switzerland, August 2003.
 Program Committee: “W3C Workshop on the long term Future of P3P and Enterprise Privacy Languages”, Kiel, Germany, June 2003.
 Standardization: IBM representative in the Platform for Privacy Preferences 1.1 Working Group of the World-wide Web Consortium (W3C P3P 1.1).
- 2000-2001** Founder and Aufsichtsratsvorsitzender (engl. *chairman of the board*) of the IT-security consulting company “Sirrix Security Technologies AG” (see <http://www.sirrix.com>).
- 1998** Program Committee: “Workshop Sicherheit und Electronic Commerce (WS SEC 98), Essen, Oktober 1998.
- 1994-** Member of IACR (International Association for Cryptologic Research) as well as of IEEE and ACM.
- 1988-2001** Geschäftsführer (engl. *manager*) of Serocert GmbH, Oldenburg, Germany.

4 Honors and Awards

- 2010** IBM Invention Achievement Award - Fourth Plateau.
 MBA Graduation with distinction from Warwick Business School [1].
- 2006** “IBM Research Division Award” for Federated Identity Management.
- 2005** “IBM Outstanding Technical Achievement Award” for the IBM Enterprise Privacy Architecture.
- 2004** Award for Outstanding Research in Privacy Enhancing Technologies for [17]: “A Toolkit for Managing Enterprise Privacy Policies” (Sponsored by Microsoft; administered by the advisory board of the Workshop on Privacy Enhancing Technologies (PET)).
 IBM Invention Achievement Award - Second Plateau.
- 2003** IBM Research Division Award for “contributions to our on demand innovation services (ODIS) project for the Office of the CIO of the Government of Alberta (GoA).”
 HP Privacy award for the Office of the CIO of the Government of Alberta (GoA) based on the work performed by IBM.
- 2001** IBM Invention Achievement Award for “Using an Object model to Improve Handling of Personally Identifiable Information”.
- 1999** Best Paper Award for [48].
- 1994** Graduation with honors.

5 Publications and Patents

<http://www.semper.org/sirene/lit/sirene.abstracts.html>. The most important papers outlining different areas of research are:

Cloud Computing and Secure Virtual Systems:	[21,6,23]
Enterprise Privacy Management:	[13, 34, 28]
Secure electronic commerce:	[7, 9, 19, 38]
Security protocols:	[5, 15, 39, 41]
Formal security models:	[40, 103]

5.1 Theses

1. Matthias Schunter: Strategic Implications for Software-as-a-Service for the Financial Services Sector, Master thesis, Warwick Business School, March 2010.
2. Matthias Schunter: Optimistic Fair Exchange; Dissertation, Universität des Saarlandes, October 2000.
3. Matthias Schunter: Spezifikation von Geheimhaltungseigenschaften für reaktive kryptologische Systeme; Diplomarbeit am Institut für Informatik, Universität Hildesheim, Januar 1994.

5.2 Refereed Journals

4. Gerrit Bleumer, Matthias Schunter: Datenschutzorientierte Abrechnung medizinischer Leistungen; Datenschutz und Datensicherheit DuD 21/2 (1997) 88-97 (revised in [5]).
5. Gerrit Bleumer, Matthias Schunter: Digital patient assistants — privacy vs. cost in compulsory health insurance; Health Informatics Journal 4 (1998) 138-156.
6. Serdar Cabuk, Chris I. Dalton, Konrad Eriksson, Dirk Kuhlmann, HariGovind V. Ramasamy, Gianluca Ramunno, Ahmad-Reza Sadeghi, Matthias Schunter, Christian Stübke: Towards automated security policy enforcement in multi-tenant virtual data centers. Journal of Computer Security 18(1): 89-121 (2010).
7. Andreas Pfitzmann, Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Trusting Mobile User Devices and Security Modules; IEEE Computer 30/2 (1997) 61-68.
8. Matthias Schunter, Michael Waidner, Dale Whinnett: A status report on the SEMPER framework for secure electronic commerce; Computer Networks and ISDN Systems 30/ (1998) 1501-1510, 1998 TERENA Networking Conference, Dresden, Germany, October 5-8.
9. Matthias Schunter, Michael Waidner, Dale Whinnett: The SEMPER Framework for Secure Electronic Commerce; Wirtschaftsinformatik 41/3 (1999) 238-247.

5.3 Refereed Conferences

10. N. Asokan, Birgit Baum-Waidner, Matthias Schunter, Michael Waidner: Optimistische Mehrparteienvertragsunterzeichnung; Verlässliche IT-Systeme, GI-Fachtagung VIS '99, DuD Fachbeiträge, Vieweg, Braunschweig 1999, 49-66.
11. Paul Ashley, Satoshi Hada, Günter Karjoth, and Matthias Schunter: E-P3P privacy policies and privacy authorization. ACM Workshop on Privacy in the Electronic Society (WPES) 2002, ACM Press 2003, 103-109
12. Paul Ashley, Matthias Schunter: The Platform for Enterprise Privacy Practices, Information Security Solutions Europe (ISSE), Paris, 2002.
13. P. Ashley, C. Powers, M. Schunter,: From Privacy Promises to Privacy Management A New Approach for Enforcing Privacy Throughout an Enterprise, ACM New Security Paradigms Workshop, Virginia Beach VA, ACM Press, October 2002.
14. Paul Ashley, Calvin S. Powers, Matthias Schunter: New Technology for Managing Privacy, 3rd International Symposium on Electronic Commerce (ISEC 2002), Raleigh NC, IEEE Press, 2002.
15. N. Asokan, Matthias Schunter, Michael Waidner: Optimistic Protocols for Fair Exchange; 4th ACM Conference on Computer and Communications Security, Zürich, April 1997, 6-17.
16. M. Backes, W. Bagga, G. Karjoth, M. Schunter: Efficient Comparison of Enterprise Privacy Policies; In 19th Annual ACM Symposium on Applied Computing, pages 375-382. Nicosia, Cyprus, March 14-17, 2004.
17. Michael Backes, Birgit Pfitzmann, Matthias Schunter: A Toolkit for Managing Enterprise Privacy Policies; 8th European Symposium on Research in Computer Security (ESORICS 2003), LNCS 2808, Springer-Verlag, Berlin 2003, 162-180.
18. Michael Backes, Matthias Schunter: From Absence of Certain Vulnerabilities towards Security Proofs - Pushing the Limits of Formal Verification; Proceedings of the 10th ACM Workshop on New Security Paradigms (NSPW), Ascona, Switzerland, August, 2003.
19. Jean-Paul Boly, Antoon Bosselaers, Ronald Cramer, Rolf Michelsen, Stig Mjøl-snes, Frank Muller, Torben Pedersen, Birgit Pfitzmann, Peter de Rooij, Berry Schoenmakers, Matthias Schunter, Luc Vallee, Michael Waidner: The ESPRIT Project CAFE — High Security Digital Payment Systems; ESORICS 94 (Third European Symposium on Research in Computer Security), Brighton, LNCS 875, Springer-Verlag, Berlin 1994, 217-230.
20. Gerrit Bleumer, Matthias Schunter: Privacy Oriented Clearing for the German Healthcare System; in Ross Anderson (ed.): Personal Information Security, Engineering and Ethics, Springer-Verlag 1997, 175-194 (revised in [5]).

21. Sören Bleikertz, Matthias Schunter, Christian W. Probst, Dimitrios Pendarakis, Konrad Eriksson: Security Audits of Multi-tier Virtual Infrastructures in Public Infrastructure Clouds, The ACM Cloud Computing Security Workshop (CCSW 2010); in conjunction with the 17th ACM Conference on Computer and Communications Security (CCS), Hyatt Regency Chicago, Chicago, IL, October 2010.
22. L. Ctuongo, A. Dmitrienko, K. Eriksson, G. Ramunno, A. Sadeghi, S. Schulz, M. Schunter, M. Winandy, J. Zhan: Trusted Virtual Domains — Design, Implementation, and Lessons Learned, INTRUST 2009, The International Conference on Trusted Systems, Beijing, China, 2009.
23. Serdar Cabuk, Chris I. Dalton, HariGovind V. Ramasamy, Matthias Schunter: Towards automated provisioning of secure virtualized networks. ACM Conference on Computer and Communications Security (CCS), ACM Press, 2007: 235-245.
24. Tyrone Grandison, Mike Bilger, Luke O'Connor, Marcel Graf, Morton Swimmer, Matthias Schunter, Andreas Wespi, Nev Zunic: Elevating the Discussion on Security Management: The Data Centric Paradigm. 2nd IEEE/IFIP International Workshop on Business-Driven IT Management (BDIM 2007), May 21, 2007, Munich, Germany. IEEE Press, 84-93
25. B. Jansen, H. V. Ramasamy, and M. Schunter. Flexible Integrity Protection and Verification Architecture for Virtual Machine Monitors; Second Workshop on Advances in Trusted Computing (WATC-2006), November 30 - December 1, 2006, Tokyo, Japan.
26. Bernhard Jansen, HariGovind V. Ramasamy, Matthias Schunter: Policy enforcement and compliance proofs for Xen virtual machines. 4th International Conference on Virtual Execution Environments, VEE 2008, Seattle, WA, USA, March 5-7, 2008. ACM 2008: 101-110
27. Bernhard Jansen, HariGovind Ramasamy, Matthias Schunter, Axel Tanner: Architecting Dependable and Secure Systems Using Virtualization. Workshop on Architecting Dependable Systems. Supplemental Volume of the 2007 International Conference on Dependable Systems and Networks (DSN-2007) 124-149 (extended in [54])
28. G. Karjoth, M. Schunter: A Privacy Policy Model for Enterprises, 15th IEEE Computer Security Foundations Workshop, IEEE Press, 2002.
29. G. Karjoth, M. Schunter, M. Waidner: Platform for Enterprise Privacy Practices, Privacy-enhancing Technologies (PET 2002), San Francisco, Springer-Verlag LNCS, 2002.
30. G. Karjoth, M. Schunter, M. Waidner: Privacy-enabled Services for Enterprises; In International Workshop on Trust and Privacy in Digital Business (Trustbus 2002), pages 483-487. IEEE Computer Press, 2002.

31. Günter Karjoth, Matthias Schunter, Els Van Herreweghen: Enterprise Privacy Practices vs. Privacy Promises - How to Promise What You Can Keep; 4th IEEE International Workshop on Policies for Distributed Systems and Networks (Policy '03), Lake Como, Italy, June 4-6, 2003, 135-146.
32. Guenter Karjoth, Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Service-oriented Assurance - Comprehensive Security by Explicit Assurances; Quality of Protection: Security Measurements and Metrics. Dieter Gollmann and Fabio Massacci and Artsiom Yautsiukhin (eds.). Springer Verlag, 2006, pp 13–24.
33. Rüdiger Kapitza, Matthias Schunter, Christian Cachin, Klaus Stengel, Tobias Distler: Storyboard : Optimistic Deterministic Multithreading, Sixth Workshop on Hot Topics in System Dependability (HotDep 2010), Vancouver, BC, Canada, October 3, 2010.
34. Günter Karjoth, Matthias Schunter, Els Van Herreweghen, Michael Waidner: Amending P3P for Clearer Privacy Promises; Trust and Privacy in Digital Business - TrustBus 03. In 14th Intül Workshop on Database and Expert Systems Applications (DEXA), IEEE Press, Prague, 2003, 445-449.
35. Hans Löhr, HariGovind Ramasamy; Ahmad-Reza Sadeghi, Steffen Schulz, Matthias Schunter, Christian Stüble: Enhancing Grid Security Using Trusted Virtualisation. Proceedings of the 4th International Conference on Autonomic and Trusted Computing (ATC-2007), pp. 372-384.
36. Michael R. Nelson, Matthias Schunter, Michael R. McCullough, John S. Bliss: Trust on Demand — Enabling Privacy, Security, Transparency, and Accountability in Distributed Systems; 33rd Research Conference on Communication, Information and Internet Policy (TPRC), September 23-25, Arlington VA, USA, 2005.
37. Andreas Pfitzmann, Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Vertrauenswürdiger Entwurf portabler Benutzerendgeräte und Sicherheitsmodule; Hans H. Brüggemann, Waltraud Gerhardt-Hückl (ed.): Verlüüliche IT-Systeme, Proceedings der GI-Fachtagung VIS '95; DuD Fachbeiträge, Vieweg, Wiesbaden 1995, 329-350 (revised in [7]).
38. Birgit Pfitzmann, Matthias Schunter, Michael Waidner: How to Break Another “Provably Secure” Payment System; Eurocrypt '95, LNCS 921, Springer-Verlag, Berlin 1995, 121-132.
39. Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Optimal Efficiency of Optimistic Contract Signing; 17th Symposium on Principles of Distributed Computing (PODC), ACM, New York 1998, 113-122.
40. Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Cryptographic Security of Reactive Systems; Workshop on Secure Architectures and Information Flow, Royal Holloway, University of London, December 1 - 3, 1999; Electronic Notes in Theoretical Computer Science (ENTCS) 32 (2000).

41. Birgit Pfitzmann, Matthias Schunter: Asymmetric Fingerprinting (Extended Abstract); Eurocrypt '96, LNCS 1070, Springer-Verlag, Berlin 1996, 84-95.
42. Hari Ramasamy, Matthias Schunter: Multi-Level Security for Service-Oriented Architectures; Proceedings of the IEEE Military Communications Conference (MILCOM-2006), Washington D.C., Oct. 23-25, 2006.
43. A. Sadeghi, M. Schunter, S. Steinbrecher: Private Auctions with Multiple Rounds and Multiple Items; TrustBus Workshop at DEXA2002, IEEE Press, 2002.
44. Jan Holger Schmidt, Matthias Schunter, Arnd Weber: Ist elektronisches Geld realisierbar?; Verlässliche IT-Systeme, GI-Fachtagung VIS '99, DuD Fachbeiträge, Vieweg, Braunschweig 1999, 1-18.
45. Matthias Schunter, Christian Stübke: Effiziente Implementierung von kryptographischen Datenaustauschformaten am Beispiel von S/MIME und OpenPGP; Sicherheitsinfrastrukturen, DuD Fachbeiträge, Vieweg 1999, 272-284.
46. Matthias Schunter and Chris Vanden Berghe: Privacy Injector – Automated Privacy Enforcement through Aspects; 6th Workshop on Privacy Enhancing Technologies Robinson College, Cambridge, United Kingdom June 28 - June 30, 2006, Lecture Notes in Computer Science, Springer Verlag, 2006, 99-117.
47. Matthias Schunter, Els Van Herreweghen, Michael Waidner: Expressive Privacy Promises — How to Improve the Platform for Privacy Preferences (P3P); W3C Workshop on the Future of P3P World Wide Web Consortium, Dulles VA, 11/12/2002.
48. Matthias Schunter, Michael Waidner, Dale Whinnett: The SEMPER Framework for Secure Electronic Commerce; Electronic Business Engineering, 4. Internationale Tagung Wirtschaftsinformatik 1999, Physica-Verlag, Heidelberg 1999, 169-185 (revised in [9]).
49. Matthias Schunter, Michael Waidner: Architecture and Design of a Secure Electronic Marketplace; Joint European Networking Conference (JENC8), Edinburgh, June 1997, 712.1-712.5 (revised in [9]).
50. Matthias Schunter, Michael Waidner: Simplified Privacy Controls for Aggregated Services - Suspend and Resume of Personal Data. Privacy Enhancing Technologies 2007: 218-232
51. Matthias Schunter: Vertrauen als integraler Bestandteil kryptographischer Spezifikationen; Trust Center, Grundlagen, Rechtliche Aspekte, Standardisierung, Realisierung, DuD Fachbeiträge, Vieweg, Wiesbaden 1995, 173-179.

5.4 Book Chapters

52. N. Asokan, Birgit Baum-Waidner, Torben Pedersen, Birgit Pfitzmann, Matthias Schunter, Michael Steiner, Michael Waidner: Technical Framework; In Gérard

- Lacoste, Birgit Pfitzmann, Michael Steiner, Michael Waidner (eds.): Secure Electronic Marketplace for Europe. LNCS 1854, Springer-Verlag, Berlin 2000.
53. N. Asokan, Matthias Schunter: Optimistic Fair Exchange. In: Annals of Emerging Research in Information Assurance, Security, and Privacy, Elsevier 2009.
 54. Jansen, B., Ramasamy, H. V., Schunter, M., and Tanner, A. 2008. Architecting Dependable and Secure Systems Using Virtualization. In Architecting Dependable Systems V, R. Lemos, F. Giandomenico, C. Gacek, H. Muccini, and M. Vieira, Eds. Lecture Notes In Computer Science, vol. 5135. Springer-Verlag, Berlin, Heidelberg, 124-149 (extended version of [27]).
 55. G. Karjoth, M. Schunter, M. Waidner: Unternehmensweites Datenschutzmanagement. Datenschutz Sommerakademie “Datenschutz als Wettbewerbsvorteil”, Kiel, Germany, September 18, 2001, Vieweg Verlag, 2002 (english in [30]).
 56. Andreas Pfitzmann, Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Trustworthy User Devices; In Günter Müller, Kai Rannenber (ed.): Multilateral Security in Communications, Vol. 3: Technology, Infrastructure, Economy; Addison-Wesley, München 1999, 137-156 (extension of [7]).
 57. Jan Holger Schmidt, Matthias Schunter, Arnd Weber: Can Cash be Digitalised?; In Günter Müller, Kai Rannenber (ed.): Multilateral Security in Communications, Vol. 3: Technology, Infrastructure, Economy; Addison-Wesley, München 1999, 301-320 (translation of [44]).
 58. Matthias Schunter: Fair Exchange — A New Paradigm for e-Commerce; In Gérard Lacoste, Birgit Pfitzmann, Michael Steiner, Michael Waidner (eds.): Secure Electronic Marketplace for Europe. LNCS 1854, Springer-Verlag, Berlin 2000 (extended in [2]).
 59. Matthias Schunter: Fair Exchange, Certified Mail, Contract Signing. In: Encyclopedia of Cryptography and Security (Henk van Tilborg ed.), Springer Verlag Berlin, May 2005.

5.5 Patents and Published Patent Applications

60. Matthias Schunter, Michael Waidner, Birgit Pfitzmann: Method for Tracing Payment Data in an Anonymous Payment System, as well as Payment System in which the Method is Applied; European Patent Specification EP 0 836 730 B1, 02.06.1999.
61. Betz; Linda, Dayka; John C., Farrell; Walter B., Guski; Richard H., Karjoth; Guenter, Nelson; Mark A., Pfitzmann; Birgit M., Schunter; Matthias, Waidner; Michael P.: Implementation And Use Of A Pii Data Access Control Facility Employing Personally Identifying Information Labels And Purpose Serving Functions Sets, US Patent US7302569, 21/04/2009.
62. Gross; Thomas, Lovatt; Brook M., Moran; Anthony Scott, Schunter; Matthias: Dynamic Access Decision Information Module, US Patent US7523200, 21/04/2009.

63. Betz; Linda, Dayka; John C., Farrell; Walter B., Guski; Richard H., Karjoth; Guenter, Nelson; Mark A., Pfitzmann; Birgit M., Waidner; Michael P., Schunter; Matthias: Implementation And Use Of Pii Data Access Control Facility Employing Personally Identifying Information Labels And Purpose Serving Function Sets, US Patent US7617393, 10/11/2009.
64. Burrows; Warwick Leslie, Karioth; Guenter, Pfitzmann; Birgit Monika, Schunter; Matthias, Moran; Anthony Scott, Turner; Brian James: Method For Access By Server-Side Components Using Unsupported Communication Protocols Through Passthrough Mechanism, US Patent US7685300, 23/03/2010.
65. Schunter; Matthias, Poritz; Jonathan A., Waidner; Michael, Van Herreweghen; Elsie A.: Method And Device For Verifying The Security Of A Computing Platform, US Patent US7770000, 03/08/2010.
66. Gross, Thomas, Lovatt, Brook M., Moran, Anthony Scott, Schunter, Matthias: Dynamic Access Decision Information Module, US Patent Application US2003000612703, 06/01/2005.
67. Betz, Linda, Dayka, John C., Farrell, Walter B., Guski, Richard H., Karjoth, Guenter, Nelson, Mark A., Pfitzmann, Birgit M., Schunter, Matthias, Waidner, Michael P.: Implementation And Use Of A Pii Data Access Control Facility Employing Personally Identifying Information Labels And Purpose Serving Functions Sets, US Patent Application US2003000643798, 24/02/2005.
68. Burrows, Warwick Leslie, Karioth, Guenter, Moran, Anthony Scott, Pfitzmann, Birgit Monika, Schunter, Matthias, Turner, Brian James: Method For Access By Server-Side Components Using Unsupported Communication Protocols Through Passthrough Mechanism, US Patent Application US2003000655368, 10/03/2005.
69. Gross; Thomas R., Karjoth; Guenter, Schunter; Matthias: Conditionalized Access Control Based On Dynamic Content Analysis, US Patent Application US2004000904038, 21/04/2005.
70. Schunter; Matthias, Poritz; Jonathan A., Waidner; Michael, Van Herreweghen; Elsie A.: Method And Device For Verifying The Security Of A Computing Platform, US Patent Application US2005000120578, 10/11/2005.
71. Camenisch; Jan L., Pfitzmann; Birgit M., Schunter; Matthias, Waidner; Michael P.: Reducing Access To Sensitive Information, US Patent Application US2004000874421, 29/12/2005.
72. Bangerter; Endre, Schunter; Matthias, Waidner; Michael, Camenisch; Jan: Privacy-Protecting Integrity Attestation Of A Computing Platform, US Patent Application US2005000178722, 02/02/2006.
73. Backes; Michael, Karjoth; Guenter, Pfitzmann; Birgit, Schunter; Matthias, Waidner; Michael: Creating A Privacy Policy From A Process Model And Verifying The Compliance, US Patent Application US2005000317396, 17/08/2006.

74. Janson; Philippe A., Pietraszek; Tadeusz J., Schunter; Matthias, Berghe; Chris P. Vanden: Computer Program With Metadata Management Function, US Patent Application US2006000554856, 19/07/2007.
75. Betz; Linda, Dayka; John C., Farrell; Walter B., Guski; Richard H., Karjoth; Guenter, Nelson; Mark A., Pfitzmann; Birgit M., Schunter; Matthias, Waidner; Michael P.: Implementation And Use Of Pii Data Access Control Facility Employing Personally Identifying Information Labels And Purpose Serving Function Sets, US Patent Application US2007000764487, 25/10/2007.
76. Dias; Daniel M., Schunter; Matthias, Steiner; Michael: Method For Protecting Data From Unauthorised Access, US Patent Application US2006000612515, 19/06/2008.
77. Bangerter; Endre, Schunter; Matthias, Waidner; Michael, Camenisch; Jan: Privacy-Protecting Integrity Attestation Of A Computing Platform, US Patent Application US2008000126978, 18/09/2008.
78. Schunter; Matthias, Tanner; Axel, Jansen; Bernhard: Integrity Protection In Data Processing Systems, US Patent Application US2008000054860, 25/09/2008.
79. Schunter; Matthias, Tanner; Axel, Jansen; Bernhard: Integrity Protection In Data Processing Systems, US Patent Application US2008000020612, 25/09/2008.
80. Schunter; Matthias, Poritz; Jonathan A., Waidner; Michael, Van Herreweghen; Elsie A.: Method And Device For Verifying The Security Of A Computing Platform, US Patent Application US2008000124619, 16/10/2008.
81. Backes; Michael, Karioth; Guenter, Pfitzmann; Birgit, Schunter; Matthias, Waidner; Michael: Creating A Privacy Policy From A Process Model And Verifying The Compliance, US Patent Application US2008000186257, 27/11/2008.
82. Carbone; Martim, Jansen; Bernhard, Ramasamy; HariGovind V., Schunter; Matthias, Tanner; Axel, Zamboni; Diego M.: Hardware Emulation Using On-The-Fly Virtualization, US Patent Application US2008000022184, 30/07/2009.
83. Carbone; Martim, Jansen; Bernhard, Ramasamy; HariGovind V., Schunter; Matthias, Tanner; Axel, Zamboni; Diego: Protection And Security Provisioning Using On-The-Fly Virtualization, US Patent Application US2008000130159, 03/12/2009.
84. Husemann; Dirk, Muller; Samuel, Nidd; Michael Elton, Schunter; Matthias, Zamboni; Diego M.: On-The-Fly Creation Of Virtual Places In Virtual Worlds, US Patent Application US2008000145081, 24/12/2009.
85. Jansen; Bernhard, Schunter; Matthias, Tanner; Axel, Zamboni; Diego M.: Secure User Interaction Using Virtualization, US Patent Application US2008000175503, 21/01/2010.

5.6 Technical Reports

86. Steve Adler, Paul Ashley, Satoshi Hada, Günter Karjoth, Calvin Powers, Matthias Schunter (ed.): Enterprise Privacy Authorization Language (EPAL); W3C Member Submission by International Business Machines Corporation (IBM), 11/10/2003. See <http://www.w3.org/Submission/2003/07/>.
87. N. Asokan, Birgit Baum-Waidner, Matthias Schunter, Michael Waidner: Optimistic Synchronous Multi-Party Contract Signing; IBM Research Report RZ 3089 (#93135) 12/14/1998, IBM Research Division, Zürich, Dec. 1998 (published as [10]).
88. Paul Ashley, Satoshi Hada, Günter Karjoth, Calvin Powers, Matthias Schunter (ed.): Enterprise Privacy Authorization Language (EPAL); IBM Research Report RZ 3485 (# 93951) 03/03/2003, IBM Zurich Research Laboratory, Zürich, March 2003. (published as [86])
89. Paul Ashley, Satoshi Hada, Günter Karjoth, Matthias Schunter: Shortcomings of P3P for Privacy Authorization - Lessons learned when Using P3P-based Privacy Manager 1.1; Position Paper. Submitted to the W3C Workshop on the long term Future of P3P and Enterprise Privacy Languages; World Wide Web Consortium, Kiel, 18 - 20 June 2003.
90. N. Asokan, Matthias Schunter, Michael Waidner: Optimistic Protocols for Multi-Party Fair Exchange; IBM Research Report RZ 2892, IBM Zurich Research Laboratory, Zürich, November 1996 (superseded by [10]).
91. N. Asokan, Matthias Schunter, Michael Waidner: Optimistic Protocols for Fair Exchange; IBM Research Report RZ 2858, IBM Zurich Research Laboratory, Zürich, February 1996 (published as [15]).
92. Endre-Felix Bangerter, Jan Camenisch, Matthias Schunter, Els Van Herreweghen, Michael Waidner: Idemix — Pseudonymity for e-Transactions, IBM Secure-World '01, Washington, DC, August 27-31, 2001.
93. S. Bleikertz, T. Gross, M. Schunter, K. Eriksson: Automating Security Audits of Heterogeneous Virtual Infrastructures; IBM Research Report RZ 3786 (#Z 1008-003) 08/26/2010, IBM Zurich Research Laboratory, Zürich, August 2010.
94. Serdar Cabuk, Chris I. Dalton, HariGovind Ramasamy, Matthias Schunter Declarative Security Specification of Virtual Networks, The Rise and Rise of the Declarative Datacentre A research meeting jointly organised by Microsoft Research and HP Labs Monday-Tuesday, May 12-13, 2008, Roger Needham Building, Microsoft Research Cambridge.
95. Günter Karjoth, Matthias Schunter, Michael Waidner: Privacy-enabled Services for Enterprises; IBM Research Report RZ 3391 (#93437), 01/21/02, IBM Research Division, Zürich, January 2002 (published as [30]).
96. Günter Karjoth, Matthias Schunter, Michael Waidner: Privacy-enabled Management of Customer Data; IEEE Computer Society Bulletin of the Technical

Committee on Data Engineering, March 2003, <http://sites.computer.org/debull> [revision of 29]

97. Hans Löhr, HariGovind Ramasamy; Ahmad-Reza Sadeghi, Steffen Schulz, Matthias Schunter, Christian Stübli: Enhancing Grid Security Using Trusted Virtualisation. 1st Benelux Workshop on Information and System Security, Antwerpen, Belgium, November, 2006. [published as 35]
98. Hans Löhr, HariGovind Ramasamy; Ahmad-Reza Sadeghi, Steffen Schulz, Matthias Schunter, Christian Stübli: Enhancing Grid Security Using Trusted Virtualisation; 2nd Workshop on Advances in Trusted Computing, Tokyo, Japan, November 2006.[published as 35]
99. Andreas Pfitzmann, Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Mobile User Devices and Security Modules: Design for Trustworthiness; IBM Research Report RZ 2784 (#89262) 02/05/96, IBM Research Division, Zürich, Feb. 1996 (published as [7]).
100. Birgit Pfitzmann, Matthias Schunter, and Michael Waidner. Reactively simulatable certified mail. Record 2006/041, Cryptology ePrint Archive, February 2006.
101. Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Secure Reactive Systems; IBM Research Report RZ 3206 (#93252) 02/14/00, IBM Research Division, Zürich, Feb. 2000.
102. Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Optimal Efficiency of Optimistic Contract Signing; IBM Research Report RZ 2994 (#93040) 20/04/98, IBM Research Division, Zürich, April 1998 (published as [39]).
103. Birgit Pfitzmann, Matthias Schunter, Michael Waidner: Provably Secure Certified Mail; IBM Research Report RZ 3207 (#93253) 02/00, IBM Research Division, Zürich, Feb. 2000.
104. Birgit Pfitzmann, Matthias Schunter: Die SEMPER Sicherheitsarchitektur für elektronischen Handel im Internet; Magazin Forschung 1/1999, Universität des Saarlandes 1999, 22-26.
105. Jonathan Poritz, Matthias Schunter, Els Van Herreweghen, and Michael Waidner: Property Attestation — Scalable and Privacy-friendly Security Assessment of Peer Computers, IBM Research Report RZ 3548 (# 99559) 05/10/2004.
106. Hari Ramasamy, Matthias Schunter: Multi-Level Security for Service-Oriented Architectures; IBM Research Report RZ 3692 (# 99702) 06/11/2007, IBM Zurich Research Laboratory, Zürich, June 2007. (published as [42])
107. Matthias Schunter and Els Van Herreweghen: Enterprise Privacy Practices vs. Privacy Promises — How to Promise What You Can Keep, RZ 3452 (# 93771) 09/09/2002, IBM Research Division, Zürich, 2002.

108. Birgit Baum-Waidner, Armin Müller, Torben Pedersen, Matthias Schunter: Architecture of the Payment Gateway; Deliverable D14 of ACTS Project AC026, Project Public Report, November 22, 1996.
109. Max Schmidt, Matthias Schunter, Arnd Weber: Is Electronic Cash Possible?; Technischer Bericht Nr. A/03/98, Fachbereich Informatik, Universität des Saarlandes, Saarbrücken 1998 (published as [44,57]).
110. Matthias Schunter, Arnd Weber: Sicherheit und Datenschutz für Bankkunden; FiFF Kommunikation /1 (1996) 27-28.
111. Matthias Schunter: Book Review “Ed Dawson, Jovan Golic: Cryptography: Policy and Algorithms, International Conference, LNCS 1029, Springer-Verlag, Berlin 1996.”; Datenschutz und Datensicherheit DuD 21/5 (1997) 309.
112. Matthias Schunter: Conditional Access for Europe (CAFE); Data Security Letter 66 (1995) 15.