

# CURRICULUM VITAE

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## Education

- 2003** Dr.-Ing. (Ph.D.), *summa cum laude*  
Technische Universität Darmstadt (Darmstadt University of Technology),  
Fachbereich Informatik (Computer Science department).  
Thesis: “*A Model-Independent Security Architecture for Distributed Heterogeneous Systems*”  
(Advisor: Johannes Buchmann)
- 1993 – 1999** Diplom-Informatiker (TU) (approx. equiv. M.Sc.)  
Technische Universität Darmstadt (Darmstadt University of Technology),  
Fachbereich Informatik (Computer Science department).  
(Advisor: José L. Encarnação)

## Academic and Professional Interest

- Information assurance and security
- Applied combinatorics and graph theory
- Network and distributed systems security
- Models for critical infrastructure protection

## Experience

### Research

- 2008–present** Reader, Information Security Group, Department of Mathematics, Royal Holloway, University of London, UK.
- 2007–present** Full professor, Norwegian Information Security Laboratory, Gjøvik University College, Norway (part-time).
- 2006–2008** Lecturer, Information Security Group, Department of Mathematics, Royal Holloway, University of London, UK.

**2005–2006** Associate professor, Norwegian Information Security Laboratory, Gjøvik University College, Norway (part-time position from 2006 onward).

**2005–present** Senior scientist at the security technology department at Fraunhofer-IGD.

**2002–2005** Deputy department head of the security technology department at Fraunhofer-IGD, a German national research laboratory. Principal scientist and head of information assurance group.

**1998–2002** Research staff member and principal scientist in the security technology department at Fraunhofer-IGD.

## Teaching

**Fall Semester 2008** Graduate course “*Applied Information Security*” at Gjøvik University College, Norway. Created detailed syllabus and course materials.

**Fall Semester 2008** Graduate course “*Foundations of Information Security*” at Gjøvik University College, Norway. Created detailed syllabus and course materials.

**Fall Term 2006 – current** Graduate course “*Network Security*” at Royal Holloway, University of London, UK.

**Fall Semesters 2005 – 2007** Graduate course “*Information Security and Security Architecture*” at Gjøvik University College, Norway. Created detailed syllabus and course materials.

**Fall Semester 2005** Graduate course (with D. Schadt and B. Hämmerli) “*Schutz kritischer Infrastrukturen und Informationssicherheit*” at the University of Bochum, Germany.

**Summer Semester 2005** Graduate seminar (with P. Ebinger, J. Likavec, U. Pinsdorf, and J. Peters) “*Sicherheit in mobilen Ad-Hoc-Netzen*” at Darmstadt University of Technology, Germany. Created detailed syllabus and course materials.

**Fall Semesters 2001 — 2005** Graduate (*Hauptdiplom*) course “*Netzwerksicherheit*” at Darmstadt University of Technology. Created lecture notes and course materials (see *Courses Developed*), developed written and oral exams. Maximum class size: 120 students plus 6 continuing professional education students from the CAST continuing education certificate program in Information Security (see *Courses Developed*).

The 2005 course was given together with W. Böhmer, U. Pinsdorf, J. Peters, and P. Ebinger.

## Professional Activities

- Adjunct professor in the Executive Master of Information Assurance Program at Virginia Tech University, Alexandria, VA, USA (2009–present)
- Visiting professor, Department of Computer Science, Harbin Institute of Technology, China (2008–present)
- Member of the German national working group on IT security criteria at the German Information Security Agency (1999–2008)
- Member of the executive committee of the IEEE Computer Society Task Force on Information Assurance (2001–present)
- Vice Chair for Europe, IEEE Information Assurance Standards Committee (2003–present)
- Member, steering board of the special interest group on critical infrastructure protection of the German Gesellschaft für Informatik, GI FG KRITIS (2006–present)
- Member, IFIP Working Group 11.10 on Critical Infrastructure Protection

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE), IEEE Computer Society
- Member, American Association for the Advancement of Science (AAAS)
- Member, Association for Computing Machinery (ACM)
- Member, Gesellschaft für Informatik (GI)
- Member, American Mathematical Society (AMS)
- Member, United States Naval Institute (USNI)
- Member, Armed Forces Communications and Electronics Association (AFCEA)

## Courses Developed

**Foundations of Information Security** Developed graduate course (3 hours/week, 1 semester, in English)

**Applied Information Security** Developed graduate course (3 hours/week, 1 semester, in English)

**Information Security and Security Architecture** Developed graduate course (4 hours/week, 1 semester, in English)

**Sicherheit in mobilen Ad-hoc-Netzen** Developed graduate (*Hauptdiplom*) seminar (2 hours/week, 1 semester, in German and English)

**Netzwerksicherheit** Developed graduate (*Hauptdiplom*) course (2 hours/week, 1 semester, in German) including lecture notes (475 pp.), viewgraphs, and written and oral exams.

The updated lecture notes were the basis for the textbook “*Netzwerksicherheit*” described below.

## Books

- Editor (with J. Lopez and R. Setola) of the monograph “*Advances in Critical Infrastructure Protection: Information Infrastructure Models, Analysis, and Defense*”. Springer-Verlag, 2010 (*manuscript under preparation*).
- Monograph “*A Model-Independent Security Architecture for Distributed Heterogeneous Systems*” (ISBN 3-8325-0416-8), Logos Verlag, Berlin, Germany, December 2003 (Publication of dissertation).
- Principal co-author (with M. Arnold and M. Schmucker) of the monograph “*Techniques and Applications of Digital Watermarking and Content Protection*” (ISBN 1-58053-111-3), The Artech House Computer Security Series, Artech House, Norwood, MA, USA, July 2003.
- Principal co-author (with C. Busch) of the textbook “*Netzwerksicherheit*” (ISBN 3-8274-1373-7), Spektrum Akademischer Verlag, Heidelberg, Germany, September 2002.

## Book Chapters

- [1] WOLTHUSEN, S. D. *Electronic Business: Innovationen, Anwendungen und Technologien*. IRB Verlag, Stuttgart, Germany, Sept. 2004, ch. Netzwerksicherheit, pp. 222–233.
- [2] WOLTHUSEN, S. D. *Telemedizinführer Deutschland*. Deutsches Medizin Forum, Ober Mörlen, Germany, Feb. 2004, ch. Grundschutz für Praxis-Systeme, pp. 225–229.

- [3] BUSCH, C., AND WOLTHUSEN, S. D. *IT-Sicherheit für den Mittelstand: Leitfaden zum Thema IT-Sicherheit*. Hessisches Ministerium für Wirtschaft, Verkehr und Landesentwicklung, Wiesbaden, Germany, Sept. 2002, ch. IT-Sicherheit - wie geht das?, pp. 9–34.

## Edited Volumes

- [1] COLE, J. L., AND WOLTHUSEN, S. D., Eds. *Proceedings of the Fourth IEEE International Workshop on Information Assurance (IWIA 2006)* (Royal Holloway, UK, Apr. 2006), IEEE Press.
- [2] HÄMMERLI, B. M., AND WOLTHUSEN, S. D., Eds. *Proceedings of CIP Europe: Critical Infrastructure Protection* (Bonn, Germany, Sep. 2005), Gesellschaft für Informatik.
- [3] HÄMMERLI, B. M., AND WOLTHUSEN, S. D., Eds. *Proceedings of the First IEEE International Workshop on Critical Infrastructure Protection (IWCIP 2005)* (Darmstadt, Germany, Nov. 2005), IEEE Press.
- [4] COLE, J. L., AND WOLTHUSEN, S. D., Eds. *Proceedings of the Third IEEE International Workshop on Information Assurance (IWIA 2005)* (Washington D.C., USA, Mar. 2005), IEEE Press.
- [5] COLE, J. L., ZHENG, Y., AND WOLTHUSEN, S. D., Eds. *Proceedings of the Second IEEE International Workshop on Information Assurance (IWIA 2004)* (Charlotte, NC, USA, Apr. 2004), IEEE Press.
- [6] COLE, J. L., AND WOLTHUSEN, S. D., Eds. *Proceedings of the First IEEE International Workshop on Information Assurance (IWIA 2003)* (Darmstadt, Germany, Mar. 2003), IEEE Press.

## Refereed Publications

- [1] AL-KUWARI, S., AND WOLTHUSEN, S. Passive Ad Hoc Localization and Tracking in Short-Range Communication. In *Proceedings of the First International Conference on Next Generation Wireless Systems (NGWS 2009)* (Melbourne, Australia, Oct. 2009), IEEE Press (*accepted for publication*).
- [2] MCEVOY, T. R. AND WOLTHUSEN, S. Using Observations of Invariant Behavior to Detect Malicious Agency in Distributed Control Systems. In *Proceedings of the 4th International Workshop on Critical Information Infrastructures Security* (Bonn, Germany, Sep. 2009), E. Rome and R. Bloomfield, Eds., vol. of Lecture Notes in Computer Science, Springer-Verlag, (*accepted for publication*).
- [3] AL-KUWARI, S., AND WOLTHUSEN, S. A Survey of Forensic Localization and Tracking Mechanisms in Short-Range and Cellular Networks. In *Proceedings of the 1st International Conference on Digital Forensics & Cyber Crime (ICD2FC 2009)* (Albany, NY, USA, Sep. 2009), Springer-Verlag (*accepted for publication*).
- [4] EBINGER, P. AND WOLTHUSEN, S. Efficient State Estimation and Byzantine Behavior Identification using Distributed Multisensor Data Fusion in Tactical Networks. In *Proceedings of the IEEE Military Communications Conference 2009 (MILCOM 2009)* (Boston, MA, USA, Oct. 2009), IEEE Press.
- [5] REIDT, S. AND WOLTHUSEN, S. Energy-Efficient Key Distribution and Revocation in Tactical Networks with Asymmetric Links. In *Proceedings of the IEEE Military Communications Conference 2009 (MILCOM 2009)* (Boston, MA, USA, Oct. 2009), IEEE Press.

- [6] REIDT, S. AND WOLTHUSEN, S. Revocation Mechanisms for Hybrid Group Communication with Asymmetric Links. In *Proceedings of the Third Annual Conference of ITA* (College Park, MD, USA, Sep. 2008).
- [7] AL-SALLOUM, Z. AND WOLTHUSEN, S. Semi-Autonomous Link Layer Vulnerability Discovery and Mitigation Dissemination. In *Proceedings of the 5th International Conference on IT Incident Management & IT Forensics (IMF 2009)* (Stuttgart, Germany, Sep. 2009), IEEE Press, (accepted for publication).
- [8] ZHOU, X., BUSCH, C., AND WOLTHUSEN, S. Feature Correlation Attacks on Biometric Privacy Protection Schemes. In *Proceedings of the Special Session on Biometrics, Fifth International Conference on Intelligent Information Hiding and Multimedia Signal Processing* (Kyoto, Japan, Sep. 2009), IEEE Press, (accepted for publication).
- [9] BUSCH, C. AND WOLTHUSEN, S. Non-Forensic Odontological Biometrics. In *Proceedings of the Special Session on Biometrics, Fifth International Conference on Intelligent Information Hiding and Multimedia Signal Processing* (Kyoto, Japan, Sep. 2009), IEEE Press, (accepted for publication).
- [10] HJELMÅS, E., SVENDSEN, N.K., AND WOLTHUSEN, S. Integrating Information Assurance into System Administration. In *Proceedings of the 2009 Information Security South Africa Conference (ISSA 2009)* (Johannesburg, South Africa, Jul. 2009), pp. 363–376.
- [11] FRANKE, K., HJELMÅS, E., AND WOLTHUSEN, S. Advancing Digital Forensics. In *Proceedings of the 5th IFIP TC11.8 World Conference on Information Security Education (WISE 6)* (Bento Gonçalves, RS, Brazil, Jul. 2009), Springer-Verlag (accepted for publication).
- [12] ZHOU, X., BUSCH, C., WOLTHUSEN, S., AND KUIJPER, A. A Security Analysis of Biometric Template Protection Schemes. In *Proceedings of The International Conference on Image Analysis and Recognition (ICIAR 2009)* (Halifax, NS, Canada, Jul. 2009), M. Kamel and A. Campilho, Eds., Vol. 5627 of Lecture Notes in Computer Science, Springer-Verlag, pp. 429-438.
- [13] BORGES, H., BOURS, P., AND WOLTHUSEN, S. Simulating the Influences of Aging and Ocular Disease on Biometric Recognition Performance. In *Proceedings of the 3rd IAPR/IEEE International Conference on Biometrics (ICB 2009)* (Alghero, Italy, Jun. 2009), M. Tistarelli and M. S. Nixon, Eds., Vol. 5558 of Lecture Notes in Computer Science, Springer-Verlag, pp. 864-874.
- [14] REIDT, S., BALFE, S., AND WOLTHUSEN, S. Robust and Efficient Communication Overlays for Trust Authority Computations. In *Proceedings of the 2009 IEEE Sarnoff Symposium* (Princeton, NJ, USA, Mar. 2009), IEEE Press.
- [15] SVENDSEN, N. K. AND WOLTHUSEN, S. Physical Model Constraints on Intrusion Detection in Control Systems. In *Proceedings of the Third Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection* (Hanover, NH, USA, Mar. 2009), Springer-Verlag, pp. 97–107.
- [16] REIDT, S. AND WOLTHUSEN, S. Connectivity Augmentation in Tactical Mobile Ad hoc Networks. In *Proceedings of the IEEE Military Communications Conference 2008 (MILCOM 2008)* (San Diego, CA, USA, Nov. 2008), IEEE Press.
- [17] REIDT, S. AND WOLTHUSEN, S. Exploiting UAV Capabilities in Tactical MANETS. In *Proceedings of the Second Annual Conference of ITA* (London, UK, Sep. 2008).
- [18] MCEVOY, T. R. AND WOLTHUSEN, S. Using Observations of Invariant Behavior to Detect Malicious Agency in Distributed Environments. In *Proceedings of the 4th International Conference on IT Incident Management & IT Forensics (IMF 2008)* (Mannheim, Germany, Sep. 2008). O. Göbel, S. Frings, D. Günther, J. Nedon, D. Schadt, Eds., vol. 140 of Lecture Notes in Informatics, GI-Edition, pp. 55–72.

- [19] WU, M.-D. AND WOLTHUSEN, S. Network Forensics of Partial SSL/TLS Encrypted Traffic Classification Using Clustering Algorithms. In *Proceedings of the 4th International Conference on IT Incident Management & IT Forensics (IMF 2008)* (Mannheim, Germany, Sep. 2008). O. Göbel, S. Frings, D. Günther, J. Nedon, D. Schadt, Eds., vol. 140 of Lecture Notes in Informatics, GI-Edition, pp. 157–172.
- [20] WOLTHUSEN, S. AND JAHNKE, M. Information Assurance Situation Awareness for Tactical MANETs. In *Proceedings of the NATO RTO Symposium on Information Assurance for Emerging and Future Military Systems* (Ljubljana, Slovenia, Oct. 2008), NATO Research and Technology Organization.
- [21] GENNARO, R., HALEVI, S., KRAWCZYK, H., RABIN, T., REIDT, S., AND WOLTHUSEN, S. Strongly-Resilient and Non-Interactive Hierarchical Key-Agreement in MANETs. In *Proceedings of the 13th European Symposium on Research in Computer Security (ESORICS 2008)* (Malaga, Spain, Oct. 2008), S. Jajodia and J. Lopez, Eds., vol. 5283 of Lecture Notes in Computer Science, Springer-Verlag, pp. 49–65.
- [22] BORGES, H., BOURS, P., AND WOLTHUSEN, S. Visible-Spectrum Biometric Retina Recognition. In *Proceedings of the Special Session on Biometrics, Fourth International Conference on Intelligent Information Hiding and Multimedia Signal Processing* (Harbin, China, Aug. 2008), IEEE Press, pp. 1056–1062. (Best Paper Award).
- [23] SVENDSEN, N. K. AND WOLTHUSEN, S. Modeling and Detection of Anomalies in SCADA Systems Networks. In *Proceedings of the Second Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection* (Arlington, VA, USA, Mar. 2008), Springer-Verlag, pp. 101–113.
- [24] WOLTHUSEN, S. Vertrauenswürdige Protokollierung mittels nicht-deterministischer nebenläufiger wechselseitiger Überwachung. *Datenschutz und Datensicherheit*, 10 (2007), pp. 740–743.
- [25] SVENDSEN, N. K. AND WOLTHUSEN, S. An Analysis of Cyclical Interdependencies in Critical Infrastructures. In *Proceedings of the 2nd International Workshop on Critical Information Infrastructures Security* (Malaga, Spain, Oct. 2007), J. Lopez and B. Hämmerli, Eds., vol. 5141 of Lecture Notes in Computer Science, Springer-Verlag, pp. 25–36.
- [26] SVENDSEN, N. K. AND WOLTHUSEN, S. A Framework for 3D Geospatial Buffering of Events of Interest in Critical Infrastructures. In *Proceedings of the 2nd International Workshop on Critical Information Infrastructures Security* (Malaga, Spain, Oct. 2007), J. Lopez and B. Hämmerli, Eds., vol. 5141 of Lecture Notes in Computer Science, Springer-Verlag, pp. 37–48.
- [27] REIDT, S. AND WOLTHUSEN, S. Efficient Trust Authority Distribution in Tactical MANET Environments. In *Proceedings of the IEEE Military Communications Conference 2007 (MILCOM 2007)* (Orlando, FL, USA, Oct. 2007), IEEE Press.
- [28] SVENDSEN, N. K. AND WOLTHUSEN, S. A Framework for Modelling Logical, Physical, and Geographic Dependencies between Critical Infrastructures. In *Proceedings of the Lund Energy Security Conference* (Lund, Sweden, Sep. 2007), pp. 183–205.
- [29] REIDT, S. AND WOLTHUSEN, S. An Evaluation of Cluster Head TA Distribution Mechanisms in Tactical MANET Environments. In *Proceedings of the First Annual Conference of ITA* (College Park, MD, USA, Sep. 2007).
- [30] WU, M.-D. AND WOLTHUSEN, S. Network Forensics of SSL/TLS Encrypted Channels. In *Proceedings of the Sixth European Conference on Information Warfare and Security* (Defence Academy of the United Kingdom, Shrivenham, UK, July 2007), ACI, pp. 303–312.

- [31] SVENDSEN, N. K. AND WOLTHUSEN, S. Analysis and Statistical Properties of Critical Infrastructure Interdependency Multiflow Models. In *Proceedings from the Eighth Annual IEEE SMC Information Assurance Workshop, United States Military Academy* (West Point, NY, USA, June 2007), IEEE Press, pp. 247–254.
- [32] REIDT, S. AND WOLTHUSEN, S. Efficient Distribution of Trust Authority Functions in Tactical Networks. In *Proceedings from the Eighth Annual IEEE SMC Information Assurance Workshop, United States Military Academy* (West Point, NY, USA, June 2007), IEEE Press, pp. 84–91.
- [33] SVENDSEN, N. K. AND WOLTHUSEN, S. Graph Models of Critical Infrastructure Interdependencies. In *Inter-Domain Management, Proceedings of the First International Conference on Autonomous Infrastructure, Management and Security (AIMS 2007)* (Oslo, Norway, Jun. 2007), A.K. Bandara and M. Burgess, Eds., vol. 4543 of Lecture Notes in Computer Science, Springer-Verlag, pp. 208–211.
- [34] WOLTHUSEN, S. The Role of Mathematics in Information Security Education. In *Proceedings of the 5th IFIP TC11.8 World Conference on Information Security Education (WISE 5)* (West Point, NY, USA, Jun. 2007), Springer-Verlag, pp. 129–136.
- [35] SVENDSEN, N. K. AND WOLTHUSEN, S. Connectivity Models of Interdependency in Mixed-Type Critical Infrastructure Networks. *Information Security Technical Report* 12, 1 (2007), pp. 44–55.
- [36] SVENDSEN, N. K. AND WOLTHUSEN, S. Multigraph Dependency Models for Heterogeneous Critical Infrastructures. In *Proceedings of the First Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection* (Hanover, NH, USA, Mar. 2007), Springer-Verlag, pp. 337–350.
- [37] WOLTHUSEN, S. Automated Extraction of Behavioral Profiles from Document Usage. *BT Technology Journal*, 25,1 (2007), pp. 192–200.
- [38] WOLTHUSEN, S. Windows Device Interface Security. *Information Security Technical Report*, 11 (2006), pp. 160–165.
- [39] HJELMÅS, E. AND WOLTHUSEN, S. Full-Spectrum Information Security Education: Integrating B.Sc., M.Sc., and Ph.D. Programs. In *Proceedings of the 3rd Annual Conference on Information Security Curriculum Development* (Kennesaw, GA, USA, Sep. 2006), ACM Press, pp. 9–16.
- [40] WOLTHUSEN, S. Secure Visualization of GIS Data. In *Proceedings from the Seventh Annual IEEE SMC Information Assurance Workshop, United States Military Academy* (West Point, NY, USA, June 2006), IEEE Press, pp. 200–207.
- [41] WIEHE, A., HJELMÅS, E., AND WOLTHUSEN, S. Quantitative Analysis of Efficient Antispam Techniques. In *Proceedings from the Seventh Annual IEEE SMC Information Assurance Workshop, United States Military Academy* (West Point, NY, USA, June 2006), IEEE Press, pp. 163–169.
- [42] WOLTHUSEN, S. Revisionssichere Protokollierung in Standardbetriebssystemen. *Datenschutz und Datensicherheit*, 5 (2006), pp. 281–284.
- [43] WOLTHUSEN, S. Risikomanagement, Sicherheitspolitiken und technische Verfahren zur Durchsetzung von Sicherheitspolitiken (II). *IT-Sicherheit & Datenschutz*, 4 (2006), pp. 349–352
- [44] WOLTHUSEN, S. Risikomanagement, Sicherheitspolitiken und technische Verfahren zur Durchsetzung von Sicherheitspolitiken (I). *IT-Sicherheit & Datenschutz*, 3 (2006), pp. 319–321

- [45] DAHL, O. M. AND WOLTHUSEN, S. D. Modeling and Execution of Complex Attack Scenarios using Interval Timed Colored Petri Nets. In *Proceedings of the Fourth IEEE International Workshop on Information Assurance (IWIA 2006)* (Royal Holloway, UK, Apr. 2006), pp. 157–168.
- [46] GRAF, F., AND WOLTHUSEN, S. A Capability-Based Transparent Cryptographic File System. In *Proceedings of CYBERWORLDS 2005* (Singapore, Nov. 2005), pp. 101–108.
- [47] WOLTHUSEN, S. GIS-based Command and Control Infrastructure for Critical Infrastructure Protection. In *Proceedings of the First IEEE International Workshop on Critical Infrastructure Protection (IWCIP 2005)* (Darmstadt, Germany, Nov. 2005), pp. 40–47. IEEE Press.
- [48] WOLTHUSEN, S. Molehunt: Near-line Semantic Activity Tracing. In *Proceedings from the Sixth Annual IEEE SMC Information Assurance Workshop, United States Military Academy* (West Point, NY, USA, June 2005), IEEE Press, pp. 410–418.
- [49] WOLTHUSEN, S. Trustworthiness in Security Policy Mechanisms for Network-Centric Warfare Environments. In *Proceedings of the NATO RTO Workshop on Information Security for Network Enabled Capabilities* (The Hague, The Netherlands, April 2005), NATO Research and Technology Organization.
- [50] LIKAVEC, J., AND WOLTHUSEN, S. D. Enforcing Messaging Security Policies. In *Proceedings of the Third IEEE International Workshop on Information Assurance (IWIA 2005)* (Washington D.C., USA, Mar. 2005), pp. 131–138.
- [51] WOLTHUSEN, S. D. Defensive Information Warfare and the Protection of Critical Infrastructures. *Accademia Nazionale dei Lincei, Atti dei Convegni Lincei*, 230 (2007), pp. 93–106.
- [52] WOLTHUSEN, S. Modeling Critical Infrastructure Requirements. In *Proceedings from the Fifth Annual IEEE SMC Information Assurance Workshop, United States Military Academy* (West Point, NY, USA, June 2004), IEEE Press, pp. 101–108.
- [53] WOLTHUSEN, S. Self-Inflicted Vulnerabilities. *Naval War College Review LVII*, 3/4 (2004), pp. 102–113
- [54] WOLTHUSEN, S. Tempering Network Stacks. In *Proceedings of the NATO RTO Symposium on Adaptive Defence in Unclassified Networks* (Toulouse, France, April 2004), NATO Research and Technology Organization.
- [55] BUSCH, C., AND WOLTHUSEN, S. D. Information Warfare: Threats to Critical Infrastructures. In *Proceedings of the XV International Amaldi Conference of Academies of Science and National Scientific Societies on Problems of Global Security* (Helsinki, Finland, Sept. 2003), pp. 147–156.
- [56] WOLTHUSEN, S. D. Goalkeeper: Close-In Interface Protection. In *Proceedings 19th Annual Computer Security Applications Conference (ACSAC'03)* (Las Vegas, NV, USA, December 2003), IEEE Computer Society Press, pp. 334–341.
- [57] WOLTHUSEN, S. A Distributed Multipurpose Mail Guard. In *Proceedings from the Fourth Annual IEEE SMC Information Assurance Workshop, United States Military Academy* (West Point, NY, USA, June 2003), IEEE Press, pp. 258–265.
- [58] WOLTHUSEN, S. D., AND PREDIGER, F. ReEncryption — Das Konzept für den umfassenden Dokumentenschutz. In *D-A-CH Security: Bestandsaufnahme und Perspektiven. Gemeinsame Arbeitskonferenz GI · OCG · BITKOM · SI · TeleTrusT* (Erfurt, Germany, Mar. 2003), Kluwer Academic Publishers, pp. 273–284

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- [60] WOLTHUSEN, S. Embedding Policy-Controlled ID Sensors within Host Operating System Security Enforcement Components for Real Time Monitoring. In *Proceedings of the NATO RTO Symposium on Real Time Intrusion Detection Symposium (RTID)* (Estoril, Portugal, May 2002), NATO Research and Technology Organization, pp. 4.1–4.11. Publication RTO-MP-101, published June 2003.
- [61] BUSCH, C., AND WOLTHUSEN, S. Sensitivity Labels and Invisible Identification Markings in Human-Readable Output. In *Proceedings of Electronic Imaging 2002* (San Jose, CA, USA, Jan. 2002), The International Society for Optical Engineering (SPIE), pp. 149–157.
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- [64] BUSCH, C., AND WOLTHUSEN, S. Tracing Data Diffusion in Industrial Research with Robust Watermarking. In *Proceedings of the 2001 Fourth Workshop on Multimedia Signal Processing (MMSP'01)* (Cannes, France, Oct. 2001), J.-L. Dugelay and K. Rose, Eds., IEEE Press, pp. 207–212.
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- [66] RADEMER, E., AND WOLTHUSEN, S. Transparent Access To Encrypted Data Using Operating System Network Stack Extensions. In *Communications and Multimedia Security Issues of the New Century: Proceedings of the IFIP TC6/TC11 Fifth Joint Working Conference on Communications and Multimedia Security (CMS'01)* (Darmstadt, Germany, May 2001), R. Steinmetz, J. Dittman, and M. Steinebach, Eds., IFIP, Kluwer Academic Publishers, pp. 213–226.
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## Other Publications

- [1] WOLTHUSEN, S. Overcast: Forensic Discovery in Cloud Environments. In *Proceedings of the 5th International Conference on IT Incident Management & IT Forensics (IMF 2008)* (Stuttgart, Germany, Sep. 2009), IEEE Press, (accepted for publication).
- [2] WOLTHUSEN, S. Sichere Geo-Webdienste. *Business Geomatics*, 2 (2006), p. 3.
- [3] WOLTHUSEN, S. First IEEE International Workshop on Critical Infrastructure Protection. *European CIIP Newsletter*, 1,2 (2005), p. 35.
- [4] WOLTHUSEN, S. Information Sharing and Decision Support for C(I)IP. In *Proceedings of CIP Europe: Critical Infrastructure Protection* (Bonn, Germany, Sep. 2005), B. M. Hämmerli and S. D. Wolthusen, Eds., Gesellschaft für Informatik, pp. 7–12.
- [5] WOLTHUSEN, S. Von der Patienten-Chip-Karte zur Health Professional Card. *Der Deutsche Dermatologe*, 10 (Oct. 1999), 788–789.
- [6] WOLTHUSEN, S. Sicherheitsfragen in der Informationstechnik. *Zeitschrift für Dermatologie*, 188 (1999), 188–192.
- [7] WOLTHUSEN, S. Sicherheit von Praxis-Systemen. *Der Deutsche Dermatologe*, 9 (Sept. 1999), 687–692.
- [8] ENCARNANÇA, J. L., AND WOLTHUSEN, S. Sicherheit in der Informationstechnik. In *Digitale Signaturen — ihre Rolle im Rechts- und Geschäftsverkehr* (1998), Deutsch-Japanischer Rat, pp. 74–96.

## Selected Other Presentations and Public Appearances

- Keynote talk “Overcast: Forensic Discovery in Cloud Environments” at the 5th International Conference on IT Security Incident Management & IT Forensics, Stuttgart, Germany, September 15, 2009.
- Keynote talk “Mobility, Routing, and Computation in Ad-Hoc and Disruption-Tolerant Networks” at the 5th IEEE LCN Workshop on Security in Communications Networks, Zurich, Switzerland, October 20, 2009.
- Invited talk “The Cyber Threat: Evolution and Outlook” at the NATO Oberammergau Symposium, Oberammergau, Germany, January 21, 2009.
- Invited talk “Concurrent Probabilistic Invariant Monitoring” at the Dagstuhl Perspectives Workshop on Network Attack Detection and Defense. Castle Dagstuhl, Germany, March 3, 2008.
- Invited talk “Detecting Subversion-Type Attacks in Off-Shore Control Systems” at the Maritime Infrastructure Protection Symposium (MIPS). United States Naval Forces Central Command, Manama, Bahrain, February 28, 2008.
- Keynote talk “Modeling Network Security Services in Tactical Networks” at the 2007 IEEE International Conference on Computational Intelligence and Security (CIS 2007). Harbin, China, December 17, 2007.
- Working session on nonproliferation of weapons of mass destruction and sensitive technologies of the Deutsche Gesellschaft für Auswärtige Politik (German Council on Foreign Relations). Invited talk “Technologiekontrolle jenseits der Nichtverbreitungspolitik: Gefährdung und Sicherung kritischer Infrastrukturen im Informationszeitalter”. Berlin, Germany, September 12, 2005.
- Conference “Corporate Digital Security”, organized by Marcus Evans Corporation. Invited presentation “Sicherheitspolitiken und ihre Umsetzung” (Security Policies and their Implementation). Cologne, Germany, November 3rd-4th, 2004.

- Workshop “GeoSec – Sicherheit für Geodaten – Geodaten für die Sicherheit” (GIS for Security) of the CAST-Forum, Darmstadt, Germany. Invited presentation “Technische Schutzmaßnahmen für Informationssysteme” (Technical Protection Controls for GIS). April 1st, 2004.
- IEEE Information Assurance Standards Workshop 2003. Invited presentation “Software Engineering Issues”, NIST, Gaithersburg, MD, USA, December 4th, 2003.
- Workshop “Medizin und IT-Sicherheit” (Health Care and IT Security) of the CAST-Forum, Darmstadt, Germany. Invited presentation “Grundschutz für Praxis-Systeme” (Baseline Security for Private Practice). June 26th, 2003.
- Workshop “Netzwerksicherheit” (Network Security) of the CAST-Forum, Darmstadt, Germany. Invited presentation “Tagungsbericht IWIA 2003, IEEE-Aktivitäten im Bereich Information Assurance” (Conference Report IWIA 2003, IEEE Information Assurance Activities). April 24th, 2003.
- First IEEE International Workshop on Information Assurance. Invited presentation “IEEE Activities in Information Assurance”, Darmstadt, Germany, March 24th, 2003.
- First IEEE International Workshop on Information Assurance. Closing panel presentation “Challenges in Information Assurance”, Darmstadt, Germany, March 24th, 2003.
- Workshop “IT Sicherheits-Engineering” (IT Security Engineering) of the CAST-Forum, Darmstadt, Germany. Invited presentation “Information Assurance”. September 20th, 2001.
- Workshop Web-Security of the CAST-Forum, Darmstadt, Germany. Invited presentation “Gefahren bei Webangeboten” (Threats for Web Services). August 16th, 2001.
- Workshop “Sicherheit von Betriebssystemen / Firewalls” (Operating System and Firewall Security) of the CAST-Forum, Darmstadt, Germany. Invited presentation “Politikbasierte Sicherungsmechanismen für verteilte Systeme” (Policy-based security mechanisms for distributed systems). July 12th, 2001.
- Online-Tag des Hessischen Wirtschaftsministeriums (IT forum of the Hessian state ministry of economy), Wiesbaden, Germany. Invited presentation “Firewalls: Einordnung und Grenzen” (Firewalls: Their role and limitations). November 15th, 2000.
- Seminar Sicherheit im Electronic Business (Security in electronic business), Stuttgart, Germany. Invited presentation “TCP/IP Firewalling: Stand der Technik, Herausforderungen, und Entwicklungen” (TCP/IP Firewalling: State of the art, challenges, and recent developments). October 12th, 2000.
- IBM Crypto Council, Poughkeepsie, NY, USA. Lecture “CIPRESS: Cryptographic Intellectual Property Rights Enforcement System”. September 19th, 2000.
- n-tv Finanzplatz (n-tv Finance, a national/European satellite news network). Initially broadcast July 7th, 2000: Panel discussion “Chancen und Risiken im Internet-Wertpapierhandel” (Opportunities and risks in Internet-based financial trading)  
Participants: Matthias Kröner, member of the board, Direktanlage-Bank; Patrick Zeigerer, member of the board, net.IPO; Stephen Wolthusen, Fraunhofer-IGD.
- Workshop Web Security of the CAST-Forum, Darmstadt, Germany. Invited presentation “Gefahren bei WWW-Angeboten” (Threats for Web Services). June 29th, 2000.
- hamburger dialog – Effizienz der Kommunikation: Neue Vielfalt – Neue Chancen (Efficiency in communication: Diversity and Opportunities). May 8th, 2000, Congress Centrum Hamburg, Germany. Panel discussion: “Neue Techniken und Datensicherheit. Geht das?” (New Technology and Data Security).  
Participants: Ulrich Kühn, Hamburgischer Datenschutzbeauftragter (Data privacy controller for the state of Hamburg, Germany); Wau Holland, Chaos Computer Club, Germany; Stephen Wolthusen, Fraunhofer-IGD.
- Workshop Firewalls of the CAST-Forum, Darmstadt, Germany. Invited presentation “Firewalls: Elemente einer Sicherheitsarchitektur” (Firewalls: Elements of a security architecture). March 17th, 2000.
- Workshop Firewalls of the CAST-Forum, Darmstadt, Germany. Invited presentation “Anwendungsorientierte Evaluierung von Firewalls” (Application-oriented evaluation of firewalls). March 17th, 2000.

- CeBIT 2000, Hannover, Germany. Lecture “Firewalls in der Praxis” (Firewalls in practice) February 28th, 2000.
- Institut für Maritime Systeme und Strömungstechnik (Institute for Naval Systems and Hydrodynamics), Rostock, Germany. Invited presentation “Sicherheitsaspekte bei der Kommunikation sensibler Daten über das Internet” (Security aspects in communicating classified data over the Internet). February 24th, 2000.
- Industrie- und Handelskammer (Darmstadt chamber of commerce) Darmstadt, Germany. Invited presentation “Understanding & Implementing Internet Security”. September 3rd, 1998.
- Various lectures on IT security aspects in the medical sector in cooperation with the ZGDV e.V., Darmstadt, Germany and der Deutschen Dermatologischen Gesellschaft (German Association of Dermatologists).
- Various interviews on national TV on IT security issues.
- Various interviews on national and local radio on IT security issues.
- Various interviews by national and European print media on IT security issues.

## Patents

- International Patent (with E. Rademer and C. Busch) PCT/DE01/01333: “*Method for Integrating Hidden Information in a Set of Notes*”. Priority: May 15th, 2001. Granted: November 22nd, 2001.
- German Patent (with C. Busch) DE 100 58 175: “*Verfahren und Einrichtung zur automatischen Markierung von Ausdrucken einer Datenverarbeitungsanlage*”. Priority: November 22nd, 2000. Granted: August 8th, 2002
- German Patent 10146361.8-53: “*Vorrichtung und Verfahren zur Etablierung einer Sicherheitspolitik in einem verteilten System*”. Priority: September 20th, 2001. Granted: September 20th, 2006.

## Program Committees

- European Liaison and Co-Chair of Special Session on Biometrics, Fourth International Conference on Intelligent Information Hiding and Multimedia Signal Processing. Harbin, China (IIHMSP 2008)
- Co-chair, Third International Workshop on Critical Information Infrastructure Security. Rome, Italy (CRITIS '08)
- Co-chair, Second International Workshop on Critical Information Infrastructure Security. Malaga, Spain (CRITIS '07)
- Program committee chair, Fourth IEEE International Workshop on Information Assurance. Royal Holloway, UK (IWIA 2006)
- Program committee chair, First IEEE International Workshop on Critical Infrastructure Protection. Darmstadt, Germany (IWCIP 2005)
- Program committee chair, Symposium on Critical Infrastructure Protection. Bonn, Germany (CIP Europe 2005)
- Convener, Session “Dual Use Technologies in Information Warfare”, XVI International Amaldi Conference of Academies of Science and National Scientific Societies on Problems of Global Security. Trieste, Italy (2004).
- Program committee chair, Third IEEE International Workshop on Information Assurance. Washington D.C., USA (IWIA 2005)
- Program committee chair, Second IEEE International Workshop on Information Assurance. Charlotte, North Carolina, USA (IWIA 2004)
- Co-chair, First IEEE International Workshop on Information Assurance. Darmstadt, Germany (IWIA 2003)

- Program committee, 6th International Conference on Intelligent Information Hiding and Multimedia Signal Processing. Darmstadt, Germany (IIH-MSP 2010).
- Program committee, Fourth International ARES Workshop on Secure Software Engineering. Krakow, Poland (SecSE 2010)
- Program committee, FTRG International Workshop on Advances in Cryptography, Security and Applications. Jeju, South Korea (ACSA-09).
- Program committee, 25th IFIP International Information Security Conference. Brisbane, Australia (SEC 2010).
- Program committee, IEEE International Conference on Communications 2010 Ad-hoc, Sensor and Mesh Networking Symposium (ICC AHS 2010). Cape Town, South Africa.
- Program committee, 2010 ACM Symposium of Applied Computing, Track on Information Security Research and Applications. Lausanne, Switzerland.
- Program committee, IEEE GlobeCom 2010 Ad-Hoc and Sensor Networking Symposium. Miami, FL, USA.
- Program committee, Fourth International Workshop on Critical Information Infrastructure Security. Bonn, Germany (CRITIS '09)
- Program committee, 5th International Conference on Intelligent Information Hiding and Multimedia Signal Processing. Kyoto, Japan (IIH-MSP 2009).
- Program committee, 3rd International Conference on Information Security and Assurance. Seoul, Korea (ISA 09).
- Program committee, 24th IFIP International Information Security Conference. Pafos, Cyprus (SEC 2009).
- Program committee, Third International ARES Workshop on Secure Software Engineering. Fukuoka, Japan (SecSE 2009)
- Program committee, IEEE ICC 2009 Ad-Hoc and Sensor Networking Symposium. Dresden, Germany.
- Program committee, Fourth IEEE LCN Workshop on Network Security (WNS 2008). Montreal, Canada.
- Program committee, European Wireless Conference 2008 (EW 2008). Prague, Czech Republic.
- Program committee, Workshop on Security and Dependability of the Electric Power Infrastructure at the 38th Annual IEEE/IFIP International Conference on Dependable Systems and Networks. Anchorage, AK, USA (DSN 2008).
- Program committee, Second IEEE Workshop on Mission-Critical Networking. Phoenix, AZ, USA (MCN 2008)
- Program committee, GI Sicherheit 2008. Saarbrücken, Germany (SICHERHEIT 2008).
- Program committee, Second International ARES Workshop on Secure Software Engineering. Barcelona, Spain (SecSE 2008)
- Program committee, Workshop on Authentication and Identification techniques. Oslo, Norway (WAIT 2007)
- Program committee, 3rd GI Incident Management and IT-Forensics Conference. Stuttgart, Germany (IMF 2007)
- Program committee, 8th Annual IEEE SMC Information Assurance Workshop. United States Military Academy, West Point, New York, USA (IAW 2007)
- Program committee, International Conference on Security and Cryptography. Barcelona, Spain (SECRYPT 2007)
- Program committee, 10th Information Security Conference. Valparaiso, Chile (ISC 2007)
- Program committee, First International Workshop on Next Generation Networks for First Responders and Critical Infrastructures 2007. New Orleans, LA, USA (IPCCC 2007).
- Program committee, ARES Workshop on Secure Software Engineering. Vienna, Austria (SecSE 2007)
- Program committee, 4th GI/IEEE Workshop on Detection of Intrusions and Viruses & Vulnerability Assessment. Lucerne, Switzerland (DIMVA 2007)
- Program committee, 3rd Information Security Practice and Experience Conference, Hong

- Kong, China (ISPEC 2007)
- Program committee, 1st International Workshop on Critical Information Infrastructure Security, Samos, Greece (CRITIS '06)
- Program committee, 7th Annual IEEE SMC Information Assurance Workshop. United States Military Academy, West Point, New York, USA (IAW 2006)
- Program committee, 2nd GI Incident Management and IT-Forensics Conference. Stuttgart, Germany (IMF 2006)
- Program committee, 3rd GI/IEEE Workshop on Detection of Intrusions and Viruses & Vulnerability Assessment. Berlin, Germany (DIMVA 2006)
- Program committee, 2nd IEEE Workshop on Dependability and Security in Sensor Networks and Systems, Columbia, Maryland, USA (DSSNS 2006)
- Program committee, 3rd International Security Conference, Düsseldorf, Germany (2005).
- Program committee, GI Workshop Sicherheit in komplexen, vernetzten Umgebungen. Bonn, Germany (2005)
- Program committee, 6th Annual IEEE SMC Information Assurance Workshop. United States Military Academy, West Point, New York, USA (IAW 2005)
- Program committee, 2nd GI/IEEE Workshop on Detection of Intrusions and Viruses & Vulnerability Assessment. Vienna, Austria (DIMVA 2005)
- Program committee, 2nd International Security Conference, Berlin, Germany (2004).
- Program committee, 5th Annual IEEE SMC Information Assurance Workshop. United States Military Academy, West Point, New York, USA (IAW 2004)
- Program committee, GI/IEEE Workshop on Detection of Intrusions and Viruses & Vulnerability Assessment. Dortmund, Germany (DIMVA 2004)
- Program committee, 4th Annual IEEE SMC Information Assurance Workshop. United States Military Academy, West Point, New York, USA (IAW 2003)
- Review committees Annual Computer Security Applications Conferences (ACSAC), 2002–2005.

## Editorial and Review Service

- Editor-in-Chief, Computers & Security (Elsevier Science) (2006-2008)
- Associate editor, Journal of Information Hiding and Multimedia Signal Processing
- Member, Editorial Board of Information Security Technical Report (Elsevier Science)
- Member, Steering Committee IEEE International Security in Storage Workshops
- Reviewer for ACM Computing Reviews
- Reviewer for computers & graphics journal (Elsevier Science)
- Reviewer for IEEE Wireless Communications Magazine
- Reviewer for Computer Communications journal (Elsevier Science)
- Reviewer for International Journal of Critical Infrastructure Protection (Elsevier Science)
- Reviewer for International Journal of System of Systems Engineering (Inderscience)
- Reviewer for ACM Transactions on Information and System Security
- Editorial Advisory Board, Streaming Media Architectures, Techniques, and Applications: Recent Advances

## Other Service

- Balloter, IEEE Standards Association
- Institute Coordinator, German Academic Exchange Service IAESTE Program (2003-2005)
- External Ph.D. examiner, Strathclyde University, Glasgow, UK (Swee Keow Goo, Department of Electronic and Electrical Engineering).

- External Ph.D. examiner, Technische Universität Darmstadt, Germany (Oriana Yuridia Gonzalez Castillo, Department of Computer Science).