

# KASTEL Security Research Labs



Insight  
2021|2022|2023



KASTEL

Part II: Facts &  
Numbers

# Editorial Notes

## Published by

KASTEL – Institute of Information Security and Dependability,  
Engineering Secure Systems  
Head of institute: Prof. Dr. Jörn Müller-Quade

## Editorial Team

Dr. Klaus Lehmann,  
Dr. Martin Schmidt,  
Birgit Scholer,  
Dr. Mario Strefler,  
Annette Wettach

## Copy-Editing

mentorium GmbH, Berlin

## Layout & Print

modus: medien + kommunikation gmbh  
76829 Landau in der Pfalz  
[www.modus-media.de](http://www.modus-media.de)

## Contact

KASTEL – Institute of Information Security and Dependability  
Topic “Engineering Secure Systems”  
Am Fasanengarten 5, 76131 Karlsruhe, Germany  
E-mail: [geschaeftsstelle@kastel.kit.edu](mailto:geschaeftsstelle@kastel.kit.edu)  
[www.kastel-labs.de](http://www.kastel-labs.de)

## Graphics

Dorfjungs.

August 2023

# CONTENTS

## Part I: Research & Researchers

- 6** Editorial & Opening Messages
- 10** Who We Are ...
- 12** Security Research Labs
- 16** Highlights 2021|2022|2023
- 32** Fellows
- 56** Cross-Cutting Issues
- 64** Associated Partners

## Part II: Numbers & Facts

- 5** Publications & Awards
- 6** Transfer in Economy & Society
- 8** Projects
- 10** Cooperation
- 14** Diversity



## Publications & Awards

### Publications

(Number of Researchers - 138)

	2021	2022
Total number of publications	137	160
Number of peer-reviewed publications	87	113
· thereof WoS-/Scopus-indexed publications	52	75
· thereof other peer-reviewed publications	35	38
Number of non-peer-reviewed publications	50	47

### Awards

- “Best Paper Award (runner-up)”, 2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops.  
*M.-R. Vempardal, N. Fastous, A. Frickenstein, S. Sarkar, Q. Zhao, S. Kuhn, L. Frickenstein, A. Singh, C. Unger, N.-S. Nagaraja, C. Wressnegger & W. Stechele (2021): Adversarial Robust Model Compression using In-Train Pruning. – Proceedings, 2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW): 66-75.*
- “Distinguished Paper Award”, USENIX Security Symposium 2022.  
*D. Arp, E. Quiring, F. Pendlebury, A. Warnecke, F. Pierazzi, C. Wressnegger, L. Cavallaro & K. Rieck (2022): Dos and Don’ts of Machine Learning in Computer Security. – 31st USENIX Security Symposium (USENIX Security 22): 3971-3988.*
- “Best Paper Award (runner-up)”, ACM Web Conference 2022  
*N. Demir, M. Große-Kampmann, T. Urban, C. Wressnegger, T. Holz & N. Pohlmann (2022): Reproducibility and Replicability of Web Measurement Studies. – Proceedings, ACM Web Conference 2022 (WWW ’22): 533-544.*
- “Best Paper Award”, 2022 IEEE 13th International Symposium on Power Electronics for Distributed Generation Systems  
*D. Schulz, K. Schneider, M. Weßbecher, V. Hagenmeyer, M. Zitterbart & M. Hiller (2022): Hardware Realization of Participants in an Energy Packet-based Power Grid. – 2022 IEEE 13th International Symposium on Power Electronics for Distributed Generation Systems (PEDG): 1-6.*
- “Federal Consumer Protection Award”, German Foundation for Consumer Protection (DSV): Research Group SECUSO.
- “Digital Autonomy Award”, “Digital Autonomy Hub”: Privacy Friendly Apps by Research Group SECUSO.
- “CYS Secure Biometrics Competition 2022”, Technical University of Delft, first place: Matin Fallahi.
- “Academic Award of the CYBERSECURITY CONFERENCE 2022”, Mannheim, first place: Julian Todt.  
*J. Todt (2022): Towards a general approach for reversing biometric data anonymization – M.Sc. thesis, KIT, Karlsruhe.*
- “Alexander von Humboldt Professorship for Artificial Intelligence 2023”, Alexander von Humboldt Foundation: André Platzer.



## Transfer in Economy & Society

### Activities in Advisory Boards

- Scientific Working Group of the National Cybersecurity Council (*Wissenschaftliche Arbeitsgruppe Nationaler Cyber-Sicherheitsrat*, Cyber-SR), headed by Federal Ministry of the Interior and Community, BMI, and Federal Ministry for Education and Research, BMBF – Member: Jörn Müller-Quade.
- acatech - National Academy of Science and Engineering: Topic Network Safety and Security – Spokesperson: Jörn Müller-Quade; Deputy Spokesperson: Jürgen Beyerer; Member: Indra Spiecker gen. Döhmann.
- acatech - Topic Network Healthcare Technologies – Member: Indra Spiecker gen. Döhmann.
- acatech - *Lernende Systeme* – Germany's Platform for Artificial Intelligence (funded by BMBF), Working group "IT-Security and Privacy" – Chair: Jörn Müller-Quade; Member: Bernhard Beckert.
- acatech - *Lernende Systeme* – Germany's Platform for Artificial Intelligence (funded by BMBF), Working group "Learning Robotic Systems" – Chair: Jürgen Beyerer.
- acatech - *Lernende Systeme* – Germany's Platform for Artificial Intelligence (funded by BMBF), Working group "Mobility and Intelligent Transport Systems" – Member: J. Marius Zöllner.
- acatech, German National Academy of Sciences Leopoldina, Union of the German Academies of Sciences and Humanities: Initiative "Energy Systems of the Future" (funded by BMBF), Working Group "Energy Prices and Security of Supply" – Participant: Indra Spiecker gen. Döhmann (Member of the Board of Directors).
- acatech, German National Academy of Sciences Leopoldina, Union of the German Academies of Sciences and Humanities: Initiative "Energy Systems of the Future" (funded by BMBF), Working Group "Centralised vs. Decentralised Power Supply" – Participant: Veit Hagenmeyer.
- Expert group "Transformation of the Automotive Industry" (*Expertenkreis "Transformation der Automobilwirtschaft* of the Federal Ministry for Economic Affairs and Climate Action, BMWK) – Co-chair: Ina Schaefer.
- Fraunhofer Segment for Defense and Security VVS – Chairman: Jürgen Beyerer.
- Fraunhofer Strategic Research Field Artificial Intelligence (AI) – Spokesman: Jürgen Beyerer.
- Interdisciplinary Commission for Pandemic Research (established by the German Research Foundation, DFG) – Member: Jörn Müller-Quade.
- Scientific Advisory Board of the Volkswagen Foundation – Member: Veit Hagenmeyer.
- Scientific Advisory Board of Électricité de France – Member: Veit Hagenmeyer.

### Contributions to Standardization

- VDI-Gesellschaft Energie und Umwelt (VDI-Association for Energy and Environment), Fachbereich Energie- und Umwelttechnik: *Expertenrat im Richtlinienausschuss* (VDI-EE 4603 Part 3 – Project "IT-Sicherheit und Informationssicherheit für Betriebsmanagementsysteme in der Energiewirtschaft" (IT security and information security for operational management systems in the energy industry).
- International Society of Automation (ISA Europe), ISA99 standards committee (ISA 99 Industrial Automation and Control Systems Security). Training courses for ISA/IEC 62443 series of standards.
- Association of the German Machinery and Equipment Manufacturing Industry (*Verband Deutscher Maschinen- und Anlagenbau*, VDMA), Institute of Mechanical Engineering, Seminars on cybersecurity in line with IEC 62443.

### Further Transfer Activities

- Knowledge transfer initiatives "NoPhish" and "Privacy Friendly Apps": These initiatives ensure that the findings from research are also incorporated into programs or measures that directly help users. Apps/add-ons are developed that lead to increased security (phishing detection) or improved privacy (PFAs).
- Hotline of the "Cyberwehr Baden-Württemberg" at FZI Research Center for Information Technology (Contact and advice center for small and medium-sized enterprises), founded by Ministry of the Interior, Digitalisation and Local Government of the Federal State Baden-Württemberg.
- "Benefit Cybersecurity Course for Ukraine" for citizens: Detect phishing emails and other deceptive e-mails. Detect fake news, amongst others, on social media. KIT, May 5, 2022.
- Citizen dialogue on social and technical opportunities and risks of conducting online-elections. Democracy Days 2022 ("Tage der Demokratie"), Karlsruhe, September 15–16, 2022.
- Trade show participation at Hannover Messe.
- Trade show participation at "Smart Production Solutions" (SPS), Nürnberg.
- Project StartupSecure KASTEL for the support of start-ups, events with the entrepreneur network "CyberForum" and the security initiative "Karlsruher Sicherheitsinitiative KA-IT-Si" and "IHK Tag der IT-Sicherheit".
- "Cybersecurity Training Lab" (*Lernlabor Cybersicherheit*, funded by Federal Ministry for Education and Research, BMBF) by Fraunhofer Academy: Head of consortium Cybersecurity for Industrial Production; advanced training for companies in the field of industrial cybersecurity.
- Seminars on "Cybersecurity in Accordance with IEC 62443". Association of the German Machinery and Equipment Manufacturing Industry (*Verband Deutscher Maschinen- und Anlagenbau*, VDMA), Institute of Mechanical Engineering.
- Lectures at KIT "HECTOR School of Engineering Management" for the Master of Science in Information Systems Engineering and Management, covering information security topics.
- "IT Security Profile" for Master (M.Sc.) in Informatics at KIT: studies focusing on cryptographic processes and, above all, on their use in complex IT systems.
- "KASTEL Certificate" for studies in IT security at KIT. The certificate attests the graduates a special qualification (Diploma, M.Sc., PhD) and is of great interest for future career: 184 certificates have been issued since 2013 (thereof 22 in 2021 / 27 in 2022).
- Research talk: "For Smarter Authentication, We Might Need to Use the Brain". RuhrSec Day 2022, Bochum, May 5, 2022.
- Lecture at "Lab Tour Industrial Safety in the Networked Factory". VDMA Baden-Württemberg in cooperation with Allianz Industrie 4.0 Baden-Württemberg, June 22, 2022.
- Research talk: "Enforcement Deficits in Data Protection Law – Significant Challenges for Data Protection Authority under GDPR". (En)lightening Talk series, SCOTLIN Network (University of Stirling/University of Edinburgh), August 16, 2022.
- Impulse speech: "Industrial Cyber Security". Round table "How to secure critical infrastructure? – THE LÄND meets Israel", organized by CyberForum e.V., Karlsruhe, May 10, 2023.
- Event organization: "Conference of the 11th Annual Meeting of the Security Division of the German Informatics Society (GI)" (Sicherheit 2022), KIT, Karlsruhe, April 5–8, 2022.
- Event organization: "European Symposium on Usable Security" (EuroUSEC 2022), KIT, Karlsruhe, September 29–30, 2022.



## Projects

### Third-Party Funding (participation, selected projects)

(Sorted by funding organization)

- “ANYMOS – Anonymisierung für vernetzte Mobilitätssysteme”  
(Anonymization for Networked Mobility Systems). BMBF-funded project.
- “BLoG<sup>3</sup> – Blockchain-basiertes Gesundheitsdatenmanagement für gesamtheitliche Gesundheitsprofile” (Blockchain-based Health Data Management for Holistic Health Profiles). BMBF-funded project.
- “DATACARE – Datensouveränität und informierte Zustimmung als Grundlage für eine patientenorientierte KI-gesteuerte klinische Forschung” (Data Sovereignty and Informed Consent as the Basis for Patient-Centered and AI-driven Clinical Research). BMBF-funded collaborative project.
- “DataChainSec – Sicherheit für KI-Anwendungen in der Lebensmittelversorgung”  
(Safety for AI Applications in Food Supply). BMBF-funded project.
- “DaWID – Datenzentrierte Wertschöpfungsplattform für interaktive, assistierende Dienstleistungssysteme” (Data-Centred Value Creation). BMBF-funded project.
- “HardShiP – Langfristige IT-Sicherheit für die Hardware von Produktionsanlagen”  
(Long-term IT Security for Production Plant Hardware). BMBF-funded project.
- “INSPECTION – Externe Erkennung von gehackten Webseiten im Umfeld von betrügerischen Online-Shops” (External Detection of Hacked Websites in the Environment of Fraudulent Online Stores). BMBF-funded project.
- “ITSTR.sys – Systematisierung des IT-Sicherheitsrechts”  
(Systematization of the IT Security Law). BMBF-funded project.
- “IUNO2PAKT – Werkzeuge für die Absicherung von Automatisierungs- und Kommunikationstechnologien” (Tools for Securing Automation and Communication Technologies). BMBF-funded project.
- “KARL – Künstliche Intelligenz für Arbeit und Lernen in der Region Karlsruhe” (Artificial Intelligence for Work and Learning in the Karlsruhe Region). BMBF-funded competence cluster.
- “KIWI – Künstliche Intelligenz in sicheren Web-Infrastrukturen mit digitalem Identitätsmanagement” (Artificial Intelligence in Secure Web Infrastructures with Digital Identity Management). BMBF-funded project.
- “PANDIA – Plattform zur Analyse von Datennutzungsbedingungen interaktiver Assistenzsysteme” (Platform for the Analysis of Privacy Notices of Interactive Assistance Systems in the Health Care Domain). BMBF-funded project.
- “PQC4MED – Daten in der medizinischen Versorgung für die Post-Quanten-Ära schützen”  
(Protecting Data in Healthcare for the Post-Quantum Era). BMBF-funded project.
- “Propolis – Privacy for Smart Cities”. Project funded by BMBF and Agence Nationale de la Recherche.
- “RESPOND – Resiliente soziotechnische Prozesse im industriellen Internet der Dinge”  
(Resilient Sociotechnical Processes in the Industrial Internet of Things). BMBF-funded project.
- “Sec4IoMT – Sicherheit im Internet der Dinge für medizinische Endgeräte”  
(Security for the Internet of Medical Things). BMBF-funded project.
- “SynthiClick – Synthetische Datenerzeugung anhand von Nutzungsverhalten im World Wide Web” (Synthetic Data Generation based on User Behavior on the World Wide Web). BMBF-funded project.
- “VE ASCOT – Neuartige sichere Elektronikkomponenten für die ‘Chain of Trust’”  
(Advanced Security for Chains of Trust). BMBF-funded project.

- “FLAIROP: Federated Learning for Robot Picking”. BMWK-funded project.
- “Intelligent Security Handwerk”. BMWK-funded project.
- “SofDCar – Software-Defined Car”. BMWK-funded project.
- “CanConnect – Zusammenführung von Krebsregisterdaten und multimodalen, melderbasierten Diagnostikdaten zur KI-basierten Biomarker-Detektion”  
(Merging Cancer Registry Data and Multimodal, Reporter-based Diagnostic Data for AI-based Biomarker Detection). BMG-funded project.
- “Sicherheits- und Funktionsanalysen/Proof of Concepts für Industrie 4.0”  
(Safety and Functional Analyses/Proof of Concepts for Industry 4.0). BSI-funded project.
- “Sicherheitsanalyse zu OPC UA” (Open Platform Communications – Unified Architecture). BSI-funded project.
- “KI in ICS Netzen” (AI in ICS Networks). BSI-funded project.
- “CyberSec4Europe”. European Framework on Cybersecurity Research. EU-funded project.
- “ROCK-IT (remote, operando controlled, knowledge-driven, IT-based)”. Project funded by Helmholtz Association.
- “Change aPS – Static Analysis to Support Change Management in Variant-rich Legacy Control Software for Machine and Plant Engineering Companies”. DFG-funded project.
- “GRK 2050: Privacy and Trust for Mobile Users”. DFG-funded project.
- “KeY – A Deductive Software Analysis Tool for the Research Community”. DFG-funded project.
- “Resilient Network Embeddings for Friend-to-Friend Networks”. DFG-funded project.
- “Poison Ivy – Preventing and Detecting Data-based Backdoors”. Project funded by Ministry of Economic Affairs, Labour and Tourism of the Federal State Baden-Württemberg within the scope of the “AI innovation contest of Baden-Württemberg”.
- “Rechtliche Möglichkeiten zur Stärkung und Institutionalisierung der Kooperation der Datenschutzaufsichtsbehörden des Bundes und der Länder (DSK 2.0)”  
(Legal Options for Strengthening and Institutionalizing Cooperation between Federal and State Data Protection Supervisory Authorities (DSK 2.0)). Expertise provided for the Landesbeauftragter für den Datenschutz und die Informationsfreiheit Rheinland-Pfalz (State Commissioner for Data Protection and Freedom of Information Rhineland-Palatinate).
- “JuBot – Stay Young with Robots”. Project funded by Carl-Zeiss-Stiftung.



## Cooperation

### Selected Cooperation Projects with Research Institutions & Organizations

- “Use of AI in Risk and Resilience Research”. Cooperation with MINES ParisTech.
- “Development of New Methods in the Field of Information Flow Control” (*Entwicklung neuer Methoden im Bereich der Informationsflusskontrolle*). Cooperation with Tel-Aviv University.
- “Principles of Machine Learning in Computer Security”. Cooperation with University College London, King's College London, Ruhr-Universität Bochum, and Technical University of Berlin.
- “Evading Learning-based Detection of Heap-Spraying”. Cooperation with Università degli studi di Milano, University of Modena and Reggio Emilia, and King's College London.
- “Cyber Threat Intelligence”. Cooperation with Ben-Gurion University of the Negev.
- “Encrypted Computing”. Joint project with CISPA Helmholtz Center for Information Security, funded by *Agentur für Innovation in der Cybersicherheit GmbH*.
- “Web Measurements”. Joint project with CISPA Helmholtz Center for Information Security, Westfälische Hochschule, University of Applied Sciences, Gelsenkirchen and secunet Security Networks AG.
- “RoboTrust – Responsible Interaction with Anthropomorphic Service Robots”. Interdisciplinary project with ZEVEDI.
- “Sustainable Intelligence – Intelligent Sustainability”. Project with ZEVEDI.
- “Diffusion of Responsibility through Algorithms”. Project with ZEVEDI.
- “ConTrust”. Research alliance with Peace Research Institute Frankfurt.
- “MED²ICIN – Medical Data Driving an Integrated Cost-Intelligent Model”. Fraunhofer Lighthouse project.
- “Vertrauen durch Erklärbarkeit bei verifizierbaren Online-Wahl-Systemen” (Trust through Explainability in Verifiable Online Voting Systems). Project with ITAS, KIT.
- “End-to-End Verifiable and Secret Online Elections at KIT”. Project with SCC, KIT.
- “Methods for Evaluating Vulnerabilities of Shell Scripts in High-Performance Computing”. Project with SCC, KIT.

### Cooperation Partners: Research Institutions & Organizations

(Selection)

- |   |   |
|---|---|
| • Akademie der Polizei Hamburg.   | • Charité – Universitätsmedizin Berlin.                           |
| • ATHENE National Research Center for Applied Cybersecurity, Darmstadt. | • CISPA Helmholtz Center for Information Security, Saarbrücken.   |
| • Ben-Gurion University of the Negev, Beer-Sheva.                       | • Deutsches Elektronen-Synchrotron DESY, Hamburg.                 |
| • Berufsförderungswerk des Handwerks gGmbH, Korbach.                    | • Digital Society Institute (DSI), Berlin.                        |
| • Bremen Cancer Registry.   | • Dresden University of Technology.                               |
| • Centre for Tactile Internet with Human-in-the-Loop (CeTi), Dresden.   | • EIFER – European Institute for Energy Research, Karlsruhe.      |
| • Centre Responsible Digitality (ZEVEDI), Darmstadt.                    | • Eindhoven University of Technology.                             |
| • Centrum Wiskunde & Informatica (CWI), Amsterdam.                      | • ESMT European School of Management and Technology GmbH, Berlin. |

- FIZ Karlsruhe – Leibniz Institute for Information Infrastructure GmbH.
- FKFS Forschungsinstitut für Kraftfahrtwesen und Fahrzeugmotoren Stuttgart.
- Fraunhofer Center for International Management and Knowledge Economy IMW, Leipzig.
- Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., München.
- Fraunhofer Institute for Applied and Integrated Security AISEC, Garching.
- Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE, Wachtberg.
- Fraunhofer Institute for Computer Graphics Research IGD, Darmstadt.
- Fraunhofer Institute for Digital Medicine MEVIS, Bremen.
- Fraunhofer Institute for Integrated Circuits IIS, Erlangen.
- Fraunhofer Institute for Intelligent Analysis and Information Systems IAIS, Sankt Augustin.
- Fraunhofer Institute for Machine Tools and Forming Technology IWU, Chemnitz.
- Fraunhofer Institute for Mechatronic Systems Design IEM, Paderborn.
- Fraunhofer Institute for Molecular Biology and Applied Ecology IME, Aachen.
- Fraunhofer Institute for Secure Information Technology SIT, Darmstadt.
- Fraunhofer Institute for Software and Systems Engineering ISST, Dortmund.
- Fraunhofer Institute for Systems and Innovation Research ISI, Karlsruhe.
- Freie Universität Berlin.
- Friedrich-Alexander-Universität Erlangen-Nürnberg.
- The George Washington University, Washington.
- German Aerospace Center (DLR), Köln.
- Goethe University Frankfurt/Main.
- Hahn-Schickard-Gesellschaft für angewandte Forschung e.V., Villingen-Schwenningen.
- Hannover Medical School.
- Heilbronn University of Applied Sciences.
- Helmholtz-Zentrum Berlin für Materialien und Energie.
- Helmholtz-Zentrum Dresden-Rossendorf.
- Hochschule Osnabrück, University of Applied Sciences.
- Idaho National Lab, Idaho Falls.
- Instituto Brasileiro de Ensino, Desenvolvimento e Pesquisa (IDP), Brasília.
- IT University of Copenhagen.
- Karlsruhe University of Applied Sciences.
- King's College London.
- Leibniz Institute for Prevention Research and Epidemiology – BIPS GmbH, Bremen.
- microTEC Südwest e.V., Freiburg.
- Leuphana University Lüneburg.
- Mines ParisTech.
- National Research Center for Applied Cybersecurity ATHENE, Darmstadt.
- Norwegian University of Science and Technology, Trondheim.
- OFFIS e.V., Oldenburg.
- OWL University of Applied Sciences and Arts, Lemgo.
- Peace Research Institute Frankfurt (PRIF/HSFK), Frankfurt am Main.
- Robert Koch Institute, Berlin.
- Royal Holloway University of London.
- Ruhr-Universität Bochum.
- Singapore University of Technology and Design.
- Softwarezentrum Böblingen/Sindelfingen e.V., Böblingen.
- Tallinn University of Technology.
- Technical University of Berlin.
- Technical University of Braunschweig.
- Technical University of Darmstadt.
- Technical University of Munich.
- Technische Universität Bergakademie Freiberg.
- Tel-Aviv University.
- Uniklinik RWTH Aachen.
- Università degli Studi di Milano.
- Universität Bielefeld.
- Universität Hamburg.
- Universität zu Lübeck.
- University College London.
- University of Bamberg.

- University of Canberra.
- University of Denver.
- University of Edinburgh.
- University of Illinois at Urbana-Champaign, Urbana.
- University of Kassel.
- University of Luxemburg.
- University of Maryland.
- University of Michigan.
- University of Paderborn.
- University of Southern Denmark, Odense.
- University of Stellenbosch.

- University of Strathclyde.
- University of Stuttgart.
- University of Waterloo.
- University of Zurich.
- UNSW Allens Hub for Technology, Law and Innovation (University of New South Wales), Sydney.
- Victoria University of Wellington.
- Westfälische Hochschule, University of Applied Sciences, Gelsenkirchen.
- Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Stuttgart.

### Selected Cooperation Projects with Economy & Industry

- "Cyber Security in Energy and Production Day 2022". Cooperation and exchange with Siemens AG.
- "Adversarial Robust Pruning". Cooperation with BMW and Technical University of Munich.
- "Secure Federated Machine Learning". Project with SAP SE.
- "Secure and Robust Machine Learning for IoT Systems". Project with SAP SE.
- "Vulnerability Discovery in Web Applications". Project with SAP SE.
- "Efficient Secure Multi-Party Computations". Project with Huawei Research Germany.
- "Auditable Security". Project with Huawei Research Germany.
- "Everest". Cooperation with PIONIX GmbH.
- "Toward better Development of Applications on DLT". Project funded by EnBW AG.
- "Automotive Security". Cooperation with ETAS GmbH.
- "Threat&Risk-Analysis". Cooperation with ITK Engineering GmbH.

### Cooperation Partners: Economy & Industry

(Selection)

- 4flow AG, Berlin.
- AI4BD Deutschland GmbH – Standort Dresden.
- Ascora GmbH, Ganderkesee.
- Asvin GmbH, Stuttgart.
- Atruvia AG, Frankfurt am Main.
- AVL Deutschland GmbH, Karlsruhe.
- BASF AG, Ludwigshafen.
- BDO AG Wirtschaftsprüfungsgesellschaft, Hamburg.
- beegy GmbH, Mannheim.
- BMW AG, München.
- BooleWorks GmbH, München.
- Bosch Rexroth AG, Horb am Neckar.
- CAS Software AG, Karlsruhe.
- CircularTree GmbH, Berlin.
- convolution GmbH, Ettlingen.
- C.R.S. iiMotion GmbH, Villingen-Schwenningen.
- C&S Computer und Software GmbH, Augsburg.
- DarwinAI Corp., Waterloo.
- datenschutz cert GmbH, Bremen.
- DFN-CERT Services GmbH, Hamburg.

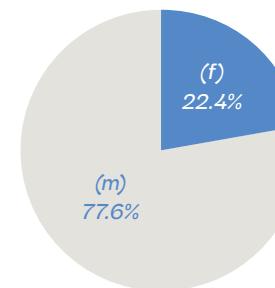
- DLR Gesellschaft für Raumfahrtanwendungen (GfR) mbH, Weßling.
- DResearch Fahrzeugelektronik GmbH, Berlin.
- easierLife GmbH, Karlsruhe.
- EEW Energy from Waste GmbH, Helmstedt.
- e-mobil BW GmbH, Stuttgart.
- EnCo Software GmbH, Hamburg.
- ergofox GmbH, Hamburg.
- ERNW Enno Rey Netzwerke GmbH, Heidelberg.
- ETAS GmbH, Stuttgart.
- Festo SE & Co. KG, Esslingen.
- FREQUENTIS COMSOFT GmbH, Karlsruhe.
- GFFT Security Lab GmbH, Bad Vilbel.
- GoDaddy, Inc., Scottsdale.
- Hilscher Gesellschaft für Systemautomation GmbH, Hattersheim.
- Huawei Research Germany, Darmstadt.
- IBM Research Zurich.
- idigiT – Institute for Digital Transformation in Healthcare GmbH, Witten.
- Illinois at Singapore Pte Ltd., Advanced Digital Sciences Center, Singapore.
- Infineon Technologies AG, Neubiberg.
- INFOline GmbH, Bonn.
- init innovation in traffic systems SE, Karlsruhe.
- INIT Mobility Software Solutions GmbH, Karlsruhe.
- INTEC International GmbH, Hechingen.
- ISB Institut für Software-Entwicklung und EDV-Beratung AG, Karlsruhe.
- ITK Engineering GmbH, Rülzheim.
- Jolocom GmbH, Berlin.
- Karlsruher Verkehrsverbund GmbH.
- Macio GmbH, Kiel.
- Mercedes-Benz AG, Stuttgart.
- mindUp Web + Intelligence GmbH, Konstanz.
- MVV Energie AG, Mannheim.
- NORDSYS GmbH, Braunschweig.
- nubedian GmbH, Karlsruhe.
- Omicron electronics GmbH, Klaus.
- P3 digital services GmbH, Hamburg.
- Pflegewerk Managementgesellschaft mbH Berlin.
- PIONIX GmbH, Bad Schönborn.
- PTV Planung Transport Verkehr GmbH, Karlsruhe.
- REINER Kartengeräte GmbH & Co. KG, Furtwangen.
- Reusch Rechtsanwaltsgeellschaft mbH, Saarbrücken.
- RISA Sicherheitsanalysen GmbH, Berlin.
- Robert Bosch GmbH, Gerlingen.
- SaarLB Landesbank Saar, Saarbrücken.
- SAP SE, Walldorf.
- Schäffler AG, Herzogenaurach.
- Schöllý Fiberoptic GmbH, Denzlingen.
- Secervo Security Consulting GmbH, Karlsruhe.
- SEW-EURODRIVE GmbH & Co. KG, Bruchsal.
- Siemens AG, München.
- Siemens Energy AG, München.
- Sirona Dental Systems GmbH, Wals.
- SITEC Industrietechnologie GmbH, Chemnitz.
- snoopmedia GmbH, Bonn.
- SO NAH GmbH, Aachen.
- Software AG, Darmstadt.
- SRC Security Research & Consulting GmbH, Bonn.
- Stadtwerke Ettlingen GmbH.
- Stadtwerke Walldorf GmbH & Co. KG.
- teamtechnik Maschinen und Anlagen GmbH, Freiburg.
- tsenso GmbH, Stuttgart.
- T-Systems International GmbH, Frankfurt am Main.
- TTI – Technologie-Transfer-Initiative GmbH an der Universität Stuttgart (TTI GmbH).
- TÜV Rheinland Consulting GmbH, Köln.
- Urban Software Institute GmbH, Chemnitz.
- Vector Informatik GmbH, Stuttgart.
- Weidmüller Interface GmbH & Co. KG, Detmold.
- WIBU Systems AG, Karlsruhe.
- ZF Friedrichshafen AG.



## Diversity

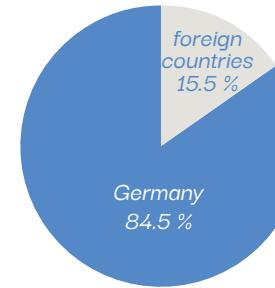
### Gender Statistics

	Number of Individuals (m)	(f)	Ratio of Female Individuals
Total number	161	125	36 22.4%
Fellows	23	17	6 26.1%
Researchers	138	108	30 21.7%



### Statistics on International Participation

	Number of Individuals	Number of Foreign Individuals	Ratio of Foreign Individuals
Total number	161	25	15.5%
Fellows	23	2	8.7%
Researchers	138	23	16.7%



### Represented Nations

Number of Individuals

5	5	3
China	Spain	India
2	2	1
France	Iran	Austria
1	1	1
Denmark	Egypt	Italy
1	1	1
Pakistan	Turkey	Uruguay





KASTEL Security Research Labs

Contact:

KASTEL - Institute of Information Security and Dependability  
Am Fasanengarten 5, 76131 Karlsruhe, Germany  
[www.kastel-labs.de](http://www.kastel-labs.de)



**KASTEL**

**Part II: Facts & Numbers**