Selected labs at Fraunhofer AISEC

INDUSTRIAL SECURITY LAB

- Risk analysis and penetration testing for connected production, IoT and building automation
- Realistic, secure test environments
- Training and experimental systems

HARDWARE SECURITY LAB

- Hardware security analyses and penetration testing
- Common Criteria site certification for Evaluation Assurance Level 7
- Pre-audit evaluation of security chips

AUTOMOTIVE SECURITY LAB

- Security analysis for complete vehicles and vehicle components
- Secure, trusted environment certified according to TISAX AL 3
- Development and testing of security measures

Contact

Fraunhofer Institute for Applied and Integrated Security AISEC
Lichtenbergstraße 11
85748 Garching near Munich
+49 89 322 99 86-0
marketing@aisec.fraunhofer.de

www.aisec.fraunhofer.de/en

www.cybersecurity.blog.aisec.fraunhofer.de/en

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Fraunhofer AISEC

Fraunhofer AISEC at a glance

Innovating with cybersecurity

#InnovatingWithCybersecurity

Mission

The Fraunhofer Institute for Applied and Integrated Security AISEC translates excellence in IT security research into applied solutions for greater dependability, trustworthiness and tamper protection in IT-based systems and products.

Facts and Figures

- **Founded:** 2009
- **Employees:** 230
- **Higher Education Connections:** Technical University of Munich (Prof. Eckert and Prof. Sigl), Freie Universität Berlin (Prof. Margraf and Prof. Wunder) and OTH Amberg-Weiden (Prof. Loebenberger)

Challenge for cybersecurity

There is huge potential for innovation in cutting-edge technology, but it also presents risks for cybersecurity. Our economy and society are facing major challenges:

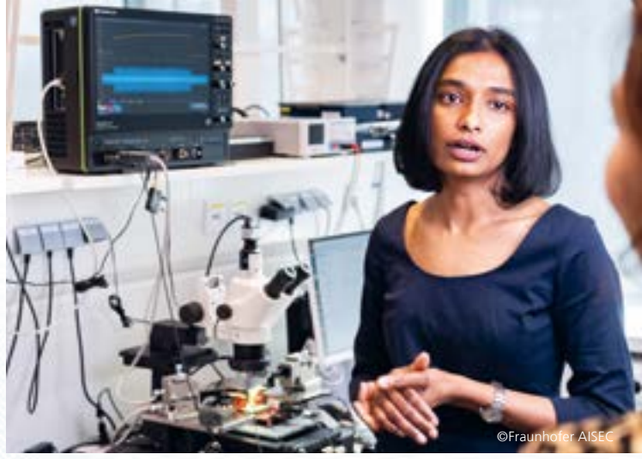
- Abuse of vulnerabilities in the program code
- Data manipulation and theft
- Manipulation of control units
- Automated attacks using AI and deepfakes
- Identity theft
- Threats from quantum computers
- Side channel and error attacks on chips and printed circuit boards

Fraunhofer AISEC offers specialist expertise in the area of cybersecurity based on research excellence. This allows businesses and public research institutions to strengthen their position for the future with tailor-made, state-of-the-art technologies.

Areas of expertise

Fraunhofer AISEC supports businesses in protecting systems, infrastructures, products and services.

Secure Infrastructure	Applied cryptography, migrating to quantum-secure architecture designs, secure communication
Secure Systems Engineering	Secure digital identities, user-friendly IT systems, adherence to compliance and data protection regulations
Cognitive Security Technologies	Robustness and trustworthiness of algorithms, application of AI methods to increase cybersecurity
Service and Application Security	Secure data exchange, security and data protection of distributed applications, secure cloud infrastructures
Secure Operating Systems	Security of hardware-facing software, development of secure operating systems
Hardware Security	Development and analysis of trust-worthy electronics and secure embedded systems
Product Protection and Industrial Security	Automotive security, product protection, industrial security, security for the internet of things and smart buildings



R&D services and opportu-nities for collaboration:

- Risk analysis
- Security tests and analysis
- Creating and reviewing IT security concepts
- Reference implementations in minimum viable products
- Developing testing and analysis tools
- Trainings and education
- Studies and technology radar