10th International VDI Conference

Cyber Security for Vehicles

June 11-12, 2024, Munich, Germany

- Regulations, Standards, Processes & Homologation
- Post-Development and Vehicle Operation
- Future Cyber Security
- Security Technologies & Further Developments
- Security Testing

+ Panel Discussion: What Comes Next?
+ OEM Presentations: Volkswagen AG - Ampere
+ International VDI Workshop: Capture The Flag

Meet international Experts from:

AMPERE · ARGUS · AVL · Bosch Engineering BOSCH · COUPRY · CYRES · emproof · eTAS · IAV · KUGLER MAAG CIE · msg · T Systems · TÜVIT · VECTOR

An event organized by VDI Wissensforum GmbH
www.vdi-international.com/ 01K0907024

09:00 Registration & Welcome coffee

10:00 Chair's Welcome and Opening Address
Mathias Dehm, Chief Product Security Officer, Continental AG, Germany

I. Regulations, Standards, Processes & Homologation

10:15 Cybersecurity from a Global Perspective - China and its Rules for Automotive Cyber Security

- International automotive cyber security regulations are evolving & more national standards adding complexity to international type approval
- China is developing a cyber security and data security standard system for ICV
- Strong references to UNECE, ISO and other international standards
- What additional effort is required if, e.g. ISO standards & UNECE regulations are already implemented in an organization

Janine Funke, Strategic Area Lead Cybersecurity, co-author: Sergej Weber, both: Kugler Maag Cie by UL Solutions, Germany

10:45 The Achilles' Heel of AI-Based Systems in the Automotive Domain: Security Aspects and Challenges

- New challenges in terms of cyber security
- AI specific vulnerabilities and risks
- Threats and attacks along the life-cycle

Vasilios Danos, Artificial Intelligence, Head of AI Security & Trustworthiness, co-author: Thora Market, both: TÜVIT (TÜV NORD GROUP), Germany

11:15 Cyber Security beyond Cars: Compliance Challenges for OEMs and their Supply Chain

- Small OEMs and the need for CSMS/SUMS compliance
- Small OEMs depend on bigger suppliers and OTS components
- Big OEMs' business models vs. small manufacturers and special vehicle builders
- Secure communication: Changing configurations of trucks & trailers during operation

Jan-Peter von Hunnius, Associate Partner and Head of CYRES Consulting, Austria

11:45 Strategic Use of Intellectual Property Rights for the Automotive Sector: Creating and Capturing Value

- Use of exclusive rights to derive value out of data sets, architecture, AI solutions and software
- Contracting for security by design in the multi-tiered automotive supply chain
- Organizing security compliance in light of the new and upcoming European legislation

Maurits Westerik, Attorney-at-law, co-author: Lot Wagemakers, Attorney-at-law, both: Coupry, The Netherlands

12:15 Lunch

II. Post-Development/ Vehicle Operation

13:45 Utilizing Simulated AUTOSAR Security Events for the Detection of Cyber Attacks on Vehicles

- Investigates a realization of the interplay of an in-vehicle IDS system with a monitoring backend system according to UNECE R155
- Digital traces of a real-world cyber attack are mapped to AUTOSAR security events which are integrated into fleet simulations of AUTOSAR events
- The generated data is transferred to a backend system where it is analyzed and different approaches for detecting the attack among a multitude of noise events are evaluated

Thomas Bitterlich, Senior Automotive Security Consultant, co-authors: Dr.Grit Pientka, both: T-Systems, Max Engelsberger, Vector all: Germany

14:15 Secure Decommissioning: Automotive Security at the End of the Life Cycle

- Security risks at end of life cycle
- Challenges regarding secure decommissioning
- Best practices

Mathias Löbl, Security Manager, Bosch Engineering GmbH, Austria

14:45 Networking & Coffee Break

III. Future Cyber Security

15:30 Security Operations for Vehicles: Experiences und Challenges

- Establishing risk-based security operations
- Application of tooling
- Lessons learned, e.g., BOM quality, metrics, attack types
- Trends regarding technology, regulation, and collaboration

Prof. Dr. Jörn Eichler, Head of Security Engineering, Electric/Electronic Engineering, Volkswagen AG, Germany

16:00 Post-Quantum Cryptography on Embedded ECUs

- Post-quantum cryptography
- Embedded Security
- AUTOSAR classic platform

Claude-Pascal Stöber-Schmidt, Project Manager Security Engineering; co-. authors: Philipp Jungklass & Marco Siebert, all: IAV GmbH, Germany

16:30 Panel Discussion: What comes next?

17:15 End of Conference Day 1

17:45 **Get-together**
At the end of the first conference day, we kindly invite you to use the relaxed and informal atmosphere at our conference dinner for in-depth conversations with other participants and speakers.

09:25 Chair's Welcome

IV. Security Technologies & Further Developments

09:30 Cyber Security: the HW Challenges of SW-Defined Vehicles

- SDV architectures tend to merge HW, which tends to weaken the cyber security resilience level
- Several solutions and strategies exist in the market to adopt fusion architecture in the same system-on-chip
- The presentation will explore the strategies, missing components or certifications in the existing product roadmaps
- Summarization of the pros/cons of SDV fusion architectures.

Frederic Ameye, Cybersecurity Lead, Ampere Software Technology, France

10:00 Why do automotive zero-day vulnerabilities matter?

- Emerging threats in automotive and lessons learned from Pwn2Own Automotive Japan
- Remediating highly exploitable and critical vulnerabilities
- Possible approach using the example of a Smart Cockpit

Gregor Knappik, Solution Architect Cybersecurity, VicOne, Germany

10:30 V2X Security, Mutual Trust, and Data Sharing - Challenges When Introducing a Trust Model for External Data in V2X

- V2X Security ensures the integrity, authenticity, and confidentiality of communications and anonymity of participants
- Misbehavior detection provides measures to identify malfunctioning devices and malicious actors
- Future use cases require the determination of the trustworthiness of external data
- Various techniques support the evaluation of the trustworthiness of data and entities

Stephan Rein, Consultant - Software Defined Vehicle, msg systems ag, Germany

11:00 Networking & Coffee Break

11:45 Challenges and Strategies for Enhancing Firmware Security in Automotive Systems

- Common automotive firmware attack vectors
- Firmware reverse engineering for IP theft and competitor analysis
- Technical countermeasures: exploit mitigations and software protection
- Overcoming implementation challenges for diverse automotive environments
- Future directions in firmware security and industry-academia collaboration

Tim Blazytko, Chief Scientist, Head of Engineering, emproof, Germany

12:15 Resource Efficient Hybrid Automotive Ethernet Firewall for Smart Switches

- Tool based creation of allow list firewall policies
- Multilevel optimization of filter conditions
- Efficient utilization of switch resources

Alexander Zeeb, Senior Solution Manager Embedded Software, Vector Informatik GmbH, Germany

12:45 Lunch

V. Security Testing

14:00 The Importance of a Consistent Process from TARA to Testing

- Establishing standardized cybersecurity processes in the dynamic automotive industry
- Overcoming challenges by integrating TARA seamlessly
- Standardization and automation of test procedures for faster iteration of tests and integration
- Utilizing model-based TARA for automated test case generation, improving testing efficiency
- Employing a versatile testing platform for diverse interfaces, saving time and resources in the testing lifecycle

Harald Petschnik, Business Innovation Manager, co-authors: Jürgen Wurzinger & Stefan Marksteiner, all: AVL List GmbH, Austria

14:30 Full-Vehicle Penetration Testing - A Silver Bullet for Cyber Security Homologation?

- Current cyber security homologation/ vehicle-type-approval setup for global UN-R 155 member states
- Detailed insights into industry experience as security testing provider
- Description of effective attack vectors, techniques and specific tools to conduct full-vehicle penetration test in context of VTA
- Appreciation of full-vehicle penetration testing compared to testing on component level

Thomas Irmscher, Product Manager Security Testing, co-author: Abdallah Ourad, both: ETAS GmbH, Germany

15:00 Protecting Vehicle Architectures: Common Security Pitfalls to Avoid

- Learn how to design more secure vehicle architectures and avoid common security pitfalls at the component (e.g., ECU) and vehicle levels
- Get insights into real-world cases of vulnerabilities found in vehicle architectures
- Practical advice for building testing requirements for Tier 1 suppliers

Ilya Dubnov, Security Research Team Lead, Argus Cyber Security, Israel

15:30 Closing Remarks

15:45 End of Conference

International VDI Workshop

Capture the Flag (CTF): The Hands-On Introduction to Cybersecurity

Date and Venue:
June 10, 2024
Munich, Germany
Time
10:00 – 16:00

Workshop Chair
Abdallah Ourad, Security Tester, ETAS GmbH

Content
This hands-on workshop offers you a close-to-reality experience to test and exercise your security skills. You will simulate an offensive security engagement from an attacker's point of view and gain insights into hacking methodologies and strategies. You will be solving challenges based on real-life applications and scenarios. The goal is to shape a better understanding of securing your products and services.

Agenda

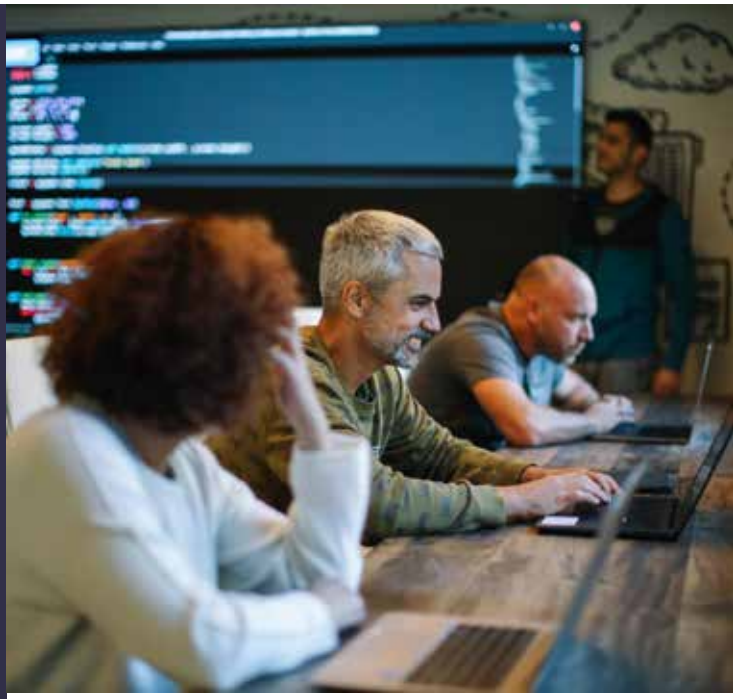
Setup
- Introduction to tools and system under test
- Introduction to the challenges

Solving challenges, finding flags
- Many diverse challenges to crack
- Varying complexity and difficulty
- Differing ways to solving them
- Employ hacking techniques and use hacking tools
- Experienced supervision and guidance

Reflection
- Difficulties encountered in solving the challenges
- Unique and creative solutions devised
- Implications for implementing and developing systems

Target Group
- Security managers, product managers or project managers
- System engineers, software engineers, hardware engineers
- Developers
- Technical understanding on engineering level is required

Prerequisites
- Bring your own laptop with your preferred operating system and hacking tools. Recommended: Kali Linux and its tools
- If you are new to this: You can install a Kali Linux instance in a virtual machine software. Virtual Box is recommended.



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Supporting Experts

Dr. Mathias Dehm, Chief Product Security Officer, Continental AG, Germany
Prof. Dr. Christoph Krauß, Head of Automotive Security Research, INCYDE GmbH and Head of Research Group Applied Cyber Security Darmstadt, Darmstadt University of Applied Sciences, Germany
Prof. Dr. Jörn Eichler, Head of Security Engineering, Electric/Electronic Engineering, Volkswagen AG, Germany
Dr. Christian Köbel, Senior Project Engineer Cyber Security, Honda R&D Europe GmbH, Germany

About us

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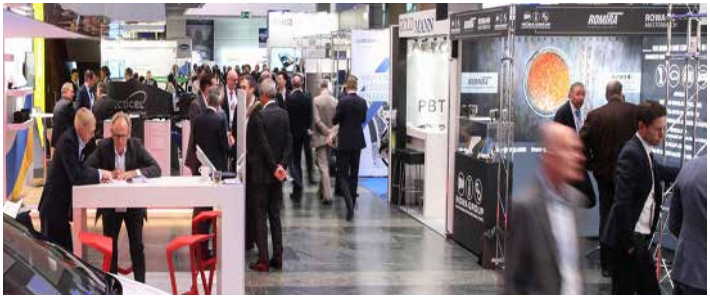

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Become a speaker at our international VDI Automotive Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: Software Defined Vehicle, Automated Driving and Connected Off-Highway Machines.

Please submit your topic to:
Annick Cathrin Pauwels
Product Manager International Business
Phone: +49 211 6214-8646
Email: Pauwels@vdi.de

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Conference venue
Holiday Inn Munich - Westpark
Albert-Rosshaupter-Strasse 45
81369 Munich, Germany
Phone: +49 89 411 113-0
Email: info.wp@himuc.com

HRS Das Hotelportal

You will find more hotels close to the venue at www.vdi-wissensforum.de/hrs

Hotel room reservation:
A limited number of rooms has been reserved for the benefit of the conference participants at the Holiday Inn Munich - Westpark. Please refer to "VDI Conference". For more hotels: www.vdi-wissensforum.de/hrs

VDI Wissensforum service package: The conference package includes the conference documents (online), beverages during breaks, lunch and the get-together on June 11, 2024.

Conference attendance conditions and terms can be found on our website: www.vdi-wissensforum.de/en/terms-and-conditions/

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Registration

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Cyber Security for Vehicles

VDI Wissensforum GmbH | VDI-Platz 1 | 40468 Düsseldorf | Germany

Register online!
www.vdi-international.com/01KO907024

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Yes, I will participate as follows:

Participation Fee + VAT

☐ **VDI Conference 11.-12.06.2024** (01KO907024) **€ 1990**

and/or

☐ **Workshop Capture the Flag 10.06.2024** (01ST945024) **€ 990**

and/or

Package Price (Please tick the boxes)
☐ (Conference + 1 Workshop) **€ 2830**

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