



PRACTICAL AUTOMOTIVE SECURITY TESTING

IT security analyses in the automotive field

HOW YOU CAN BENEFIT: AT A GLANCE

After the seminar, you will be able to ...

... carry out IT security analyses for electronic vehicle systems

... precisely track various kinds of security problems

... appropriately assess research results

This seminar will provide you with ...

... current and advanced analysis techniques such as binary analysis and side-channel attacks

... first-hand practical knowledge through training and demonstration of various research methods

The challenge: Testing the cyber-security of electronic control devices comprehensively and efficiently

Carrying out IT security analyses of vehicle systems poses completely new challenges for developers and testers. Unlike classic safety tests, security problems here are unexpected and hard to foresee. They are exploited by unpredictable and intelligent attackers. A systematic approach is necessary in order to obtain a comprehensive and meaningful assessment of IT security within a limited testing period.

But even experienced security experts from the IT field must be familiar with new methods and approaches to be able to carry out practical tests of vehicle electronics efficiently.

The solution: Methodical and technical know-how

In this seminar, you will learn how to efficiently track various types of security problems at conceptual and implementation levels. Up-to-date, field-tested research methods and procedures for analyzing vehicle electronics are clearly demonstrated in hands-on training.

These practical examples are selected such that they provide a comprehensive view of all the important aspects and concepts. The scope of topics ranges from the analysis of the circuit board to attacks on the level of semiconductors and buses, crypto chip security, CAN firewalls, UDS fuzzing, binary analysis, and the analysis of protocols for wireless interfaces.



INFORMATION OVERVIEW

Course: Practical Automotive Security Testing

Prerequisites: Good understanding of technical systems, ideally, in the field of vehicle electronics or embedded systems

Duration: 1.5 days in class

Number of participants: max. 16 people

Event location: Darmstadt or in-house on request

Cost: €900

Organized by:



Contents

- Analysis techniques with practical examples from the fields of application
 - PCB analysis
 - Cryptographic procedures and protocols
 - Fuzzing (CAN bus, UDS)
 - Wireless interfaces
 - Reading and analysis of firmware
 - Side-channel analysis
- Documentation and assessment of weaknesses
- Analysis at the concept and implementation level, effective approach to security analyses
- Special features of automotive tests

Learning objectives

In addition to an efficient, systematic approach from requirement analysis to final assessment, you will also learn the latest practical techniques for analyzing security-relevant software, hardware components and protocols in modern vehicles.

Target group

- Developers in the automotive industry who plan or execute IT security analyses
- Security experts from the IT field who carry out practical tests on vehicle electronics

OUR SPEAKERS

Jan Steffan

Christian Brandt

Dr. Andreas Follner

Norman Lahr

Dr. Roland Rieke

Cyber-Physical Systems Security specialists at the Fraunhofer Institute for Secure Information Technology (SIT)

The Cyber-Security Training Lab: Cyber-Security Training for the IT security experts of tomorrow

The Cyber-Security Training Lab is the result of a collaborative effort between Fraunhofer and a number of select technical colleges, transferring up-to-date knowledge of cyber-security as part of advanced training courses offered to companies. All over Germany, specialists and managers in industry and public administration receive compact qualifications in top labs with the latest IT infrastructure.

DO YOU STILL HAVE QUESTIONS ABOUT ...

... IT security analyses in the automotive industry?

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... registration, organization or information about other courses offered?

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