

Security Fundamentals for Embedded Systems - Face-to-Face Training

Objectives

You get familiar with structured and efficient Security by Design, learn how to identify potential security vulnerabilities in embedded systems and how to suitably assess and eliminate those vulnerabilities. This includes the most essential cryptographic processes and their application as well as specific hardware and software concepts. You know the details of ISO/SAE 21434 and can comply with the related requirements.

Your benefit:

Jump-start into the security topic with compact knowledge

Functional security (safety) context

Details on ISO/SAE 21434

Exercises covering the different phases of the security lifecycle

Training documentation on USB stick/ download as compendium

Participants

Hardware and software architects, hardware and software developers, test engineers, project managers, system engineers

Requirements

Experience with embedded systems as well as basic safety knowledge of are an advantage.

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Content

Threats and Attack Scenarios

- Security incidents
- Terms and definitions
- Vulnerability databases
- Impacts
- Classes of attackers
- Case study
- Defense in depth
- Security process/ mindset/ design
- Security development lifecycle (SDL)
- Threat models

Risks and Efforts

- Classic risk management
- Security risk management
- Threat analysis and risk assessment TARA
- IT security risk assessment
- Examples of TARA methods

Generic Application of Countermeasures

- Security attributes
- Cryptography (symmetric, asymmetric, hash, MAC, signatures)

- Example of memory encryption
- Security modules (SHE, HSM, TPM)
- CPU core security
- Secure software
- Security testing

Selected Vulnerabilities and Countermeasures

- Code injection
- Code reuse
- Countermeasures
- Boundary error vulnerabilities
- Side channel attacks
- Debug interface aspects

Norms and Standards

- References
- Extracts from IEC 62443

Security in Safety Context

- Differences and similarities
- Security in safety norms

Cybersecurity Engineering

- ISO/SAE 21434:2021
- Exercises: headlamp system

FACE-TO-FACE TRAINING

Date	Price *	Duration
02.09.2024 – 03.09.2024	1.500,00 €	2 days

* Price per attendee, in Euro plus VAT

Training code: E-SECFUSI

Face-To-Face - German

Date	Duration
02.09. – 03.09.2024	2 days

Live Online - German

Date	Duration
02.05. – 03.05.2024	2 days
27.01. – 28.01.2025	2 days

Coaching

Our coaching services offer a major advantage: our specialists introduce their expertise and experience directly in your solution process, thus contributing to the success of your projects.

We will be happy to provide you with further information or submit a quotation tailored to your requirements.