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Precisely Right.

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IT-Security for Railway Systems

TÜV Rheinland InterTraffic GmbH

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Digital Transformation

The increasing digitalization of the industry has arrived in the railway systems. Recent reports on potentially vulnerable, modern railway systems make one thing clear:

There is an urgent need to integrally consider the issue of IT Security in the safety management process.

The augmented use of commercial standard software called “Commercial Off-The-Shelf" (COTS) and the simplified accessibility to hacking tools have notably increased the risk of an attack.

Our Experience

We support our customers with our long-time experience in railway technology especially in the field of safety assessment, testing and certification of products and systems as an independent testing organization.

In addition, we can also resort to partnerships with other IT specialists at TÜV Rheinland in order to offer our customers the best possible service.

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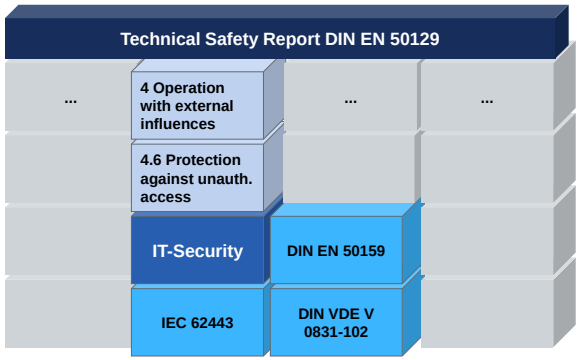
Our Methods

Together with our customers we first of all perform an inventory, in which we determine the level of development when it comes to IT Security. Here the focus is on resolving outstanding issues and the analysis of how IT Security is taken into account in the development or in operation.

As the project progresses, we focus on the current framework which was created with the publication of the pre-standard DIN VDE V 0831-104: 2015-10. This serves as an integrated guide for IT Security for electric railway signaling systems extending specific established safety management processes of EN 50129.



For this purpose, it is necessary to take an expanded view of the systems, subsystems and equipment, on the one hand to be able to analyse potential external attacks by extending the traditional risk- and hazard analysis methods and on the other hand to be able to formulate scaled IT Security requirements depending on the safety implications of the project, to subsequently select appropriate methods and techniques for risk mitigation.

Service Overview

Safety- and Risk Analysis

- System definition (Assets / Operational processes)
- Risk assessment
- Definition of IT-Security requirements

IT-Security Management

- Process definition, IT-Security plan and IT-Security concept assessment
- Requirements management, System validation
- Process monitoring, Definition of methods and tools
- Conformity assessment

IT-Security Engineering

- Implementation of processes, System verification
- Analyses, Implementation of methods and tools
- Demonstration
- System requirements engineering

IT-Security Validation

- Web-based testing
- Radio-based testing
- Physical testing, SW-Tests
- Monitoring and event logging

Furthermore we gladly support you in any other enquiries.