

Why this Training Course?

In modern railway engineering, a thorough understanding of the **CENELEC standards (EN 50126, EN 50716, EN 50129)** is the key to success. Given increasing system complexity and strict regulatory requirements, in-depth knowledge of **RAMSS** (Reliability, Availability, Maintainability, Safety, Security) is essential for implementing projects on time, in compliance with regulations, and safely.

Benefits for You

After this **3-day Intensive Training Course**, you will be able to:

- **Apply Standards Correctly:** You understand the structure and requirements of the European and national legal frameworks.
- **Manage Risks:** You can apply methods such as FMEA, HAZOP, and risk analyses to identify hazards.
- **Optimizing Development Processes:** You have a solid grasp of the specification, allocation, and traceability of safety requirements throughout the entire lifecycle.
- **Maintaining documentation:** You understand the differences between validation and verification, as well as how to create legally compliant safety case documentation.

Gain the expertise required for the certification of modern rail systems worldwide. Book now!



Overview of the Basic Content:

- **Motivation & Legal Framework:** Fundamentals of railway safety and standardization.
- **RAMSS Terminology:** Systematic introduction to terminology and key metrics.
- **Analysis Methods:** Practical application of failure and hazard analyses (including FMEA exercise).
- **Risk Assessment:** From hazard identification to risk acceptance (including HAZOP exercise).
- **Requirements Management:** Defining and assigning functional and technical safety requirements.
- **Design & Implementation:** Focus on roles, documentation structure, design of safety measures, and testing.
- **Validation & Acceptance:** Strategies for validation and review processes.
- **Operation & Maintenance:** Maintaining security during ongoing operations.



Eckdaten & Organisation



Duration: 3 days (in-person or hybrid options available)

Language: German or English

Methodology: Theoretical modules combined with practical exercises (e.g., HAZOP, FMEA, System Validation)

Prerequisites: None

Target audience: All roles involved in safety-related or non-safety-related projects

Trainer: Dr. Hansjörg Manz, expert in railway safety & RAMS management