



Choose certainty.
Add value.

Generic safety system services

Test and certify your systems to functional safety standards



Your challenges

The hardware and software systems used for safety in the rail sector are becoming increasingly complex. With components now being sourced from multiple markets and development lifecycles being compressed, your company must have a strategy for dealing with safety risks.

What is functional safety?

Functional safety is the part of the overall safety of a system that depends on the system or equipment operating correctly in response to its inputs. This includes the safe management of likely operator errors, environmental changes, and hardware and software failures. Functional safety is an additional step beyond the traditional product safety assessment, as it deals with complex and interconnected technologies.

Why is functional safety important?

Companies operating in the rail sector are responsible for reducing safety risks to an acceptable level, including hazards caused by malfunctions of complex systems. Functional safety failures can result in serious liability claims. IEC 61508 is the standard governing functional safety worldwide, and the EN 5012X series derived from IEC 61508 applies to the railway sector.

How can we help you?

TÜV SÜD offers extensive rail sector expertise and experience in functional safety issues. Our extensive suite of in-house services includes independent safety assessment, certification, knowledge services and training. We can serve as a testing and certification partner to help your company achieve compliance at an acceptable cost.



Our functional safety services

We offer a complete portfolio of services for manufacturers of safety systems in the rail sector, including functional safety services.

- **Independent safety assessment**
TÜV SÜD provides independent safety assessments throughout the development lifecycle. We conduct assessments through a combination of on-site inspection and documentation review, resulting in an independent safety assessment report.
- **Certification**
Our experts can certify your product in accordance with IEC 61508 and all relevant sector-specific safety standards, such as the EN 5012X series.
- **Knowledge services**
We provide knowledge services throughout your development lifecycle to help you design safer products. These services include concept analyses, verification of development documentation, qualitative and quantitative analyses, validation of generic products and applications, software development processes, and software analyses.
- **Training**
TÜV SÜD conducts training programmes for your development teams on functional safety in general and railway functional safety in particular. Topics include IEC 61508 and EN 5012X series or the equivalent IEC standards. We can also customise in-house training to suit your unique needs.

Your business benefits

- **Enhance product marketability** – with certificates from a trusted third-party testing organisation, which will increase the acceptance of your products.

- **Save time and money** – through our experience in functional safety and compliance strategy. This will help you swiftly meet safety requirements, while avoiding costly rework of test specifications.
- **Minimise risk** – of time-consuming delays and rework, especially at the later stages of a project.
- **Take advantage of reliable expertise** – by outsourcing non-core activities to a trustworthy partner so that you can focus on your daily business.

Why choose TÜV SÜD?

We possess nearly 50 years of experience in the rail sector, and a sterling track record in generic safety system services. The knowledge, capabilities and network we have gained and developed in this time enable us to provide complete one-stop support for rail functional safety issues.

TÜV SÜD's experts are recognised by European and international authorities. In addition, many are EBA (Federal German Railway Authority)-recognised assessors for rolling stock. Through our affiliated company, Railcert, a Notified Body, and our association with the German Notified Body (EISENBAHN-CERT), we are able to provide comprehensive solutions for rail system interoperability in accordance with EU directives. Furthermore, through our close collaboration with numerous authorities and our involvement in national and international boards, our experts are up to date with the latest regulatory requirements. We are also accredited as a test lab according to DIN EN ISO/IEC 17025.

Choose certainty. Add value.

TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training and knowledge services. Represented in over 800 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East and Asia. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

Related services

TÜV SÜD provides the following related services:

- Approval management
- Complete system services
- Training for the rail sector