



Choose certainty.
Add value.

Put safety at the heart of your rail operations

Railway solutions that ensure
reliability, availability and safety



TÜV SÜD – a driving force in rail transport

Moving people and goods to where they need to go puts the rail industry at the heart of the global economy. Its viability hinges on four critical factors: reliability, availability, maintainability and safety. TÜV SÜD Rail recognises the importance of these factors for a safe, efficient and effective rail transport system. We offer manufacturers, operators and authorities a complete range of services throughout the entire lifecycle. From planning through to engineering, installation, testing, commissioning, operation and decommissioning, TÜV SÜD Rail ensures increased safety, efficiency and added economic value.

Reliable and safe infrastructure and train operation are the foundation of any railway system, with design, construction and operation underpinning optimal performance and reliability.

Your connection for safety, reliability and efficiency

We can provide you with complete solutions for all your rail needs

With ever-increasing demand for passenger and cargo transport as a result of congestion and environmental concerns, significant investment is being made globally to upgrade, expand and initiate railway networks during the next few years. Rail authorities and operators are playing an increasingly vital role in an economy that is becoming progressively globalised. There is a need to solve substantial industry issues such as capacity and congestion, operational efficiency and reliability, structural and competition issues, and safety and security. Train operating companies and infrastructure managers are also working hard to improve their cost position, looking for ways to reduce the cost of both investments and operations, whilst still providing a reliable, safe and efficient service.

TÜV SÜD provides rail clients a complete portfolio of consulting, engineering, testing, certification and training services to meet these challenges. Our competencies in the conventional and high speed as well as metro and light rail area are backed by our years of experience, collaboration and association with rail stakeholders worldwide, proprietary engineering tools, multidisciplinary experts, and operation of our own rail testing facilities.

We support our clients to achieve tangible benefits such as minimising risk of costly recalls, reworks or project delays and increasing project or operational efficiency with our seamless multidisciplinary solutions throughout the project lifecycle.

OUR ACCREDITATIONS

- Testing centre for railway vehicles: 17025 / DAkkS
- Inspection centre: 17020 / DAkkS
- Testing laboratory for safety components: 17025 / ZLS
- Notified Body: Railcert B.V
- Associated partner of EISENBAHN-CERT (EBC)
- German Federal Railway Authority (EBA)
- Department of the Federal States: Bavaria & Saxony (NE railways, BOStrab)

A complete platform of end-to-end solutions

TÜV SÜD possesses 50 years of experience in delivering safe, reliable and available railway systems and processes. Over the years, our team of experts has worked on many significant projects across all rail sectors including conventional, high speed, metro and light rail systems. Leveraging this experience, we are able to provide expert advice, assess complete railway systems and act as overall assessor on behalf of railway authorities, managing all the safety-related interfaces between the different subsystems. Our capabilities in the various disciplines include:

ENGINEERING SERVICES
 CONSULTING SERVICES
 TESTING SERVICES
 ISA & CERTIFICATION SERVICES
 TRAINING SERVICES

INFRASTRUCTURE

- Understructure
- Superstructure
- Civil works & tunnels

ELECTRICAL AND MECHANICAL (E&M) SYSTEMS

- Signalling & telecom
- Power supply
- Catenary

ROLLING STOCK

- High speed
- Conventional rail
- Light rail/Metro

GENERIC SAFETY SYSTEMS

- Programmable electronics
- Safety components
- Rail automation

OVERALL SERVICES

Our overall services are offered for each of the subsystems including complete railway systems. This includes training (in-house training of regulations, standards and operational rules), project management, system integration, management system certification (IRIS, ISO 9001 and ISO 14000), damage and cause analyses, RAMS and CSM analyses, safety management, and approval management.

INFRASTRUCTURE



Testing services

- Testing of track components (e.g. sleeper, rail, fastening, track lubrication system, track fencing)

ISA and certification services

- Assessment of infrastructure (understructure, superstructure, civil works, energy, interface rolling stock / track components and interface rolling stock / catenary)
- Certification of track components and measurement cars
- Assessment of fire protection systems (e.g. railway stations, tunnels, etc.)

ELECTRICAL AND MECHANICAL (E&M) SYSTEMS



Engineering services

- Preliminary design and execution design, evaluation and preparation of inventory documents
- Preparation of installation plans

Consulting services

- Studies and concepts, benchmarking, traffic simulations
- Preparation of tenders, specifications, operational concepts and rules
- Interface management

Testing services

- Verification and validation of generic products and applications
- ERTMS system integration

ISA and certification services

- Assessment of evidence of safety, function and security
- Plan verification and acceptance tests
- Product and system certification

ROLLING STOCK



Consulting services

- Preparation of tender documents and technical specifications
- Technical documentation
- Optimisation of maintenance procedures

Testing services

- Technical running, brake, derailment, functional and strength tests
- Crash tests on complete vehicles or components
- Rail impact test for tank containers
- Testing buffers, automatic couplings and drawgear
- Fire protection
- Pantograph

ISA and certification services

- Certification of vehicles and components (incl. TCMS)
- Assessment of personal protection safety concepts
- Certification of maintenance procedures and workshops (ECM)

GENERIC SAFETY SYSTEMS



Training and consulting services

- Support for the implementation of functional safety requirements
- Training courses (EN 5012x / IEC 61508)

Testing services

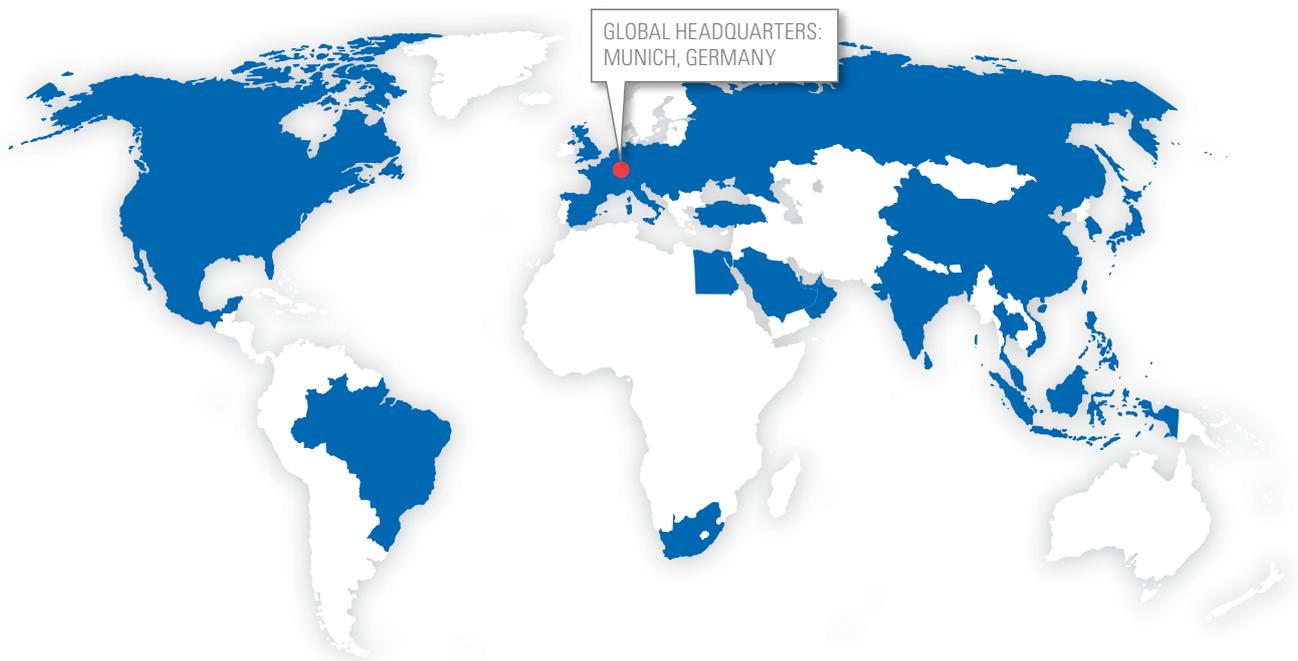
- System and software analyses
- Environmental simulation and electromagnetic compatibility test
- Electrical safety and optical test
- Hardware analysis / probabilistic methods

ISA and certification services

- Certification of electronic systems according to functional safety standards
- EC Type examination and certification for safety devices according to the Machinery Directive
- Certification of applications and company functional safety management

Engineered for success

TÜV SÜD's global rail network



AMERICAS	EUROPE			ASIA
BRAZIL, SÃO PAULO USA, PEABODY	AUSTRIA, GRAZ AUSTRIA, VIENNA GERMANY, BERLIN GERMANY, BRAUNSCHWEIG GERMANY, DELITZSCH GERMANY, DRESDEN	GERMANY, DUISBURG GERMANY, ERFURT GERMANY, GÖRLITZ GERMANY, HAMBURG GERMANY, KIRCHMÖSER GERMANY, MUNICH	GERMANY, SCHWERIN ITALY, TURIN NETHERLANDS, UTRECHT SWITZERLAND, ZURICH UK, FAREHAM	CHINA, BEIJING CHINA, HONG KONG CHINA, SHANGHAI INDIA, NEW DELHI JAPAN, OSAKA JAPAN, TOKYO KOREA, SEOUL SINGAPORE, SINGAPORE TURKEY, ANKARA UNITED ARAB EMIRATES, DUBAI

Why choose TÜV SÜD?

Multidisciplinary expertise

Our 300 multidisciplinary rail experts understand the complexities and interlinking nature of the various rail tasks. We offer you world-class insights and practical advice based on best practices and foresight knowledge.

Independent and impartial

Our structure enables us to focus on enhancing the value we bring to you. We reinvest our profits back into the company to ensure continual development and optimisation of expertise and resources.

Recognised experts

We are recognised worldwide as railway safety assessors and expert advisers by railways, and European and international authorities including German Federal Railway Authority (EBA).

Full-service partner

We offer a comprehensive range of consulting, engineering, testing, certification and training services from the planning stage right through to operation, all from a single source.

In-market expertise and support

We have more than 17,000 employees across 800 locations and a network of international and local experts in all key markets worldwide. Our global presence is backed by our years of experience, network of partners, proprietary tools and operation of our own rail testing facilities that cover an area of approximately 30,000 square metres.

Proven track record

Drawing on more than 145 years of experience, our solutions are backed by best practice case scenarios, making us a holistic service provider and a project implementation expert.



Your business benefits

Save time and money – Our dedicated team of experts are committed to increasing safety and adding tangible economic value to your operations by supporting the entire product lifecycle, from the initial planning through engineering to operation and maintenance.

Minimise risk – Our holistic approach covers the whole railway system, ensuring a safe integration of the entire rail system, including all relevant interfaces, to its operational environment.

Competitive edge – We provide insight and foresight about national and international standard developments through our experts' participation in standardisation committees.

Complete solutions – We offer a comprehensive range of services from the planning stage right through to the final safety assessment.

Expert partnership – Our experts are recognised by a number of different national and international authorities including more than 300 dedicated engineers with international accreditations.

Global support – We operate a reliable network of international and local experts in all key markets worldwide, providing you with global knowledge of processes and procedures in the rail sector.

Transparency – Our unique proactive and pragmatic approach ensures your cost-efficient compliance to all necessary international and national standards.



Contact us to find out how we deliver value across the entire project lifecycle

www.tuv-sud.com/rail

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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.

Our global offices

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