

# Train control and signalling technology



In addition to the various country-specific applications of train control and signalling technology, there is ongoing work in Europe toward an interoperable cross-border railway system.

For the implementation of this interoperable train control system, European Train Control System (ETCS), a.o. the technical specifications applicable in Europe for the category of train control, train protection and signalling (TSI ZZS) must be used.

One of the focal points of TÜV NORD activities is to examine and check the implementation of these European regulations for the operation of an interoperably functioning ETCS.

NoBo, DeBo, AsBo - from a single source!

Whether vehicles or lines, PZB/LZB or ETCS, or other national train control systems, relay signal boxes or ESTW - we are always the right partner for the success of your projects!

Apart from component and system inspections, the inspections in the CCS category also include plan and execution inspections as well as monitoring on-site. Moreover, TÜV NORD inspects complete on-board and trackside installations in train control, train protection and signalling.

In addition to the personal recognitions of TÜV NORD experts, TÜV NORD also has an inspection body for railway technology accredited by DAkkS and is a Notified Body (NoBo).

Whether you require a European approval for your vehicle, a national approval for a train control system or an expert appraisal for the "Landeseisenbahnaufsicht" (state railroad oversight agency), our experts are always the right contact for you.

**TÜV NORD - Making our world safer.**

## Our services

### Signalling infrastructure

- Examination of migration concepts
- Evaluation of hazard and risk analyses, safety cases
- Appraisal of safety and function cases for generic products as well as for specific applications (EN 5012x, EN 50159)
- Acceptance inspections, compliance checking
- Verification of planning documents and acceptance inspections by other agencies
- Expert reports in connection with the new type approval procedure (NTZ)
- Product and system certification
- EC conformity assessments
- Consultation for the protection of critical infrastructure

### On-board train control systems

- Evaluation of hazard and risk analyses, safety cases
- Appraisal of safety and function cases for generic products as well as for specific applications (EN 5012x, EN 50159)
- Product and system certification
- EC conformity assessments

### Training Courses

- Basics Training ETCS
- Advanced training courses on the subjects:
  - On-board integration of ETCS
  - Implementation/parameterisation of ETCS lines
  - Maintenance of ETCS vehicle components
  - Inspection of ETCS line components
- Hardware development according to EN 50129
- Software development according to EN 50128
- Verification management according to EN 5012x
- Security in railway applications EN 50159 and IEC 62443

### The benefit to you:

- Protection of persons and the environment
- Expert reports recognised by the authorities
- Planning certainty
- Specialist competence of a single-source provider across all systems
- Independent inspection services based on the up to date status of national and international requirements

### Our competence:

- Independence and neutrality
- Specialist independent experts with long-standing experience
- Assessors with EBA-recognition
- Accredited inspection body according to DIN EN ISO/IEC 17020 (DAkKS)
- Notified Body (NoBo)
- Designated Body (DeBo)
- Assessment Body (AsBo)
- Partner of country and municipal authorities (Landeseisenbahnaufsicht (LfB, TAB))
- Associated partner of the German notified body

We look forward to sharing our expertise with you.  
Why not contact us.

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