



RAIL SYSTEM SERVICES

Move Forward with Confidence



**BUREAU
VERITAS**



For technical and/or safety evaluation of railway systems

Your stakes

As each railway construction develops through a consortium of project actors such as the Transport Authority or Project Management (EPC, constructor, etc.), you must ensure and monitor system performance, sub-systems and other railway components as well as verify compliance with regulatory standards, norms or technical specifications. Request collaboration with an experienced technical assistance company like Bureau Veritas.

Why choose Bureau Veritas?

- Bureau Veritas is your partner throughout each phase of your project: from feasibility studies to service operations and for all kinds of rail systems (rolling stock, track, signals), infrastructures (bridges, tunnels, stations, etc.) and HSE hazards.
- Bureau Veritas has European technical expertise such as EC accreditations and is a notified body.
- A worldwide network with a strong presence in Europe, China, India and the Middle East region.

Our references

High Speed Lines Interoperability-TSI compliance

- Czech Republic: Berlin/Prague/Vienna High Speed Line, Rolling Stock TSI
- Italy: Roma Napoli & Milano Bologna High Speed Line, Control-Command Signalling TSI
- Saudi Arabia: High Speed Rolling Stock TSI for High Speed Line between Medina and Mekkah

EOQA/ISA safety assessment

- France: RATP, Paris metro lines 1 and 4 global and signalling systems
- France: Reims, Lyon and Toulouse tramways global and signalling systems

Independent Safety Assessment - ISA

- Singapore NEL signalling system
- Athens metro rolling stock
- China: NINBO Line 1 signalling system
- China: Wuhan Lines 2 and 4 signalling systems

SIL 2 & SIL 4 certification

- Alstom: Train Control and Monitoring System
- Alstom: Multi platform core software Opera
- Ansaldo-STIS: PAI-NG generic product
- Bombardier: Train control network for Regio-2N trains

Freight wagons conformity assessment

- TSI and client conformity assessment of wagons
- Certification of entity in charge of maintenance of ERMEWA, ATIR-Rail, NACCO, GE Rail, and many others
- Noise test realisation

Inspection & Technical Control

- Spain: Madrid metro
- South Korea: High Speed rolling stock
- Greece: Athens metro rolling stock

Technical Assistance

- Italy: RAM analysis of power supply subsystem for High Speed Lines Milan- Bologna and Bologna-Florence

Our accreditations

Notified body for:

- Interoperability of the European Railway System (2008/57/EC)
- Community's Railway Safety (2004/49/EC)
- Recognized by National Safety Authority as railway and urban systems safety assessor

Accredited Body for:

- Equipment Technical Inspection (EN17020)
- Electrical Equipment Certification (EN45011)

Applying:

- Railway RAMS* Applications (EN 50126)
- Railway Control and Protection System (EN 50128)
- Railway Safety Related Electronic System for Signalling (EN 50129)

**Reliability, Availability, Maintainability and Safety*

Our services

Thanks to a strong European experience as well as notifications and accreditations, Bureau Veritas assesses and certifies safety and interoperability for rail systems worldwide. Bureau Veritas performs subsystem assessments and interoperability parts for the following domains:

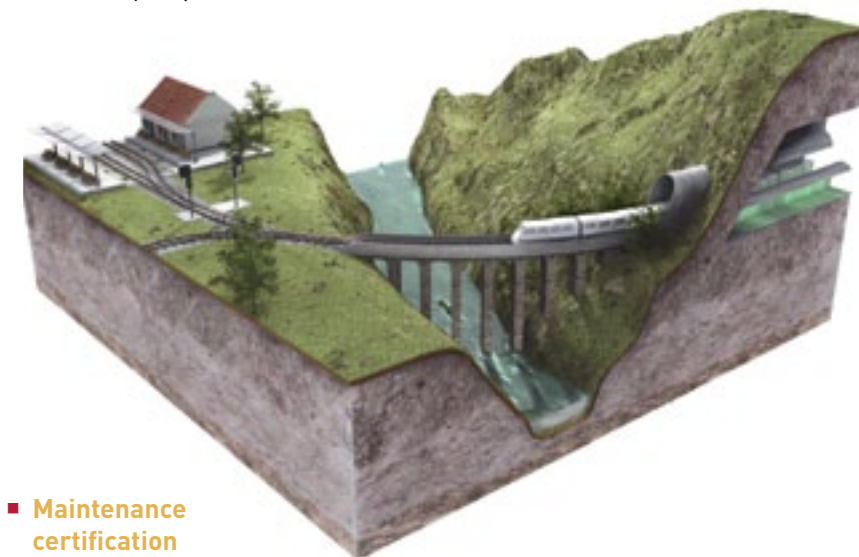
- Rolling stock (High Speed and conventional rail system), including freight wagons
- Energy
- Control command and signalling
- Infrastructure (bridges, tunnels, safety in tunnels)
- Maintenance
- Noise, operation and traffic management, reduced mobility people

- **ICE – Independent Checking Engineer** to assess the conformity of projects, systems and sub-systems against specifications or standards and to propose solutions in cases of non-conformity

- **Interoperability Notified Body (TSI compliance)** of a rail system or sub-system and suitability for use of interoperability constituents

- **ISA - Independent Safety Assessor** for safety assessments of railway systems, signalling systems or products (hardware and/or software/SIL)

- **Product or system evaluation and certification** from a Notified (European directives and standards) and Designated Body (national standards)



- **Maintenance certification and auditing**

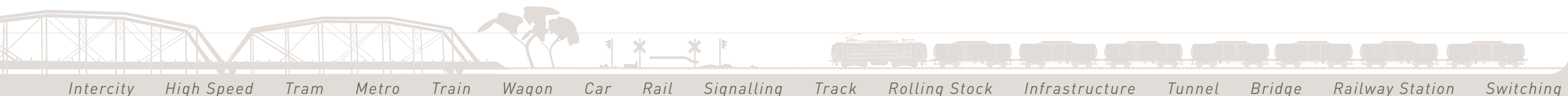
- **IRIS – Quality management system certification**



Bureau Veritas also delivers services for railway infrastructures
Ask for our leaflet

- **Infrastructure project management assistance:** design review, technical control, etc.

- **Technical & Safety assistance** or assessment/certification for bids and projects : Design review, process auditing, **RAMS studies & surveys**, manufacturing and test inspections and maintenance plans



Bureau Veritas your compliance and performance partner

Established in 1828, Bureau Veritas is a professional services company whose overriding aim is to provide its clients with all the necessary services required to achieve, maintain and demonstrate compliance with their Quality, Health & Safety, Environment and Social Accountability (QHSE/SA) obligations. At the heart of our services, you will find an underlying law, regulation, standard, elected specification, or similar criteria driving a client requirement.

Our services are then designed to respond to these requirements by either advising clients of their risks and most appropriate course of action (consulting), assessing and monitoring the status of physical assets (inspection and testing services) or assessing the effectiveness of management systems (assurance/audit and certification services).

Bureau Veritas is a listed company with a network of 930 offices and 48,000 employees in more than 140 countries. As such, it is uniquely placed to provide you with a coordinated global service to support a specific business requirement.



Americas

- 200 offices
- 100 laboratories
- 10,800 employees
- 30 countries



Europe, Middle East & Africa

- 520 offices
- 120 laboratories
- 20,500 employees
- 88 countries



Asia-Pacific

- 210 offices
- 110 laboratories
- 16,700 employees
- 22 countries



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