FOCUSED

ON

YOUR

CRITICAL

SYSTEMS

SOLUTIONS FOR THE RAILWAY INDUSTRY

spherea.com

SPHEREA

SPHEREA, PROVIDER OF SOLUTIONS FOR CRITICAL SYSTEMS

Today, the railway industry faces the same issues experienced by the aeronautics industry in recent years with increasingly complex systems relying on smart sensors/actuators, compressed development and production schedules or strict safety and security regulations (IEC61508).

The railway industry has also to adapt to the digitalization of the sector.

Finally the traffic growth due to increasing urbanization leads to changes in mobility trends.

With 50 years of expertise in critical systems for the aeronautics industry, SPHEREA has developed a series of solutions adapted to the railway sector's specific needs.

- Integration benches
- Embedded test equipment
- Maintenance systems
- Life extension and full obsolescence management
- From data gathering to supervision systems: a comprehensive digital offer

Digital solutions for rail industry 4.0

- Simulation framework, virtual testing thanks to the U-TEST simulation and real-time testing environment;
- Predictive maintenance through big data analysis;
- Augmented reality for training and maintenance tasks.

Certification bench dedicated to the ERTMS equipment

SPHEREA has developed jointly with the SNCF Rolling Stock Engineering Center and CERTIFER Laboratory a certification bench that is used to qualify the two following pieces of equipment:

- EVC (European Vital Computer);
- ATESS (Security events recorder).

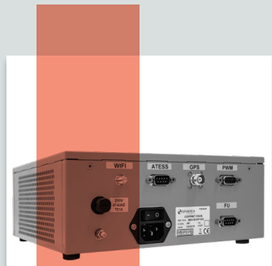
In compliance with the ERA Subset-94 and ERA Subset-76 standards.

Our customers

ALSTOM · BOMBARDIER the evolution of mobility · RATP · Keolis · MEL MÉTROPOLE EUROPÉENNE DE LILLE · SNCF

SPHEREA's know-how to optimize the Life Cycle Cost (LCC) of rolling stock

- Safety and testability management to improve the Reliability, Availability, Maintainability and Safety (RAMS) of rolling stock.
- Test benches for integration activities:
  LABORAME integration benches relying on SPHEREA's U-TEST environment for Citadis XO5 tramway cars.
- Embedded test equipment:
  Embedded supervisory system for speed control during test campaigns.
- High-rate manufacturing test means for embedded equipment:
  ATEC Dyna Series test bench.
- Maintenance platform for availability of rolling stock at the highest level:
  Dynamic test bench solution for subway maintenance.
- Life extension:
  TMA (Tierce Maintenance Applicative) test benches;
  Life extension management plan for embedded equipment;
  PCB (Printed Circuit Boards) cloning.
- Power electronics and cable testers:
  Power electronics and converters dedicated to the railway industry;
  Means to simulate and test the whole drivetrain from the electric grid to the engine;
  Cable testers perfectly suited to the railway industry.



Dynamic test bench solution for subway maintenance

SPHEREA has developed a solution enabling track tests to be replaced with a dynamic test bench that takes up a limited amount of space in the workshop.

MAIN TECHNICAL CARACTERISTICS:

Mechanical simulation of the train's movements;

A control station steers the train during testing and simulates the whole track environment (beacons, virtual stations, false alarms and other trains)

A complete electrical infrastructure powers the train and equipment.

BENEFITS

- Compact footprint enabling real estate and infrastructure savings;
- Indoor solution optimized for smarter cities through reduced noise & pollution;
- Significant acquisition and cost of ownership benefits compared to conventional testing;
- Provide train availability, reduce need for spares through 24/7 full testing capabilities;
- Extreme cost savings for maintenance and operation.