SMART MAINTENANCE

MEMBER OF
BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

CONDITION-BASED MAINTENANCE OF VEHICLE AND INFRASTRUCTURE

Maintenance-related costs account for a very significant amount of the Life Cycle Cost of railway systems. Optimization of maintenance activities (planning, costs, safety, availability) needs reliable software tools that support decision making based on reliable predictions of the degradation of assets.

AD-HOC SOLUTIONS

Life Cycle Cost calculation, optimization algorithms (costs, operations planning, etc.), risk and safety analysis, software tools to support decision making, formalization of maintenance procedures, predictive analysis of the condition of assets with both data-driven and physical-modeling-driven approaches. We also offer consultancy services.

- Maintenance & operations strategy:
  - Formalization of maintenance procedures.
  - Analysis of the impact of the maintenance strategy on operation costs, amortization of the infrastructure, risk of potential hazards, service availability and network capacity.
- Forensic analysis of the causes of component failure, e.g. weld and rail cracks (RCF), track geometry, etc.
- Impact of new vehicles and/or operations on infrastructure damage and aging (e.g. corrugation, excessive wear, etc.).
- Auscultation data reconciliation and analysis.

KNOWLEDGE AND EXPERTISE

Vehicle & infrastructure health assessment
- Condition-Based Maintenance.
- Predictive Maintenance by physical modeling.
- Prescriptive Maintenance using formal procedures.

On-board electronics
- Wireless sensor networks.
- Signal processing and algorithms.
- Real-time high-accuracy positioning.
- Communications.
- Energy supply.

Back-office
- Data analysis and visualization.
- Complex data handling and simulation.
- Interfaces with other IT systems.
- User interfaces (web, tablet).

PARTNERS & CUSTOMERS

FGC Ferrocarrils · NetworkRail · VIAS · telice TECNOLOGÍA SOBRE EL TERRENO · ÖBB · adif · Inycom · MainRail

PROJECTS

eaTS · TREND · ECUC www.ecuc-project.eu · Roll2Rail · ERSAT · SIA SYSTEM FOR VEHICLE-INFRASTRUCTURE INTERACTION ASSETS HEALTH STATUS MONITORING · Shift2Rail · X2RAIL 1 · X2RAIL 2 · FR8RAIL · fr8hub

ceit
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

Paseo Manuel Lardizábal, 15
20018 Donostia-San Sebastián · Spain
+34 943 212 800

Parque Tecnológico de San Sebastián
Paseo Mikeletegi, 48
20009 Donostia-San Sebastián · Spain
+34 943 212 800

www.ceit.es/railway
ceitrailway@ceit.es