EKE

Train Modernisation and Refurbishment

Smarter trains. Better future.

TRAIN MODERNISATION AND REFURBISHMENT

CHOOSE EKE-TRAINNET® FOR A SMARTER, SAFER, AND MORE RELIABLE UPGRADE. SEAMLESSLY INTEGRATE NEW TECHNOLOGIES WITH EXISTING SYSTEMS USING ITS OPEN, MODULAR DESIGN.

WHAT IS TRAIN MODERNISATION OR REFURBISHMENT?

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Train modernisation or refurbishment upgrades trains to improve performance, safety, comfort, and efficiency. It integrates new technologies, and implements advanced safety features. This extends train lifespan, reduces costs, and ensures compliance with current standards, enhancing the experience for passengers and operators.

WHY CHOOSE EKE?

With nearly 40 years of expertise in train automation, system integration, and onboard communications, EKE has modernised/refurbished over 1,200 coaches across multiple countries, earning the trust and loyalty of our returning customers.

01

OPEN ARCHITECTURE

The open architecture of the Train Control and Management System offers flexibility and interoperability, integrating technologies from different partners. This is crucial for modernising/refurbishing trains with both legacy and modern systems. It adapts to various requirements and configurations, minimising integration challenges. This facilitates smoother project implementation.

02

MODERNISATION/ REFURBISMENT PRE-STUDY

Many customers struggle to understand existing systems, complicating fleet modernisation/refurbishment decisions. EKE mitigates this with a mandatory pre-study; a crucial step to providing reasonably priced proposals. Our TCMS engineering ensures compatibility between old and new components, reducing costs by retaining well-functioning parts and avoiding complete replacements.

03

RANGE OF PRODUCTS AND SOLUTIONS

EKE-Trainnet®'s products enhance train capabilities and safety. This reduces maintenance costs and improves passenger and crew safety. Upgrading during modernisation/ refurbishment is cost-efficient, replacing outdated systems. This ensures compliance with modern SIL 2 safety levels. It also mitigates risks associated with aging systems.

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WHAT DO WE OFFER?

EKE-Trainnet® integrates all train communication and safety systems, crucial for complex modernisation and refurbishment projects with many subsystems. Explore our wide range of EKE-Trainnet® products for your project needs.

TRAIN CONTROL AND MANAGEMENT SYSTEM

Modular EKE-Trainnet® TCMS platform
Modular EKE-Trainnet® TCMS platform, including platform software, our CODESYS® powered software development environment and a minimum of 20 years lifecycle support. Systems include:

- TCN Gateways: WTB, MVB, CAN Ethernet, serial links and Safety gateways.
- Vehicle Control Units
- Remote I/O Systems
- Event Recorders

SIL SAFETY APPLICATIONS

In-house competencies to develop a range of safety applications up to SIL 2
At EKE-Electronics, we excel in developing SIL 2 systems across diverse safety functions, following strict standards (EN50126/50716 (previously EN 50128)/50129). With our proven track record and rigorous practices, we deliver unmatched reliability in safety-critical solutions. Examples of applications developed include:

- Automatic selective door operation
- Hot axle box detection
- Lateral acceleration monitoring
- Vigilance control system
- Examples of other applications developed: Fire detection sub-system monitoring, brake pipe pressure monitoring, train speed and distance monitoring, supervision of traction enabling, supervision of passenger alarm activation

BUILD YOUR OWN APPLICATIONS

Powered by CODESYS®
Our software development environment fully supports CODESYS®, the industry-leading manufacturer-independent IEC 61131-3 (PLC) automation suite. With this integration, you can effortlessly create, analyse, simulate, and commission applications, ensuring maximum efficiency and reliability throughout your automation projects. Streamline your development process, allowing you to focus on innovation and achieving your automation goals.

Independent implementation available
EKE-Electronics offers a flexible TCMS development platform that supports both in-house and supported approaches. We can train your engineers to build and manage software applications independently or deliver a complete, ready-to-use solution. With powerful tools for custom application design and seamless third-party integration, you retain full control over your train control systems.
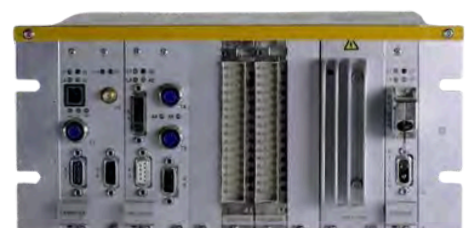
MAKE OR BUY?

We offer a flexible business model tailored to each customer's unique capabilities and resources. Our solutions provide the optimal balance of support and independence for train modernisation and refurbishment projects.

1. **TCMS PRODUCTS**
2. **SAFETY PRODUCTS**
3. **TCMS PLATFORM PROJECTS**
4. **TCMS TURNKEY PROJECTS**
5. **SOLUTION PROJECTS**

Train Control and Management Systems

SIL Safety Applications

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CONTACT US

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