THE SPECIALIST FOR TRAIN AUTOMATION

APPLICATIONS

New Vehicles | Modernization | Subsystems
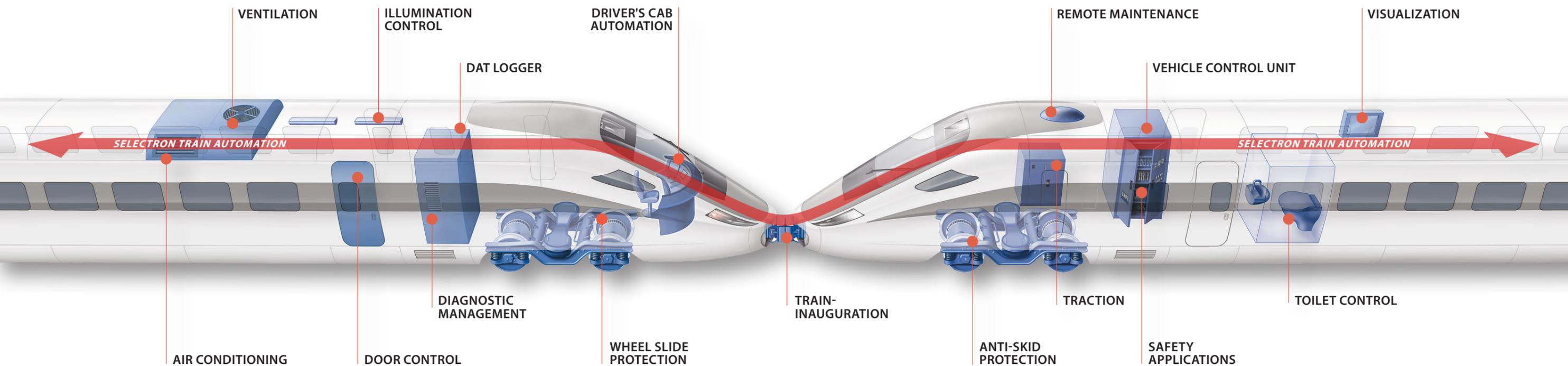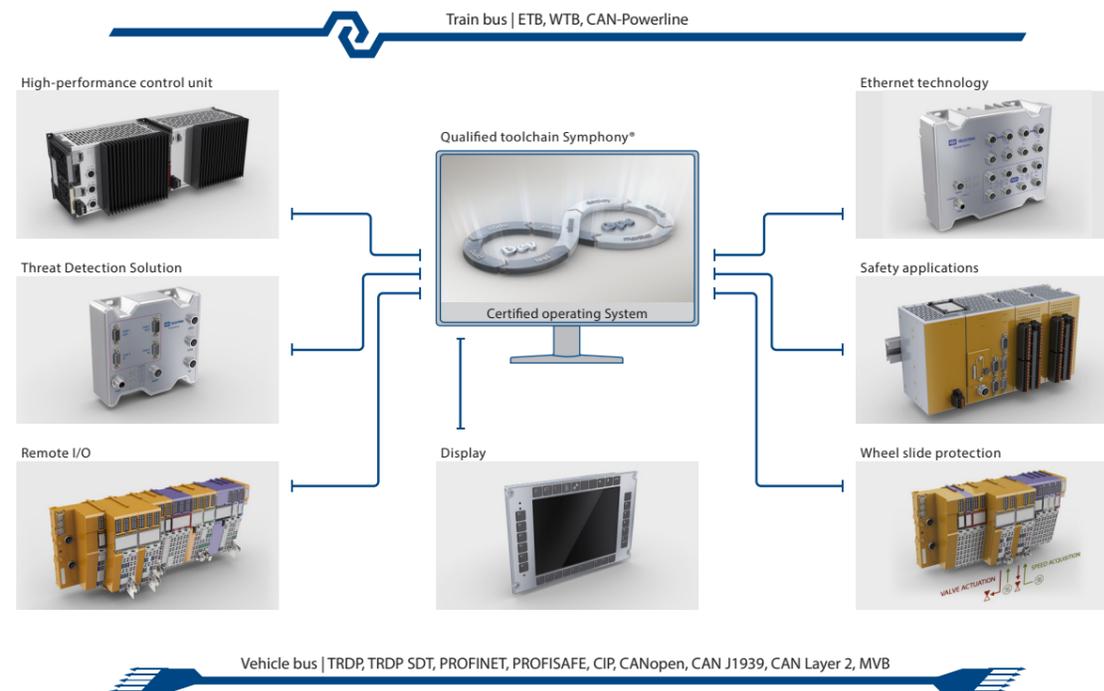
SELECTRON

VARIABLE AND FLEXIBLE SOLUTIONS

- More than 60 years of experience in electronics and programming for industry
- Since 2001, focused solely on the railway vehicle market
- More than 150 employees, about 80% of whom are engineers and technicians
- Solutions in line with the latest international standards
- Optimized systems facilitate vehicle homologation and maintenance
- Processes are IRIS and SIL-certified
- 100% of all products undergo a function and load test ("burn-in") prior to delivery
- 20% of sales are invested in research and development
- Efficient support for our customers
- Independent of machine manufacturers and system integrators
- International workforce with global communication in almost all languages

VENTILATION ILLUMINATION CONTROL DRIVER'S CAB AUTOMATION REMOTE MAINTENANCE VISUALIZATION

DAT LOGGER VEHICLE CONTROL UNIT

SELECTRON TRAIN AUTOMATION SELECTRON TRAIN AUTOMATION

DIAGNOSTIC MANAGEMENT TRAIN-INAUGURATION TRACTION TOILET CONTROL

AIR CONDITIONING DOOR CONTROL WHEEL SLIDE PROTECTION ANTI-SKID PROTECTION SAFETY APPLICATIONS

| SPECIFICATION | ENGINEERING | COMPONENTS ▶ SYSTEM INTEGRATION TOOLING ▶ | COMMISSIONING | SERVICE |

EXCELLENCE IN TRAIN AUTOMATION
Our customer-oriented alignment means we can offer you optimum support in each project phase.

CONSISTENT
AND USER-FRIENDLY SYSTEM

Cyber Security & Safety

Train bus | ETB, WTB, CAN-Powerline

High-performance control unit

Threat Detection Solution

Remote I/O

Qualified toolchain Symphony®

Certified operating System

Display

Ethernet technology

Safety applications

Wheel slide protection

Vehicle bus | TRDP, TRDP SDT, PROFINET, PROFISAFE, CIP, CANopen, CAN J1939, CAN Layer 2, MVB

HARDWARE

As specialists in control, network, and communication technology, we offer TCMS system solutions for automation in rail vehicles. Our key areas of focus are systems, components, and applications according to safety standards.
Our range of services include programmable controllers, such as vehicle control units, driver's cab displays, remote I/Os, and wireless technologies. Plus, communication networks according to network standards like Ethernet, CAN, CANopen, and WTB/MVB for the train control (TCMS).

In spite of their compact size, the **Selectron MAS*** and Smartio® module families deliver high performance and speed, with the flexibility you have come to expect from us.
All modules support the EN 50155 standard demanded for rail vehicles, i.e. they are resistant to harsh ambient conditions.
We can also demonstrate very high levels of availability as a result of many years of experience and practical operation.
Our guaranteed long-term availability is another advantage.
This is ensured by our consistent processes from development through to logistics and service.

* Modular Automation System

SOFTWARE

Symphony®
The name Symphony® represents the development environment of our PLC controllers. It has a user-friendly design and is structured to function in a transparent and self-documenting way.
We can offer you the right software tool for each project phase.

In the area of **engineering**, this is primarily the software tool **CAP1131**. This offers programming according to the IEC 61131-3 standard.

Analysis and diagnosis are carried out by the following software applications:

The **POUtest1131** tool automatically checks CAP1131's Program Organizational Units and applications. The main objectives of the POUtest1131 include automatic testing of IEC 61131-3 code modules and applications, generation of test reports for standards-conforming documentation, as well as early detection and avoidance of regressions.

SIM1131 offers the user the possibility to simulate CAP1131 applications virtually.
This means that short smoke tests or comprehensive module tests (e.g., with POUTest1131) can be carried out without the need for additional hardware.

Concerto®
The Concerto® diagnostic management tool can be used for creating extensive data logger applications.
The software package consists of two parts:
Concerto Configuration enables the developer to create individual DDSs (diagnostic data sets) from program variables and from CAN messages.
Concerto Maintenance can be used for analyzing and archiving the recorded data.

Visualization is done using **Maestro Designer®.**
This programming tool is used for convenient programming of Selectron HMIs within a graphical user interface.

For **commissioning**, various configuration tools are provided, such as **TOP1131** and **WDLD1131**.

CONVINCING ADVANTAGES

- Unified, end-to-end hardware and software components
- Flexible architectures, tailor-made to the application
- Independent network topologies
- Flexibly combinable system components
- Qualified and certified
- Can be expanded at any time
- Value-for-money cost structure thanks to tailor-made solutions
- The right support for each project phase

SPECIFICATION ▶ ENGINEERING ▶ COMPONENTS ▶ SYSTEM INTEGRATION TOOLING ▶ ▶ COMMISSIONING ▶ SERVICE

The right component for each project phase.

OUR EXPERTISE FOR YOUR SUCCESS

MORE THAN 60 YEARS OF EXPERIENCE.
MORE THAN 10,000 VEHICLES
SUCCESSFULLY IN OPERATION

WORLDWIDE PROJECTS

SPECIFICATION

Experienced engineers support you in specifying the system for your project, whether it involves new vehicles, modernizations or subsystems. Without any cost implications for you, we analyze your task and work with you to search for an optimum and ground-breaking solution in the following aspects:

- Technical concept
- Redundancy and availability
- Train and vehicle bus
- Connection to external systems
- Diagnosis and maintence
- Efficiency
- Safety

An optimum system architecture is decisive for high levels of vehicle availability in operation.

ENGINEERIG

As a system supplier, we attend to your wishes and requirements in a comprehensive and targeted approach. For example, as well as our train control and monitoring modules, we also offer project handling from subsystems through to the engineering of turnkey solutions. Our organizational flexibility, combined with the open structure of our entire train control and monitoring system, offers users a solution which is precisely tailored to their requirements.

COMMISSIONING

We put our solutions and performance at your disposal to ensure that your vehicle makes a successful start.
We have an experienced team of engineers available for deployments all over the world in order to assist with commissioning, testing, and calibration of the train control and monitoring system or specific subsystems. Our experts deliver the required services efficiently and with a high standard of quality. These are decisive criteria for ensuring smooth operation in the long term.

SERVICE

Selectron has a highly effective support and service department with well-trained engineers, in order to offer you the best possible after-sales service. Our specialists will be happy to assist you if you have any questions. We also offer an extensive range of training courses. The flexibility of our organization means we can offer users a training course that is exactly tailored to their requirements.
Our technical support can offer you the following services:

- Freephone/email hotline
- On-site support
- Training courses
- Handling of hardware repairs

NEW VEHICLES:

Bombardier Transportation

PESA

Stadler Rail

Plasser & Theurer

Vossloh

MODERNIZATION

Warsaw trams

BEHL, Metro Kolkata

Rhätische Bahn, GEM 4/4

SUBSYSTEMS

Medcom, Traction Converters

Musfeld Aircotech, HVAC

| SPECIFICATION | ENGINEERING | COMPONENTS ▶ | SYSTEM INTEGRATION / TOOLING ▶ | COMMISSIONING | SERVICE |

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KNORR-BREMSE

NEW YORK AIR BRAKE

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MERAK

MICROELETTRICA

SELECTRON

KIEPE ELECTRIC

EVAC

ZELISKO

RAILSERVICES