



RAILWAY  
SYSTEMS

STRATEGY



## CONSULTING & ENGINEERING

Comprehensive consulting services and sustainable engineering for drives, lockings, detection systems & signaling solutions

Recording existing turnouts for turnout drive or signal technology planning

If existing turnouts are to be equipped or converted with a drive and setting system, it may be necessary to record the corresponding existing data on site. In particular, an on-site inventory may be necessary for a signal-technical planning of individual turnout control units and depot control units in order to plan corresponding railway routes as regards control technology. Our team records these data on site, adds customer information to it and takes this as a basis to develop an appropriate proposed solution for the customer.

Planning the setting system in the turnout, interface clarification

The turnout portfolio of voestalpine VAE Group is supplemented by a comprehensive range of point machines, lockings, setting and detection systems. In addition to voestalpine VAE companies, interface clarifications of a mechanical and electrical nature are carried out for infrastructure operators, consultants and other turnout providers. In this way, it can be ensured that the complex interplay between turnout, drive system and the signal-technical connection to the signal box or the turnout control unit, respectively, functions smoothly after being installed in the track. We combine specific turnout and signal technology knowledge here to the customer's advantage.



## CUSTOMIZED SOLUTIONS

### RAMS / LCC / safety verification

As part of the product development, the RAMS principles (Reliability - Availability - Maintainability - Safety) as per EN50126 and 50129 are taken into account. Based on determined RAMS key figures, a specific LCC evaluation can be carried out on the product or system level together with the customer. In addition, voestalpine SIGNALING Zeltweg GmbH is qualified to provide safety verifications for turnout setting systems as per EN50126 and EN50129. The safety verification confirms compliance with the standard and life cycle-compliant development process and the safety required for signal-technical products (generic or user-specific based on user conditions of the customer).

Compliance check of the signal box interface  
voestalpine SIGNALING Zeltweg GmbH can carry out a conformity check for the interface to the signal box if this is disclosed by the customer and a corresponding setting part of a turnout group is provided for this verification. If necessary, a specific cooperation occurs here with a signal box manufacturer or an external expert.

### Appraisals

voestalpine SIGNALING Zeltweg GmbH has its own inspection agency ("test body") whose employees are recognized as experts by the EBA (Eisenbahn-Bundesamt, German Railway Agency) and are authorized to carry out expert work for point machines and setting systems. In addition, the inspection agency has an accreditation as an inspection body as per EN/ISO 17020. This means that the inspection body is authorized to evaluate the conformity of their client's products with the standards EN 50126 and EN 50129. They can operate as an "inspection body type B" within the voestalpine VAE Group as a supporting organization.



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## CERTIFIED TRAINING

Comprehensive range of instructions and training courses in dealing with drives, lockings, detection systems & signaling solutions

### Training for trainers

We offer sustainable and comprehensive training sessions for trainers, which combine practical and theoretical knowledge and ensure they have the necessary knowledge of products, operation, maintenance and service. Afterwards, the trainer should be able to pass on the in-depth knowledge to service technicians or be able to act as a key user and contact partner internally.

### Training for technicians & service personnel

We offer sustainable and comprehensive training sessions (commissioning, service, troubleshooting) for technicians & service personnel, which combine practical and theoretical knowledge and ensure they have the necessary knowledge of products, operation, maintenance and service to be able to ensure the maximum availability of components.

### Training center

The training sessions can be booked at the global training center in St. Pölten, Austria or at the individual companies at the respective locations. If necessary, theory and practical training sessions can also be held at the customer's location.

### Optimizing existing infrastructure

Our service technicians offer their services to locally support infrastructure system managers dealing with turnouts and related matters or signal-technical control systems. In particular, inspections and maintenance activities are carried out together with the customer, focusing on optimizing the work to be carried out as well as incorporating and using diagnostic data. The aim is to achieve a sustainable increase in the system availability by integrating manufacturer expertise.





## SUPPLY, LOGISTICS & INITIAL SERVICES

Initial delivery and installation services for drives, lockings, detection systems & signaling solutions

Shipping and transport logistics to the construction site or to the turnout plant  
voestalpine SIGNALING Group has business relationships in over 50 countries around the world and, in the course of market development, has established internal competences for the handling of product and system transports and in this area works together closely with recognized shipping companies to ensure an efficient and high-quality delivery. In cooperation with the turnout plants of the voestalpine VAE Group, completely pre-assembled turnouts can thus also be delivered to the installation site "just-in-time" by means of a special wagon with drive and setting systems already pre-assembled.

Installation assistance or support

A proper installation of turnouts and turnout components is crucial to the service life and future maintenance expenses of the turnout. Maintenance intervals can be extended and the total costs over the service life can thus be sustainably lowered. Our experts provide support in project management during the installation phase, train and instruct on-site fitters, provide set-up tips and point out special hazards in order to ensure a high quality installation of the turnout and its signal-technical components.



## EFFICIENT OPERATION - RIGHT FROM THE START

Installation by service technicians of the supplier

In some cases, the customer does not have the corresponding capacity or the specific installation expertise. voestalpine SIGNALING Group has highly qualified personnel at its locations and at its sister companies who can take care of these tasks competently and efficiently. Not only is the installation of the signal-technical components looked at here, but the interplay with the turnout is optimized and quality-tested afterwards. The customer benefits from the expertise of the system provider. In particular, a support or the entire installation of a signal-technical control system is required from the manufacturer in order to ensure the best performance in subsequent operation in terms of the increased complexity of such systems.

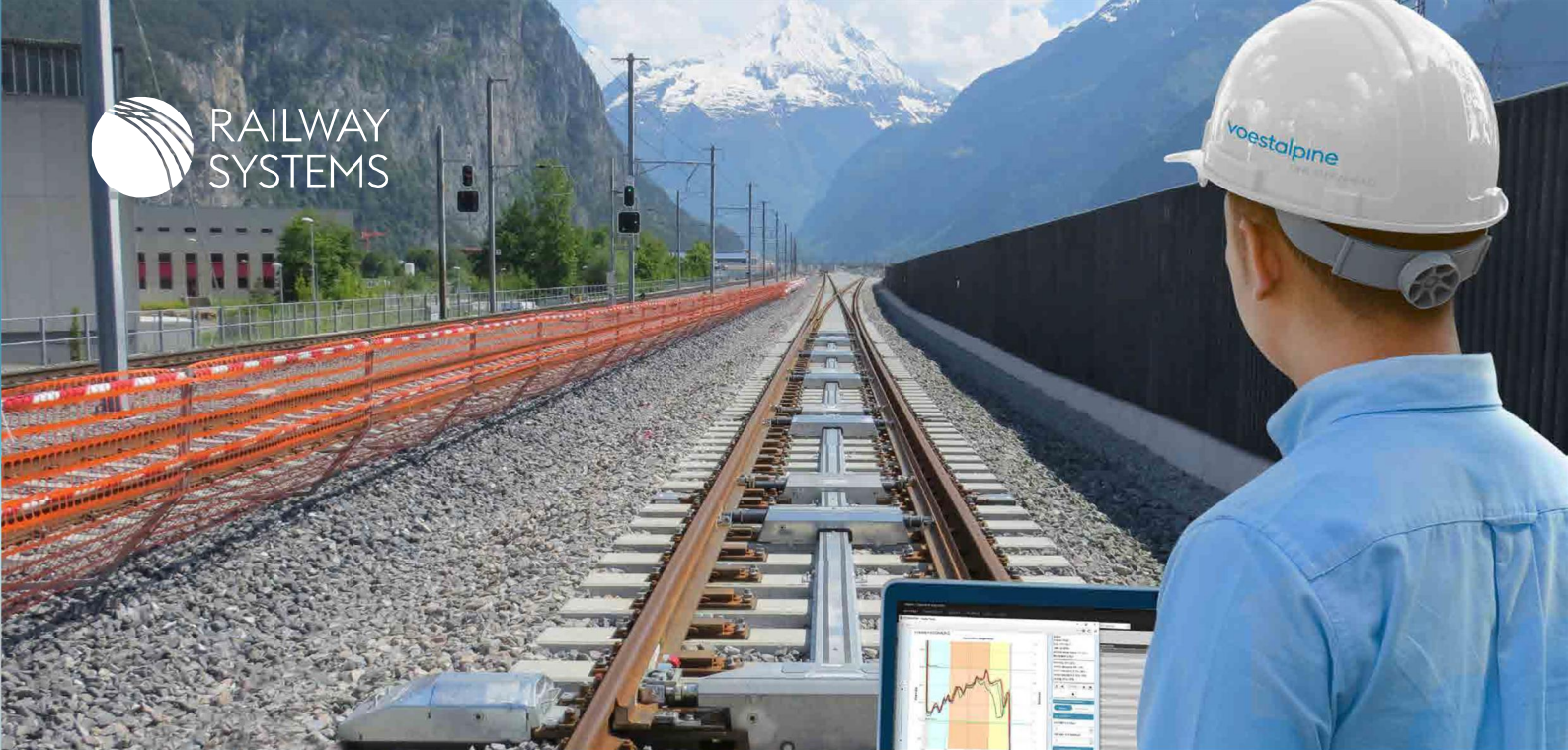
Commissioning and site acceptance test (SAT)

With complex systems in the turnout or signal-technical control area, we are happy to provide support during the commissioning or to carry it out on behalf of the customer. The successful commissioning is documented accordingly afterwards and in most cases serves the formal handover of the system to the customer.





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## CONTINUOUS SERVICE / SERVICE LEVEL AGREEMENT

Services and agreements for drives, lockings, detection systems & signaling solutions over the entire product life cycle

Maintenance based on diagnostic data

The changeover from periodic to state-based maintenance was supported by the development of specific diagnostic tools. Due to its domain expertise in the field of railway infrastructure, the voestalpine SIGNALING Group is the pioneer in the development of monitoring solutions for infrastructure assets. In addition to using such monitoring tools for its own maintenance activities, the monitoring expertise can also be provided to the end customer via "Software as a Service" (SaaS). voestalpine SIGNALING evaluates the recorded data and takes it as a basis to develop specific state and service information. In addition, corresponding software and hardware can be

provided to the customer in the form of a leasing model. The high-quality findings from the monitoring systems thus become part of comprehensive condition-based maintenance. By focusing on emerging malfunctions, targeted maintenance actions can be carried out in advance, thus sustainably increasing track availability. Planned, condition-based maintenance operations in comparison to unplanned maintenance work sustainably reduce the maintenance costs and thus contribute to an improved railway operation with increased punctuality and customer satisfaction.



## PARTNERSHIP WITH FUTURE

### Periodic inspection and maintenance

A proper inspection and maintenance of turnouts, turnout setting systems and safety-technical controls and systems is essential for their availability and service life. We offer holistic maintenance for system turnouts, drive systems and setting systems. In addition, inspection services are offered for individual turnout and depot controls and other signal-technical components and systems.

### Remote maintenance

Signal-technical systems these days usually have a data interface that allows the manufacturer to carry out a "remote diagnosis" of the system and to carry out a "remote" maintenance action or install software updates in case of an emergency. Travel times and associated costs are sustainably reduced by this procedure. Long periods of disruption are reduced to a minimum and availabilities of tracks and systems are sustainably increased.

### Recurring maintenance of drive and setting systems

Due to wear and legal regulations (BeoStrab), a recurring inspection and maintenance at the manufacturer's plant may be necessary for turnout drives and setting systems. These activities are carried out both at the German location in Sainerholz as well as in Zeltweg (Austria) in order to ensure the required product safety on the one hand and to increase the reliability on the track on the other.

### Emergency Services (24/7)

In order to keep the downtimes as short as possible in the event of unforeseen system failures, voestalpine SIGNALING Group has established a 24/7 emergency service for specific customers with complex systems. In this way, long periods of disruption can sustainably be reduced, especially in the control area.