

INTEGRATED TRACK PERFORMANCE ECOSYSTEM

From Measurement to Decision

Turning fragmented Data into Predictable Infrastructure Performance

Modern railway infrastructure is becoming increasingly complex. Growing traffic volumes, mixed rolling stock fleets and rising expectations regarding availability, safety and cost efficiency place enormous demands on infrastructure operators. At the same time, vast amounts of condition and performance data are collected from various measurement systems – often stored in separate environments and evaluated independently.

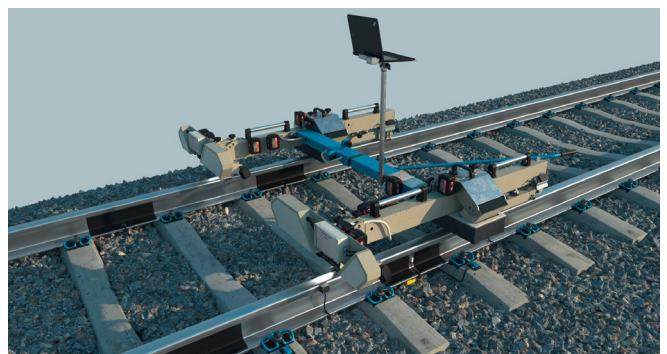
The challenge is no longer collecting data. The challenge is transforming data into actionable decisions.

The Challenge: Valuable Data, Limited Insights

Many railway operators face the same obstacles:

- » No clear overview of deployed assets and their location
- » Measurement data scattered across different systems and campaigns
- » Limited comparability of inspection results over time
- » Manual data interpretation and delayed decision-making
- » Reactive maintenance strategies instead of predictive approaches
- » Lack of a consolidated view of infrastructure performance

As a result, critical developments may remain undetected, maintenance activities cannot be optimally prioritized, and infrastructure assets do not reach their full lifecycle potential.



One Integrated Ecosystem

zentrak DIGITAL TOUCHPOINT

Creates the foundation for data continuity and traceability throughout the rail lifecycle while providing a unique digital identity for every rail.

In-Track Measurement Solutions

Advanced measurement technologies capture track geometry, rail condition, and operational loads, creating a comprehensive picture of the actual condition in track.

zentrak Track Performance Management

A central software platform that consolidates and links measurement data, maintenance records and asset information into a unified digital track model.

Engineering & Consulting Expertise

Specialists transform measurement results into practical recommendations for maintenance optimization, lifecycle management and network performance improvement.

Our System Approach

voestalpine Railway Systems combines asset management, measurement technology, digitalization and engineering expertise into one integrated service ecosystem.

By connecting data acquisition, data management and expert interpretation, infrastructure operators gain a complete and transparent understanding of track performance throughout the asset lifecycle.

From Data Collection to Predictive Decision-Making

The integrated workflow enables operators to:

- » Link data to the respective asset and derive the best-performing product for each section
- » Connect data from multiple measurement systems into one environment
- » Visualize infrastructure condition across the track network
- » Monitor trends and deterioration rates over time
- » Identify critical developments before failures occur
- » Prioritize maintenance activities based on actual asset condition
- » Support performance-based and predictive maintenance strategies

The result is a seamless transition from isolated measurements to informed, data-driven decisions.

By connecting digital asset information, track measurement and engineering expertise, voestalpine Railway Systems transforms railway data into predictive, performance-based and sustainable infrastructure management.

Why voestalpine Railway Systems?

Unlike standalone measurement or software solutions, voestalpine Railway Systems delivers a fully integrated ecosystem that combines:

- » **Advanced measurement technologies**
- » **End-to-end digital data continuity**
- » **Rail and infrastructure expertise**
- » **Proven field experience and validation**
- » **Scalable solutions for network-wide deployment**

The result is a holistic approach to railway infrastructure management that transforms fragmented data into measurable performance improvements.



Customer Benefits

Increased Infrastructure Availability

Early identification of deterioration enables timely interventions and reduces unplanned disruptions.

Optimized Lifecycle Costs

Maintenance activities can be prioritized based on actual condition, reducing unnecessary work and extending asset life.

Greater Transparency

All relevant infrastructure information is consolidated in a single environment for faster and more confident decision-making.

Predictive Maintenance

Trend analyses and performance assessments help operators move from reactive maintenance to proactive asset management.

Reliable Engineering Decisions

Measurement data is complemented by deep railway system expertise, ensuring recommendations are both technically sound and operationally relevant.