

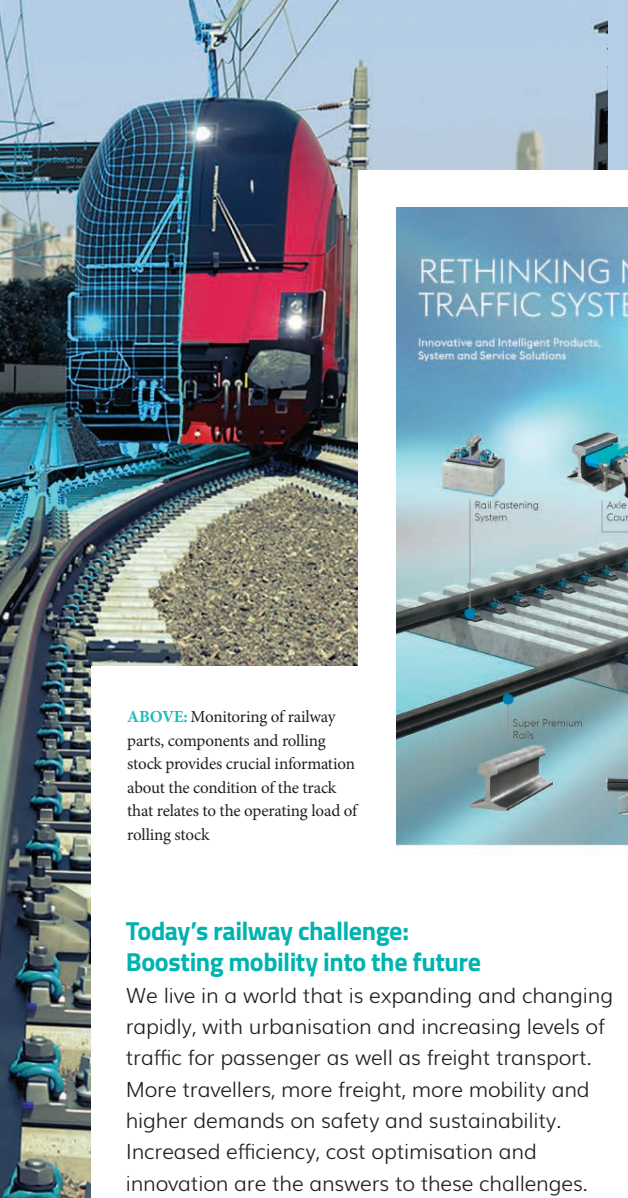
# High-tech products and digital service concepts: The key to success for modern railway networks

Over past years, worldwide railway operators have been challenged more and more with higher demands. Urbanisation, increasing mobility and higher standards on safety and sustainability have led to a more demanding playing field. At the same time, investments are declining. [Mark de Vries](#), CEO of voestalpine Track Solutions, recognises these challenges and explains more in this interview with [Global Railway Review](#).

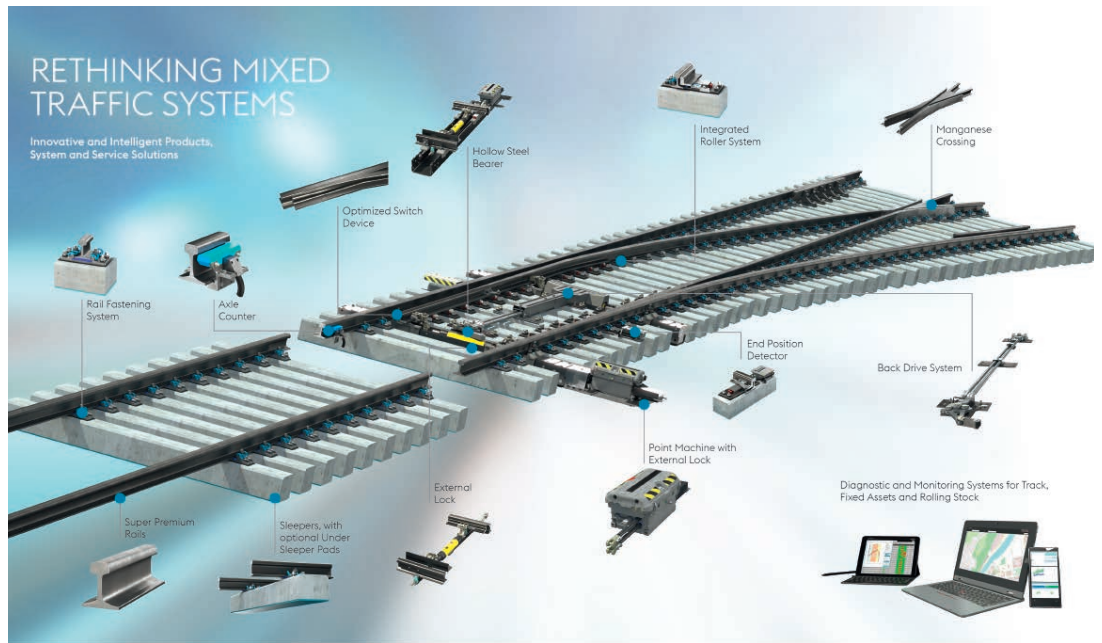
**"FROM OUR VAST and long-lasting experience as a railway supplier, we have learned to look beyond just delivering products,"** explains Mark.

"The addition of smart and digital maintenance services during all phases of track life supports operators in their everyday contribution to an available and safe railway network."





**ABOVE:** Monitoring of railway parts, components and rolling stock provides crucial information about the condition of the track that relates to the operating load of rolling stock



### Today's railway challenge: Boosting mobility into the future

We live in a world that is expanding and changing rapidly, with urbanisation and increasing levels of traffic for passenger as well as freight transport. More travellers, more freight, more mobility and higher demands on safety and sustainability. Increased efficiency, cost optimisation and innovation are the answers to these challenges. It leads to a different approach for everybody working in worldwide rail infrastructure companies. As a technology leader in rail infrastructure markets, voestalpine Railway Systems is familiar with and understands these challenges.

Whether you manage a passenger, freight, tram or subway line, creating optimum logistics solutions and minimising costs are the top priority. "Creating an integrated package of products and services, which are harmonised over the lifecycle, result in longer life and thus outstanding customer benefits. This is what we call 'Performance on Track'," emphasises Mark.

### voestalpine Railway Systems: From product producer to system supplier in 160 years

As a supplier of high-tech railway products, voestalpine Railway Systems has come from a long line of experience, pioneering technical expertise and engineering knowledge, built up over a long period of 160 years. Since its early days, the company has offered top quality products to railway tracks worldwide. Its expertise in rails, turnouts, fastening systems and signalling technology are brought together in order to be able to respond to changing mobility needs and each single railway challenge. Mark explains: "We approach railways as an innovative and

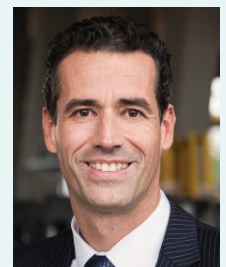
intelligent track system and understand the mutual dependence of modular components. This is how we ensure high-performance and safe and sustainable railways."

### Digitalisation in railway monitoring: Individual solutions for different requirements

In its development from product producer to system supplier, voestalpine Railway Systems has learned that railways are robust and have a long service life, often more than 40 years. Every phase in the lifecycle has different requirements, which ask for individual solutions. Railways hugely benefit from comprehensive and systemic digitalisation, diagnostic and monitoring systems, data analytics and preventive maintenance regimes. The development of smart digital solutions in railways gives the opportunity to perform real-time monitoring of tracks. Monitoring of railway parts and components and rolling stock provides crucial information about the condition of the track that relates to the operating load of rolling stock.

Collecting all of the information in a centralised database and analysing the performance of tracks makes it possible to predict maintenance into the future. Mark explains: "This is where we are able to support rail infrastructure owners and their maintenance organisations<sup>1</sup>. The data evaluation allows the use of the systems economically in order to save money during ongoing operation and to avoid interruptions in operation. Optimising track performance and asset management ensures the future-proofing of railway systems. We have developed a world leading range of monitoring solutions, which provide our customers with the tools to implement smarter maintenance practices and prevent asset failures." ➤

**ABOVE:** voestalpine Railway Systems approaches railways as innovative and intelligent track systems and understand the mutual dependence of modular components



**MARK DE VRIES**

Mark is CEO of the competence centre Track Solutions at voestalpine Railway Systems. He graduated from the Amsterdam University of Applied Sciences in electro technical engineering in 2000. He joined the voestalpine company in 2006, where he was CCO at voestalpine Railpro in The Netherlands. In addition, he is also the Regional CEO for Northern Europe and CSO at voestalpine Turnout Technology Germany.



*Maintenance planning for busy railway systems is challenging because there is growing pressure on increasing operation time, which reduces the infrastructure accessible time for maintenance.”*

### Diagnostic and monitoring technology for infrastructure enables efficient and targeted maintenance planning

To perform monitoring on fixed assets in track, for example, voestalpine Railway Systems uses its intelligent ROADMASTER® system. It is a fully digitalised and well proven monitoring system, based on the latest technologies, which can be customised to the requirements of the railway infrastructure. Depending on the application, the recorded data of the asset condition is evaluated, and specific state and service information is developed. In addition, so-called ‘dashboards’ and key performance indicators can be created to clearly display all of the data. This direct recording of the asset condition and the provision of targeted information – both from track components, as rails or turnouts and fixed infrastructure assets – allow for optimised asset management, as well as efficient and targeted maintenance planning.


### Rail Performance Monitoring – rail measurement technology

Maintenance planning for busy railway systems is challenging because there is growing pressure on increasing operation time, which reduces the infrastructure accessible time for maintenance. The major reason for rail maintenance is operational rail deterioration, such as rail wear and deformation, corrugation and so-called rolling contact fatigue. Rail Performance Monitoring is based on real-time data. It includes recommendations for inspection technologies and intervals, technical and economically meaningful intervention limits, lifecycle

comparisons of different alternatives and wheel-rail interface optimisation. Besides the strategic long-term benefits, the acquired data is also used as an immediate decision-making basis for short-term maintenance activities, such as rail grinding or milling.

### Diagnostic and monitoring technologies for rolling stock

It is no surprise that the railway track’s maintenance condition and lifecycle is in conjunction with the load of the rolling stock driving over it. Rolling stock in poor condition or a lack of harmony between wheel and rail are the cause of large dynamic forces, not only in the track but also on the rolling stock. Rolling stock failure, besides the cause of delays and disruptions to transport services, is crucial to be prevented at all time. This means that not only monitoring the infrastructure is important, but also monitoring systems for rolling stock are crucial for railway operators.

Over the past 20 years, voestalpine Railway Systems has been developing rolling stock diagnostic and monitoring all over the world with its PHOENIX MDS solutions. This system is based on a variety of measurement technologies: Such as infrared, optic and acoustic. Information on wheel defect detection, hot wheel detection, hot box detection, weighing in motion, automatic vehicle identification and much more is gathered in a modular diagnostic system. “Through continuous monitoring and analysing of rolling stock assets, we provide fleet managers with decision support and condition-based, real-time maintenance data to keep their performance on track,” explained Mark. 

Creating an integrated package of products and services, which are harmonised over the lifecycle, result in longer life and thus outstanding customer benefits – this what voestalpine Railway Systems calls ‘Performance on Track’



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www.voestalpine.com/railway-systems

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ONE STEP AHEAD.

## REFERENCE

1. <http://www.voestalpine.com/railway-systems/en/services/track-solutions>