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How is Deutsche Bahn using smart sensor technology to avoid infrastructure failure?

With infrastructure constantly growing – as well as ageing – condition monitoring of assets is essential to drive efficiency savings (maintenance optimisation), and to reduce the risk of infrastructure failure in the long term. As renewals and maintenance account for almost half of infrastructure managers' expenditure, smart maintenance planning and spending has become paramount.

A recent bridge collapse in the UK highlighted the issue, when all direct services between London St Pancras and all stations north of Leicester, including the major cities of Sheffield and Nottingham, had to be put on hold. The collapse resulted in severe disruption, and major issues for operators – not to mention headache for thousands of passengers.

The technology is now here for us to drive innovation in asset management. State-of-the-art sensor technology allows us to replace manual measurements and provide continuous monitoring to detect anomalies and prevent delay-causing failures. Coupled with advanced analytical capability based on machine learning, sensor systems provide infrastructure maintenance managers with valuable insights into the health of switch infrastructure to help pave the road to infrastructure 4.0.

Deutsche Bahn – one of the most advanced rail networks in the world – use KONUX smart sensor technology to help them reduce maintenance costs and delay-causing failures.

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The German operator has adapted the KONUX solution to replace manual measurements with a position measurement system based on custom-made MEMS (micro-electro-mechanical) sensor clusters. This enables autonomous and continuous monitoring with wireless data transmission. The data is pre-processed in the sensors, and machine learning algorithms in the cloud detect critical wear.

The benefits include a cost reduction of 25%, achieved by minimizing downtime and maximizing performance.

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Through real-time monitoring, the health of all critical points can be tracked in real-time via the backend KONUX software. This shift towards predictive maintenance enables a radically enhanced understanding of critical components and need-based maintenance.

KONUX

KONUX is a Munich-based IIoT (Internet of Things) company, combining the best of German engineering quality with Silicon Valley speed and innovation. Their technology integrates sensors and smart analytics to solve complex technical challenges and helps customers become data-driven industrial companies.

KONUX are currently digitizing Deutsche Bahn's high-speed railway network through condition monitoring of switches and crossings, a critical part of the railway infrastructure. This helps DB significantly reduce inspection and maintenance costs, decrease train delays and improve worker safety.

The KONUX solution

Real-time Monitoring

Autonomous and continuous monitoring

Intelligent Networking

Wireless module transmits measurements to central data platform

Embedded Analytics

Data is pre-processed in the sensor and algorithms detect critical wear

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Learn more about the KONUX solution here.

For further information, or to set up an appointment with one of our experts, contact:
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