VEMS for Wheel Profile

Automated wheel profile measurement for reduced life cycle costs.

Wheel inspection is an essential but time-consuming task for any rail operator, and manual inspections have a direct impact on train availability. If inspections are skipped or recorded incorrectly, increased maintenance costs and longer train downtime can result. The Vehicle Equipment Measurement System (VEMS) for wheel profile has been developed to provide accurate roll-by measurements, detailed reports and reliable data for predictive maintenance.

How Does It Work?

VEMS for wheel profile uses measuring stations that can be quickly and easily installed at a depot or other suitable location.

Multiple profile measurements from both sides of the wheel are taken to create a virtual wheel profile – covering the back of the flange to the rim face. At the same time, the system also measures the back-to-back and diameter of the wheels. Every parameter is recorded to a high degree of precision, in accordance with EN 15313. Conicity data is reported according to EN 15302. All data is stored in the VEMS Data Management System and is used for trend analyses and predictive maintenance in Siemens Railigent®.

The optional Thermal Trace Measurement System allows accurate temperature measurements of the wheels, axle box and associated components.

Benefits at a Glance

- No inspection downtime thanks to roll-by design
- More frequent measurements increase safety
- Trend analysis for predictive maintenance
- Lower costs due to optimized maintenance

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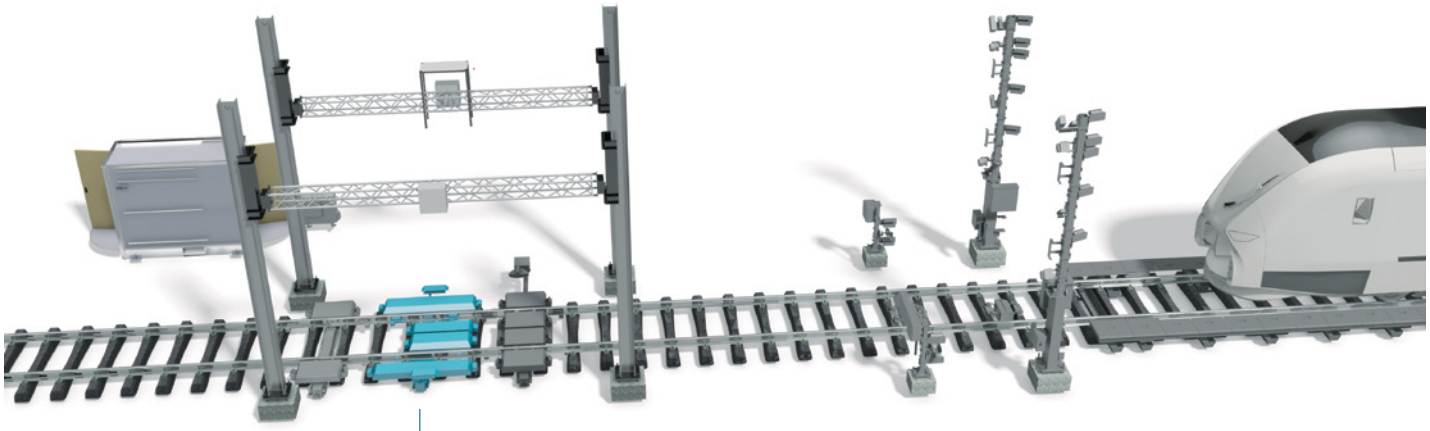

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One out of many vehicle equipment measurement systems

Comprehensive Report System

Drawing on these measurements, VEMS for wheel profile creates detailed reports. Manually measuring a train's wheels entails up to two hours of work, but VEMS for wheel profile provides complete automated analyses in 2–3 minutes. As the data is stored in the VEMS Data Management System, long-term trends can be analyzed in Siemens Railigent®. This facilitates predictive maintenance management, helping to boost and secure the fleet's overall availability.

Putting It into Practice

VEMS for wheel profile transforms necessary inspections into real competitive advantages. Measurements are quick and easy, so profile data can be collected during routine tasks. Consistent profile data not only reveals the actual state of the wheels – it also lets operators identify wear trends and plan efficiently. Wheel wear is non-linear, so having a frequent and detailed set of measurements allows wheel-life optimization across a fleet with relative ease. Changes in wear trends may also be used to identify infrastructure-based failures.

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