Directory

Data & Information

Intelligent Data Platforms as a Key Driver for Digital Railway Operations

By Thomas Hartinger | Product Manager

In this new era of digital transformation, using future-proof data platforms has immense potential for railway operations.

Operators are generating more and more data – from control command and signalling technology to infrastructure monitoring. In the course of digitalisation, data platforms allow existing and new data to be collected, intelligently bundled, and more efficiently used than ever before. With optimised data, the availability of railway infrastructure can be increased, and operations can be cost-efficiently adapted to existing as well as future requirements.

Data as a Key Asset for Digital Transformation

Why is intelligent data key to managing the myriad digital challenges of rail operators? Perhaps the most important advantage is the flexibility to monitor the status of the network and all parts of various systems. To do this, a system must collect and evaluate various existing or newly integrated data and make the results available as required. Intelligent data platforms offer clear advantages for operations, for example, through predictive maintenance. As a result, critical infrastructure conditions can be identified at an early stage and rectified quickly. Other maintenance and repair work can also be planned more precisely as required, whereas until now, they have mainly been scheduled according to fixed maintenance periods.

'Frauscher Insights' as a Solution for the Intelligent Use of Data

Frauscher Sensortechnik is a technology pioneer in the railway industry. For more than 30 years, the company has been breaking new ground with its products and services. This also applies to the intelligent use of data, since the latest technologies of Frauscher focus on the digital challenges that railway operators are facing. Frauscher's solutions and services are combined with the established procedures for train detection to form a digital ecosystem (see Figure 1).

The inductive wheel sensors transfer information to the established digital axle counting solutions, where it is processed. This data – together with further information from rail operations and external content – is collected on the data platform and made accessible

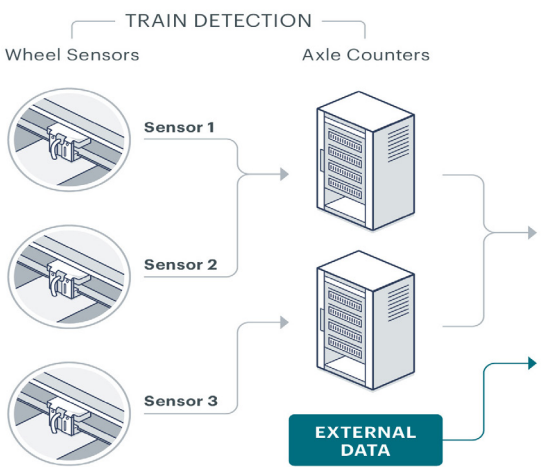


Figure 1: Schematic representation of the data platform Frauscher Insights

Figure 2: Visualisation of task management as a use case

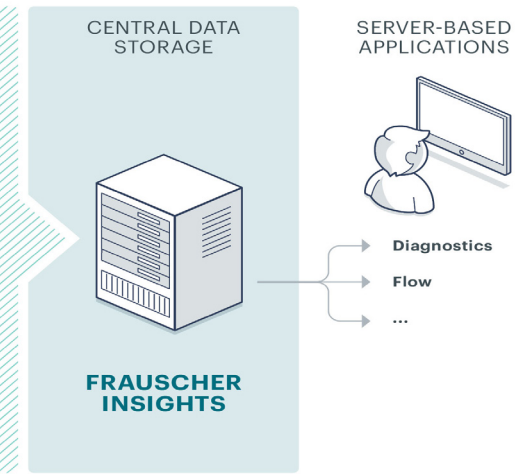
to numerous different applications. This networked and flexible approach opens the way for more possibilities in the future of rail operations.

A Data Platform as a Digital Ecosystem

Frauscher sees the use of data platforms as a crucial success factor in the digitalisation of railway operations. In the age of rapid technological advances, it is important to combine and store information from complex technical systems in a future-proof manner. In the field of rail technology, the data from the operator's secure network is stored centrally and made available for various applications. Since it involves complex networking of multiple data sources and application interfaces, such a solution can be referred to as a digital ecosystem.

The strengths of Frauscher Insights – at a glance:

- Expandable modular structure: additional information such as status information or meteorological data can be integrated into the data platform at a later time
- Scalable digital applications: railway operators can optimise operations and the associated infrastructure through the intelligent use of data
- Diagnostics: the Diagnostics application displays all data collected on the track on a user-friendly dashboard and sends a notification where necessary, which allows negative changes in the condition of components to be detected early
- Task management: with the Motion application, maintenance and service work as well as commissioning can be planned and organised efficiently, with tasks even being assigned to specific employees. The dashboard also uses real-time data to show which maintenance tasks have already been completed or are still open (see Figure 2).



Conclusion

Innovative technologies such as a data platform enable rail operators to intelligently use existing and new data together. The numerous advantages in terms of capacity, availability, efficiency, safety, economy and other factors make such solutions a crucial tool for the industry in the near future.

A digital ecosystem that allows for the seamless integration of different data sources is no longer an option but a necessity. The great challenge is combining data from the complex technical systems of railway operations with other information in a scalable, future-proof manner.

With Frauscher Insights, Frauscher has developed a sophisticated solution for the intelligent use of data that meets the requirements of operators and offers additional options for future integration. Its flexible and scalable applications empower railway operators to solve digital challenges in areas ranging from diagnostics and predictive maintenance to efficient task management.

In case of questions, contact Harald Murauer

Sales | Business Development

harald.murauer@frauscher.com

frauscher.com