



DIGITAL RAIL - DATA-DRIVEN ECOSYSTEMS

As part of the International Data Spaces Association (IDSA), Knorr-Bremse will be promoting data-driven ecosystems in the future.

In almost all modern industries, more and more data is being exchanged. In response, governments across Europe are investing in new infrastructures to facilitate the exchange and management of data in system-critical sectors such as transportation. As an IDSA member, Knorr-Bremse is a driving force in the introduction of new principles for data traffic in the mobility sector. This includes equipping data units with certificates that clarify their origin, the identity of the owner and the owners, and the rights of use. With its commitment, Knorr-Bremse aims to create a solid foundation for future digital business models and partnerships.

„Digitalisation is both a driver and an enabler for innovative business models in the rail industry - based on data as a key resource. In order to continue creating far-reaching digital products for the rail industry in the future and to contribute to greater automation, efficiency and flexibility, we are already addressing the challenges of future data exchange between the players in the rail industry,“ explains Dr. Nicolas Lange, Chairman of the Executive Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH.

„In this sense, our involvement in the IDSA helps to integrate data as an important asset in the value chain of the rail industry and to facilitate the use of data in smart services and new partnerships in the digital space.“

One of the main reasons for this development is the way data is increasingly accessed. Traditionally, data storage has been centralised and proprietary, meaning that data sets are owned by a single party at any given time. However, today’s trend in data storage is towards decentralised data ecosystems. The spread of networking and the complexity and convergence in sectors such as the mobility industry mean that data must increasingly be available (simultaneously) to a large number of participants so that they can read it, evaluate it and integrate it into their services.

In order to better manage, track and combine the data streams, new criteria need to be established. ... „In perspective, this opens up new opportunities for our company to support operators in digital maintenance and operational processes and to contribute to high-availability and low-disruption railway operations. The joint introduction of a special data space for the railway industry - Rail Data Space - with our partners could also help to open up additional business potential.“

Best of Both



Data sovereignty and governance in particular are crucial when it comes to data sharing. That is why Knorr-Bremse, as a partner to its customers in the IDSA, is committed to providing data traffic with identity services that make it possible to identify exactly who the data originates from, who is authorised to access it and who is permitted to modify it



Dr. Maximilian Eichhorn

Vice President Digital Products of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH

The future of data exchange: Knorr-Bremse cooperates with SBB

In a feasibility study, Knorr-Bremse and the Swiss Federal Railways (SBB) successfully investigated the automated and secure exchange of operational data. Based on the results, the two partners are now looking into further cooperation for the exchange of operational data for entry systems. This will enable Knorr-Bremse to analyze and interpret the data and, if necessary, alert SBB as soon as predictive maintenance announces an imminent failure of a system.

What makes this exchange special are the identity services associated with the data. By continuously asserting the appropriate read, edit and distribution rights, they protect data sovereignty. These „data usage conditions“ are managed on both sides by a connector built into the underlying IT - a virtual certificate manager that checks, grants or rejects data usage rights. In close cooperation with Knorr-Bremse, msg systems AG is responsible for configuring and implementing the

Connector environment. As the boarding systems are among the most maintenance-intensive systems on a train and their smooth functioning has a direct influence on customer comfort, timetable stability and the punctuality of trains, the project is already demonstrating the practical benefits of a better-controlled and more transparent data flow for everyone involved.

More generally, many industries are now moving towards decentralised data spaces, prompting governments to launch initiatives to this effect. Together with Austria, Switzerland, Finland and Sweden, Germany has recently launched the Mobility Data Space, to which a future Railway Data Space could be linked. At EU level, both the Mobility Data Space and the GAIA-X data project are encouraging stakeholders from business, politics and information technology to work together on this exciting new concept.

- + Data sharing is becoming a key element in the relationships between players in the rail industry
- + Consequently, data sovereignty and governance are becoming key criteria for data flow and form the basis for innovative digital services
- + As a member of the International Data Spaces Association (IDSA), Knorr-Bremse is committed to secure, decentralized data spaces for the exchange of data between many different participants
- + In a pilot project, Knorr-Bremse and the Swiss Federal Railways (SBB) are demonstrating the importance of these standards for the digital maintenance of train door systems

Would you like to learn more about our offerings? We look forward to hearing from you.



Svenja Schröder

Head of Requirements Engineering

+43 664 80740131

svnja.schroeder@msg-plaut.com

msg Plaut Austria GmbH

Modecenterstraße 17/4/6 | 1110 Vienna

msg-plaut.at

office.at@msg-plaut.com

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