Digital rail: Knorr-Bremse drives future data ecosystems forward as part of the International Data Spaces Association

- **Data sharing is evolving into a key element in the relationships between rail industry players**
- **Consequently, data sovereignty and governance are becoming key criteria in data flows, forming the basis for innovative digital services**
- **As a member of the International Data Spaces Association (IDSA), Knorr-Bremse advocates secure, decentralized data spaces for sharing data between many different participants**
- **In a pilot project, Knorr-Bremse and Swiss operator SBB are demonstrating the importance of these standards for the digital maintenance of train door systems**

Munich, November 18, 2021 – Players in almost all modern industries are sharing more and more data. In response, governments across Europe are investing in new infrastructures that will make it easier to share and manage data in system-critical sectors such as transportation. As an IDSA member, Knorr-Bremse is a major force behind the inception of new principles governing data traffic in the mobility sector. This includes providing data entities with certificates that clarify their provenance, owner and owner's identity, and usage rights. By becoming involved, Knorr-Bremse aims to build a solid foundation for future digital business models and partnerships.

"Digitalization is both a driver and an enabler of innovative business models in the rail industry – based on data as a key resource. So we can continue to create far-reaching digital products for the rail industry in the future and help boost automation, efficiency and flexibility, we are already addressing the challenges involved in future data sharing between players in the rail sector," explains Dr. Nicolas Lange, Chairman of the Management Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH. "In this sense, our involvement with the IDSA is helping to incorporate data into the rail industry's value chain as a key asset, facilitating the use of data in smart services and new partnerships in the digital space."

One of the core drivers of this development is the way in which data is increasingly accessed. Traditionally, data storage is centralized and proprietary – that is, at any given moment, datasets are owned by one participant at a time. But today's data storage trend is inclining towards decentralized data ecosystems. The spread of networking, coupled with complexity and convergence in sectors such as the mobility industry, means that increasingly, data must be (simultaneously) available to large numbers of participants so they can read it, evaluate it and assimilate it into their services.

To make data flows easier to manage, trace and combine, new criteria need to be established. "Data sovereignty and governance in particular are vitally important when you share data. This is why Knorr-Bremse, acting as its customers' partner in the IDSA, is committed to providing data traffic with identity services that can tell you exactly who originated the data, who's entitled to access it, and who's authorized to modify it," adds Dr. Maximilian Eichhorn, Vice President Digital Products at Knorr-Bremse Systeme für Schienenfahrzeuge GmbH. "As far as prospects are concerned, this opens up new opportunities for our business to provide operators with support for digital maintenance and operating processes, and to help achieve high-availability, low-disruption rail services. Similarly, the joint launch with our partners of a dedicated data space for the rail industry – Rail Data Space – could help unlock additional business potential."

The future of data sharing: Knorr-Bremse partners with SBB
In a feasibility study, Knorr-Bremse and Swiss operator SBB successfully investigated the automated and secure exchange of operating data. Based on the findings, the two partners are now looking into another cooperation on the exchange of operating data for entrance systems. For example, Knorr-Bremse can analyze and interpret the data, and when necessary, can alert SBB as soon as predictive maintenance indicates that a system is likely to fail in the near future.

What makes these exchanges special are the identity services associated with the data. By continually asserting the relevant read, edit and distribution rights, they protect data sovereignty. These "terms of data usage" 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. Working closely with Knorr-Bremse, msg systems AG is responsible for configuring and implementing the Connector environment. Because entrance systems are one of a train's most maintenance-intensive systems and their smooth functioning has a direct impact on customer comfort, scheduling stability and train punctuality, the project is already demonstrating the real-world benefits of better managed, more transparent data flows for all those involved.

In more general terms, many industry sectors are now making the transition to decentralized data spaces, causing governments to launch related initiatives. Joining Austria, Switzerland, Finland and Sweden, Germany recently initiated the Mobility Data Space, to which a future Rail Data Space could eventually be linked. At EU level, the Mobility Data Space and GAIA-X data project are both encouraging players in the worlds of business, politics and information technology to work together on this exciting new concept.

Caption 1: As a member of the International Data Spaces Association (IDSA), Knorr-Bremse is committed to creating decentralized data ecosystems (lead photo). | © Knorr-Bremse/Adobe Stock

Knorr-Bremse (ISIN: DE000KBX1006, ticker symbol: KBX) is the global market leader for braking systems and a leading supplier of other rail and commercial vehicle systems. Knorr-Bremse's products make a decisive contribution to greater safety and energy efficiency on rail tracks and roads around the world. About 29,500 employees at over 100 sites in more than 30 countries use their competence and motivation to satisfy customers worldwide with products and services. In 2020, Knorr-Bremse's two divisions together generated revenues of EUR 6.2 billion (IFRS). For over 115 years, the company has been the industry innovator, driving innovation in mobility and transportation technologies with an edge in connected system solutions. Knorr-Bremse is one of Germany's most successful industrial companies and profits from the key global megatrends: urbanization, sustainability, digitization and mobility.

Contact:

Alexandra Bufe
Head of Corporate Communications
Phone: +49 (0)89 3547-1402
alexandra.bufe@knorr-bremse.com

Knorr-Bremse AG
Moosacher Straße 80
80809 Munich, Germany
www.knorr-bremse.com

Julian Ebert
Trade Press, Rail Vehicle Systems
Phone: +49 (0)89 3547-1497
julian.ebert@knorr-bremse.com

Knorr-Bremse AG
Moosacher Straße 80
80809 Munich, Germany