Big data: Knorr-Bremse and Deutsche Bahn cooperate on intelligent use of vehicle data

- **Knorr-Bremse and Deutsche Bahn sign cooperation agreement on the intelligent use of train operating data**
- **The agreement aims to facilitate condition-based maintenance for rail vehicles, with a view to reducing maintenance costs and enabling data-based services**
- **With an initial term of three years, the agreement strengthens Knorr-Bremse's position as a digital partner for big data and value-added services for the OEM market and aftermarket, and will help to deliver even better rail vehicle availability**

Munich, February 02, 2021 – Knorr-Bremse, the global market leader for braking systems and other rail and commercial vehicle systems, has signed a cooperation agreement with Deutsche Bahn on the use and analysis of train operating data and vehicle subsystem data. The agreement has an initial term of three years and aims to utilize big data insights to enhance condition-based maintenance of vehicle fleets.

"In the context of the ongoing digitalization of the rail sector, data-based products and services have huge potential to add value for customers and enable further operational optimization of the overall rail system," explains Dr. Nicolas Lange, Chairman of the Management Board of Knorr-Bremse Rail Vehicle Systems. "As a system supplier, we are continuously expanding our portfolio in this important strategic area and are delighted to have signed an agreement on the intelligent use of vehicle data with our partners at Deutsche Bahn."

"The agreement with Deutsche Bahn is an outstanding example of how smart vehicle and fleet data processing and the insights that it provides into the condition of onboard systems can be used to optimize maintenance intervals and costs," adds Mark Cleobury, Member of the Management Board of Knorr-Bremse Rail Vehicle Systems and responsible for the RailServices aftermarket business. "Ultimately, partnerships like this allow us to work with our customers to further increase the availability of rail transportation."

Deutsche Bahn is aiming to use the data to increase vehicle availability and optimize its vehicle maintenance cost structures. Meanwhile, the focus for Knorr-Bremse RailServices is on enhancing its digital and value-added services. These include condition monitoring of onboard vehicle systems, wear prediction, and the corresponding software support, for example for door controls installed in double-decker cars. In order to deliver the desired maintenance improvements, the agreement provides for the use of existing vehicle and system data and for the collection of additional data in the future.

Enabling condition-based maintenance through big data insights
The aim of the partnership is to make it possible to call rail vehicles into the workshop at the exact point in time when a system or component requires maintenance. The key to this is the condition-based maintenance system envisioned by the cooperation agreement, which will enable even more targeted and needs-based maintenance cycle planning. It also has the potential to reduce train downtime by minimizing the time that vehicles spend in the workshop.

Knorr-Bremse RailServices is taking its entire aftermarket business to the next level. As a trusted partner, it supports its customers with a range of new service models in the areas of

Energy Saving, Repair & Overhaul (One-Stop Shop), Parts Availability and Operational Optimization, as well as through scalable, data- and cloud-driven rail vehicle maintenance solutions. In doing so, Knorr-Bremse helps to improve the overall availability and reliability of rail transportation, while at the same time further reducing vehicles' environmental footprint and adding value for its customers.

Figure 1: Knorr-Bremse and Deutsche Bahn have signed a cooperation agreement on the intelligent use of train operating data. | © Knorr-Bremse

Figure 2: One possible application are door controls on double-decker cars (2003). By analyzing data from the door control, door failures can be prevented and maintenance be further optimized. | © Deutsche Bahn

Knorr-Bremse (ISIN: DE000KBX1006, Ticker symbol: KBX) is the global market leader for braking systems and other systems for rail and commercial vehicles. Knorr-Bremse's products make a decisive contribution to greater safety and energy efficiency on rail tracks and roads around the world. About 29,000 employees at over 100 sites in more than 30 countries use their competence and motivation to satisfy customers worldwide with products and services. In 2019, Knorr-Bremse's two divisions together generated revenues of EUR 6.9 billion (IFRS). For more than 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, digitalization and mobility.

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