

Press release

Munich, February 8, 2021

Electric mobility: Knorr-Bremse sets up the eCUBATOR®, a new development unit

- **Knorr-Bremse bundles expertise in the field of electric mobility**
- **Agile incubator founded, staffed by up to 60 specialists**
- **Focus on second-generation electric commercial vehicles**

Munich, February 8, 2021 – Knorr-Bremse, the global market leader for braking systems and a leading supplier of other rail and commercial vehicle systems, has taken the next step towards the age of electric mobility by bundling its expertise in the field of e-mobility within the eCUBATOR, its own new development unit. Plans envision as many as 60 in-house and external specialists working on innovative future-oriented solutions at Knorr-Bremse’s Munich and Budapest locations.

The electrification of commercial vehicles and the accompanying gradual substitution of the internal combustion engine require changes in vehicle architecture. As a result, the advent of electric mobility is set to fundamentally transform commercial vehicle system requirements. From traction, braking and steering, all the way to suspension, damping and supplying the systems with energy, this opens up multiple opportunities for efficient and scalable technologies. For Knorr-Bremse this presents a unique chance to shape future systems for all-electric commercial vehicles. Knorr-Bremse not only commands the necessary expertise to integrate new technologies into state-of-the-art systems that offer maximum customer benefits; the company also already manufactures products for first-generation electric commercial vehicles, and this will help its customers bring their products to market fast.

To prepare Knorr-Bremse for the next generation of electric vehicles (EVs), the eCUBATOR – an agile think tank for future EV system integration – is starting work. This newly created development unit is marked by an agile working environment, cross-functional teams and flat hierarchies. It bundles the company’s technical experience and interdisciplinary expertise, and provides a space in which to think outside the box.

An innovative approach to the challenges of e-mobility

“For us the electrification of commercial vehicles is one of the major trends of the commercial vehicle industry in which we intend to participate,” says Dr. Peter Laier, Member of the Executive Board of Knorr-Bremse AG responsible for the Commercial Vehicle Systems division. “In order to drive forward solutions in this area, Knorr-Bremse has set up its own development unit, the eCUBATOR, separate from our conventional development operations, with some 60 in-house and external specialists. The aim of the eCUBATOR is to adapt our existing product portfolio to the mobility requirements of electric drive systems and, at the same time, to identify and generate growth opportunities for Knorr-Bremse in the wider field of electric mobility. The underlying goal is to support our customers with the electrification of their commercial vehicles.”

Based at external locations in Munich and Budapest, the new development unit with its international and interdisciplinary approach provides a space where, through unconventional approaches, innovative, intelligent solutions for electric commercial vehicles can be identified and then developed in close collaboration with customers, technology partners and start-ups. Knorr-Bremse is currently engaged in talks with potential business partners. The company is already working on numerous different projects that will be complemented in the coming months by additional ideas for new products.

Knorr-Bremse strengthens its product portfolio for electric commercial vehicles

Knorr-Bremse has already developed many products for first-generation electric commercial vehicles and brought some of these products to market. The portfolio includes screw-type compressors, for example, primarily for electric buses and trucks. Knorr-Bremse is also strongly positioned in the field of brake control: The company has channeled its experience with brake blending, involving interplay of the service brake, the retarder and an additional exhaust brake, into brake blending solutions for EVs. Here, the braking effect of the electric motor is combined with the service brake to generate not only optimal deceleration but also maximum energy recovery. This leads to an improvement in vehicle efficiency while at the same time ensuring maximum stability – even in adverse conditions.

With a view to second-generation EVs, which will enter the market from approximately 2025 onwards, Knorr-Bremse is working on solutions including future energy management systems, electromechanical actuators and enhanced functionalities related to vehicle stability and propulsion.

In addition, with its solutions for electric vehicles, Knorr-Bremse subsidiary Kiepe Electric is working to support zero-emission public transportation, focusing on the development and installation of complete electrical systems, as well as on top performance and high quality. Among the solutions currently available is the trailblazing Kiepe Traction Inverter (KTI) that combines the power electronics for the traction system and for charging the battery in a single system. The KTI supports the Kiepe Fleet Management (KFM) system and the Smart Fleet Charging Management (SFM) energy management system. The company's continuously upgraded In-Motion-Charging technology (IMC®) for flexible trolley-bus operation is already well established across the globe.

Through its innovations, Knorr-Bremse is making a decisive contribution to the societal megatrends of urbanization, sustainability, digitalization and mobility. In recent years, the Commercial Vehicle Systems division has focused its research and development activities primarily on the four industry trends derived from these megatrends: traffic safety, connectivity, automated driving and emissions reduction & electric mobility. Electric mobility represents one of the key levers for reaching the internationally agreed emissions targets. Knorr-Bremse also ensures that the carbon footprint of its own components is kept to a minimum at the production stage and that resources are used as conservatively as possible in the interests of sustainable development.

More information on the eCUBATOR can be found at emobility.knorr-bremse.com.

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 29,000 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 generated in both its divisions revenues of more than 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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