

Mass-Trans Innovation Japan 2023

Bosch Automotive Sensor Technology applied to Railways

November 1, 2023

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- ▶ Tram forward collision warning system
- ▶ Perception systems for trains (Sensor based automation for rail)
- ▶ Introduction of Hydrogen Engine Project (Presentation slides only)
- ▶ Bosch booth: B-54 (near North 7 gate)
- ▶ Information is available on the exhibition official website:
https://f-vr.jp/mtij/eng/show1/registration_2023/detail_en.cgi?id=305

Yokohama – Bosch Engineering, a subsidiary of Bosch in Japan, will participate in Mass-Trans Innovation Japan 2023 to be held at the Makuhari Messe from November 8 (Wednesday) through November 10 (Friday), 2023. Bosch Engineering will be showcasing its innovative applications of radar and camera systems for tram collision warning systems, as well as the cutting-edge solutions in railway automation in booth B-54.

Bosch Engineering applies Bosch components which are proven in the automotive industry and its know-how, and exhibits a radar, camera system, and control unit for tram forward collision warning system and introduces automation solutions for railways applying on-board sensor technology.

Bosch Engineering will also be at Stage Presentation introducing about Bosch Railway Front Assist (Forward Monitoring Technology).

Overview of Stage Presentation

Date & time: Wednesday, November 8, from 11:00 to 11:30

Location: Hall 8 special stage (open style)

Contents: Bosch Engineering and Railway Business Division
Driver Assistance Systems for Trams and Light Rail Transit (LRT)
Challenges in Railway Autonomous Operations and
Bosch's Front Assist Development Roadmap

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About Bosch Engineering GmbH

Bosch Engineering GmbH is a wholly owned subsidiary of Robert Bosch GmbH and is head-quartered in Abstatt, Germany. As a systems development partner to the automotive industry since 1999, the company with its more than 3,300 associates offers development services for powertrains, safety and convenience systems, and electrical and electronic systems – from the original concept to series production. Specialized in electronics and software, it draws on Bosch's proven large-scale series production technology to develop tailored solutions for a wide variety of applications in passenger cars, commercial vehicles, off-highway and recreational vehicles, and in rail applications, ships, and industry. Bosch Engineering GmbH also coordinates all the Bosch Group's motorsports activities.

Bosch Engineering K.K. is a wholly owned subsidiary of Bosch in Japan and is head-quartered in Yokohama, Japan. As same as Bosch Engineering GmbH, the company provides services in a wide range of fields.

Additional information can be accessed at www.bosch-engineering.com and www.bosch-engineering.jp.

Bosch in Japan is currently represented in the country by Bosch Corporation, Bosch Rexroth Corporation and other affiliates. Bosch Corporation is responsible for the development, manufacturing, sales and services of automotive original equipment, automotive aftermarket products and power tools. Bosch Engineering K.K. provides engineering services, such as development and application for automotive systems. ETAS K.K. develops and provides engineering of development support tools of electrical control units. Bosch Rexroth Corporation develops and manufactures hydraulics, FA module components and other systems which contribute to industrial technologies. Bosch Security Systems Ltd. provides security and communication products and solutions to help secure the safety of lives, buildings and properties, and is also a supplier of professional sound systems. In 2022, Bosch Japan achieved sales to third parties of some 340 billion yen and employed approximately 6,250 associates.

Additional information is available online at www.bosch.co.jp Bosch Japan Website (Japanese)

The Bosch Group is a leading global supplier of technology and services. It employs roughly 421,000 associates worldwide (as of December 31, 2022). The company generated sales of 88.2 billion euros in 2022. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 470 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 136 locations across the globe, Bosch employs some 85,500 associates in research and development, of which nearly 44,000 are software engineers.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPress.

Note: one Euro = 137.9900 JPY (Calculated using the average rate in 2022)