BMW GROUP
Corporate Communications

Media Information
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BMW Group introduces self-driving robots in Supply Logistics

Autonomous robots transport car parts in Logistics
Innovation assists staff in Materials Procurement
Recycled BMW i3 batteries to power future robots

Munich/Wackersdorf. Plant Wackersdorf supplies the BMW Group's international assembly and production sites with car parts. In the hall of Supply Logistics, a self-driving robot maneuvers itself underneath a roller container with parts. Silently and with flashing lights, it picks up the container and begins to move through the logistics hall. The system is complicated and extensive; nobody can find their way around without a good sense of direction. But this is no problem for the transport robot, which is about the size of a suitcase. Flanked by radio transmitters and equipped with a digital map, it drives independently to the destination of the goods. When tugger train cross its path, a fitted sensor identifies the obstacle and stops the self-driving robot with car parts loaded weighing up to half a ton.

Digitization is essential for production

In terms of smart logistics, the BMW Group is promoting innovative and trend-setting logistics systems: "The development of the Smart Transport Robot is an important milestone for the BMW Group when it comes to digitization and autonomization in production logistics. Together with the autonomous tugger train at our plant in Spartanburg, USA, these two innovation projects make an important contribution to the agility of the supply chain in Logistics and Production. They enable the supply chain to adapt to changing external conditions quickly and flexibly," comments Dr. Dirk Dreher, Vice President of Foreign Supply at the BMW Group.

Company
Bayerische
Motoren Werke
Aktiengesellschaft

Postal Address
BMW AG
80788 München

Telephone
+49 89 382 12225

Internet:
www.bmwgroup.com

Autonomous navigation in Supply Logistics

Measuring its distance to three radio transmitters allows the robot to calculate its exact position and route. With the help of sensors, it identifies critical situations and can

respond accordingly, sharing the route with people and other vehicles. At a later point when the innovation is being implemented in series operation, a 3D camera system will make navigation even more accurate.
The transport robot will be able to function without the floor-mounted induction loops for navigation and will move freely within the space. The battery-powered radio transmitters mounted to the walls of the hall can be expanded to further areas in logistics flexibly without major effort and at low costs.

Utilization of recycled BMW i3 batteries

For the BMW Group, a self-driving robot tailored to meet the demands of the company's supply logistics and production supply is a top priority. Besides custom-fit measurements for the containers to be transported, the vehicle also has sufficient battery capacity as the developers have drawn on the experience gained with BMW i: batteries previously fitted in BMW i3 vehicles are being sustainably reused. This BMW i3 battery module will provide eight hours' worth of energy, covering a full shift.

Pilot project is being transferred to series operations this year

The BMW Group has partnered with the Fraunhofer Institute for this project. The collaboration under the label of the BMW Enterprise Lab for Flexible Logistics was established in September 2015. It aims to explore future solutions for logistics areas. Initial findings will be presented at the trade fair LogiMAT 2016 in Stuttgart from March 8 to 10, 2016, at the stand of the Fraunhofer IML as well as in the forum "New transport robots – agile, strong, versatile". In the future, the Smart Transport Robot can be deployed in both packing areas and in assembly logistics. This step in the automation simplifies the materials procurement process for workers in packing departments and reduces the supply space in the supermarket. The self-driving robot is being developed and tested at the BMW Group's Innovation Park in Wackersdorf. This center is the logistics hub for material management and just-in-sequence supply to BMW Group sites in ten different countries. Wackersdorf is also home to the cockpit production for several plants.

Additional information

The presentation of the Smart Transport Robot in the forum "New transport robots – agile, strong, versatile" takes place on Tuesday, March 9, 2016, between 2:30 and 4:00 p.m. in Forum A, Hall 1. The fair stand of the Fraunhofer IML is located in Hall 1, Stand 1K61.

If you have any questions, please contact:

Corporate Communications

Sandra Schillmöller, Communications BMW Group Production Network
Phone: +49 89 382-12225, Fax: + 49 89 382-25878
sandra.schillmoeller@bmwgroup.com

Frank Wienstroth, Head of Communications BMW Group Production Network
Phone: +49 89 382-54459, Fax: +49 89 382-25878
Frank.Wienstroth@bmw.de

Internet: www.press.bmw.de
e-mail: presse@bmw.de

The BMW Group

With its three brands BMW, MINI and Rolls-Royce, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. As a global company, the BMW Group operates 30 production and assembly facilities in 14 countries and has a global sales network in more than 140 countries.

In 2015, the BMW Group sold approximately 2.247 million cars and nearly 137,000 motorcycles worldwide. The profit before tax for the financial year 2014 was approximately € 8.71 billion on revenues amounting to € 80.40 billion. As of 31 December 2014, the BMW Group had a workforce of 116,324 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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