

PRESS RELEASE

Weinsberg, 8th August, 2011

Expedited battery handling in the port of Hamburg

E-Mobility for Container Logistics

Battery-powered, emissions-free transporters that operate without a driver are being used for the first time at HHLA Container Terminal Altenwerder (CTA). To quickly and frequently exchange the batteries in the onboard battery boxes, which can weigh up to 12 tons, Vollert Anlagenbau developed a fully automated handling station in close collaboration with Gottwald Port Technology GmbH.

HHLA Container Terminal Altenwerder in Hamburg is regarded as the most state-of-the-art facility of its kind. Some 90 diesel-hydraulic and diesel-electric AGVs (automated guided vehicles) from Gottwald Port Technology GmbH, a subsidiary of Demag Cranes AG, are used to quickly move containers between the loading dock and the container depot. Now, electric AGVs are being considered as an alternative means of transport that can reduce exhaust and noise emissions. The first new container transporters have already been integrated in regular fleet operations and provide round-the-clock service thanks to the automated battery handling station from Vollert, which quickly removes and exchanges the onboard batteries.

Pit Stop in Just Five Minutes

"The challenge here was to accommodate the heavy batteries and the low vehicle profile required", explains Lars Strobel, project manager at Vollert. "The battery boxes measure 3 x 2.5 metres, weigh up to twelve tons, and are fitted at the bottom of the vehicle, below its platform, to facilitate loading." The solution for removing and reinserting the boxes was to combine a high-bay warehouse and a 10-metre tall, 4-metre wide guided rack feeder with two drive units and a hoisting drive. The rack feeder does not have a lower crossmember so that the telescopic carriage it supports can reach the battery box of the AGV. The carriage extends 3 metres under

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the box, lifts it, and returns to the rack feeder, which brings the box to one of the twelve storage bays of the warehouse for automatic recharging. The rack feeder then inserts a fully recharged battery in the AGV. In just five minutes, the container transporter is fully operational again. Automation starts at the point of entry, where the Vollert plant measures the height, width, and depth of the transporters to determine their exact position. Should a transporter not be correctly aligned due to snow or ice, for example, a message is sent to the central control unit and the vehicle automatically reverses and enters again.

E-Mobility in Container Handling: An Industry First

Vollert built the battery handling station as a trial plant to service two vehicles and four battery boxes that are being used to test the performance of the e-mobility solution devised by Gottwald Port Technology GmbH for container terminals. Battery-powered AGVs not only have minimal environmental impact, but also offer great potential for lowering operating costs and improving efficiency in a time of rising fuel prices. If the test concludes successfully, HHLA Container Terminal Altenwerder plans to order additional battery-powered AGVs and a larger battery handling station.

About Vollert Anlagenbau

Founded in 1925, Vollert Anlagenbau GmbH specialises in developing made-to-order systems that move, transport, store, and handle heavy goods. The company also devises intralogistics solutions for the metal and aluminium industries and engineers shunting equipment in addition to catering to the production requirements of the building materials sector. The company employs some 200 personnel at its headquarters in Weinsberg. www.vollert.de

Images:

Figure 1: Gottwald



The first battery-powered container transporters (battery automated guided vehicles) from Gottwald are put into service at Container Terminal Altenwerder (CTA) in Hamburg.

Figure 2: Vollert



The twelve-ton batteries are frequently exchanged by a fully-automatic battery handling station from Vollert Anlagenbau.

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