

# Technical report

*BEUMER Group: The warehouse control system simplifies and integrates material flows in the new European Logistics Centre (ELC) of Inter Cars:*

## **At the right place at the right time**

**The system integrator BEUMER Group installed its flexible and modular warehouse control system (WCS) at the new European Logistics Centre (ELC) of the Polish automotive parts supplier Inter Cars S. A. near Warsaw. This system controls the complete material flow from inbound to outbound in real time: picking, packaging and shipment are coordinated, throughput is optimised and costs are reduced. The products reach the right place in the desired time within the distribution centre.**

Inter Cars is a leading distributor of spare parts for cars, vans and trucks in Central and Eastern Europe. The company, headquartered in Poland, has several hundred subsidiaries and branches spread all across the Baltic states and the Balkans. In addition, there is a nationwide network of approximately a thousand workshops. Until the end of 2016, the logistics centre was located in Czosnów. From here, the goods were distributed to the smaller distribution centres in Europe, which on their side supplied the workshops and the customers. However, the quantity of spare parts to be stored and dispatched exceeded the capacities of the logistics centre. The managers decided on a new automated European Logistics Centre in Zakroczym, approx. 30 km from Warsaw. The in-house logistics provider ILS was commissioned as general contractor - "and this is how we got involved as system supplier of intralogistics solutions", says Sandra Lückmann. Sandra Lückmann is business development manager at BEUMER Group in Beckum, Germany, and was responsible for the successful handling of this order. "As a system integrator, we not only designed and installed the entire conveyor, picking and sorting technology, but also our flexible WCS." It integrates and controls the material flows including inbound, quality assurance, picking and shipping.

### **Adaptable WCS**

In May 2017, the ELC went into operation. There, the BEUMER WCS serves as link between the warehouse management system (WMS) of the owner and the entire material flow

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equipment. "While developing this software solution we did not focus on adapting the processes of the customer to our WCS, but we adapted our system project-related to the respective customer requirements", explains Lückmann. Therefore it has a modular design. It controls the packing sorter and the shipping sorter as well as the pick-to-light system in the inbound area, coordinates the automatic supply and application of the shipping labels and supports the routing of the individual items on the conveyor lines. "This route planning optimises the performance of the system and controls the distribution of the different types of spare parts, depending on the requirements", says Lückmann. "The WCS ensures the optimal route of the goods."

The new European Logistics Centre currently stores around 7 million pieces like spark plugs, brake disks, V-belts, batteries, but also more bulky parts, like exhausts and hoods. The complex is comprised of four buildings, the largest one with 30,000 square metres, ten metres in height. It is equipped with a four-story shelving rack. The other warehouses have a surface of 5,000 square metres each. They store tyres and hazardous material, such as oils and varnishes, that must be kept separate for reasons of fire safety.

The employees use their hand-held scanner, where the company's warehouse management system indicates which goods have to be commissioned in batches. The products are divided into different clusters, similar to clothing sizes into S, M, XL and XXL, depending on dimension and weight. The totes filled with S and M parts are placed on a roller conveyor which forwards them automatically to the packing sorter, the BEUMER BS7 Belt Tray Sorter. "This system achieves a throughput of approximately 14,000 parts per hour", says Lückmann. "However, with presorting, it manages a throughput of approx. 27,500, almost twice as much." Depending on the content, the WCS also distributes the incoming totes to one of three induction areas where the employees take the items out of the tote, identify them using matrix camera and place them on the sorter.

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## **WCS distinguishes between "light" and "heavy"**

In order to ensure a gentle handling of the goods and prevent packaging from getting damaged, the engineers of BEUMER Group have divided the destinations of the packing sorter in two parts. If the spare part weighs up to 1.4 kilogram, the WCS classifies it as "light", up to six kilogram as "heavy". According to this classification, the software assigns the goods to the left or to the right side of the destination when picking the order, enabling the employee to place the heavy goods in the tote or the cardboard box first, then the light ones.

The XL goods from the main storage however are so large that only one item fits in one totes. Therefore the WCS does not forward them to the packing sorter but directly to the consolidation area via the roller conveyors. Together with the goods from the other buildings, such as tyres and hazardous materials, as well as the products coming from the packing sorter, the orders are combined into shipping units. These are weighed in the Quality Assurance and compared with the target weight, closed, labelled and then strapped. Now, the WCS guides them over the roller conveyors to the connected shipping sorter that distributes the consolidated orders according to delivery routes at a capacity of 2,500 totes per hour.

If spare parts are returned, they are checked by the employees. If the spare parts are ok, the employee enters them in the system and sends them back to the warehouse.

## **Clear overview of all processes**

Besides the modules which control the material flow, BEUMER's own BG Fusion tool is also in use. This visual display system offers the user a web-enabled user interface for configuration, control and reporting. It displays system data as alarms in a uniform and centralised way and shows status messages, fault messages and all relevant data. "The entire system status can be supervised via the interface to the machine control", describes Lückmann. "BG Fusion combines machine and system data, enabling the responsible employee to trace the order status in real time."

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## **Task fulfilled, project successfully completed**

"The WCS plays a crucial role in this project. After all, exactly this solution ensures that all spare parts within the European Logistics Centre are in the right place at the right time", Lückmann explains. BEUMER Group has completely fulfilled the targets requested by the customer. In addition, to be able to concentrate fully on its core business, ILS has also transferred the maintenance and servicing of the system to BEUMER Group. Employees of BEUMER Group are on site around the clock. As part of the residential service they take over responsibility for availability of machines and systems. The BEUMER Group employees also perform preventive maintenance work. The team carries out maintenance and inspection work on the systems at defined intervals, checks the safety devices, electrical and control components as well as automation technology. And they can perform repairs that might be necessary in case of an unscheduled failure of components.

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## Captions:



**Picture 1:** BEUMER Group installed the entire conveying, picking and sortation technology for car parts dealer Inter Cars S. A. at its new European Logistics Centre.



**Picture 2:** The managers decided to build the new automated European Logistics Centre in Zakroczym, approx. 30 km from Warsaw.

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**Picture 3:** There are currently stores around 7 million of pieces in Zakroczym like spark plugs, brake disks, V-belts, batteries, but also exhausts and hoods.



**Picture 4:** The totes are placed on the roller conveyor and transported automatically to the packing sorter.



**Picture 5:** The conveying technology transports the totes to the workplaces.

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**Picture 6:** The BEUMER BS7 Belt Tray Sorter manages a throughput of around 14,000 without presorting, and up to 27,500 items per hour when using the described presorting process.

**Picture credits: BEUMER Group GmbH & Co. KG**

**The high-resolution pictures can be downloaded [here](#).**

The BEUMER Group is an international leader in the manufacture of intralogistics systems for conveying, loading, palletising, packaging, sortation, and distribution. With 4,500 employees worldwide, the BEUMER Group has annual sales of about EUR 900 million. BEUMER Group and its subsidiaries and sales agencies provide their customers with high-quality system solutions and an extensive customer support network around the globe and across a wide range of industries, including bulk materials and piece goods, food/non-food, construction, mail order, mail and airport baggage handling. For further information visit [www.beumer.com](http://www.beumer.com).

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