# **Wireless Charging for FlexQube Robots**

Daimler Trucks, Santiago, Mexico



- Location: Daimler Trucks Santiago Plant, Mexico.
- Implementation: 2025
- Objective: Improve their material handling process from picking area to the assembly line Engine-Transmission along 250 meters Rute, using mobile robots from FlexQube, called FlexQube Navigator AMRs.
- **Solution:** Integrated Wireless Charging Infrastructure (WCPS) by PohlCon for contactless in-process charging.
- Highlight: Energy supply at process-related stop points no need for separate charging zones or operational downtime. During the picking process, there are two stations where the Kit Cart stops for 3-4 minutes due to subassemblies performed by the operators. We use this time to charge the Robot's battery.

### PohlCon

## **Project overview**

## Daimler Trucks, Santiago, Mexico

### Challenges

- · Eliminate idle times caused by charging breaks
- · Limited space for additional charging infrastructure
- High requirements for process stability and safety
- Seamless integration into existing material flow
- Maximum availability of autonomous mobile robots (AMR) in dynamic environments
- Safer solution for users by not having contact with energy

### Solution

- Installation of the Wireless Charging Protection System (WCPS) directly into the floor at predefined stop points
- Contactless intermediate charging of FlexQube's mobile robots during brief stops – such as loading or unloading material
- No separate charging zones needed:
  Work path = Charging path
- Automated recognition and start of charging when a robot arrives – completely wireless, safe, and lowmaintenance of the Wiferion Wireless Charging technology
- **Mixed traffic compatible**: Charging zones remain walkable and free of tripping hazards for staff

### Result

- Maximum robot availability due to in-process
  energy supply
- No additional charging breaks required robots charge while they work
- **Space-efficient & safe**: No interference with staff or transport equipment
- Easily scalable for future process stations or robot fleets

PARTNER FROM START

TO FUTURE.

 Energy is supplied intelligently and invisibly – exactly where the process allows it

# **Wireless Charging for FlexQube Robots**

Daimler Trucks, Santiago, Mexico

Daimler Trucks launched a forward-looking automation initiative at its production facility in Mexico, aimed at increasing the efficiency of internal material logistics. To achieve this, the plant deployed several FlexQube Navigator AMRs (autonomous mobile robots), designed to navigate in dynamic environments with motorized Towing Load Carriers coupled to the Navigator AMRs to transport materials seamlessly across the shop floor.

A key challenge of the project was the need to supply the FlexQube fleet with energy without causing operational downtime or requiring designated charging areas outside the working cycle. The solution was found in the form of the integrated Wireless Charging Infrastructure System, known as WCPS, developed and delivered by PohlCon. This innovative charging infrastructure enables in combination with the outstanding charging technology from Wiferion, to deliver energy contactlessly at key process-related stop points - eliminating the need for manual intervention, physical connectors, or additional floor space.

During their normal operation, the FlexQube mobile robots stop at designated handover stations - for example, to load or unload material. The charging process starts automatically via the embedded system.

When the next task starts, the robot continues its route, topped up with energy and without any disruption. The entire system is robust, low-maintenance, and designed for 24/7 operation, making it ideal for high-throughput production environments where time matters.

The results of the project have been substantial. Robots now remain fully operational at all times thanks to in-process energy supply.

## **About the partners**

### Daimler Trucks, Santiago, Mexico

### **Daimler Trucks**

Daimler Trucks owns several truck brands across the world, including Freightliner, Western Star, Mercedes-Benz, FUSO, BharatBenz and RIZON.

The company plays a key role in Mexico's automotive industry and operates four major production facilities Santiago Tianguistenco, Monterrey and Saltillo Plants. In 2024, the company reported over 9,000 passenger car sales and more than 3,150 vans sold in Mexico, as well as over 7,000 vehicle sales throughout Latin America. In the recent project Daimler decided to continue their automation effort with the cutting edge mobile robot fleet of FlexQube and rethink the energy supply with wireless charging infrastructure from PohlCon.

### FlexQube

FlexQube develops modular robot platforms for flexible production logistics. Their robots operate autonomously along dynamic routes and handle material transport within ongoing production processes.

#### Wiferion

Wiferion develops and sells energy systems for mobile robotics applications. Building on the etaLINK 3000 inductive charging system in combination with standardized battery modules, the company offers scalable and modular energy systems.

### **PohlCon GmbH**

PohlCon offers WCPS – a robust, floor-integrated wireless charging infrastructure for AMRs, AGVs, and advanced logistics systems – wireless, safe, and efficient.

