

Between gray cast iron and forklifts: real-time communication in harsh environments



Image source: M. Busch

Modernized intralogistics with comprehensive Wi-Fi coverage thanks to a broad antenna portfolio

M. Busch GmbH & Co. KG, Europe's leading supplier of ready-to-install components for the commercial vehicle industry, with locations in Bestwig and Meschede-Wehrstapel, faced the challenge of technologically reorganizing its intralogistics. Up to now, the company had been using an industrial narrowband radio solution with RFID tags embedded in the floor to transmit data between the ERP system and the forklift terminals. This special technology was technically obsolete from a hardware point of view and had to be replaced by a future-proof solution.

Reliable connections sought in the middle of a jungle of cast iron

M. Busch's warehouse logistics are characterized by massive castings, which are stacked in containers by type and stored in large block storage areas. Forklifts navigate through narrow aisles, surrounded by cast material walls up to five meters high—a challenge for any wireless network. It was in these very areas that a reliable data connection had to be ensured to enable processes like container and batch tracking in real time.

“Looking beyond this project, we intend to further unify the infrastructure. Using the LANCOM Management Cloud, we aim to consistently enhance the security and efficiency of managing and monitoring all network operations.”

Lars Tüllmann,
Consultant, tisenito GmbH

Fully covered and future-ready

Longstanding LANCOM Platinum Partner tisenito supported the project from the very beginning with their technical expertise. After a thorough technology comparison between 5G and Wi-Fi, the decision was made in favor of a high-performance Wi-Fi infrastructure as the more cost-effective and future-proof solution.

To accurately assess the specific attenuation and shielding conditions, tisenito then carried out detailed on-site measurements at both locations using the Ekahau planning tool. The measurement results formed the basis for the installation of 76 outdoor access points of the LANCOM OW-602 type. These models, with their rugged protective housing, are resistant to the challenging environmental conditions of the warehouses. Where the integrated, high-performance omnidirectional antennas of the access points reached their limits, external AirLancer sector antennas from the LANCOM portfolio with directional characteristics of 60°, 90°, 180° and 360° were strategically deployed—meeting all coverage requirements.

The backbone of the infrastructure consists of a 10G aggregation switch LANCOM XS-5116QF, several access switches, and two high-end SD-WAN gateways, all connected via client-owned fiber optic lines. The Zebra terminals on the forklifts were easily and securely integrated into the network via Wi-Fi.



Image source: M. Busch, outdoor area coverage – outdoor access point LANCOM OW-602 with outdoor omnidirectional antenna featuring a 360° beam angle

Not just a nice-to-have: information security in the automotive industry

M. Busch deliberately relied on technology “engineered in Germany” to implement this business-critical solution. The decisive factor was not only the technical performance, but also the guarantee of the highest safety and quality standards. “In the automotive industry, compliance with standards such as TISAX is non-negotiable. With LANCOM, we were able to rely on a certified German product that meets our requirements for confidentiality, availability, integrity, and security—and without interface issues, because everything comes from a single source”, said Frederick Wiese, IT Manager at M. Busch GmbH & Co. KG. Thanks to LANCOM's unified system architecture, potential operational inefficiencies can be minimized—ensuring efficient processes from planning through to long-term stable use.



Image source: M. Busch

Networked in real time—ready for tomorrow

M. Busch now benefits from a highly available, scalable Wi-Fi solution that not only optimizes forklift logistics, but also supports future digitalization projects, for example, in production or mobile hand scanner processes. The continuous connection to the ERP system ensures real-time information about material flows, increases transparency and reduces error rates.

The client

M. Busch GmbH & Co. KG is Europe's leading supplier of ready-to-install components for the commercial vehicle industry. With a high demand for efficiency and digitalization along the entire production and logistics chain, the company has developed into an innovative partner for the mobility industry.

The partner

The LANCOM Platinum Partner timento GmbH is an experienced ICT systems house that supports companies in planning, implementing, and operating powerful IT infrastructures—from the initial analysis to stable operation.

Overview

The client



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The partner



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Requirements

- Personal support from a regional systems house
- Compliance with important framework conditions in the automotive sector (TISAX)
- Technological mapping of the infrastructure from a single source
- Central management of IT network components with cloud hosting in Germany

Components used:

Network management:

- LANCOM Management Cloud

Switches:

- LANCOM XS-5116QF
- LANCOM GS-3126XP
- LANCOM GS-2310P+

Router:

- LANCOM 1926VAG

Access points:

- LANCOM OW-602
- various AirLancer antennas with directional characteristics of 60°, 90°, 180°, and 360°

Service:

- Ekahau Site Survey

