

Wi-Fi MESH FOR AUTONOMOUS PALLET SHUTTLES

HIGHLIGHTS

- ✔ [Anit Otomasyon](#) is a Turkish technology company that concentrates on offering inventive solutions for industrial automation.
- ✔ The company was tasked with automating a remote warehouse and creating an integrated system of machinery and software for M2M communication and remote management capabilities.
- ✔ Using our RUTX10 industrial routers and RMS platform, Anit Otomasyon established a unified system that ensured fool-proof connectivity thanks to Wi-Fi mesh functionality and the RMS Management and Connect services.

THE CHALLENGE – SIGNAL-ABSORBING METAL

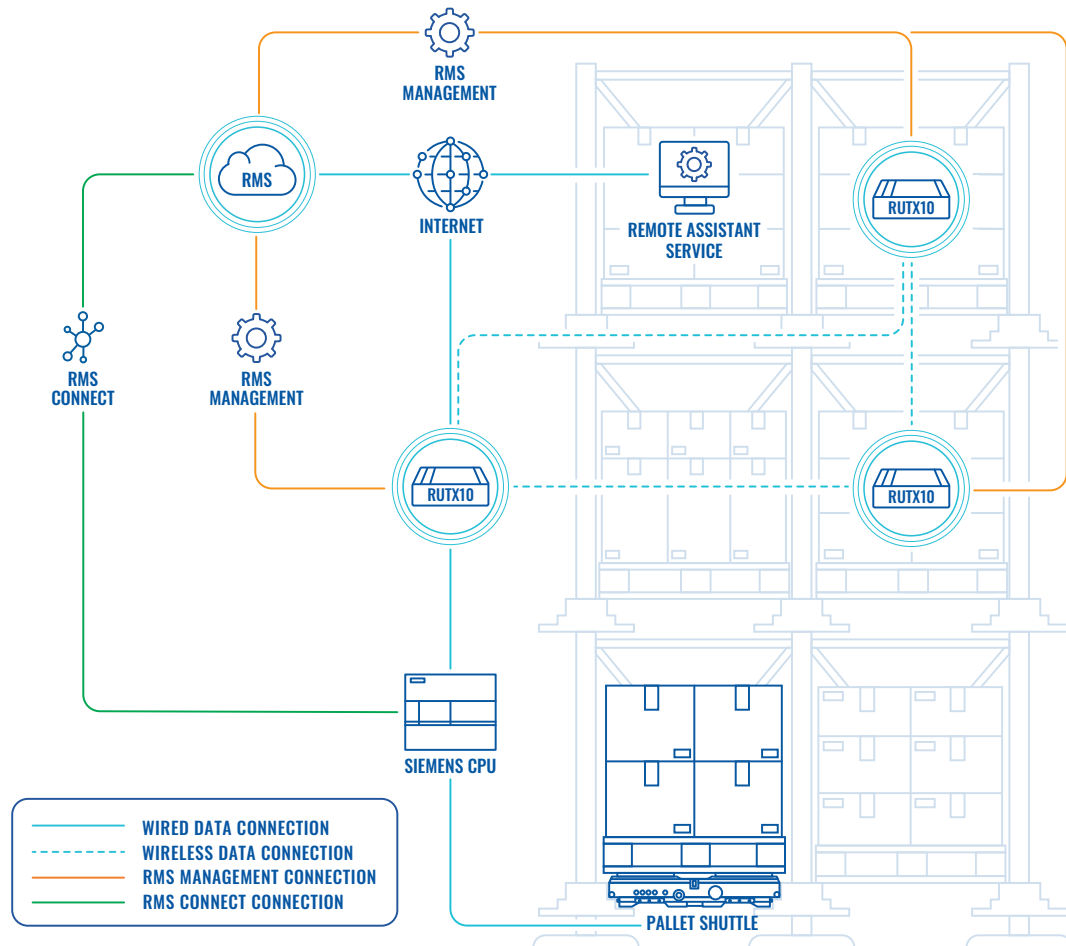
The increasing trend of automating operational processes in remote warehouses is becoming the new standard, and for good reason. It significantly reduces human error, processing time, and costs, since robots don't draw a monthly paycheck. Besides that, automation notably increases warehouse productivity and optimizes space utilization.

Specifically, key to this transformation are autonomous pallet shuttles – a robotic system designed to move goods from one location to another. It uses sensors, cameras, and CPUs to navigate around facilities, optimizing productivity and space use. With such machinery at the scene, less indeed becomes more.

However, this silver lining is not without its cloud. All the software and technologies within pallet shuttles need to be part of one cohesive system. This system needs a mechanism for wireless M2M communication and dependable management systems, enabling remote monitoring and control.

Not only that, but the warehouses' metal shelves are also a significant hurdle, as they absorb electromagnetic radio waves – the essence of Internet signals. So is there a feasible way to overcome signal interference and ensure seamless performance for the pallet shuttle system?

TOPOLOGY



THE SOLUTION – THE Wi-Fi MESHING OF MACHINES

To counteract signal interference, our partners from Anit Otomasyo deployed multiple RUTX10 industrial routers throughout the warehouse and within the pallet shuttles. Connected directly to Siemens CPUs via Ethernet, these routers enabled the pallet shuttles to function seamlessly and act in accordance with commands based on data received from sensors, cameras, and the CPUs.

The scattering of RUTX10 devices throughout the warehouse wasn't done without a reason. It was a strategic move for enabling the grand feature of the RUTX10 router: wireless (Wi-Fi) mesh functionality. This ensures the scalability of the solution and uninterrupted connectivity, even when one or two devices in the network's architecture go down.

This is because Wi-Fi mesh can automatically reroute the network, with functioning routers covering for those busy with rebooting. With this network architecture, the pallet shuttles can smoothly operate while distributing goods around the warehouse. Additionally, Wi-Fi mesh allows you to only need to configure a single router and then auto-apply its configuration to all other routers, making the network's configuration process much more efficient.

RUTX10 also has a fast-roaming feature, which allows pallet shuttles to "catch" and switch to the strongest Internet signal. This helps bypass interruptions from weak Wi-Fi transmissions.

Now, what about the remote management of the solution?

Just like any Teltonika Networks router or gateway, RUTX10 is compatible with our [Remote Management System \(RMS\)](#), and two of its great services. With RMS Management, Anit Otomasyon's team can monitor system performance and address issues remotely. With RMS Connect, it can access the Siemens CPUs, facilitating remote control and adjustments for optimal pallet shuttle operation.

This system is simple, yet highly efficient in automating machinery processes, which is critical when you want to make the most out of your remote warehouse.

