

Mobile asset connectivity

Solution Brief

As orders keep rising, labor remains in short supply and delays continue to impact revenue and loyalty, warehouses aren't just running out of time to meet demand — they're running out of hands and usable space to get work done.

OEMs and SIs have a critical opportunity to help these customers get work done faster, safer and without disruption.



»» Mobile asset connectivity unlocks high-speed operations

Using cellular or Wi-Fi technology, it links a warehouse's mobile devices and systems to the critical data, control systems and people required to maintain peak productivity.



These assets can include:

> AGVs



> AMRs



> Autonomous forklifts



> HMIs



> Tablets



> Wearables



Table of contents

Challenges that put wireless performance at risk	2
Mobile asset connectivity	2
3 steps to wireless implementation	3
Customer success story	4

Challenges that put wireless performance at risk

In a warehouse full of moving parts, maintaining seamless connectivity is no small task. Poor planning can cause coverage gaps, overloaded access points and performance slowdowns that disrupt safety and efficiency.

>>> These challenges can take many forms:

- **Roaming delays:** Delayed transitions between wireless access points cause assets to stall or fail.
- **Coverage gaps:** Obstacles cause dropouts as assets struggle to maintain connections to wireless signals in dead zones.
- **Interference:** Wireless signals emitted from other equipment or networks interfere with mobile devices and networks and lead to slow response times.
- **Integration with control systems:** Poor bridging makes it difficult for mobile assets to connect to control systems, which can cause process errors, missed tasks and the need for manual intervention.
- **Interface with existing networks:** Incorrect configuration causes compatibility and security issues, making it difficult for mobile assets to link to networks.

>>> Mobile asset connectivity

The foundation for mobile asset connectivity is built on ultra-reliable wireless networks that offer low-latency, high-throughput and scalable connectivity. Through cellular or industrial Wi-Fi, Belden's solution unifies devices, people and protocols to enable:

- Uninterrupted data flow
- Continuous operations
- Real-time visibility into assets and inventory
- Secure connectivity to guard against human error

Belden's complete connection solutions enable networks that are built to support industrial mobility and engineered to handle the demands of busy warehouses.



3 steps to wireless implementation

Our projects follow a clear plan to connect business goals to technical execution. By creating an implementation roadmap together, we guide you through every stage of your project, from mapping operational needs to designing robust infrastructure and sustaining performance over time.

> Align the network design with operational KPIs

STEP 1

Belden begins by mapping how workflows progress and interact from the application to the network. Translating KPIs into network specs, we define the outcomes your customer expects in terms of metrics like uptime, cycle time and productivity. From there, we design the network that can deliver them.

For example:

- **Real-time visibility** → low latency + minimal roaming delay
- **24/7 uptime** → resilient coverage + interference mitigation
- **Fast cycle times** → high throughput + seamless handoffs

This prevents costly disconnects between what your automation promises and what your customer's network can actually sustain.

> Design for success with infrastructure and device integration

STEP 2

Reliable mobile asset connectivity depends on seamless integration, from the wireless network backbone to every device on the floor. We ensure successful integration in three ways.

- **Conducting a wireless assessment**
First, we conduct thorough site surveys that involve wireless scans, heatmaps and interference mapping. This identifies weak spots, coverage gaps and possible sources of disruption. The results serve as our reference point for designing a network that scales without sacrificing reliability.
- **Designing the infrastructure**
Next, we help you choose network topologies, access points and antennas engineered for warehouse environments and to overcome coverage barriers like racking and metal obstructions.
- **Integrating and securing devices**
To protect operations and data, we help you connect HMIs, tablets and wearables using strong authentication and network segmentation. By connecting each device to the wireless network and supporting industrial control protocols like PROFINET and EtherNet/IP, we enable real-time performance without interrupting workflows. From there, we can enhance cybersecurity by deploying a network access control supervisor to actively manage who and what gains access to the network.



Belden's services don't begin and end at installation. We're here every step of the way to make sure the wireless network delivers reliable, consistent performance and supports your automation solution by:

- Validating network design before and during deployment
- Confirming coverage, device compatibility and system performance
- Training your team and customers on network best practices and wireless management
- Providing details on network configuration, coverage, integration and troubleshooting guides
- Ensuring that the warehouse's wireless performance meets or exceeds KPIs

>>> Customer success story

While a fleet of AGVs and AMRs empowered this warehouse to achieve **new speed and safety milestones**, unreliable wireless performance was threatening to stall progress and growth.

Faced with **strict uptime targets** and **costly setbacks** when downtime occurred, the OEM and SI needed a way to deliver wireless connectivity and turn risks into gains for the warehouse.

Belden stepped in as a strategic partner, conducting a [network assessment](#) before implementing targeted design and deployment improvements. By designing a tailored, industrial-grade wireless backbone, Belden helped the OEM and SI deliver **high availability** and **fast response** so their automation solutions consistently meet performance targets.



>>> Ready to win?

Request a consultation →



© 2025 | Belden and its affiliated companies claim and reserves all rights to its graphic images and text, trade names and trademarks, logos, service names, and similar proprietary marks, and any other intellectual property rights associated with this publication. BELDEN® and other distinctive identifiers of Belden and its affiliated companies as used herein are or may be pending or registered or unregistered trademarks of Belden, or its affiliates, in the United States and/or other jurisdictions throughout the world. Belden's trade names, trademarks, logos, service names, and similar proprietary marks shall not be reprinted or displayed without Belden's or its affiliated companies' permission and/or in any form inconsistent with Belden's business interests. Belden reserves the right to demand the discontinuation of any improper use at any time.