celona

Connectivity: The Forgotten Infrastructure

Warehouses and logistics companies cannot survive in today's unpredictable world without making the transition to digital–first operations. Still, warehouses have long trailed behind other sectors in their business transformation efforts. Poor connectivity in warehouses, distribution centers and logistics yards means a large gap remains between the promise of transformation and the reality on the ground.

## Poor Connectivity Affects Digital Transformation Efforts

Worker Productivity	AGV/AMR Operations	Yard Management
• Poor device performance	• Poor operation in dense metal areas	• Unreliable yard truck dispatch
• Inaccurate scanning	• Mobility issues for AGVs at speed	• Scanners disconnecting in yards
• Ineffective fork-lift dispatch	• Scalability of AGV fleets	• Affects reliability of perimeter camera/computer vision
• Unreliable worker communications	• Increase in collisions/stoppage	

Real-world performance of Celona Private 5G vs Wi-Fi

Superior Coverage

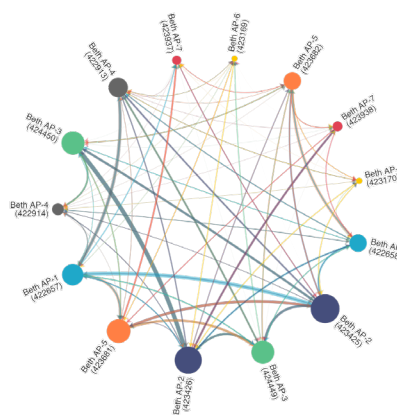- 1/5th – 1/10th the APs as Wi-Fi
- Indoor and outdoor

Wi-Fi Heat Map

29 Wi-Fi APs
59% coverage

5G LAN Map

3 Celona 5G LAN APs
95% coverage
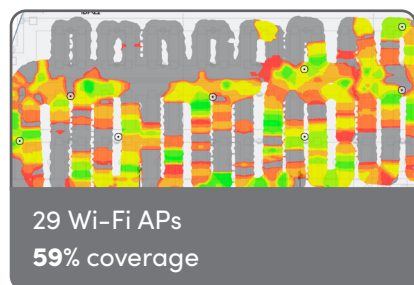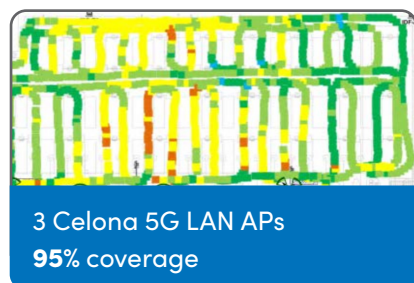
Seamless Handovers

Flawless roaming across APs

- 400 AGVs
- 61K Handovers/day
- 25mph speed

Plot showing handovers between APs in a live deployment

Ultra-low Latency

MicroSlicing™ enabled QoS

- Guaranteed latency < 30msec
- For latency sensitive AGVs, cameras, etc.

Average Ping Response Time (msec)

Legend: ■ Wi-Fi ■ Celona

X-axis: Indoor to indoor, Indoor to Outdoor, Outdoor to Outdoor
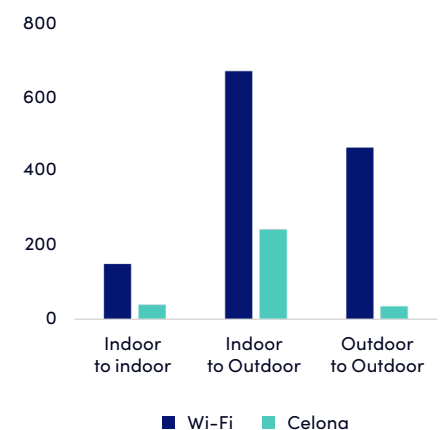
Celona 5G LAN: Turn-key Enterprise Friendly Solution for Warehouses

Edge Devices
- AGV and AMRs
- AI-powered tablets
- Automated robots
- Industrial handhelds
- Smart cameras

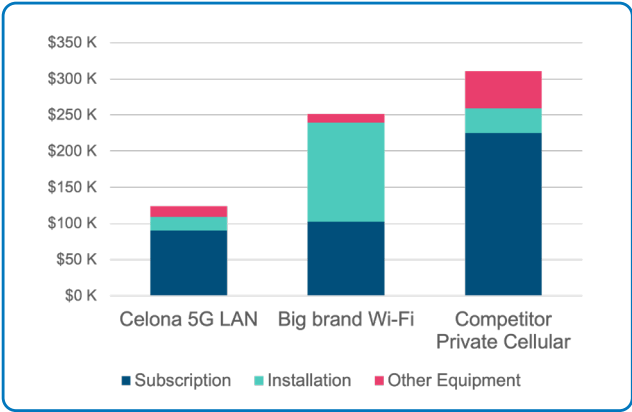**Celona Access Points**
Plug-n-play deployment

Existing on-premises IT/OT infra

AAA/NAC policy | DHCP/DNS services | Firewall

Celona Edge OS
Scalable, cloud-native 5G core with full IP stack

Secure telemetry data

Celona Orchestrator
Cloud-based network administration platform

Key differentiators

| Comprehensive turnkey solution | Advanced security | MicroSlicing QoS technology | Global reach | Enterprise-friendly operation |

Significantly Better Network with Lower TCO than Wi-Fi

Outdoor Yard | 561K sq-ft
Wi-Fi APs: 23 | Celona 5G LAN APs: 3
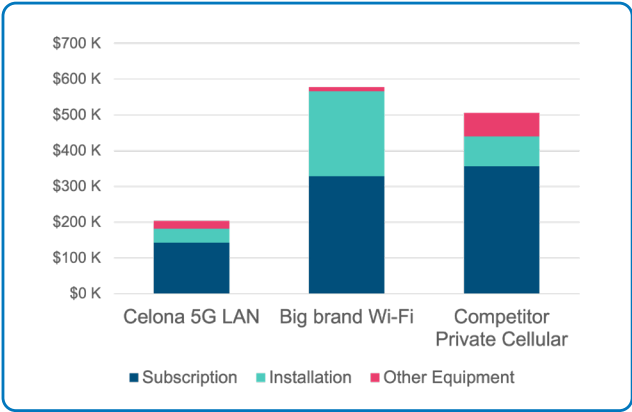
Indoor Warehouse | 775K sq-ft
Wi-Fi APs : 134 | Celona 5G LAN APs : 15

"Our testing and analysis clearly revealed the value of private wireless in delivering lower latency jitter, improved wireless coverage and seamless mobility at a lower total cost of ownership over traditional warehouse Wi-Fi implementations."

Ken Wright | P.E. Director of Technology | M.S. Benbrow and Associates

Starting fresh or upgrading? Build a future-proof network with better performance—for less than Wi-Fi.

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