

celona

Solution Brief

Celona 5G LAN

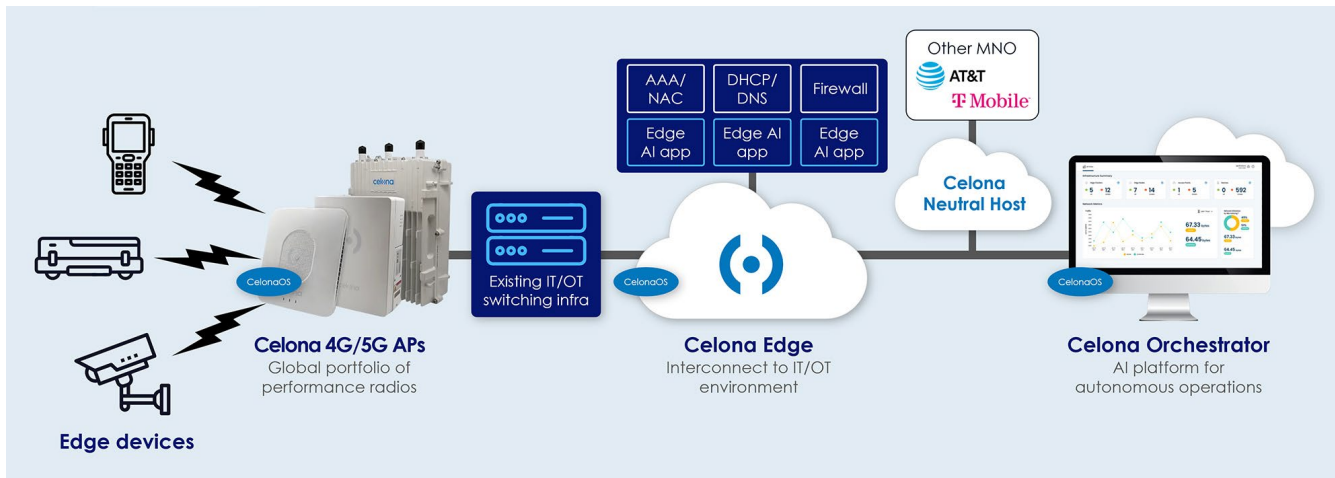
Enterprise private 5G,
purpose-built for AI-driven
industrial operations



Industrial Intelligence is the fusion of AI, real-time data processing, and next-generation connectivity to transform how industries operate—from manufacturing to logistics to energy. It enables machines to make decisions, frontline workers to access real-time insights, and operations to run with greater speed, precision, and autonomy. But to unlock its full potential, these systems need a wireless network that’s just as intelligent.

That’s where **Private 5G** comes in. Unlike legacy Wi-Fi or public networks, Private 5G delivers the reliable, low-latency, and secure connectivity required for AI-driven automation, mobile robotics, predictive maintenance, and other critical industrial use cases. Without it, Industrial Intelligence stalls at the edge—unable to connect, scale, or deliver real-time impact.

Celona 5G LAN is a turnkey private wireless solution that brings the benefits of 5G—high performance, reliability, and deterministic QoS—into enterprise and industrial environments. Unlike traditional telco architectures, it’s designed specifically for enterprise integration and AI-driven operations.



Celona Access Points

[Learn more >](#)

Ruggedized portfolio of indoor/outdoor radios. Plug-and-play private 4G/5G connectivity with global spectrum support and built-in intelligence for dynamic QoS and simplified enterprise deployment.

Celona Edge

[Learn more >](#)

Interconnect to IT/OT environments. Cloud-native 5G core that converges networking, mobility, and spectrum control – seamlessly bridging private wireless with enterprise IT and OT systems through on-prem appliance /VM based or cloud controlled, AP-only AerFlex deployment.

Celona Neutral Host

[Learn more >](#)

Public mobile coverage on private 5G. Extends T-Mobile and AT&T signals on 5G LAN infrastructure, delivering full-strength coverage at remote and in-building sites.

Celona Orchestrator

[Learn more >](#)

AI-powered cloud-based network management. Provides centralized visibility and control for deploying, monitoring, and optimizing private 5G across all enterprise sites.

CelonaOS

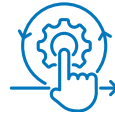
Unified software foundation for private 5G. The industry’s only unified private 5G operating system – delivering a fully integrated solution across radio hardware, core networking functions, and AI-powered management.

Celona 5G LAN key differentiators



Comprehensive turnkey solution

- Built-in 4G/5G core with intelligent spectrum control
- Tightly integrated APs, Edge Orchestrator for interoperability and performance
- Delivered as a turn-key Private 5G subscription
- Single vendor product support and lifecycle management



Enterprise-friendly integration

- Connects to existing LAN, firewall, IT policies
- Inherits VLANs, IP domains, and network policies
- Open API integration with 3rd party security services
- Enforces dynamic, per-device policies

[Learn more >](#)



Zero-trust security with Aerloc

- SIM-based identity for secure, agentless authentication
- Enforces dynamic, per-device policies—no endpoint software
- Air-gaps IT and OT traffic on a unified 5G LAN
- Integrates with firewalls, NAC, and SD-WAN

[Learn more >](#)



Unified software layer with CelonaOS

- Single software fabric connecting radios, core, cloud
- Supports AP-only deployment (AerFlex)
- Unified updates and policies across the full stack
- Built-in intelligence improves reliability



Deterministic QoS with MicroSlicing™

- Instantly segments traffic by device, app, or flow
- Apply QoS policies without manual config
- Enforces SLAs across RAN and LAN
- Segments to VLANs, firewall zones, or user groups

[Learn more >](#)



5G LAN device certification

- Open ecosystem device interoperability
- Supports Apple, Samsung, Zebra, and more
- Validated device performance for use cases
- Bulk eSIM provisioning with MDM integration

[Learn more >](#)

Celona 5G LAN

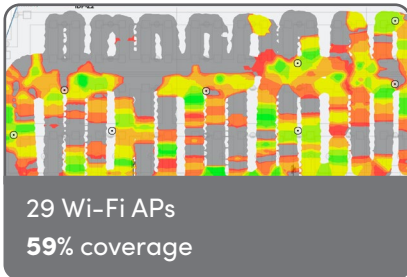
Issue	Public Cellular For roaming outside company facilities	Wi-Fi Best for home & office	5G LAN Private Wireless Purpose-built for indoor/industrial enterprise
<p>Spotty coverage</p> <p>Spotty wireless coverage and poor indoor penetration disrupt connectivity and impact productivity.</p>	<p></p> <p>Unreliable indoors; depends on macro network design and interference</p>	<p></p> <p>Good indoors, but weak in large or obstructed spaces</p>	<p></p> <p>Designed for indoor use with consistent coverage and minimal interference</p>
<p>Unreliable QoS</p> <p>Business-critical applications need predictable latency and throughput.</p>	<p></p> <p>Basic QoS; not optimized for critical app traffic</p>	<p></p> <p>Best-effort service; no guaranteed performance</p>	<p></p> <p>MicroSlicing™ ensures deterministic QoS per app, user, and device</p>
<p>Mobility issues</p> <p>AGVs/AMRs need seamless handoffs at speeds >25 mph.</p>	<p></p> <p>Limited indoor mobility; unreliable handoffs</p>	<p></p> <p>No mobility support; frequent session drops</p>	<p></p> <p>Seamless handoffs at 25+ mph; built for industrial mobility</p>
<p>Inadequate security/control</p> <p>Enterprises need full control of traffic, policies, and integration with existing security infrastructure.</p>	<p></p> <p>Carrier-controlled; limited visibility or policy enforcement</p>	<p></p> <p>Basic encryption; siloed from enterprise security systems</p>	<p></p> <p>Full SIM-based identity, per-device policies, and end-to-end segmentation – integrates with existing firewall, NAC, and security policies</p>
<p>Rising costs</p> <p>Enterprises need predictable and sustainable TCO for mobile connectivity.</p>	<p></p> <p>High and unpredictable roaming/data charges</p>	<p></p> <p>Costs rise with device density – more APs and infrastructure lead to higher installation and maintenance costs</p>	<p></p> <p>Lower and predictable TCO with flat-rate pricing, fewer APs, and minimal ongoing maintenance</p>

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

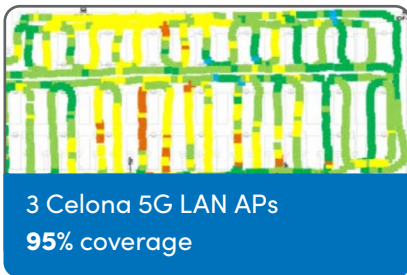
Superior Coverage

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

Wi-Fi Heat Map



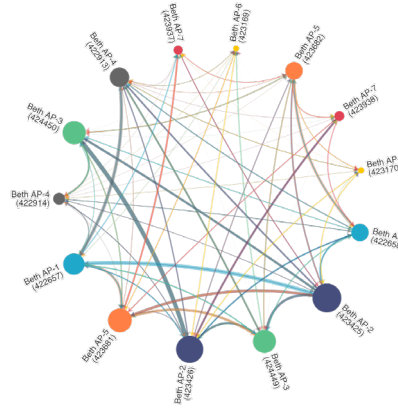
5G LAN Map



Seamless Handovers

Flawless roaming across APs

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

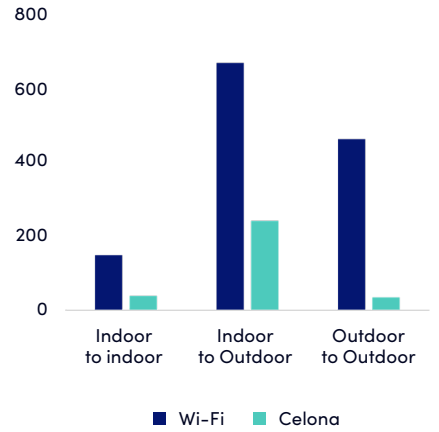


Ultra-low Latency

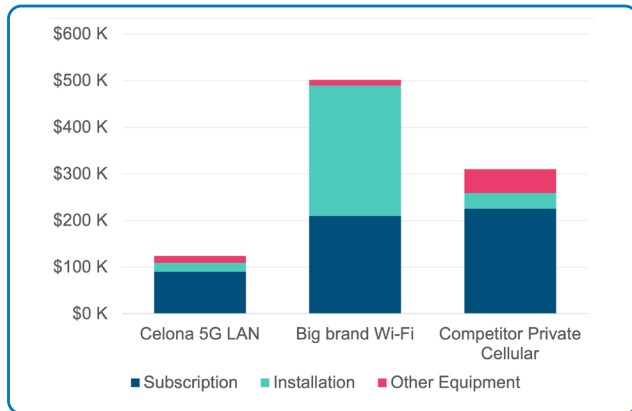
MicroSlicing™ enabled QoS

- Guaranteed latency < 30msec
- Latency sensitive PLC, sensors etc.

Average Ping Response Time (msec)



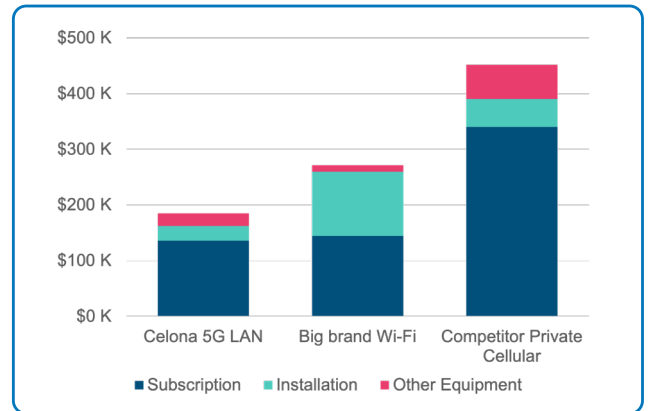
Significantly Better Network with Lower TCO than Wi-Fi



Outdoor Manufacturing Yard | 2.8M sq-ft

Equivalent Wi-Fi APs required: 47

Celona 5G LAN APs required: 3



Indoor Manufacturing Plant | 320000 sq-ft

Equivalent Wi-Fi APs required: 59

Celona 5G LAN APs required: 8

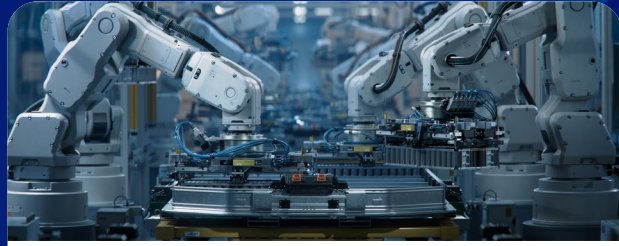
"If I had to continue to deal with the Wi-Fi issues I have to deal with every day at the plant, I'd have to hire more people. And frankly, that wouldn't even fix the technical challenges that I have with using Wi-Fi technology within our environment. With Celona's technology, all that goes away. The solution pays for itself."

Head of IT operations for the U.S Steel Manufacturer

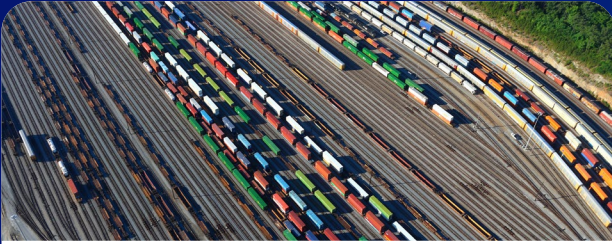
Celona Deployments



Refineries & Petrochemical



Manufacturing



Distribution & Logistics



Healthcare

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Learn more about the [Celona Platform](#)



TCO and ROI Calculator



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