

Connectivity That Powers Micro-Fulfillment Centers

Why Private 5G with XCOM RAN™ by Globalstar Outperforms Wi-Fi



The Challenge



Automation is key to efficiency in micro-fulfillment centers (MFCs), which puts a strain on network connectivity. Uninterrupted communications are required but can't always be supported in these more challenging environments with traditional networks (LTE and Wi-Fi).

- Dense IoT Ecosystem**
Automated mobile robots (AMRs), automated guided vehicles (AGVs), cameras, and sensors all compete for bandwidth.
- Mobility and Interference**
Constant handoffs in cluttered warehouse layouts.
- Downtime Risk**
Even small disruptions can halt automated operations.

Wi-Fi vs. Private 5G

Wi-Fi is a widespread choice for enterprise connectivity, but when competing devices and structures compete for connectivity, it can leave automated solutions halting or lagging.



Wi-Fi in MFCs

- Prone to interference from metal racks, machinery, and RF noise
- Struggles with seamless mobility for fast-moving robots
- Requires frequent site surveys and reconfiguration
- Limited security and performance predictability



Private 5G in MFCs

- + Dedicated spectrum for consistent, interference-free performance
- + Low latency for real-time robotics coordination and safety-critical tasks
- + Scalable bandwidth supports dense IoT ecosystems
- + Strong security and control with on-premise management

Why XCOM RAN Makes the Difference

Even regular private 5G solutions can have limitations in high-density, challenging environments. Optimization can make the difference in high-functioning private networks and those that fall victim to radio-frequency noise. XCOM RAN is a software-defined private networking solution that delivers:



Interference management
Actively optimizes RF in noisy, dynamic environments



Seamless mobility
Reliable handoff for AMRs/AGVs with no dropped connections



High-performance per radio
Fewer radios needed, less RF planning



Future-ready
3GPP and O-RAN standards compliant and adaptable as IoT devices evolve



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