Secure Mobility for Smart Manufacturing

The Challenge

As manufacturing and warehousing are transformed through AI and automated operations — often called "Industry 4.0" — the wireless and wired networks they use to operate are coming under additional pressures. Autonomous vehicles and drones, as well as robotic manufacturing, require mobility and low latency for real-time control. And various AI-enhanced workloads require high-performance and always-on connectivity.

Top Mobile Network Requirements

Complete indoor/outdoor coverage

Mobile networks must provide uninterrupted coverage indoors, outdoors, and campus-wide to support continuous operation of production lines, supplies and inventory wherever needed.

Always-on connectivity

Mobile networks must be highly reliable and resilient to traffic congestion, so production and distribution systems/processes remain uninterrupted.
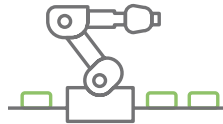
Dynamic support for AI & automation

Mobile networks must provide high performance and dynamic provisioning for modern use cases like AI-driven production automation, robotics and smart IoT.

Seamless IT infrastructure integration

Easy to integrate with existing corporate networks, security controls and policies to ensure maximum protection and compliance for digitized production lines and warehousing.

Outcomes with Digi + Highway 9 Mobile Cloud

As manufacturing and warehousing are transformed through AI and automated operations — often called "Industry 4.0" — the wireless and wired networks they use to operate are coming under additional pressures. Autonomous vehicles and drones, as well as robotic manufacturing, require mobility and low latency for real-time control. And various AI-enhanced workloads require high-performance and always-on connectivity.

⊘ **Ubiquitous coverage:** Enhance data coverage across factory floors and outdoor areas, ensuring robust performance in challenging RF environments.

⊘ **Uninterrupted production:** Connect mobile devices and processes through dedicated, highly resilient private 5G vs. a best-effort shared wireless network.

⊘ **Dynamically support AI and automation:** Rapidly support new production and operation use cases via cloud-native deployment of high-performance mobile services.

⊘ **Security:** Boost manufacturing environment security with encryption, authentication, and granular network control, while tightly integrating with existing security controls.

Mobile Network for Smart Manufacturing
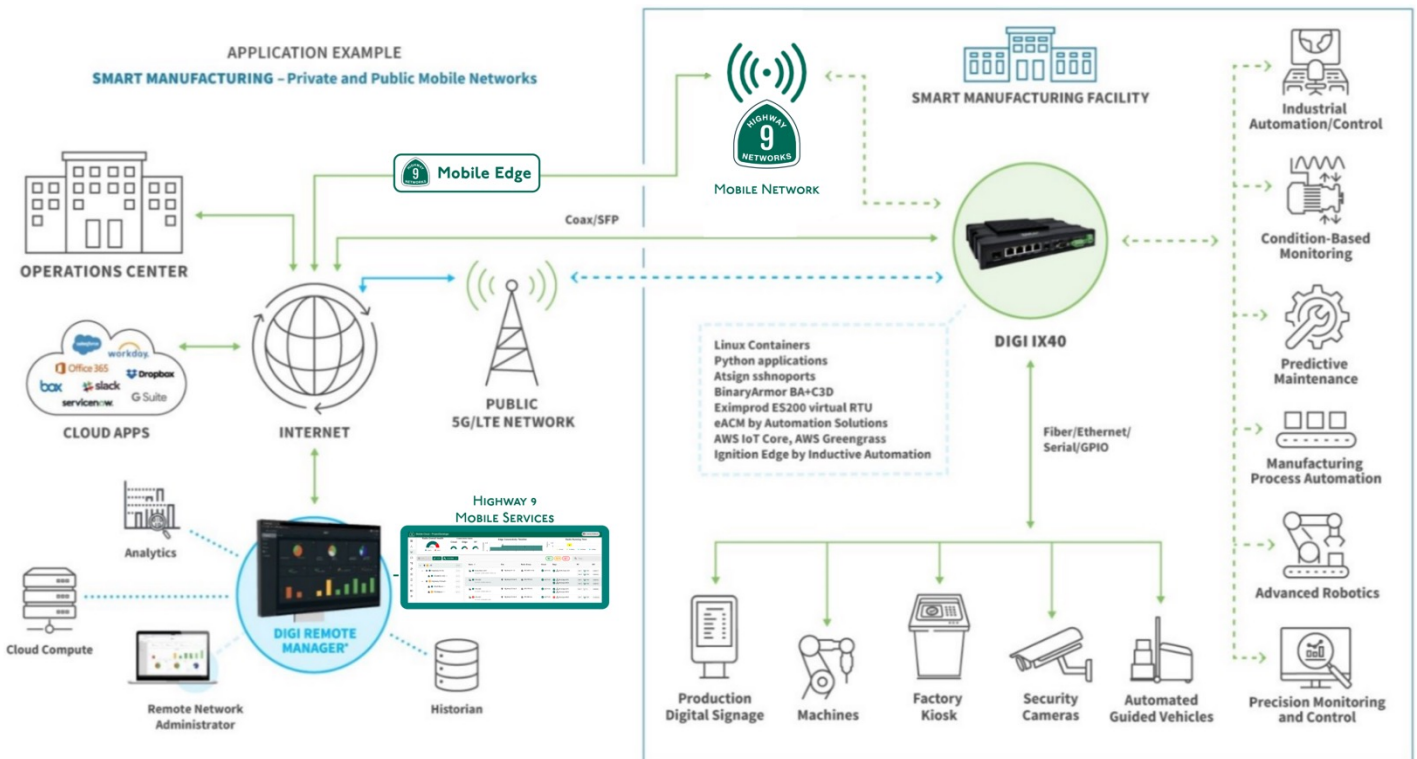
Use Case Examples

Automated machinery (vehicles, drones, robots)

Providing dependable wireless indoors and outdoors is always a challenge for factory environments due to heavy metal clutter, ever-changing floor layouts, and signal penetration. Autonomous machinery require seamless mobility from indoors to outdoors. Deploying Digi and the Highway 9 Mobile Cloud, it is possible to build a resilient mobile network that works in highly noisy and dynamically changing factory environments. For drones and robotics using video feeds, low latency and high bandwidth is mandatory — and only available via a high-performance private mobile network.
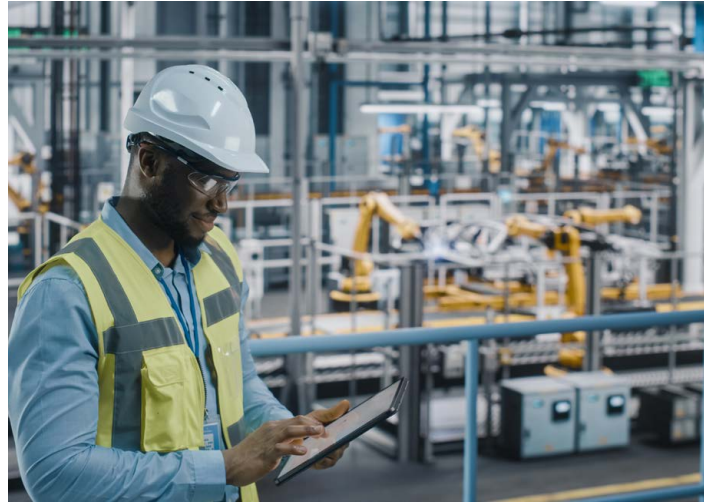
Intelligent warehouses and logistics

Highway 9 Mobile Cloud, with its long-reach cellular network, can provide connectivity for entire warehouse + outdoor/parking lot locations without the need to trench for and deploy expensive ruggedized power over Ethernet (PoE) switches. Teams can keep track of indoor + outdoor assets and incoming supplies using an ecosystem of mobile equipment such as Zebra scanners and mobile devices using Android and IOS. Powerful mobile network radios can be used to cover entire warehouse with a smaller number of access points.

Learn more:
https://highway9.com/solutions/ai-automation

DIGI