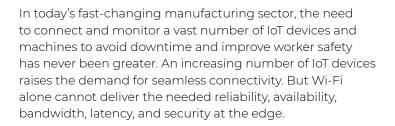# Private LTE/5G as a Service

for Manufacturing

Logicalis helps you plan, integrate, and deploy a full stack, subscription-based private LTE/5G network for increased productivity and efficiency, improved safety, and real-time collaboration across the factory floor.

In today's fast-changing manufacturing sector, the need to connect and monitor a vast number of IoT devices and machines to avoid downtime and improve worker safety has never been greater. An increasing number of IoT devices raises the demand for seamless connectivity. But Wi-Fi alone cannot deliver the needed reliability, availability, bandwidth, latency, and security at the edge.

The solution is a next-generation private 5G network that complements Wi-Fi networks to seamlessly connect all IoT devices, sensors, applications, and people to deliver low latency and high data speed. But building and operating an in-house private wireless network brings added risk, including:

- Cash upfront – A huge upfront investment of capital and/or added complexity through OpEx.
- Delayed ROI – A waiting period to realize productivity and efficiency gains and, ultimately, ROI.
- Technology challenges – Lack of in-house expertise and access to clean, dedicated spectrum.
- Network complexity – Complexity with an added network to the existing infrastructure.
- Operational issues – Lack of resources for performing site surveys to optimize radio coverage, creating new workflows to manage 5G at scale, and performing security patches and software upgrades.

Logicalis eases these risks, giving manufacturers seamless connectivity across factory operations with private LTE/5G wireless networks—delivered as a service—enabling you to quickly realize its benefits. It's simple.

How private wireless networks enhance connectivity on the factory floor

For manufacturing companies, private wireless networks offer significant benefits over Wi-Fi. These environments typically use WLAN and have multiple applications within a wide area deployed. But with Wi-Fi and public networks, it's nearly impossible to run cabling across the entire floor or connect every device without having spotty connections or reliability, security, bandwidth, and availability concerns.

With Wi-Fi and private 5G working together to blanket manufacturing operations at the edge, you'll ensure secure and reliable connections for people, devices and machines, and applications. Managers and engineers can traverse the factory floor and yet be unaware of network handoffs occurring in the background as they move between the wireless infrastructure and the cellular infrastructure.

In addition, most manufacturers have their hands full managing global supply chains and logistics, keeping machines running, and ensuring worker safety. Operating yet another network takes valuable resources away from the core mission.

As one of two global partners authorized to deliver private 5G as a service, Logicalis is expert at integrating 5G with Cisco networking and security technologies at the core and delivering it as a service, allowing you to re-focus your resources on what you do best.

Logicalis: Enabling massive productivity and efficiency gains

We guide you through all the details, starting with a complete assessment and site survey. But instead of introducing completely new technology, Logicalis has already worked out the deployment kinks to give you a clean integration with the Cisco network environment you already know. The result is that the private 5G, Wi-Fi 6E, and ultra-reliable wireless backhaul works in concert on enterprise premises for unified IoT device management and IoT rigidized environment.

In addition, Logicalis provides unified security identification and policy management across all wireless networks, supporting your business and enabling you to tackle the future with confidence.

Experience carrier-grade availability and reliability that securely supports the most demanding applications with 24/7 global support.

The result is massive gains in productivity and efficiency, improved safety metrics, and real-time collaboration across the factory floor.

Here are just a few use cases:

Use case #1:

Security here, there, everywhere on the plant floor

Thanks, in part, to our growing reliance on global supply chains, manufacturers are now in the sights of hostile nation-states. At the same time, the manufacturing sector suffered the most ransomware attacks and became one of the most extorted industries in 2022.[1] The goal of these malicious actors is clear: to steal sensitive financial data and intellectual property. That's why securing manufacturing and industrial networks requires security posture visibility, zero trust, and remote access.

Logicalis helps you minimize network vulnerabilities and harden your security posture by developing secure backups and disaster recovery plans, investing in robust cybersecurity solutions, applying regular system patches, and ensuring your team understands best security practices. Manage and secure your data locally with local connectivity without worrying about data leakage or loss.

Clear the way for automated guided vehicles (AGV) and autonomous mobile robots (AMRs)

Many of today's manufacturing facilities already use AGVs and AMRs. AVGs follow a pre-determined path on the factory floor. They navigate their way using cameras, radio waves, or lasers and stop when faced with an obstacle. These paths are typically wired, making updates and new routes expensive.

AMRs, on the other hand, rely on software to map out the most efficient route and can quickly go around obstacles. Because they can be easily re-deployed to meet changes in products or production lines, they're essential for agile production.

The true value of AGVs and AMRs comes when they are all connected and talking to each other and amassing data that's integrated into manufacturing systems for the utmost in efficiency and productivity. While this is now typically done using Wi-Fi, Wi-Fi often cannot overcome the interference that comes from a device-dense IoT environment.

Private 5G not only provides a better response time, a more stable connection, and more precise geo-positioning than Wi-Fi, it delivers Ultra-Reliable Low Latency Communications (URLLC). URLLC provides up to 99.999% reliability and 1 ms latency—essential for industrial automation and process improvements needed to ensure uptime and worker safety.

Private LTE/5G networks, offered by Logicalis, enable manufacturers to securely connect people, processes, apps, and business-critical machines and devices at the edge to reduce latency and enable real-time seamless mobility and connected operations. And when delivered as a service, these private LTE/5G networks enable you to increase operational efficiency while keeping control over your environment.

Increase productivity and enable the Connected Worker with AR/VR

Imagine equipping workers with ruggedized, voice-controlled hard hats outfitted with cameras, displays, microphones, and leading apps, enabling them to collaborate hands-free with anyone in the world and act as their counterparts' eyes and ears.

Logicalis can help you integrate these specialized AR/VR tools and apps into your private 5G environment, providing the bandwidth needed to increase worker productivity and safety, minimize errors, cut travel, and realize efficiency gains.

For example, an assembly line goes down or requires maintenance—and time is money. With a few simple voice commands, workers can access equipment manuals, call on experts, take pictures, see demos, follow workflows, complete documents, and successfully make repairs from a half world away. And experts on the other side of the world can bring in their experts to guide workers as they get lines moving again.

Keep production lines moving and machines running with asset management

Manufacturers and industrial plants require massive numbers of assets and inventory. Keeping track of them to effectively manage equipment lifecycles and meet supply chain needs can be onerous. To keep track of their locations both outdoors and within a facility, thousands of sensors are applied. But with Wi-Fi, sensors can often be "dropped" while in transit from one area of the plant—or even outdoors—to another.

Logicalis helps you build an ultra-low latency private 5G network that can provide highly accurate location services to track the movement of materials and components and the condition of machines and devices. With this ultra-low latency network, you can count on machines to run 24/7 with minimal downtime, while ensuring you have the materials you need to keep lines running.

Benefits

Lower costs

Reduce the high cost of individual monthly cellular subscriptions through your telecom provider, while enabling much more reliable service.

Improved reliability

Enjoy more reliable 4G and 5G connections that improve the plant operations with cloud-based configuration and monitoring services across all devices.

Data security

Manage and secure your data locally with local connectivity— private wireless ensures your data never leaves the network.

Greater simplicity and control

Retain security and control with complete SIM management and greater operational simplicity with service and device visibility by integrating with your Cisco infrastructure.

Better investment protection

Integrate with your existing Cisco infrastructure and get seamless software and firmware upgrades to eliminate obsolescence and maximize investment protection.

Why Logicalis

Deep connectivity expertise

Logicalis has over 20 active field trials featuring considerable expertise in Evolved Packet Core design and carrier deployment.

Award-winning global services

Logicalis delivers a consistent customer experience with the same services delivered, no matter where you're located.

Expansive ecosystem development

Logicalis has teamed with industry-leading Radio Access Network (RAN), Evolved Packet Core, and User Equipment providers, as well as numerous global providers who can deploy macro-cell (towers) both indoors and outdoors.

Hefty 5G experience

Through our acquisition of Siticom and its 100+ advanced 5G employees, Logicalis has carrier industry veterans with Private 4G/5G deployment experience and deep knowledge of Evolved Packet Core to provide a more holistic solution offering.

Unique Cisco partnership

As one of just six Cisco Global Gold partners—and one of two authorized to provide private 5G as a service, as well as private 4G—Logicalis has deep Cisco expertise and support.

Technologies

Includes Cisco's full-stack, subscription-based Private LTE/5G solution at the core, along with a Cisco-certified RAN.

Logicalis Professional Services
Provides site evaluation, engineering, and implementation, including site preparation, ordering, organization of the spectrum, SIM management, staging, profile creation, core and RAN installation, core NF configuration, and pre-launch solution validation.

Logicalis Managed Services
Provides ongoing support, including SLA management, 24/7 Logicalis Level 1 support and Level 2 and 3 triage and coordination with Cisco, RMA management, solution optimization, application and device integration, customer care and service, spectrum application, end customer service portal, and transport network managed service.

Additional use cases

- Real-time automation/process automation
- Monitoring
- Industrial controls
- Support for mobile and collaborative robots
- Industrial IoT applications
- Automated parts tracking and purchasing
- Smart building applications
- High-scale industrial IoT
- Outdoor connectivity
- SCADA control and monitoring
- Inventory management
- Remote building connectivity

LOGICALIS
Architects of Change

CISCO Partner
Global Gold Integrator