



SOLUTION NOTE **SMART FACTORY**



The Business Challenges

Manufacturers of all sizes are dealing with fresh challenges every day. Apart from the always present focus on staff safety and security, as well as securing the facilities, there are new emerging challenges. The critical one, to begin with, is the manufacturing process itself in response to **fluctuating product demand and the increasingly scarce resources**.

Enterprises are looking for cost-effective ways to improve operational productivity and efficiency at the plant **without scarifying product quality**.



The growing pace of immersing technologies with a higher level of automation, intelligent robots, autonomous drones, Industrial Internet-of-Things (IIoT) sensors, and more, has altered the whole industrial operation. This gives organizations **greater opportunities** to develop operational efficiency but also presents **potential threats** from **existing competitors** who can leverage digitalization for more **rapid at-scale development**. And, newcomers can quickly gain momentum with lower entry costs resulting in an even more competitive market. Enterprises also face stronger talent and workforce shortage despite the fact automation and robotics help to overcome some of this labour gap.

Industry 4.0 for Connected Smart Factory

Industry 4.0 (i4.0) the fourth Industrial Revolution that **Smart Factories** is a core part of, has every equipment, machine, process and person in the plant connected through the entire manufacturing network – stretching beyond the factory itself. This investment helps organizations scale, improve their ability to capture market share with better profitability, product quality and labour force stability.

More industry players have already implemented Smart Factory initiatives such as advanced planning and real-time production, inventory data or augmented reality for maintenance, through digital twins. But many still have a long way to go and need to urgently figure out the intermediate moves to harness the real potential of an i4.0 factory.

The winners are those that realise the true value of a **Connected Smart Factory** – **Visualizing manufacturing operations and management, Increasing asset and operation efficiency, Fabricating products with less waste and lower cost to Build a safer and more sustainable industrial environment.**

Operational Efficiency

- Industrial IIoT
- Internet-of-Things
- Automation
- Drones
- Industrial Robots
- Autonomous Vehicles
- Self-driving Trucks

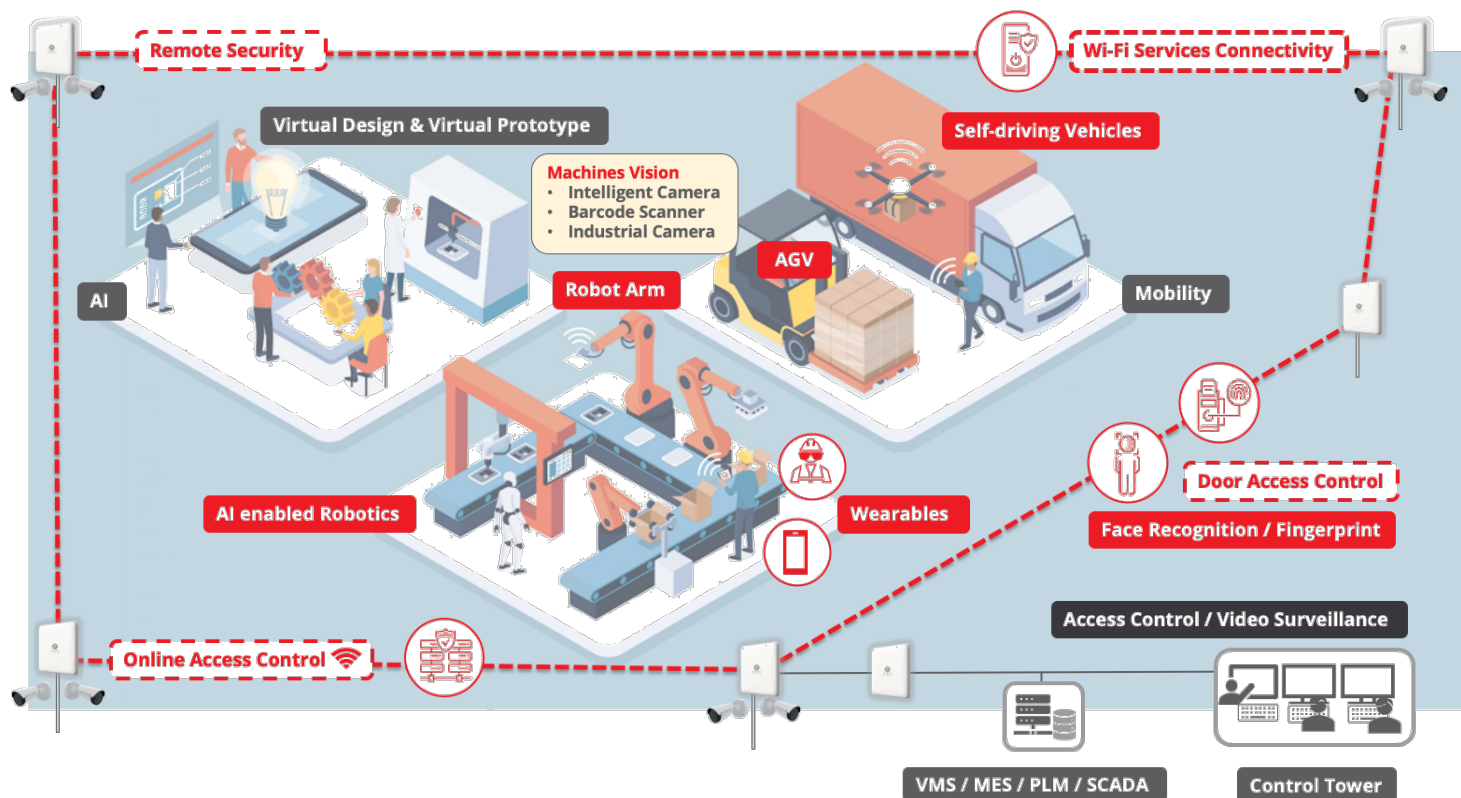
Staff Safety and Security

- Video Surveillance
- Biometric Sensors
- Access Control
- Network Audio

Facility Security

- Perimeter Protection
- Video Analytics
- Access Control
- Video Surveillance

How **Anywhere** Connects Smart Factory



Sensors, Actuators and IIoT Devices Connectivity

Our **Wireless Mesh Network** connects sensors and Industrial Internet-of-Things (IIoT) devices to monitor and supervise the whole manufacturing process. These technologies are introduced to **improve performance** of the machine, cell or line, improve Total Productive Maintenance (TPM), reduce manufacturing cycle time, for asset management and site safety. But all these sensors and IIoT devices **need to be connected**. A Wireless Mesh Network is the most efficient connectivity solution for rapid deployment and zero downtime.

▼ Cycle Time ▼ Hazard Risk ▲ TPM ▲ Performance ▲ Safety

Mobile Robot and Automated Guided Vehicle (AGV) Connectivity

Automated Guided Vehicles (AGVs) are replacing manually operated trolleys for moving heavy goods. The sensors and cameras of these fully automated vehicles and robots used for operation, monitoring, supervision, and control, need to be connected. As these vehicles move around on the floor they must be wirelessly connected. But the security, reliability, and latency of wireless networks have all been concerns in the past.

Anywhere Networks' unique solution for Smart Factories creates a fully secure wireless connectivity network through-out the plant. With the integrated Wi-Fi access point technology, the solution seamlessly integrates Mobile Robots

and AGVs into the **Wireless Mesh Network**. The products are specifically designed for enterprise-grade demands, with the highest reliability, redundancy, automatic failover, and ultra-low latency.



AI-Enabled Systems Connectivity and Augmented Worker Enablement

The **Wireless Mesh Network** connects the Design and Production oversight offices with the plant floor for Design Efficiency and Process Supervision from design optimization and production simulation to tool virtualization and physical operation. True Operational Efficiency throughout the whole product lifecycle can only be achieved in a connected smart factory using big data and advanced analytics. The connectivity is the foundation for rapid decision-making and self-optimization systems where the industry needs to respond to demand fluctuation, supply variations and process deviations.

Augmented Reality (AR) and Virtual Reality (VR) applications widely used in virtual design and commissioning, predictive maintenance, and training, large numbers of these real-time and quality data require a wireless and reliable network for seamless data transfer and advanced

▼ Downtime ▼ Human Intervention ▲ Remote Services ▲ Real Time Monitoring

analysis. As the process operates under digital architectures, augmented operators are no longer confined to a control room and a fixed location, the critical data, real-time alerts and an automated command must be transmitted throughout the **Wireless Mesh Network** to their wearables and hand-held devices.

Anywhere Networks' intelligent solution for AI-enabled factories creates a reliable network for all remote monitoring and assistance services. Our efficient mesh technology integrated AI solution with interconnected remote devices enables operating virtual teams to track data and make the decision quickly and reactive machines to operate efficiently with little or no human intervention, together for a better, faster and more efficient way in a reliable connection Anywhere in the factory.

Access Control & CCTV Surveillance Solution Connectivity

The video surveillance solution connects cameras, network audio systems, access control devices, and portable monitor and management devices to a centralized control room. More to add, more to connect. Anywhere Networks' **Wireless Mesh Network** connects all these bandwidth-intensive and mission-critical cameras, speakers, and door controllers to transmit vast amounts of high-resolution video feeds and multi-factor authentication data such as fingerprint, face recognition, license plate information for rapid decisions, inspection and monitoring. The ultra-low latency connection is critical to secure the facility at all times.

To ensure a wider area where it is difficult to reach, our Wireless Mesh Network is the most cost-effective and easiest-to-install connectivity solution for controlling and recording access anywhere in the mission-critical plant. Coverage everywhere. Anywhere.

▼ Asset Lost / Theft Rate ▲ Remote Services ▲ Security Control

High-Capacity Throughput • Security • Automatic Load Balancing • Flexible Topology Design

Redundant Smart Routing • Rapid and Easy Deployment





Key Capabilities of Wireless Mesh Network

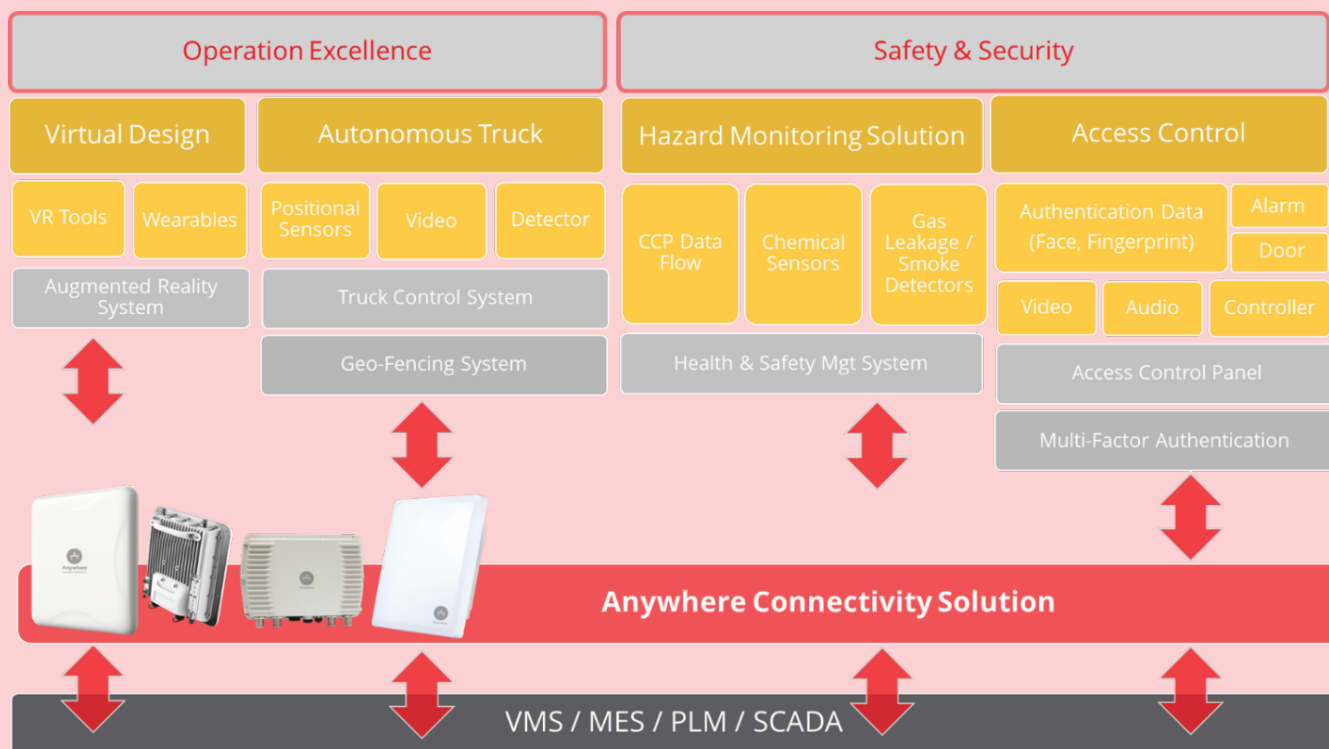
The **Wireless Mesh Network** is the very foundation in creating a **Smart Factory**, connecting:

- **Design and Process Supervision** offices with the plant floor for improved **Operational Efficiency**,
- **Autonomous Trucks and AVGs** for inspection and Safer Work Environment,
- **Sensors and Detectors** for Hazard Monitoring to ensure staff health and safety and regulation compliance, and
- **Video Surveillance** and Access Control systems for staff safety and security as well as plant safety.

A Wireless Mesh Network is 50% less expensive than fibre connectivity, saves 65% of the time for the deployment and with zero interruptions while providing maximum cybersecurity for enterprise connectivity.

Go Wireless Mesh Network for success!

The **Anywhere** Connectivity Solution



...and more.

The i4.0 technologies work together to drive intelligent operations, IT-OT convergence, machine learning-based automation, autonomous vehicles, and drones as well as traditional video surveillance and access control systems for staff and facility safety and security – connecting the digital and physical world by collecting, measuring, and analysing data to predict and automate the manufacturing process. **It's all about connectivity!**

Connecting “Everything” in the entire manufacturing network ...

Creating a Truly Connected Factory

