

# Yes Private 5G Helps Clarion Malaysia Digitize Production Line

**Yes deploys Intel® Xeon® Scalable processor-based private 5G network from Quanta Cloud Technology to integrate smart manufacturing from Cnengenz with ERP from Dassault Systèmes**



The convergence of 5G, artificial intelligence and robotics is poised to take Industry 4.0 to the next level. As industries embrace digital transformation, low latency communication will enable near real-time decision making and intervention to positively improve efficiency and uplift quality while optimizing costs.

The high-capacity, ultra-reliable, low latency 5G network provides the foundation for next-generation manufacturing, logistics, and operational systems that in the future will enable autonomous robots, smart machines, and AI-driven processes to communicate and function at high speeds.



A private 5G network further elevates signal hand off quality and robustness with a deterministic network design that can operate with a high level of resilience and robust network slicing-based QoS backed by security.



As a wireless technology, 5G provides a high degree of flexibility and performance throughout the factory to enable automation anywhere (see Table 1). Mobility support allows for the deployment of robotics such as AGVs and AMRs. Integrating 5G with robotics, industries can achieve a level of automation and intelligence that was previously unattainable, marking a transformative leap forward in the pursuit of operational excellence. The end result can be significant improvements in efficiency, reliability and quality.

YTL Communications, the company behind the 'Yes' mobile network, and an Intel® ISB Industrial Builder member, is playing a key role in bringing 5G-based automation to businesses across Malaysia through its nationwide 5G service and private 5G network integration capabilities. The company spearheaded the deployment of 5G-powered smart manufacturing at Clarion Malaysia – the first such use case in the country.

## Table of Contents

- Assembling a Solution for Clarion Malaysia..... 1
- Class-Leading Network Expertise..... 1
- QCT OmniPOD is Powered by Intel® Architecture Technology .. 2
- Cnengenz Provides Smart Factory Solutions ..... 2
- Dassault Systèmes EPR Improves Collaboration ..... 3
- Conclusion..... 4
- Learn More..... 4

## Assembling a Solution for Clarion Malaysia

Clarion Malaysia is a pioneering automotive infotainment manufacturer. The company came to Yes to understand how a private 5G network could help them re-engineer the production floor to bring about a new level of efficiency and agility. The resultant solution includes software and technology from QCT, Intel, Cnengenz and Dassault Systèmes.

This collaboration exemplifies the transformative potential of 5G in advancing Malaysia's Industry 4.0 ambitions, enabling real-time communication, automation, and future AI integration.

## Class-Leading Network Expertise

Having led the way in launching a nationwide all-4G network in Malaysia, Yes today has a modern all-IP network. Its foresight in building a cloud-native core based on Intel® Architecture in 2020 enabled it to deploy a 5G network in Malaysia.

Challenges	5G-based Solutions
Material receiving: Manual data entry for received materials is slow, error-prone and lacks efficiency.	Intelligent scanners capture material information upon scanning, automatically updating cloud-based ERP systems. This eliminates manual data entry and streamlines the process.
Material picking: Manual picking is time-consuming, error-prone and requires manual updates to the ERP system.	5G-enabled smart racks automate material picking. Strategic placement of these racks optimizes production workflow. The smart rack controls the picking process, ensuring selection of the correct quantity and type of material while updating the ERP in a real-time basis.
Material return process: Manual counting of leftover materials after production is slow, error-prone, and relies on visual inspection. Updating the ERP system afterwards is another manual step, data inaccuracy will undermine the effectiveness of the ERP system.	Automation of material returns with a 5G-enabled X-ray counter significantly improves lead time and accuracy. X-ray-based counting ensures fast and accurate inventory updates to the ERP system, maximizing efficiency and removing wastage.
Material delivery process: Manual moving of materials from storage rack to production floor is inefficient, resource-dependent, and error-prone, reducing overall productivity.	5G-enabled automated mobile robots (AMRs) automate material and finished goods movement throughout the factory.
Connectivity: Cat. 4/5 Ethernet cables were laid years ago supporting a data rate that is now a capacity constraint. In addition, these cables are inflexible and don't support digitization initiatives. Another option is Wi-Fi, which is more flexible, but it is vulnerable to cybersecurity risks and not suitable to industrial use requiring mobility and QoS.	A secure private 5G network overcomes Wi-Fi's challenges with seamless mobility, low latency, high capacity QoS controlled bandwidth with a highly resilient design suitable for mission-critical deployments.

**Table 1.** The high impact manufacturing challenges that can be improved by 5G smart manufacturing.

As a pioneer of 5G in Malaysia, Yes is now driving the next stage of industrial digitization introducing advanced private 5G network services that have high performance and ultra-low latency, are backed-up, and feature class-leading reliability and security. With these features, the service is designed to enable IoT, AI and robotics applications.

The Yes team has chosen to work closely with Quanta Cloud Technology (QCT) to provide this advanced P5G network infrastructure.

### QCT OmniPOD is Powered by Intel® Architecture Technology

The Yes 5G Private Network, developed in conjunction with Intel and QCT, is based on the QCT OmniPOD turnkey standalone private 5G system (see Figure 1). OmniPOD is a fully virtualized, 3GPP compliant (Rel.15) system with three main elements: OmniCore, OmniRAN and OmniView. The system has passed the vigorous 3GPP 5G Security Assurance (SCAS) testing and ISO 17025 lab validation, delivering a foundation for cyber security that can protect data from leakages and cyberattacks.

OmniCore is a high-availability 5G core that meets 5G reliability demands with a flexible system configuration. The core runs on redundant servers powered by Intel® Xeon® Scalable processors, a CPU family that has a balanced architecture that supports 5G core and other workloads with built-in acceleration and hardware-based security features.

QCT OmniCore also supports local user plane function (UPF) to extend site coverage from single-site to multi-site.

For RAN services, the QCT OmniPOD incorporates OmniRAN, a flexible 5G New Radio (5G NR) RAN that includes a baseband unit (BBU), fronthaul gateway (FHGW), and outdoor/indoor remote radio units (RRU). The BBU integrates both the centralized unit (CU), and the distributed unit (DU) powered by Intel FlexRAN® reference software.

OmniRAN can widen radio coverage with expandable RRU deployment. Indoor and outdoor SKUs are both available and the slot formats (downlink-heavy/uplink-heavy/downlink-uplink-balanced) are also configurable to cater to diverse user scenarios

OmniView is the management functionality that provides user-friendly network management, network visualization, and configuration of network functions, optimizing network resource allocation, from QoS profile settings, uplink/downlink slot formats, to cell handover configuration.

### Cnergiz Provides Smart Factory Solutions

Cnergiz was selected to deploy a complete integrated smart manufacturing solutions at Clarion Malaysia. The company also offers individual smart manufacturing systems.

Cnergiz systems automate the complete range of electronics and semiconductor manufacturing processes including receipt of raw materials and supplies to the production and assembly of end-products, to name a few.

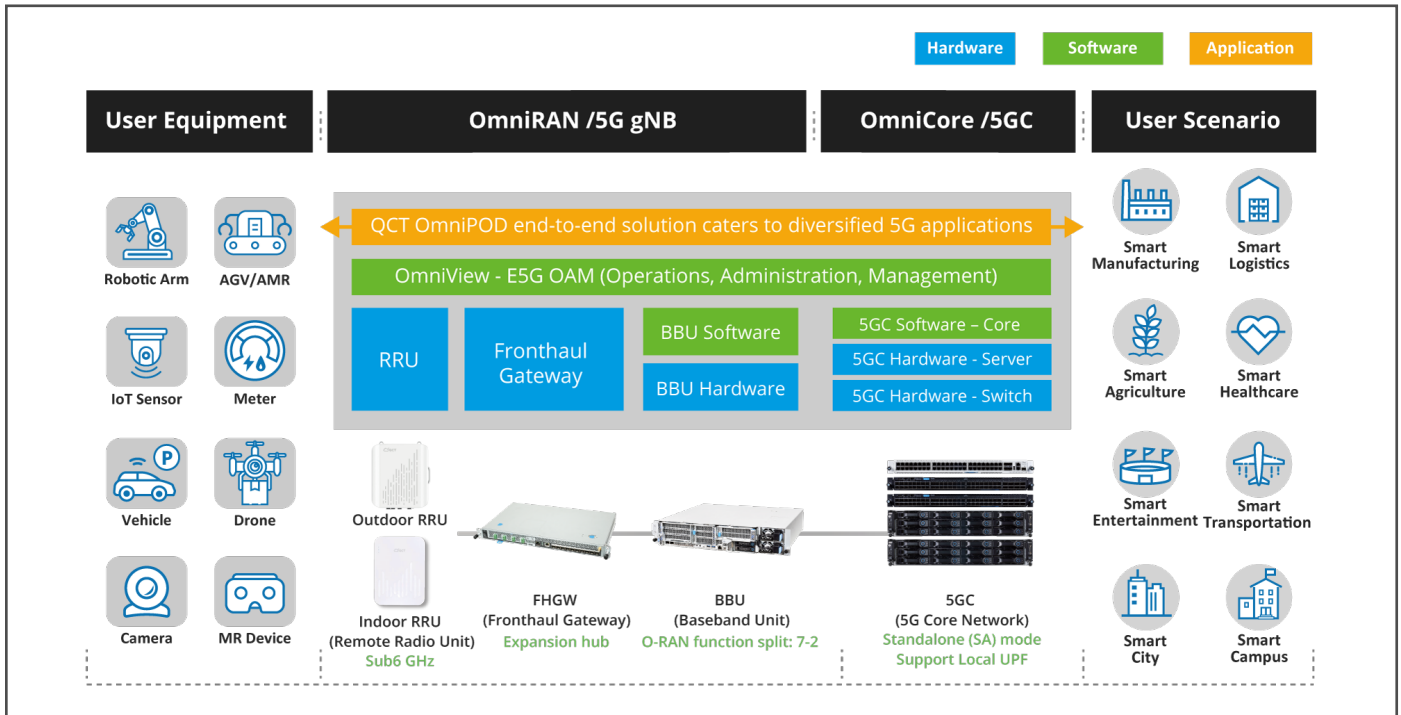


Figure 1. Block diagram of the QCT OmniPOD.

The smart factory solution is customized, using the following capabilities:

- Real time production planning and scheduling solution to optimize overall equipment effectiveness (OEE).
- Automated storage system for parts preparation with monitoring of production quality, production yield, OEE and production volume.
- Automated storage system for parts replenishment ensuring no production line stoppages due to parts replenishment.
- Production planning and scheduling solution for optimizing OEE.
- Production monitoring solution watching over quality, production yield, OEE and production volume.

- Command and control center providing the monitoring, analysis and remote supervision of production activities.

### Dassault Systèmes EPR Improves Collaboration

Clarion Malaysia also employs Dassault Systèmes’ 3DEXPERIENCE platform and DELMIAWorks Manufacturing ERP that streamlines the new product introduction process and improves departmental collaboration by integrating the bill of materials and engineering bill of materials into a single platform.

The technology behind the system can be seen in Figure 2.

Clarion Malaysia’s smart facility deploys high-capacity, ultra-low latency private 5G connectivity from Yes to provide a dedicated high performance secured connectivity

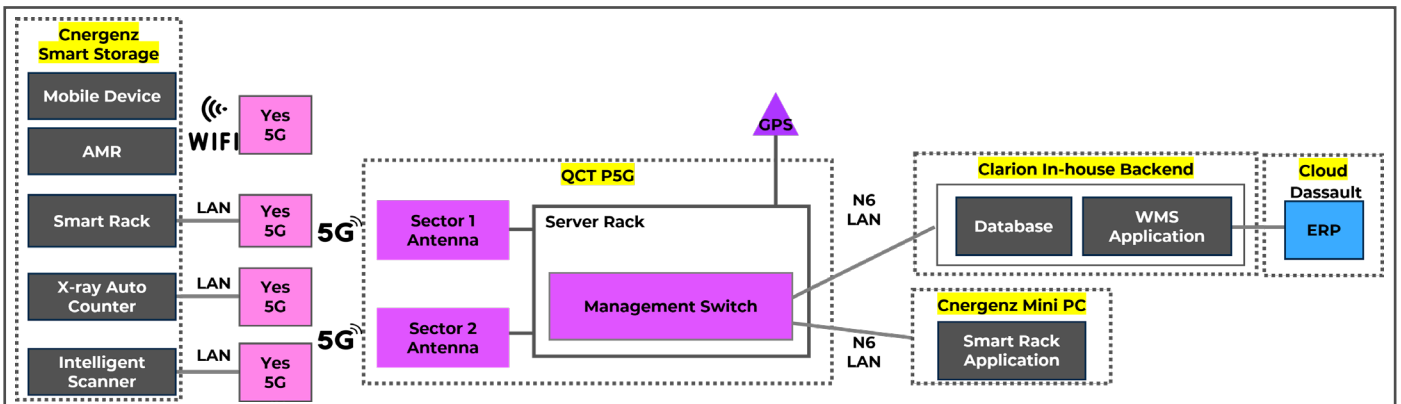


Figure 2. Block diagram of integrated Clarion Malaysia smart manufacturing line with technology from Yes, QCT, Cnergiz and Intel.

fabric on which Cnergenz provides a real-time inventory systems and AI-powered AMRs to revolutionize Clarion Malaysia's production line.

This powerful P5G network also enables real-time communication between employees and machinery on the factory floor with next-generation ERP and PLM from Dassault Systèmes. This seamless integration results in significant enhancements in production efficiency and quality.

## Conclusion

The deployment of Yes 5G Private Network has revolutionized the manufacturing process by enhancing efficiency, accuracy, and operational agility. According to Clarion Malaysia, Yes Private 5G has enabled a new level of real-time automation that has reduced manual errors by 100%, and increased material handling efficiency by 80%. On top of these benefits, the company managed to reduce its processing time by 70%.<sup>1</sup>

In the new era of smart manufacturing, 5G, with its always-on connectivity, will be a key enabler to integrate AI and robotics with production lines. Factory operators need more than just cost reduction – they need a new level of flexibility and adaptability, armed with actionable intelligence to win. Private 5G has the capability to connect people, manufacturing machines and systems in a seamless and secure manner.

Clarion Malaysia solution is just one example of how Yes, with its 5G network and private 5G solution from QCT, can unleash the next level of Industry 4.0 in Malaysia.

## Learn More

[Yes Private 5G Page](#)

[QCT OmniPOD Enterprise 5G Solution](#)

[QCT Enterprise 5G End-to-End Use Case Solution – SmartAMR](#)

[Cnergenz Home Page](#)

[Dassault Systèmes Home Page](#)

[Dassault Systèmes' 3DEXPERIENCE](#)

[Intel Xeon Scalable Processor](#)

[Intel FlexRAN™ Reference Software](#)

[Intel Partner Alliance](#)



<sup>1</sup> Intel does not control or audit third-party data. You should consult other sources to evaluate accuracy.

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