



CASE STUDY PRIVATE 5G

Private 5G is not just improving connectivity – it is enabling a more responsive, efficient and resilient manufacturing environment.

AT A GLANCE

CHALLENGES

- Large, complex manufacturing environment
- Connectivity limitations impacting operations
- Delays in fault detection and response
- Difficulty scaling connected devices and systems

BENEFITS

- Private 5G network across two major build halls
- Real-time data integration
- Connected workforce tools
- Condition-based monitoring and faster alerts
- Scalable platform

CHALLENGE

Jaguar Land Rover’s Solihull site is one of the UK’s most advanced automotive manufacturing environments – but like many large-scale facilities, connectivity constraints were limiting performance.

Existing WiFi and fixed networks struggled to provide consistent coverage across large, metal-dense build halls. This impacted how quickly issues could be identified and resolved, with delays in engineer response (Mean Time to Attend) affecting operational efficiency.

The challenge wasn’t just improving connectivity – it was proving that a new approach could deliver measurable impact in a live production environment.

THE SOLUTION

WM5G, working with delivery partners, deployed a Private 5G network across two build halls – creating a secure, high-performance connectivity platform.

This enabled:

- Real-time shopfloor data capture
- Connected workforce tools (tablets, push-to-talk)
- Faster fault detection and alerts
- Improved visibility of equipment performance

Delivered through a phased approach, the programme ensured value was evidenced at each stage – reducing risk and supporting informed investment decisions.

DEFINITION

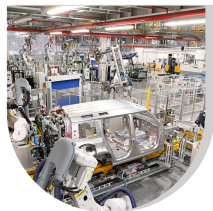
Private 5G is a dedicated wireless network designed to operate securely and reliably within a specific environment. In manufacturing, it provides the foundation for real-time data capture, low-latency communication and the connection of multiple devices, systems and workforce tools.

This creates a more responsive and connected operational environment, where information can be accessed and acted on in real time

APPROACH

Rather than simply upgrading infrastructure, the programme focused on delivering a practical, evidence-led deployment of Private 5G in a live production environment. A phased approach was adopted – designing, testing, proving and then scaling – to ensure value was demonstrated at each stage.

This approach enabled the team to focus on real operational needs, work alongside existing systems and suppliers, and build a clear evidence base to support future investment decisions



KEY AREAS

OUTCOME

Scoping

The programme began with a detailed assessment of the existing manufacturing environment, focusing on how connectivity was supporting – or limiting – key operational processes. This included understanding current systems, identifying where issues were occurring, and prioritising the most impactful areas for improvement.

Technology

The solution involved deploying a Private 5G network across two major build halls, supported by dedicated infrastructure, edge devices and integration with operational data platforms. This created a single, high-performance layer of connectivity across the shopfloor.

Importantly, the network was designed to integrate with existing IT and operational systems, ensuring that it enhanced – rather than disrupted – established processes

Connectivity

Private 5G addressed key limitations of previous network infrastructure by providing more consistent coverage and reducing reliance on fixed cabling. This enabled more reliable communication between machines, systems and people, even in challenging industrial conditions.

By improving connectivity across the environment, it became possible to support a greater number of devices while maintaining performance and reliability at scale

Data

Access to real-time operational data was a critical enabler of change. By integrating shopfloor systems into a unified platform, engineers could identify faults earlier, receive alerts more quickly and gain better visibility of equipment performance.

This shift from reactive to more proactive management of issues supported faster decision-making and improved overall efficiency

Communication & Engagement

Successful delivery relied on close collaboration between partners, suppliers and operational teams. By aligning the technology with real-world use cases and embedding it into day-to-day workflows, adoption was supported from the outset.

This ensured the solution delivered practical value on the shopfloor, rather than remaining a standalone technology deployment.

The introduction of Private 5G has helped shift connectivity from a potential barrier to a core enabler of performance.

Operationally, faster fault identification and response have contributed to improved technical availability and reduced unplanned downtime. From a productivity perspective, engineers are better connected, with more efficient workflows and improved coordination across teams.

Financially, the solution provides a more cost-effective alternative to traditional network approaches, while also reducing production losses associated with downtime. Just as importantly, it establishes a clear foundation for scaling future use cases, supported by a growing evidence base.

WHY IT MATTERS

This project demonstrates that Private 5G can deliver measurable benefits in one of the most demanding industrial environments. By targeting a specific operational constraint – in this case MTTA – the programme shows how connectivity can directly influence productivity, resilience and performance.

It also provides a scalable model for future deployment, both within Jaguar Land Rover and across the wider manufacturing sector

[find out more](#)



lesley.holt@WM5G.org.uk



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www.WM5G.org.uk