

Machine Time
Servitization

Transforming
productivity



5G Case Study

Transforming manufacturing
productivity at AE Aerospace

Synopsis

AE Aerospace, a leading manufacturing business in the West Midlands is the first UK SME to deploy a 5G private network working together with WM5G, Worcestershire 5G (W5G) and technology partner BT.

AE Aerospace operates a high precision engineering facility and has an ambitious growth strategy. **They are undertaking three 5G-enabled use cases that have the potential to transform** manufacturing productivity.

They believe that the 5G-enabled trials will both improve productivity and provide existing customers with a higher quality of service, alongside creating new business models and new revenue opportunities.

It will fast forward AE Aerospace's 'Glass Factory' concept, allowing the manufacturer to increase operational efficiency through the effective use of machine time, speeding up operations and providing their customers with more delivery certainty.





Problem

The production of high quality, high-performance aeronautical parts requires optimised planning to make the best use of different machines and tools.

This is a complex planning process, as each production stage is carefully tracked and monitored by operators.

Whilst this is a necessary part of the production process, a private 5G network provides the opportunity to eliminate documentation on paper and speed up each production stage through the real-time transmission of high volumes of data.



Solution

The installation of a 5G private network enables machines to communicate with one another in real time, transmitting and handling significant levels of data to make live updates to the production schedule as it parts are made.

A 5G private network has several advantages over a WiFi system, mainly in its superior bandwidth, with the ability to support a multitude of devices without reduced performance and low latency, where precision matters and 5G maintains a continued signal throughout.

The 5G private network and collected data will enable more advanced production planning, using real data to make decisions about required operations, machine capacity and tools required.



Benefit

Using a 5G private network to wirelessly connect machines means that higher volumes of data can be captured and analysed in real-time, leading to greater operational efficiency in the production line.

Through 5G, the system can also identify if any production components fall outside of the expected delivery times and why, allowing the team to make ongoing improvements to the production line.

The technology will provide the ability to understand the production flow and accelerate the planning and process journey, meaning AE Aerospace can transform their business model to selling machine time, rather than individual products.

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The development of 5G Technology accelerates our Glass Factory, Servitized programme by improving our productivity and flexibility, reducing costs and lead time for our customers.

Post pandemic and Brexit, this support enables the UK Manufacturing sector to compete on the world stage.

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Peter Bruch, AE Aerospace

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We're committed to supporting the recovery and growth of the manufacturing sector by transforming productivity. The cutting edge results from the trials at AE Aerospace clearly illustrate the value of 5G for manufacturers, not only across the West Midlands, but the whole UK.

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Robert Franks, West Midlands 5G

Greater production efficiencies

The UK's first private SME 5G network at AE Aerospace, powered by BT, will allow for the successful roll out of an automated system that streamlines the day-to-day operations.

Through 5G, the system will be able to support live scheduling, analysis of machine capacity, required tools, quality checks, live planning and report production.

This provides the ability to maximise machine time and provide customers with more accurate assurance that parts have been designed to specification with increased speed and efficiency. This will eliminate the need to re-work or replace damaged components impaired in transit.

The system will also highlight any areas of lateness or fault to help the manufacturer identify production pinch points and improve customer experience by providing more delivery certainty.

Through the deployment of a 5G private network, AE Aerospace will set a precedent to bring the SME aerospace sector forward to deliver products to standard more quickly and efficiently.



Takeaways

Sustain



The sophisticated data capture enabled by 5G should be regularly reviewed to ensure it delivers against industry requirements, with baseline standards for delivery agreed through the trial.

Learnings



Using a private automated network allows for high volume data capture. Engagement, conversation and collaboration between WM5G and AE Aerospace through the learnt data will demonstrate the value and efficiency that 5G can provide to the manufacturing industry.

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