

HOW TO: OPEN THE DOOR TO INDUSTRY 4.0 WITH 5G

West Midlands 5G ([WM5G](#)) has been established by the West Midlands Combined Authority (WMCA) and the Department for Digital, Culture, Media and Sport (DCMS) to develop the UK's first regional 5G testbed and accelerate the roll-out and adoption of 5G throughout the region.

5G is the fifth-generation mobile network, a global wireless technology designed to connect virtually everything, from machines and objects to devices, further enabling the Internet of Things. Its speed, capacity and low latency are just some of its capabilities which open up tangible opportunities to transform UK industries. You can read more about 5G and decide if it's right for your organisation in our [first guide](#).

In the advancement of digital technology and 5G in manufacturing, you may have heard the term '**Industry 4.0**'. Industry 4.0 represents the fourth industrial revolution and is the wider term for describing the move to cyber physical systems and technology-led manufacturing environments.

Each industrial revolution from the 1st to the 4th, didn't just happen overnight. Through the openness and introduction of new technology, any manufacturer can open the door to Industry 4.0. Below we explore how you can do so, and what this means for the future of your organisation.

How to: develop an Industry 4.0 vision

Organisations must decide where they see Industry 4.0 making the most impact across their individual operations. Start by mapping out your business strategy and 'vision' for Industry 4.0:

- ≈ Assess your current challenges and identify initial improvement points
- ≈ Evaluate your current digital maturity versus where you believe you need to be. Set clear goals to ensure you can map the progress you make to close this gap.

- ≈ Identify and prioritise the measures and technology that will bring the most value to your business and ensure these align with your overarching strategy.
- ≈ Gather insights on digitalisation from organisations that have already tried and tested, such as [WM5G](#) and [Make UK](#).
- ≈ Gain commitment to your approach from company leadership and across your organisation.
- ≈ Benchmark against your competitors and partners in the supply chain.
- ≈ Ensure there is an organisation-wide openness to new technology, ideas, and processes.

Alongside analysing business priorities and planning for the future, organisations should undertake a wider education piece internally to set clear expectations as to the art of the possible, and how colleagues can support this progress.

- ≈ Start small, with pilot projects to establish a proof of concept and demonstrate return on investment. Not every project will succeed, but they will all help you learn and develop your approach.
- ≈ Design pragmatically to compensate for standards or infrastructure that may not currently exist. Test for your ideal situation, not your current one.
- ≈ Collaborate with digital experts or leaders outside of your organisation. This could include start-ups, universities, or public sector organisations like WM5G.
- ≈ Find a network provider that can help you or consider upgrading your IT infrastructure. We'll be talking more about network availability and infrastructure in our later guide, so keep your eyes peeled!

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

[AE Aerospace](#) operates a high precision engineering facility and has an ambitious growth strategy. They believe that all three of their current 5G-enabled trials both improve productivity and provide existing customers with a better quality of service, while creating new business models and new revenue opportunities.

The trials will accelerate AE Aerospace's vision of becoming a 'Glass Factory', with greater understanding of production flows and more efficient use of machinery, enabling them to switch from the traditional pay-for-part model to offer bookable machine time to third parties.

Ian Bouquet-Taylor, Operations Director at AE Aerospace said:

"It's vital to understand 5G's capabilities and possible use cases before developing a detailed business strategy based on these.

"We initially developed our 'Glass Factory' concept after talking closely to our customers about how they saw their ideal partner. Amongst the normal perfect quality and perfect delivery requirements, a theme came through of the need for surety in their planning, knowing when work in the system would be ready and when we had future availability, alongside the fact that we spend approximately 10% of our week liaising with the customer to keep them informed of status.

"'Glass Factory' removes all that by allowing the customer to see inside our business without the need to directly be in contact. The aim of our current 5G trials is to fast forward our Glass Factory programme by improving our productivity and flexibility, reducing costs and lead time. Post Covid-19, we believe that this support will be a driving force to enable the UK Manufacturing sector to compete on the world stage."

How to: test connectivity environments

Once you have an idea of how you would like to improve your operations and begin your Industry 4.0 journey, it's important to test the technology within a connected environment.

WM5G works with a range of partners across the sector to design and create connectivity environments for organisations to test, scale and apply their 5G solutions.

[5PRING](#), an organisation formed from a consortium of WM5G, O2, Deloitte, Digital Catapult and Wayra has officially opened the UK's first 5G commercial innovation centres. With facilities located in Wolverhampton, Birmingham and Coventry, the innovation centres are an available space for all businesses to use and provides opportunities for disruptive organisations to develop and test new applications.

As well as 5PRING, the Manufacturing Technology Centre (MTC) in Coventry is working with WM5G, technology partner BT and Worcestershire 5G (W5G) to trial its own purpose-built private stand-alone 5G network.

The 5G connected facility at the MTC will allow manufacturers of all sizes to explore the benefits of 5G in manufacturing and inspire them to scale up the development of use cases within shop floor environments. They are inviting enterprises of all sizes to explore the benefits of applications such as multi-edge computing and robotics – and will be showcasing a live 5G-connected robotics demonstration later in the year.

Midlands SME AE Aerospace will also be hosting an open day in Autumn 2021 to showcase their 5G applications in us across the factory and share key trial learnings with the industry. Keep your eyes peeled for more information!

Learn more

To learn about the use case trials and the benefit of 5G to manufacturing, visit:

wm5g.org.uk/projects/manufacturing

If you've identified an operational issue and have a desire to explore new technology, we'd love to hear from you. Contact us to begin

your 5G journey: enquiries@wm5g.org.uk
wm5g.org.uk/contact