

What's next for 5G in the rail industry?

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Mobile and broadband connectivity has become more important than ever to the way we live and work, including on the railways.

Among the organisations transforming connectivity is West Midlands 5G, that is looking at opportunities to use 5G to:

- Make transport more efficient and reliable.
- Improve access – making it easier to work, study and access leisure.
- Enhance the experience of travellers by improving services and products across the transport system.

Mark Stansfeld is chair of West Midlands 5G and has written an article for railbusinessdaily.com titled 'What's next for 5G in the rail industry?'

"If the COVID-19 pandemic has taught us one thing, it's that mobile and broadband connectivity has become more important than ever to the way we live and work.

Key workers have relied on mobile and fixed connectivity to coordinate the response to the pandemic while millions of people have been and will continue working from home, relying on video conferencing

and social media to stay in touch.

Unsurprisingly the pandemic has also had an impact on transport. Almost overnight, the Department for Transport saw a dramatic drop in road users with figures reaching as low as 23%. Similarly, National Rail reported as little as 4% of their usual passenger numbers. A few months on and these numbers still remain lower than 'normal'.

While levels of use across public transport are lower than usual, it is important that we continue to work towards implementing and delivering technologies that will benefit commuters well into the future.

West Midlands 5G (WM5G) – the organisation I Chair – has helped build the UK's first region-wide 5G testbed which has been proving real-life applications and discovering new use cases, R&D projects and applications.

Thanks to successful partnerships with The West Midlands Combined Authority (WMCA), the region's Local Authorities, Government and Mobile Network Operators (MNOs) we have been able to remove the barriers to deploying super-fast 5G networks.

This has meant the West Midlands has rapidly become the UK leader for geographical 5G coverage. According to the independent Umlaut Audit Report Birmingham has also been named as the top city, and we are capitalising on that success.

Working closely with Transport for West Midlands (TfWM), our Transport programme has developed a portfolio of projects to identify how 5G integration can improve connectivity, support operators and provide an enhanced passenger experience.

Earlier in the year we conducted one such trial with West Midlands Metro and GoMedia to explore the possible benefits of a 5G-connected tram. While the trial explored how safe, remote transfers of CCTV footage for maintenance, passenger safety and route data could streamline operations, it has also opened up numerous other possible benefits.

For instance, future networks could be equipped with 5G sensors to help engineers remotely identify issues in carriages and across infrastructure, predicting and responding to faults before they occur. CCTV footage from within the carriage could be securely transferred to the Regional Traffic Control Centre while the tram is in operation, improving passenger safety and providing data on the number of people using services and waiting at stations. The collection of this data in real time will enable operators to adjust their services as required to meet demand. For passengers, this could mean a less crowded commute while operators can provide a more agile, cost effective service. Other softer benefits will include live travel updates and the ability to stream onboard entertainment for passengers, a feature that is becoming the gold-standard for public transport provision. What is clear is that technologies like this will play a key role in predicting traveller journeys, anticipate demand and expand capacity and journey times.

More recently WM5G announced the result of its first round of funding competitions – £2.4 million invested in seven UK-based consortiums to support the development of new products and services to further transform transport across the region. The funding competition's first phase will deliver exciting innovation

projects that – if successful – will either provide a use case to improve road and rail operational efficiency, provide better-connected transport, or improve passenger experiences.

With an array of factors accelerating the need for transformation, innovation and change, this is our chance to embrace them for the greater good and truly revolutionise the transport industry.

According to a study by Barclays, the fifth-generation network is set to provide an additional £1.9bn of business revenue each year to 2025. If further regions follow suit this could make a big difference to our nation's financial recovery post the pandemic. Transport and the rail sector will play a major part in this work as we move out of lockdown and closer to a world no longer restrained by a global pandemic.

By exploring new possibilities now and making the most of the situation we're in we can unlock the future of transport, making our cities and regions smarter, safer and more accessible."

Mark Stansfeld, Chair of West Midlands 5G

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