

Press release: Better mobile and Wi-Fi connectivity for rail passengers

- Proposals could allow everyone onboard to stream videos simultaneously
- Fibre optic cables and mobile masts could be rolled out alongside tracks to provide gigabit speeds to trains
- Ministers now looking at “future proofing” rail connectivity to help pave the way for a 5G rollout

The Government has fired the starting gun on an ambitious plan that could see the UK’s train passengers to benefit from a dramatic improvement in onboard mobile and Wi-Fi connections.

The rapid growth of mobile data requirements and the use of smartphones and tablets now means that consumers expect high quality, reliable connectivity everywhere. As part of its [5G strategy](#) the Government has committed to improving coverage where people live, work and travel – including on trains.

Minimum standards for mobile connectivity on new franchises already being introduced, but today’s proposals set out how, working with industry, connectivity for passengers on all mainline routes could be dramatically improved by 2025.

Each train could get speeds of around 1 Gigabit Per Second (Gbps). This would future proof the connectivity, and in practice could allow several hundred passengers to stream uninterrupted video content at the same time.

Minister for Digital Matt Hancock said:

We want people to be able to get connected where they live, work and travel. This means improving connections on Britain’s railways now, and making sure they are fit for the future. We’ve got a long way to travel but our destination is world-class signal for passengers. This will not only make journeys more enjoyable and productive, but will help improve the operation and safety of the railway and deliver economic benefits for the whole of the UK.

Bruce Williamson from Railfuture said:

Wi-fi has moved from being an optional extra to something essential for the 21st century rail passenger, so we welcome any improvements to capacity and coverage. It should become absolutely standard for all trains on the British railway network to have seamless connectivity, as it’s essential for attracting the smartphone connected generation to rail, as well as the business traveller working on the move. Very soon, trains without wi-fi will become unthinkable, and rail passengers will look forward to the day when

the phone doesn't cut out in tunnels.

Rail passenger connectivity is largely delivered through mobile phone networks operating from remote (non-trackside) masts, meaning coverage is patchy and in many places, non-existent. To deliver the improvements, upgraded trackside infrastructure could be required for reliable connectivity in areas of high passenger demand and in hard-to-reach areas such as tunnels. Delivering this will involve laying fibre along the tracks, mounting wireless devices on masts (and other trackside infrastructure) to transmit the signal to the train; and providing power supplies to these masts.

To help us understand some of the technical and practical deployment challenges of trackside infrastructure, work has already begun on a trial on the Trans Pennine route between Manchester and York, in partnership with Network Rail. This will ensure we know how best to make use of existing trackside infrastructure and utilise Network Rail assets, as well as testing suitable track-to-train radio systems to deliver services to passengers under real-life conditions. This pilot is part of the government's £31 billion National Productivity Investment Fund, which has already earmarked £1bn specifically for improving Britain's digital infrastructure, ensuring the UK is match-fit for the future.

Transport Secretary Chris Grayling said:

We are investing record levels delivering the biggest rail improvement plan since Victorian times to improve services for passengers – providing faster, better and more comfortable trains with extra seats.

Improved mobile connectivity will help passengers to keep up with work, connect with friends or even check the latest journey information online while on the move, as we continue to build and develop a railway fit for the twenty-first century.

A [call for evidence](#) has now been launched on the different ways the improvements could be delivered to support the Government's ambitions to have a digitally connected railway that meets customers' expectations and cements the UK's place as a world leader in 5G technology.

1. [Take part in the consultation](#)
2. Network Rail already owns trackside fibre along parts of the rail corridor. Where possible, it will make available access to trackside assets (e.g. fibre, underground ducts, masts and power) on an appropriate basis, to support commercial models.

3. The project could be delivered via:

- dedicated trackside infrastructure comprising base stations/masts, fibre to backhaul the signal from the masts to the core telecoms network, and access to power for these systems
- a radio system external to the train that links it to the trackside system. The radio system including spectrum must be capable of meeting growing passenger demand
- in-carriage systems that provide Wi-Fi and/or mobile network connectivity