

£9.4m for 25 pioneering projects set to revolutionise British rail travel

June 17, 2020



Automatic de-icing concrete on platforms and a rapid seat reservation-swapping service could soon make journeys easier by banishing slippery surfaces in winter and guaranteeing passengers a seat, Transport Secretary Grant Shapps has announced, following a national competition to make the railways cleaner, greener and more passenger-friendly.

The Department for Transport, in partnership with Innovate UK, has awarded 25 pioneering projects a share of £9.4 million in the 2020 First of a Kind (FOAK) competition, which encourages innovation in the rail industry.

Inventors have come forward with a host of ambitious projects to transform rail travel, including low-energy concrete slabs that automatically heat up in freezing conditions to help prevent passengers from slipping on icy platforms and the Seatfrog Train Swap app, which will allow passengers to quickly and remotely update their seat reservation to another service.

Several winning projects will also help the government reduce the railway's environmental impact and support decarbonisation, including a world-first zero emission machine for removing and replacing rails,

and hydrogen-based steam turbines to provide zero-emission, low-noise rail freight.

Other schemes supported by the competition include next-generation lightweight composite poles to provide passengers with faster, more reliable 5G wifi, and the development of safer and more resilient glazing for train windows to help prevent glass windows being smashed and protect passengers.

Transport Secretary Grant Shapps said: “I am delighted to announce the winners of this year’s FOAK competition, which will support better, more environmentally friendly journeys. Crucially, these pioneering projects will also ensure that passengers have a more efficient, reliable and responsive railway, making their journeys simpler and easier.

“From clever technology on platforms to prevent icy surfaces, new ‘seat-switching’ apps and improved 5G wifi connections, harnessing innovation will be crucial to modernising the network and making our railways greener and cleaner, as we build beyond coronavirus (COVID-19) and look to the future.”

Ian Campbell, executive chair of Innovate UK, said: “These high-quality projects illustrate the appetite of UK organisations to develop new and exciting innovations for rail transport that improve customers’ user experience, optimise railway efficiency, and are environmentally sustainable.”

Now in its fourth year, the competition was open to organisations of all sizes and sectors whose technologies could help to create a greener, more cost-effective and customer-friendly railway with greater capacity.

Previous winners include new technology from Porterbrook in partnership with emissions specialist Eminox, which successfully reduces harmful emissions from diesel trains by over 90%.

South Western Railway completed a six-month trial in March of the technology that saw an emissions reduction system fitted to the exhaust of a Class 159 train used by passengers between Waterloo and Exeter.

The trial delivered immediate reductions in pollution from nitrous oxides by over 80% and hydrocarbons, carbon monoxide and particulate matter by more than 90%, and is the first successful transfer of proven automotive technology to a rail environment.

OpenSpace Thameslink also received funding for its plans to provide station management with a set of next-generation tools to help with crowd management at London St Pancras International. The project, in conjunction with Govia Thameslink Railway Ltd, immediately found this helped with easing crowds to help maintain social distancing during the coronavirus (COVID-19) pandemic.

Full list of winners

[Click here for more details on the HydroFLEX project – the UK's first hydrogen-powered train.](#)

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