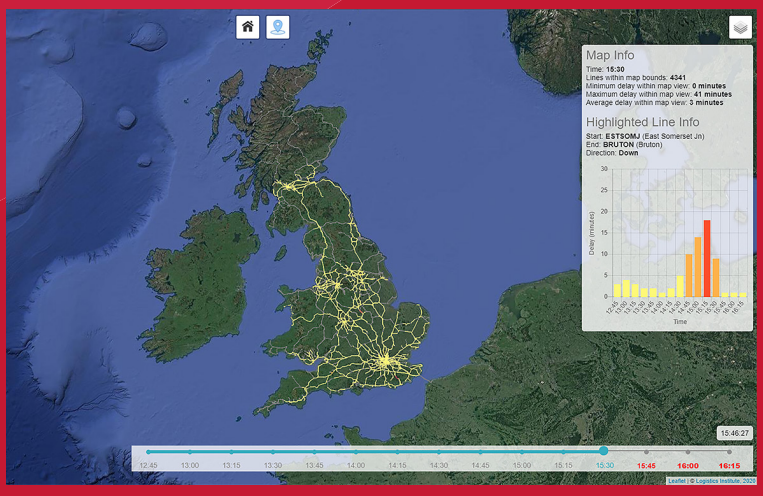
REPAIR

Rapid Evaluation and Planning Analysis Infrastructure for Railways

REPAIR is a set of predictive tools being developed by Frazer-Nash Consultancy and the Logistics Institute at the University of Hull. Their goal? To revolutionise freight train planners' understanding of the propagation of delays across the rail network, and help them mitigate the impact of current and future network delays on their services.

Funded under a grant from Network Rail and RSSB, as part of its Data Sandbox+ competition, REPAIR combines the Logistics Institute's comprehensive, detailed and integrated rail network database, NR+, with Frazer Nash's advanced Machine Learning experience from the defence sector.

Through innovative train planning, which enables freight train planners to understand and mitigate the impact of current and future network delays on their services, REPAIR's predictive tools provide increased certainty that freight operations can be delivered, and help avoid unintended potential consequences of proposed actions.



Using machine learning to mitigate freight delays

REPAIR's visualisation tools allow the end user to see, and understand, how delays are likely to propagate across the rail network and affect their services, and display how constraints such as crew availability will limit effective recovery, based on historic patterns from similar situations in the past. It is able to suggest potential mitigation options, through highlighting alternative routes and their likely arrival times. This information will assist Controllers to make faster, better decisions, to determine which specific route to adopt.

REPAIR draws upon deep learning research, proven artificial intelligence (AI) optimisation techniques, and NR+'s freight route-finding methodology, to provide innovative, rapid, predictive analysis of delays and their impacts, offering re-routing solutions to help mitigate the effect upon on the network.

Find out more

To find out more about the REPAIR suite of tools, contact Frazer-Nash Business Manager, Ashley Stower via email, **a.stower@fnc.co.uk**.