Trial of Intelligent Signs

Eurovia Contracting/TfL Lane Rental Industry Publication

TRANSPORT FOR LONDON

Introduction

Supporting vital infrastructure, roadworks are an essential part of everyday life and with approximately half a million works taking place across London each year, the ability to manage them as efficiently as possible is key.

The planning and management of their undertaking is largely a manual process, with multiple site visits required to ensure the site is maintained. This process can be costly, time consuming and carbon intensive, with limited real-time visibility.

To improve upon business processes, a trial of intelligent signage was proposed to establish their accuracy and ability to remotely monitor the location/status and transfer this information to satellite navigation providers to keep road users informed.

The trial was undertaken on New Kent Road, Southwark in Autumn 2022 by Transport for London's contractor Eurovia Contracting, Highway Resource Solutions and traffic management provider Roadway.

The Trial

Using GPS (location) and gyroscopic (movement) sensors, Intelliframe automatically identifies what sign is being used, monitors the location and status, detects non-compliance and updates satellite navigation providers with real-time information. The ePaper screen, with minimal power requirements, displays the permit reference automatically, while a QR code informs road users of works affecting their journey.

The trial set out to demonstrate how the technology could reduce the cost and carbon emissions of current practices, speed up response times when carrying out remediation on displaced signs and establish how the road user experience could be improved from their use.

In total, 18 signs were used over 74 shifts, along with the One.Network Live Link interface.

Outcomes

The trial successfully demonstrated the potential of intelligent signage and the ability to monitor sites remotely through a digital twin. The sensors accurately detected displaced signs, triggering alerts to the temporary traffic management provider to attend site to remedy.

Permit reference numbers were accurately/automatically displayed, showcasing the potential of having a direct link to satellite navigation providers through the utilisation of the One.Network interface.

There was also a significant reduction in visual site inspections when compared to the current system, highlighting the possible reduction in costs and carbon emissions.

Conclusion/ Recommendations

Overall, the project proved to be successful in demonstrating the use case for connected signs.

Being able to provide real-time information to road users on road works without any human involvement is a major improvement in reliability and speed of information which will prove vital in years to come.

The project team will now initiate discussions to establish how the use of intelligent signs could be adopted more widely and for other use cases.

TfL Lane Rental Scheme

Optimising customer journeys through the delivery of safer, innovative and sustainable roadworks

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