CASE STUDY

M4 Junction 3-12 Motorway Upgrade, Balfour Beatty VINCI Joint Venture

Involvement in an Alliance Structure.

The background

After a successful tender process, MobileVMS were awarded the Motorway VMS and journey time reliability contract for the M4 J3-12 motorway upgrade Balfour Beatty VINCI JV.

Our team were tasked with the provision of Highways standard amber 'smart' variable message signs integrated with Highway England DatexII real-time traffic data for the provision of accurate journey time reporting.

As part of our project delivery, we integrated fully with the onsite project team in order to meet key safety and customer imperatives. This included full induction training, production of RAMS and Lifting plans, provision of key reporting for Highways England and Transport Research Laboratory, provision of timely, accurate journey condition information for the motorist and becoming part of the integrated, collaborative delivery team for the 60mph project.

The M4 J3-12 project is the largest motorway upgrade of its kind in the UK to date. Due to its length – 51km of narrow lanes and the onsite construction activities, there were many occasions where VMS locations had to be altered at very short notice. Our team liaised with both the Traffic Management project team and Construction team to ensure VMS were moved quickly, efficiently and safely whilst being mindful of the location change on the journey time integration and altering routes accordingly.

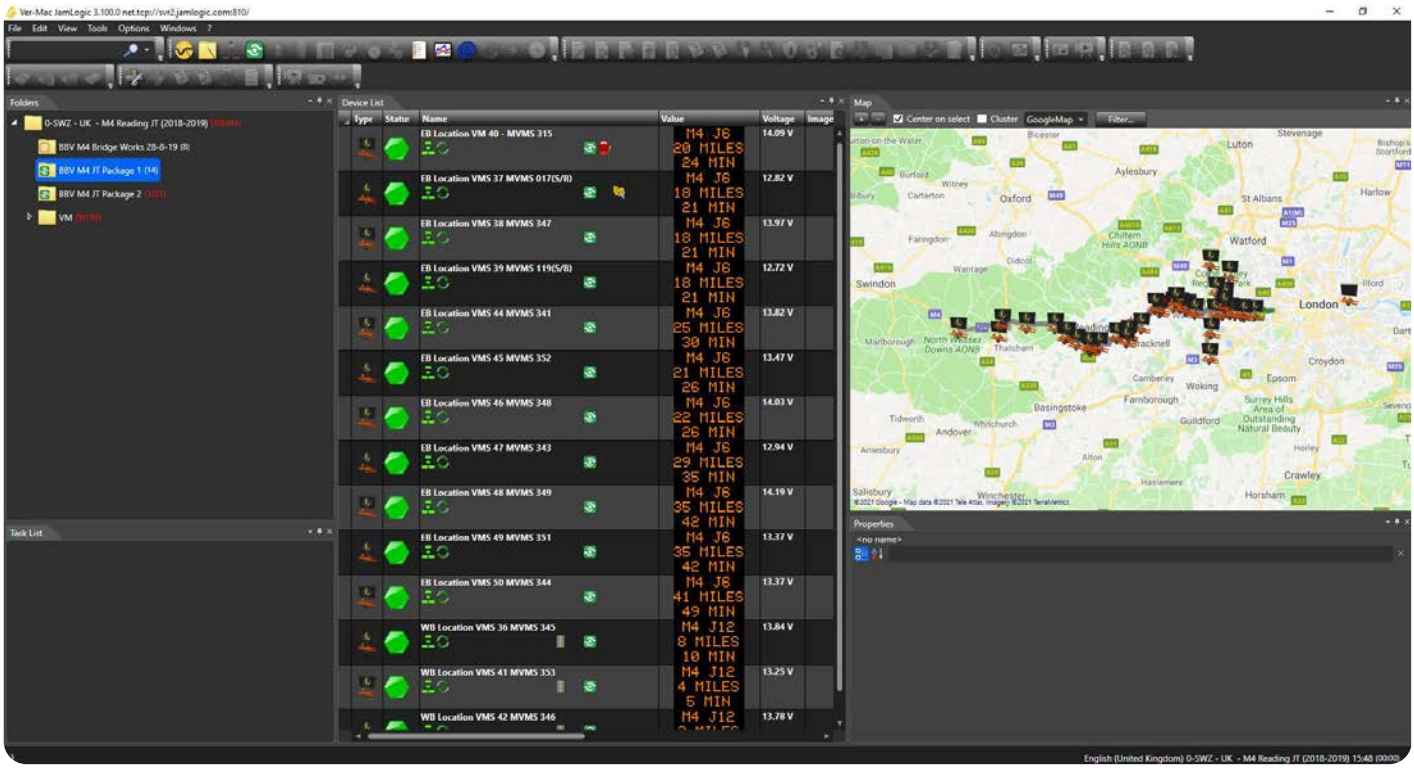
One way our team added value was in the provision of full deployment training to the onsite construction team to safely move VMS quickly if they were interfering with construction. This ensured less risk of defects arising as all onsite movement teams had undertaken adequate training in movement and deployment of our signs. We would back this up with regular checks remotely through the software to track locations and battery efficiency. This prevented the need for our team to continually drive to site.

Timeline

- **July 2018**
  Installed 14 VMS displaying DATEXII journey time through the works.
- **February 2019**
  Installed 6 VMS displaying DATEXII journey time through the works.
- **June 2019**
  Installed 11 VMS displaying DATEXII journey time through the works.
- **September 2019**
  J3 4B installed 14 VMS displaying journey time through the works.
- **October 2019**
  Installation of 4 microwave sensors to monitor the traffic for 60mph trials measuring gap and headway. This was analysed by TRL.
- **December 2019**
  Installed 2 additional VMS displaying journey time through the works.
- **February 2020**
  Installation of 10 VMS Westbound for 60 MPH. All Signs integrated with Videcon SVD. Once SVD was automatically activated on VMS warning traffic of a stopped vehicle ahead.
- **July 2020**
  Installation of 18 VMS Eastbound for 60 MPH. All Signs integrated with Videcon SVD. Once SVD was activated, the message automatically activated on VMS warning traffic of a stopped vehicle ahead.

JamLogic Operating Software

As an integral part of the 60mph M4 project working group comprising WSP, Balfour Beatty VINCI, Arcadis Jacobs, Highway Resource Solutions and Videcon Stopped Vehicle, we collaborated to provide advance warning upstream of stopped vehicles, vehicle incursions or changes to traffic flow. We integrated our JamLogic reporting software with Videcon stopped vehicle detection system and became the first integrators to provide a fully automated advance warning solution.



“With seamless integration with MobileVMS and the JamLogic control interface, Videcon’s Digifort video management system provides autonomous control of VMS messaging displayed to the customer based on stopped vehicle detection (SVD), incursions or traffic flow.

VMS signage can be automatically activated based on traffic conditions and hazards without human intervention. This is based on bespoke pre-set algorithms designed specifically for the needs of the user. Different messages based on the specificconditions can be displayed on mobile VMS within seconds of the incident using the wireless JamLogic network.

Ian Farr
Senior Engineer, Videcon Ltd
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Mobile VMS first deployed variable message signage and journey time integration on the M4 3-12 Motorway Upgrade in July 18. Their JamLogic intelligent interface software was user-friendly and provided excellent project overview and control alongside valuable customer data and reporting in relation tojourney time.

The company's operations team communicated professionally with our onsite traffic management team and deployed their system seamlessly. As the project grew and there were additional requirements beyond the initial contract, the Mobile VMS team delivered efficiently and integrated journey time reliability technologies seamlessly.

This supplier also became an integral member of our 60mph project team. They deployed microwave traffic sensors which provided critical information to TRL (speed, volume, lane occupancy, headway and vehicle classification) enabling Highways England and Balfour Beatty VINCI JV to make informed, carefully considered decisions about running at 60mph through the scheme.

The Mobile VMS project team attended weekly briefings as part of the 60mph project and displayed a collaborative approach to ensure these trials ran safely and effectively.

Thanks to the technical prowess of this company, the M4 project was the first scheme of its kind to fully automate SVD warning on a VMS, due to advanced digital integration with Videcon stopped vehicle detection system.

Mark Neville
Senior Traffic Manager, M4 J3-12 Motorway Upgrade

The microwave sensors were used to collect traffic data such as vehicle speed volume, classification, headway and gap.

The data was collected over a 12 month period to evidence the 60mph trials.

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