

Case Study

MIDAS radar challenges solved with wireless detection

Background

The Balfour Beatty VINCI joint venture team work on behalf of Highways England (HE) undertaking smart motorway upgrades on the M5 and M6.

As is typical on the HE motorway network, every 500m along a motorway there are detection points, that feed into the Motorway Incident Detection and Automatic Signalling (MIDAS) system. Historically this has been accomplished using loop-based vehicle detection, but recently there has been a growth in alternative detection technologies.

The Balfour Beatty VINCI team have been working on a location that was using a side-fire radar to detect the vehicle flow. The site (close to Junction 6 on the M5) was proving to be very problematic after changes had been made to the surrounding street furniture, which resulted in problems in receiving accurate radar readings.

The Balfour Beatty VINCI team approached Clearview Intelligence seeking a solution to ensuring the MIDAS operation continued to perform to the highest standards, and it was decided to install the M100 magnetometer wireless vehicle detection system onto this section of the motorway.

"It was important that we resolved the issue with the radar, caused by the central reservation street light at this location on the M5 as it had had been problematic for some time. The M100 system from Clearview was installed quickly, efficiently, and has been delivering a high level of performance since it was installed."

Gavin Jagger Technology Manager, Balfour Beatty VINCI - M6 J2-4 Smart Motorways Schemes

Solution

The M100 sensor is installed in the center of each lane, which places it out of the running tracks of vehicles. This creates much less damage to the integrity of the road surface, and the entire installation process can be completed significantly quicker than the installation of loops. As each sensor is installed independently, this means that the process can be carried out on a lane by lane basis and can result in much less cost in traffic management requirements and reduces the need for full carriageway closures. Using planned lane closures,

Clearview engineers and their civil engineering sub-contractors quickly, and successfully installed the 8 separate M100 sensors (two per lane) into the carriageway. The small communication access point was mounted on an existing roadside column, and connected into the MIDAS interface card within the existing MIDAS outstation, which meant there was no requirements to make any configuration changes to the MIDAS outstation. The entire installation, commissioning and testing of the new system was completed during just two roadworker shifts.

Since the installation of the M100 solution at this location, the system has performed well, and solved the challenge of delivering accurate and reliable MIDAS data.

Key Benefits

- Suitable for installation where inductive loops or radar are not practical
- Faster installation compared to inductive loops meaning less disruption to road users, and less damage to the road surface
- Battery and operational lifespan of 10 years means less maintenance time
- Compatible with existing traffic signal and MIDAS infrastructure and technology