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OptaSense Completes Evaluation on Southwick Hill Tunnel Test Bed

OptaSense TMS delivers outstanding results for queue and congesting detection in UK

Project Overview

The OptaSense Traffic Monitoring Solution (TMS) successfully completed a three-month evaluation on the Highways England Southwick Hill Tunnel Test Bed during 2020. The Southwick Hill Tunnel is a twin-bore road tunnel on the A27 highway in the UK which also provides a standalone test bed infrastructure for the test and independent evaluation of roadway detection equipment. The final evaluation of the OptaSense TMS demonstrated that it exceeded all Highways England minimum requirements for availability, detection rate, detection time and nuisance alarm rate.

Evaluation and Results

The Southwick Hill Tunnel Test Bed is a stand-alone test bed infrastructure which provides Highways England with a facility to assess the performance of various detection equipment and technologies under controlled test conditions. Over the course of a three-month evaluation project the specified detection performance of the OptaSense TMS was validated against CCTV ground truth by an independent consultant. At the conclusion of this period the final results from the OptaSense TMS were benchmarked against Highways England's requirements. Cogniva Consultancy Limited working with Highways England carried out the evaluation of the OptaSense TMS.

During the evaluation period the OptaSense TMS accurately detected over 450 incidents congestion with 100% accuracy and

- Independently conducted evaluation of the OptaSense TMS on the Highways England Tunnel Test Bed

- Outstanding performance results with 100% detection accuracy and zero missed events or false alarms

Criteria	Requirement	OptaSense TMS Performance
Availability	Greater Than or Equal to 98%	100%
False Alarm Rate	Less Than or Equal to 1 per km per day	0.00
Detection Rate	Greater Than or Equal to 75%	100.65%
Detection Time	Less Than or Equal to 120 sec	3.12 sec

OptaSense Fibre Detection Weighted Final Evaluation Score for Performance

- OptaSense TMS performance greatly exceeded the minimum Highways England requirements

zero missed events or nuisance alarms. This included 3 events which were not detected by any other system. In addition to the outstanding performance summarized in the included table, the ease of installation and commissioning of the OptaSense TMS was commended in the final report.

The complete report by the Highways England independent assessor, Cogniva Consultancy Limited, is available from OptaSense on request. It contains further information on the test bed infrastructure, the overall project to implement and evaluate the OptaSense TMS, the evaluation process and detection system results and final assessment.

Deployment Options

The OptaSense Traffic Monitoring Solution can deliver the following real-time traffic monitoring applications:

- Average Traffic Speed
- Automated Congestion Detection
- Automated Queue Detection
- Average Journey Times
- Vehicle Count
- Flow Rate

The OptaSense Traffic Monitoring Solution converts a standard single mode telecoms fibre-optic cable into an array of distributed sensors to deliver timely and reliable traffic monitoring and incident detection information from the entire monitored road. OptaSense is the trusted partner for fibre optic sensing solutions worldwide, supporting customers in more than 50 countries and more than 37,000km of assets under contract.

To learn how the OptaSense Traffic Monitoring Solution can improve your ability to make effective traffic management decisions, contact an OptaSense representative.

Cogniva Consultancy Limited

Evaluation of OptaSense Fibre Detection System Under Test Southwick Hill Tunnel Detection System Test Bed

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highways england

The OptaSense fibre detection system works well and detects congestion accurately and consistently, and during the 3-month test period has had no missed or late detections. Installation is not complicated and only requires one dark fibre - power consumption is minimal.

- Ref: Final Summary From Evaluation Report

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