

Traffic Monitoring Solution

Fibre-optic monitoring system

As the demand for mobility grows, the stresses placed on road networks intensifies. Optimal use of road infrastructure is vital to managing the impact of rapidly increasing traffic volumes and minimising congestion and journey times. For road operators, having accurate and timely information on the current traffic situation is critical. They rely on this information to automatically update variable message signs to maintain traffic flow and make rapid and informed decisions when reacting to evolving situations.



For years these critical decisions have been based on information received from a broad range of roadside sensors. These sensors often suffer from a combination of high lifecycle costs, poor reliability and inadequate route coverage which can result in inferior traffic management decisions. Even alternative sources of traffic information, including connected devices such as in-car sensors, mobile devices or other floating-point sources have their drawbacks in terms of high latency, low sample rate and limited functionality for some traffic monitoring applications.

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 to decision makers through a dedicated user interface or via complementary traffic command and control systems.

The OptaSense Traffic Monitoring Solution:

- Enables economical route coverage - a single roadside installation can cover up to 100km
- Delivers unrivalled performance - spatial output of 50m updated every second
- Is impervious to variations in weather, temperature or ambient light
- Is simple to install with no road surface disruption
- Is unaffected by road deterioration, maintenance or renewals
- Requires near-zero maintenance

Traffic Monitoring Capabilities and 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

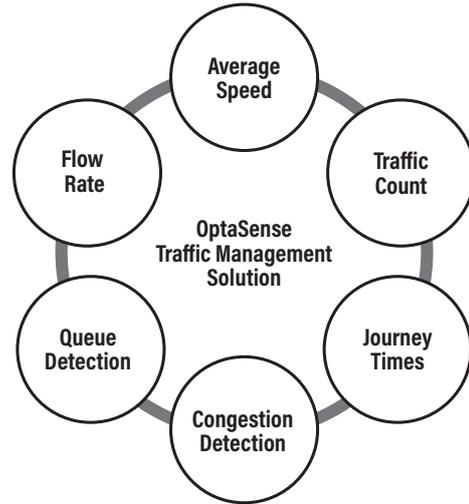
These applications are delivered simultaneously and continuously along the entire length of the monitored asset*. The output is available via a dedicated user interface or through an interface to other traffic command and control systems. The distributed technology enables key outputs to be re-configured without the need for any roadside activity.

Each OptaSense Traffic Monitoring Solution can monitor up to 100km of roadside optical fibre. Multiple systems can be linked to provide extended route coverage. The solution can be deployed on dedicated or existing fibre-optic cable. A site survey is required to confirm the viability of existing fiber-optic cable for effective traffic monitoring and detection.

** Vehicle Count and Flow Volume delivered at fibre optic road crossings only*

Operational Value

The high lifecycle costs associated with many roadside sensors often requires choosing between the accuracy of available traffic information and the density of roadside deployment. Additionally, in-service failure rates or poor availability due to environmental factors or changes in road surface conditions can mean that the expected quality of information available for traffic management decision making is not met.



The OptaSense Traffic Monitoring Solution monitors the entire route from a single roadside sensor and significantly reduces the need for cost versus performance compromises to be made.

- Complete route coverage can be achieved economically with optical fibre as the sensor
- Lifecycle costs are significantly reduced and roadside maintenance activities eliminated
- Excellent performance in terms of spatial resolution and update rate means trusted traffic information is delivered accurately and consistently
- Distributed technology enables key outputs to be re-configured without the need for any roadside activity
- Complements existing CCTV solutions by filling in coverage gaps enabling faster clearing of incidents and accidents

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

