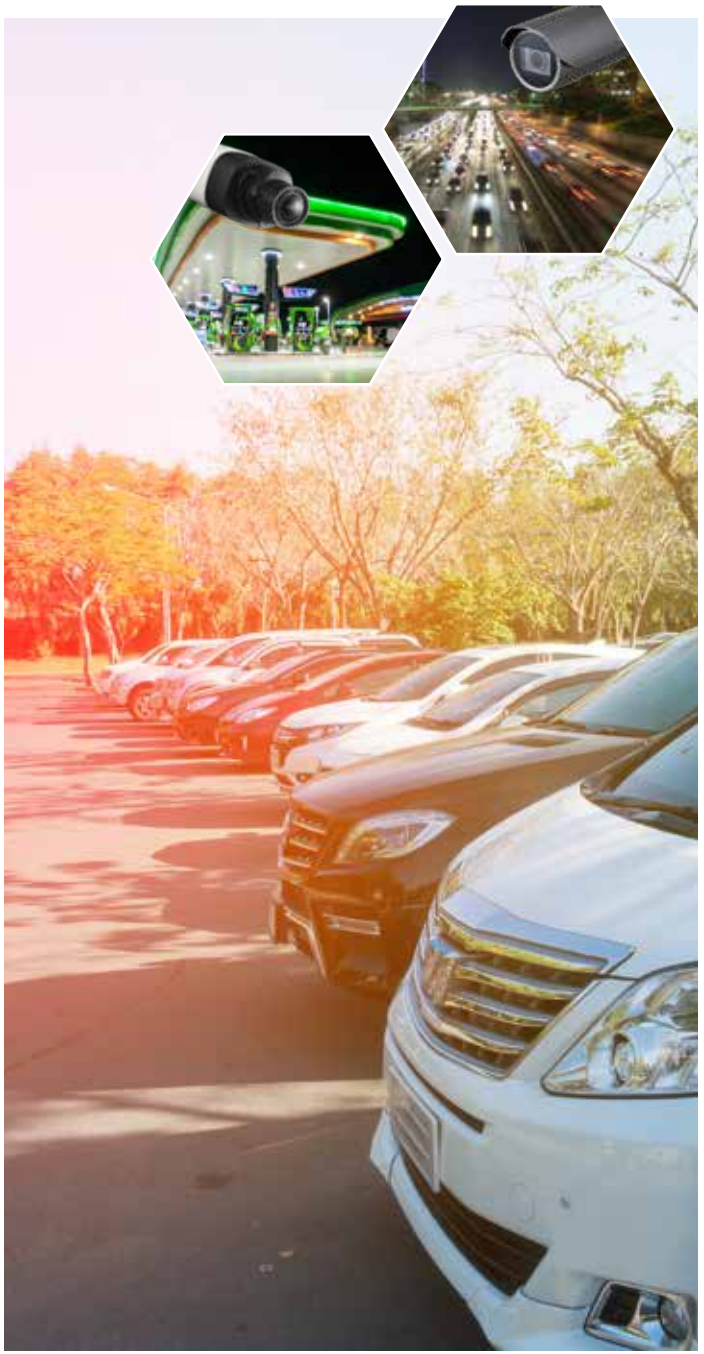


Traffic Management Solutions

Video surveillance and analytics technology combine to keep traffic on the move

With ever increasing numbers of vehicles causing congestion within city centres and on motorways, authorities are under increasing pressure to keep traffic on the move, by reacting quickly and effectively to any traffic incidents as well as anticipating when traffic jams might occur. Intelligent video analytics are key in delivering this vision of the Smart City.

Highlights

- Monitor roadways, including traffic density, traffic speed and average travel time.
- Early detection of incidents to keep people safe as well as keep traffic on the move.
- Detect events simultaneously on independent zones, from traffic slowing down, to vehicles broken down or illegally stopped, wrong way drivers and a multitude of other possible scenarios.
- Collect statistical data to assist infrastructure planning, and road safety.

City Traffic Cloud

Located at key city centre intersections and main roads, local authorities and police are provided with the licence plate numbers of vehicles involved in traffic lane or parking infringements and have access to real-time traffic flow data, such as the average speed and the number of vehicles on the roads. More in-depth analysis for longer term planning comes from data that is recorded on everyday drivers who travel into specific areas.

Additional features include:

- Traffic density
- Average travel time
- Traffic speed

Automatic Incident Detection (AID)

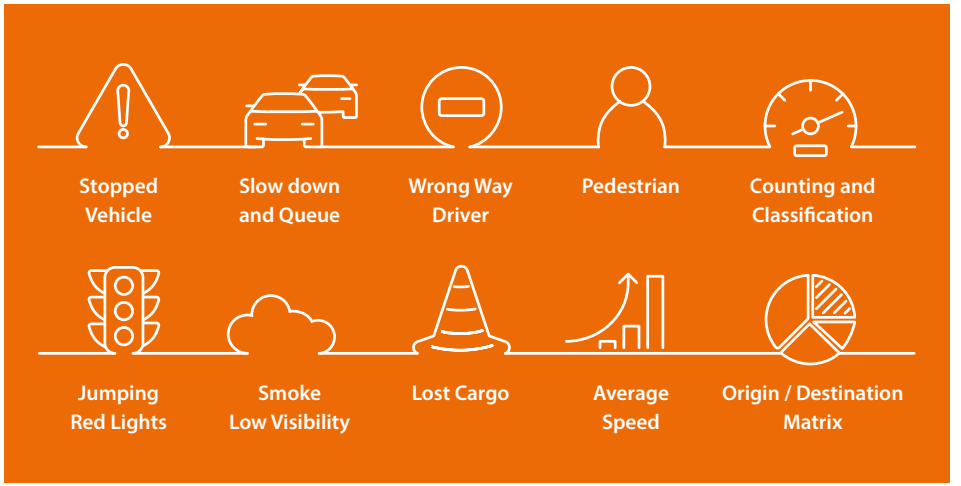
Traffic AID is an edge-based application running on-board Hanwha Techwin high definition Wisenet X cameras. The full Traffic AID solution can reliably detect incidents and events in traffic flow on critical infrastructure such as roads, highways, tunnels and intersections. Traffic AID generates an alert when traffic incidents occur, as well as provides reliable traffic flow data. All information is then delivered via an intuitive web user interface.

Traffic AID has the ability to detect events simultaneously on independent zones, including:

- When traffic is slowing down or if there is a lengthening queue
- If a vehicle has illegally stopped or broken down on a busy main road
- A wrong way driver
- A pedestrian in danger
- Smoke or low visibility in a tunnel
- Lost Cargo
- Motorists jumping the red light

and to collect statistical data such as:

- Counting and Classification
- Average Speed
- Origin-Destination Matrix (OD)



In addition to the full Traffic AID solution, the following edge-based application are available as separate offerings on Wisenet X cameras:

- Pedestrian and Stopped Vehicle Detection
- Traffic Monitoring Traffic Flow
- Traffic Data

Tunnel Solutions

We offer a complete range of solution to allow the reliable detection of incidents and anomalies in traffic flow on critical infrastructures such as tunnels where immediate reactions are an absolute must.

Traffic Monitoring Traffic Flow

The Traffic Flow application is the ideal video surveillance solution for monitoring roads, motorways, tunnels and city centre traffic. It can detect stopped vehicles, estimate the traffic flow and automatically alert operators to queuing and congestion on the roads. Based on advanced video detection technology, Traffic Flow allows you to monitor two different lane/zones of traffic simultaneously.

Traffic Flow detects the following events:

- Stopped Vehicles on a carriageway, hard shoulder, emergency layby or in a no-parking area
- Slowdown / Near Capacity Flow
- Queue / Congestion

Traffic Data

The Traffic Data application, which has been designed with smart cities in mind, monitors the flow of motorbikes, cars, lorries and buses. It can keep track of vehicles moving within a Wisenet X camera's field of view and is able to collect data on two independent lanes/zones at the same time and in both directions of travel.

Traffic Data can record and store relevant statistical data including:

- Vehicle counting and classification
- Traffic density and flow
- Average speed

Plus: a cleverly devised Origin-Destination Matrix (OD) feature highlights traffic conditions at busy city centre crossroads and roundabouts.

Traffic Hub

Traffic Hub is a server software application for collecting and aggregating data from multiple network-connected cameras running Traffic Applications on board. Through its web user interface, Traffic Hub enables a quick overview of all traffic events detected by the cameras and provides comprehensive graphs about traffic data such as vehicle counting and average speed.

Traffic Hub includes a pdf exporting tool of the collected events, helpful for operators in evaluating the performances of the system.

It also offers easy integration with 3rd party systems including ITS platforms, SCADA and PSIM.

In complex architectures Traffic Hub can work as a proxy server forwarding all the events collected from the cameras to 3rd party software or VMS platforms. This feature definitely simplifies the integration process, avoiding communication with every single camera connected on the network. The same communication interface enables 3rd party applications to disable some or all the detection features, when there is a need to do so for road maintenance purposes.