

## **Intelligent Traffic System Solution**

As city populations grow, so does car ownership and the burdens on urban traffic systems. Solutions that improve awareness, remove complexities, and reduce labor are obviously needed. The key objectives remain keeping everyone moving safely and responsibly on the road.

Hikvision adds another level of visibility and intelligence to traffic systems with integrated solutions including Traffic Violation Management, Traffic Order Management, Road Operation Assistance and Traffic Command Center, helping traffic authorities to fully understand any traffic situation and carry out optimal planning and management.

## **Designed applications**

## for specific issues

### Violation management 34679001

Most traffic accidents are common due to driving violations, causing congestion, personal injury, or property losses. Hikvision's Violation Detection System uses multi-frame recognition and vehicle tracking technology to gather driving information. It detects a driver's direction and route, and vehicle traffic violations, effectively reducing traffic accidents, and improving the efficiency of law enforcement.

### Speed measurement 29

main road traffic safety.

Speeding vehicles and reckless driving on urban roads can cause serious damage. Lack of violation detection and response is also a primary concern. Hikvision Speed Monitoring System conducts precise checkpoint, segment, and portable speed measurement for speeding deterrence, effectually reducing traffic accident ratio and improving

### Road Network Monitoring 279

Hikvision provides intelligent road network monitoring with vehicle information collection and road condition analysis. With deep learning algorithms, detailed vehicle features and violations can be recognized with higher efficiency. By calculating traffic condition, operators can optimize traffic order in a much more efficient way.

1. Tunnel

3. Highway Ramps

4. Highways Shoulders

### **Traffic Violation Management**

Improving citation accuracy and enforcement efficiency

When it comes to improving traffic violation detection, enforcement, and management, and overcoming infractions, city and highways authorities are looking to innovative technologies to help them succeed. Hikvision helps traffic authorities accurately identify and reduce unsafe driving, contributing to the development of safe, fluid traffic in modern cities.

### **Traffic Order Management**

Optimizing traffic order and road safety

Excessive traffic is a growing issue on road networks around the world. Hikvision helps traffic authorities optimize order on the roads, enhance traffic safety and efficiency, safeguard the legitimate rights and interests of law-abiding drivers, and automate traffic optimization with data analysis.



### Road Payment Verification 2 5



Road payment system ensures the smooth traffic flow in fee collection sectors, like highway toll station.

Hikvision can help operators secure road payment revenue efficiently, capturing vehicle information with wide speed range to lock on evaded vehicle. Based on deep-learning algorithm for structured data, the process for toll collection fee inspection can be much easier.

### Incident Detection 124



Challenging traffic roads, such as tunnels, are prone to frequent incidents. Traditional monitoring cannot detect incidents and anomalies and thereby miss the best opportunity to minimize dangers. Hikvision's Traffic Incident Detection system can detect real-time road conditions and anomalies to help handle incidents and ensure efficient traffic flow.

### **Road Operation Assistance**

Enhancing road operation and maintenance

Efficient road operation and maintenance can boost the traffic carrying capacity and the utilization rate.

Hikvision offers authorities optimize the road payment system with superb products to track evaded vehicles and inspect toll collection fee, as well as providing improved safety, comfort, and low vehicle operation cost with regular road maintenance.

### **Central Command**

Centralizing traffic management

The Command Center - the brain of the traffic management solution. Everything converges here as data applications enable traffic management teams to monitor events in real time. Hikvision help authorities get real-time road status updates for smart decision-making and efficient enforcement with a unified command interface, enhancing safety levels by reducing serious accident ratios and guaranteeing smooth road operations.

### Traffic Information Publish 29





Outdoor guidance screens are often used to announce warm tips, road congestion condition, abnormal incidents, etc., so as to remind drivers and reduce the potential risk of accidents. Hikvision offers a comprehensive Traffic Information Publishing solution to disseminate information including road incidents, congestions, weather, road construction and others to drivers on the roads.

### Traffic Signal Control 0



Complicated road conditions and the unreasonable configuration of traffic lights at urban roadways will aggravate traffic congestion with lower road efficiency.

Hikvision provides efficient and adaptive signal control by collecting and analyzing traffic flow data, achieving remote control of signal status to save labor cost.

#### Road Maintenance Assistance 2 9





As city populations grow, so does car ownership and the burdens on urban traffic systems. Damaged road will bring potential risks and accidents. Hikvision offers intelligent products to automatically identify road potholes and cracks to assist in road maintenance and repair.

6. Urban Roads

10. Yellow Box Juncti

### **Vehicle Qualification 29**





Alone with the refinement of traffic management, vehicle qualification issues become the foremost problem, such as license plate restrictions, fake license vehicle, missing annual inspection. Hikvision offers an ideal solution which can automatically analyze fake license vehicle, vehicle annual inspection data by using path retrieval & travel time comparison and inspection data, to enhance police law enforcement technically.



Hikvision's Traffic Solutions

## INTUITIVELY INFORMING EVERY DECISION VISUALIZED TRAFFIC DASHBOARD

Combining a geographic information system (GIS), security video feeds, and data reports, Hikvision provides users with a unified command dashboard to meet comprehensive traffic management requirements, facilitating well-informed decision making in real-time.

The Hikvision solution combines historical and real-time traffic data to help managers understand key traffic patterns, helping them make better decisions. In particular, the visualized dashboard improves decision making on which kinds of traffic management policies and solutions to implement, from signal optimization to access management solutions to congestion charging schemes. The visualized dashboard helps traffic managers make better long-term plans, assisting in tackling traffic issues such as traffic congestion and other negative impacts of excessive traffic.

## **Automation for More Efficient Traffic Management**

As an additional benefit, Hikvision's visualized dashboard can be integrated with other systems, such as traffic violation systems, to automate the process of fines and issuing penalties. In this way, manual processes can be reduced, and traffic managers can focus on more value-added activities, such as planning and collaboration with other traffic stakeholders.

## Real-time Incident Responses & Optimized Traffic Violation Management

Apart from long-term traffic planning, Hikvision's solution helps traffic managers identify and respond to traffic incidents and violations in near-real-time. This helps keep key corridors on the road network as clear as possible, speeding up journeys for road users.

The visualized traffic dashboard presents information in layers.



### Physical Layer

Showing statistics of passing vehicles at various intersections, categorizing them by brand, model, and other attributes, along with providing security camera status.



### **Digital Layer**

Presenting Al-powered traffic analytics such as violation types, violation trends, congestion time, and congestion rankings at each intersection.

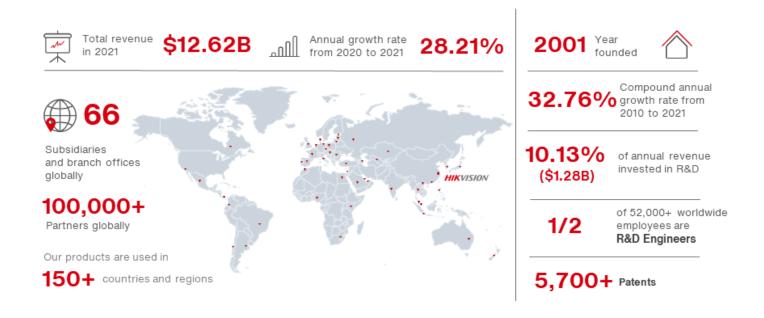


#### **Intersection View**

Providing a close-up view of data from a chosen intersection, including its passing vehicles, congestion status, and violation trends, as well as real-time video feeds.

# WITH HIKVISION AS YOUR PARTNER, YOU WILL STAND ON A SOLID FOUNDATION.

Hikvision is committed to serving various industries through its cutting-edge technologies of machine perception, artificial intelligence, and big data, leading the future of AloT: through comprehensive machine perception technologies, we aim to help people better connect with the world around them; with a wealth of intelligent products, we strive to identify diverse demands by delivering intelligence at your fingertips; through innovative AloT applications, we are dedicated to empowering every individual to enjoy a better future by building an intelligent world that is more convenient, efficient and secure.



Hikvision advances the core technologies of Multi-dimensional perception, artificial intelligence, and big data, as well as imaging technologies, cloud computing and video codec. Over the past several years, Hikvision deepened its knowledge and experience in meeting customer needs in various vertical markets, including education, oil&gas, logistics, retail, safe city, traffic and others.

Accordingly, the company provides professional and customized solutions to meet diverse market requirements. In addition to the video security industry, Hikvision extended its business to smart home tech, robotics, automotive electronics, intelligent storage, fire security, infrared sensing, X-Ray detection, and medical imaging to explore channels for sustaining long-term development.

### PRODUCT SHOWCASE



### iDS-TCV907-BIR/1140 All-Rounder Checkpoint Camera

- 9 MP (1" GMOS), 4096 × 2160 @ 25 fps
- · Built-in ANPR algorithm
- Built-in radar, supporting speed detection (10 to 300 km/h)
- Vehicle type / color / manufacturer recognition
- Driving on lane line / illegal lane change / wrongway driving / seatbelt / phone call detection
- Support side mounting with convenient installation and debug



#### iDS-TCC446-C-L/B/DLYH Mobile Intelligent Panoramic Positioning System

- Panoramic Camera: 1/1.8" CMOS sensor, 360° panoramic view, which is composed of two 180° view pictures with each spliced by 3 cameras covering front and rear view of vehicle. Up to 2688x1520 resolution for each channel.
- PTZ Camera: 1/1.8" Progressive Scan CMOS. Max. resolution 2560x1440. 23x optical zoom.
- Supports road holes and cracks recognition of three lanes.



### DS-A82024D Hybrid SAN

- High performance application, cost-efficient system
- HDD detection and repair / RAID optimization
- Direct storage (Direct Streaming mode + IP SAN mode)
- · User-friendly UI
- · Efficient maintenance service
- Green, energy-efficient, compatible & open



## iDS-TCE907-BR/1140 All-Rounder Intersection Violation Camera

- 9 MP (1" GMOS), 4096 × 2160 @ 25 fps
- · Built-in ANPR algorithm
- Built-in radar, supporting speed detection (10 to 300 km/h)
- Vehicle type / color / manufacturer recognition
- Running the red light / driving on lane line / illegal lane change / wrong-way driving



#### iDS-TCM403-EIR/0832 Radar-Assisted Smart Monitoring camera

- 4 MP (1/1.8" CMOS), 2688 × 1520 @ 25 fps
- Built-in ANPR algorithm
- Built-in radar, supporting speed detection (10 to 100 km/h)
- Vehicle type / vehicle color / vehicle manufacturer recognition



## iDS-2VS435-F836-EY Illegal Parking Detection Speed Dome

- 4 MP Min. illumination
- 36  $\times$  optical zoom,200 m IR
- Supports detection of multiple types of violation: illegal parking detection, reverse driving detection, over lane line detection, illegal lane change detection



## iDS-TCS817-CR Bi-Spectrum Traffic Incident Detection Camera

- 8 MP (1/1.2" CMOS), 3840 × 2160 @ 25 fps
- Built-in thermal and visual imaging
- Traffic flow data collection: lane flow, lane speed, space headway, time headway, etc.
- Capable of detecting multiple incidents: driving on lane line, lane change, wrong-way driving, stopped vehicle, emergency lane occupation, roadblock, construction, fallen object, pedestrians, congestion, fire/smoke, speed drop, speeding, low-speed driving.



### DS-A830XXS-ICVS Cluster storage 3.0

- Streaming data management structure for high system performance
- Storage virtualization / distribution / scaleout / load balance
- High speed data rebuild at up to 2 TB/ hour; able to tolerate up to 4 device failure without data loss
- Ultra-fault-tolerant IRAID (based on erasure code) supports data protection among devices



#### HikCentral Master / HikCentral Professional

- Rich applications for vehicle data and various types of traffic statistic reports
- Intelligent operation and management, including one-stop installation, configuration, service monitoring, and log analysis
- Open capability for different functions and applications
- Various security and protection measures for system operation

