



## Smarter traffic, safer roads

Hikvision Intelligent Traffic Solution

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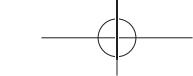


[www.hikvision.com](http://www.hikvision.com)  
[support@hikvision.com](mailto:support@hikvision.com)



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# What are the current challenges in traffic management?

Urban traffic systems face increasing pressures due to rising vehicle ownership, leading to heavy congestion and complex management demands. Common challenges include:



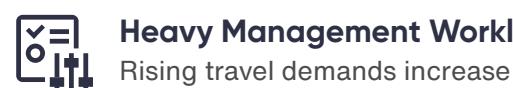
## High Traffic Accident Rates

Unsafe road conditions and poor driving behavior contribute to frequent accidents.



## Severe Traffic Congestion

Growing vehicle numbers strain urban road networks.



## Heavy Management Workload

Rising travel demands increase the burden on traffic management and road operations.

➤ This is where **Hikvision's Intelligent Traffic Solution** steps in.

# How to make every moment on the road safer and smoother?

Hikvision's Intelligent Traffic Solution uses advanced large-scale AI models to enhance visibility and intelligence in traffic systems. The solution includes:

01

Traffic Violation  
Management

02

Road Safety  
Management

03

Traffic Order  
Management

04

Highway  
Operation

05

Traffic Command  
Center

## Key Technologies



**Large-scale traffic AI models** significantly enhance detection accuracy, reduce false alarms, and improve overall traffic safety.



**Darkfighter X** minimizes supplement light impact and provides precise color rendering.



**Radar-video fusion** collects speed, distance, direction, and target ID data, enhances target detection continuity, as well as improves all-weather and long-range perception.

## Our Products

### Violation Detection



TCV Series



iDS-2VS445-F835H-MEY(T5)

DS-2SF8C848MXG1-EL(W)(Y)/26

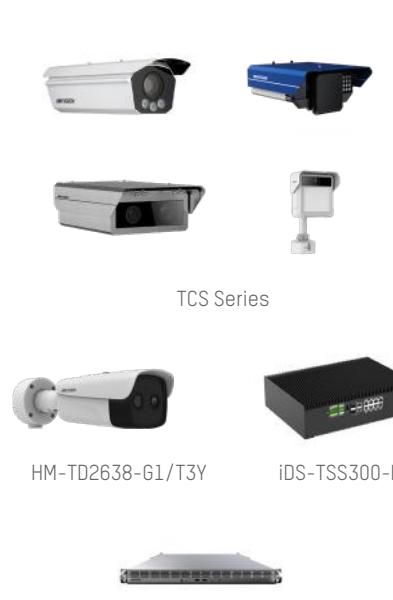


DS-TD10X Series

iDS-TVJ860-GIR/V2

iDS-MI3704-H

### Incident Detection



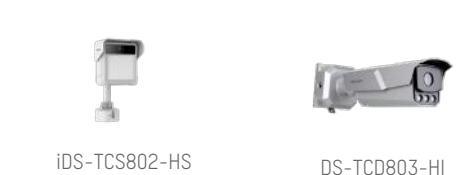
TCS Series

HM-TD2638-G1/T3Y

iDS-TSS300-H

iDS-TSS500-H

### Traffic Order Management



iDS-TCS802-HS

DS-TCD803-HI



DS-TSCX00-XXH Series



JD300-3-301SS-1  
FX300-3-3021SS-1  
RX300-3-3910SS-1



DS-2CD6984G1-VR-U/NFC



HM-TD1228/G1/T3A

### Emergency Alarm



DS-KEP311X-ZJ

DS-PEA103-CK1-E1

### Highway Operation



DS-TCH55P-H(L)

iDS-TCV500-HE(I)/IM

iDS-TCC446-HI

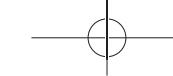
### Network Speaker



DS-QAZ1307G1T-E(C)

### Software

- HikCentral-Master
- HikCentral-Master-Lite
- HikCentral-Professional



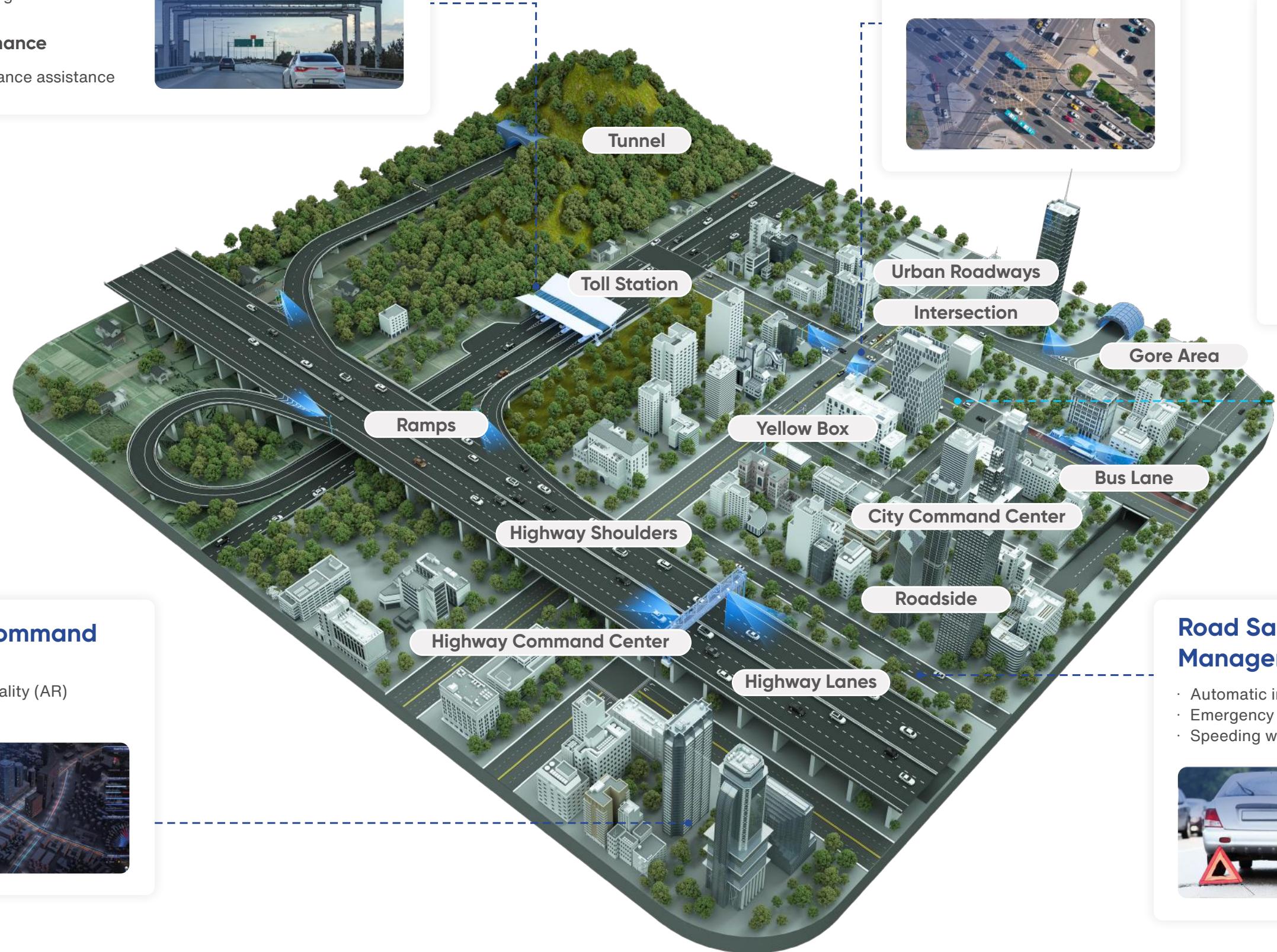
## Highway Operation

### Toll Collection System

- Barrier tolling
- Free-flow tolling

### Road Maintenance

- Road maintenance assistance



## Central Command

- Dashboard
- Augmented reality (AR) command



## Traffic Order Management

- Traffic data analysis
- Traffic signal control
- Traffic data collection



## Traffic Violation Management

- Violation management
- Speed measurement
- Vehicle qualification checks



## Road Safety Management

- Automatic incident detection
- Emergency alarm management
- Speeding warnings





# Traffic Violation Management

Powered by advanced AI models, Hikvision's high-accuracy vehicle capture technology detects various violations, promoting safer driving practices and reducing road infractions.

## General Violations

Intelligent recognition of violations such as:



Red Light Running



Lane Change



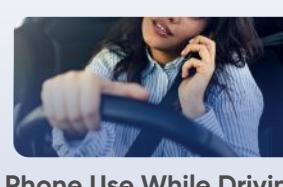
Not Driving in the Indicated Lane



Wrong-Way Driving



Not Wearing Seatbelt



Phone Use While Driving



Lane Occupation



Illegal Parking

## Speeding Violations



Checkpoint Speeding Detection



Segment Speeding Detection



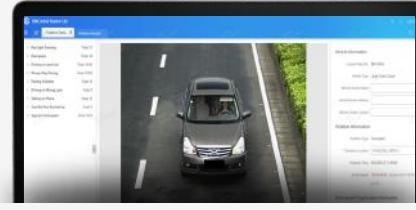
Portable Speed Measurement

## Vehicle Qualification Violations



- Violating license plate restrictions
- Using fake license plates
- Failure to conduct annual vehicle inspection

## Audit System for Violation Management



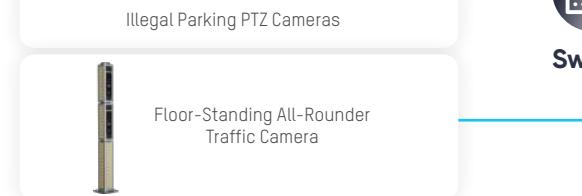
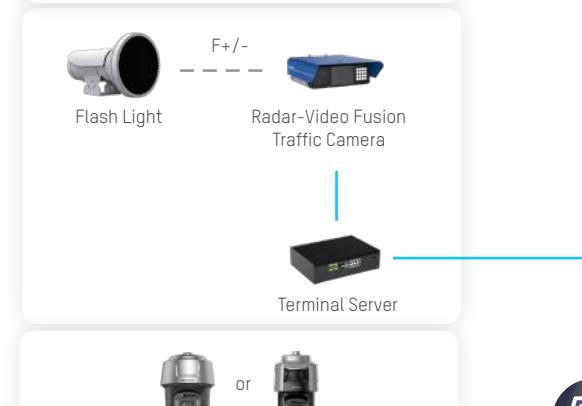
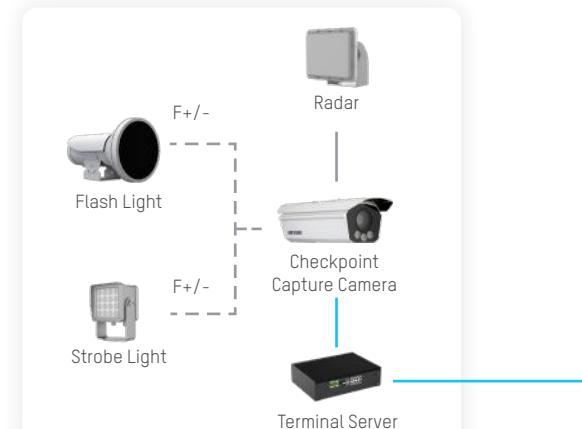
Violation Verification and Auditing



Violation Statistics Categorization and Administration

## Solution Topology

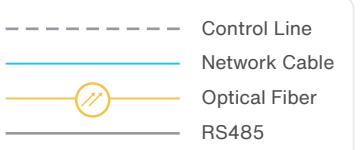
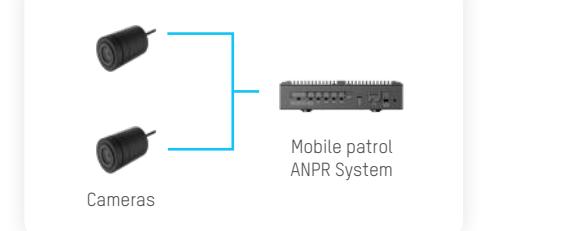
### General Violations



### Monitor Center



### Portable Violations





## Key Products

### Checkpoint Cameras with Guanlan Large-Scale AI Models



Guanlan

iDS-TCV519(C)00-HI(E)

- 5 MP (2/3" GMOS), 9 MP (1" GMOS), 12 MP (1.1" GMOS sensor)
- 25 mm / 11-40 mm lens
- Covers up to 3 lanes
- 75% drop in false detection of seatbelt & phone use



Guanlan

iDS-TCV519(C)07-HI(E)R

- 5 MP (2/3" GMOS), 9 MP (1" GMOS), 12 MP (1.1" GMOS sensor)
- 25 mm / 11-40 mm lens
- Radar: 24 / 60 GHz, up to 100 m
- Speed measuring range: 10-320 km/h
- Covers up to 3 lanes
- 75% drop in false detection of seatbelt & phone use

### Portable Radar Speed Detector



NEW

iDS-TDICCO-H  
(Dual-lens)

- iDS-TDICCO-H: 2 x 12 MP (1.1" CMOS), 25 and 50 mm
- iDS-TDICCO-HI: 12 MP (1.1" CMOS), 25 mm
- Radar: 24 GHz
- Speed measuring range: 10-320 km/h
- Covers up to 6 lanes (dual-lens)

iDS-TDICCO-HI  
(Single-lens)

### Urban Road ANPR Cameras with Guanlan



NEW

iDS-TCM803-H(I)

- 8 MP, 1/1.8" CMOS sensor
- 2.8-12 mm / 8-32 mm motorized lens
- Capture speed range: 5 to 120 km/h
- Covers up to 4 lanes
- Anti-corrosion models available

### Urban Road ANPR Camera



Guanlan

iDS-TCM403-GIR

- 4 MP, 1/1.8" CMOS sensor
- 2.8-12 mm / 8-32 mm motorized lens
- Radar: 77 GHz
- Speed measuring range: up to 120 km/h
- Covers up to 3 lanes
- Anti-corrosion models available

### Radar



DS-TD10M-1

- Operating frequency: 24 GHz
- Up to 32 detectable targets
- Covers up to 3 lanes
- Speed measuring range: 10-320 km/h



DS-TDSB00-EMM

- Operating frequency: 60 GHz
- Up to 128 detectable targets
- Covers up to 8 lanes
- Speed measuring range: 10-320 km/h

### Illegal Parking PTZ



DS-2DF7C842IXG1-ELWYP

- 8 MP@50/60 fps, 1/1.8" sensor, 42x optical zoom
- 400 m IR
- 140 dB WDR, GIS
- Pan: 360°, tilt: -20° to 90°
- Traffic violation detection and road incident detection
- IP67, IK10, -W: wiper, -Y: NEMA 4x



DS-2SF8C848MXG1-EL(W)(Y)/26

- Panoramic: 180° 6 MP@25/30 fps
- Tilt: 12° to 24°, 30 m white light
- PTZ: 8 MP@50/60 fps, 48x optical zoom
- Pan: 360°, tilt: -20° to 90°, 300 m IR
- Traffic violation detection and multiple intelligences
- IP67, IK10, -W: wiper, -Y: NEMA 4x

### Floor-standing ITS Pole



iDS-TCVKKP-HIR

- 20MP (1.1" GMOS)
- 11-40 mm lens
- Radar: 24 / 60 GHz
- Speed measuring range: 10-320 km/h
- Built-in 2TB SSD Storage
- Covering up to 8 lanes

# Traffic Order Management

Through traffic data perception & analysis, multidimensional traffic data is collected to accurately assess traffic conditions and optimize signal control.

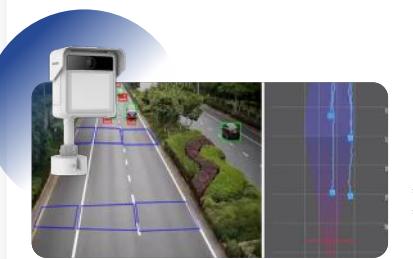
## Data Collection



Traffic Flow Camera

- Traffic flow
- Speed
- Lane status (smooth, slow, jammed)
- Queue length
- Average speed
- Time headway
- Space headway
- Time occupancy
- Space occupancy
- Delay
- Average wait time

\* Available with both devices  
\* Enhanced by radar-video fusion cameras

Radar-Video  
Fusion Camera

360°+360° VR Camera

- Grab a panoramic view of intersections
- Panoramic video recording and playback

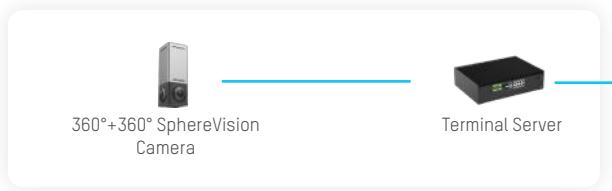
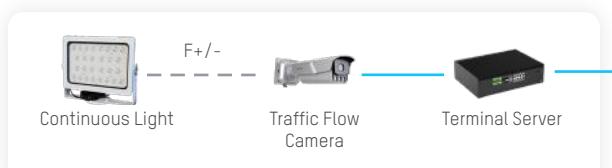
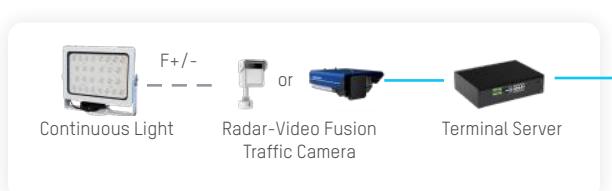
### Mobile Patrol ANPR System



iDS-MI3704-H

- 2 x 2 MP, 1/2.8" CMOS, 4 mm lens
- 4 white light beads, up to 8 m light range
- 4G, Wi-Fi, GPS
- Supporting up to 1 TB microSD card
- ANPR

## Solution Topology



### Monitor Center



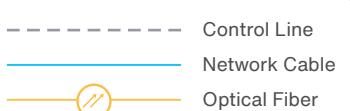
Software



Server



Central Storage





## Signal Control

Manage traffic lights to improve traffic flow and reduce urban congestion.

### 01 General Control Application



- **Remote control** for city-wide traffic light monitoring and management.
- **Static signal control** offers a pre-set fixed signal time cycle according to the traffic conditions at a specific intersection.

### 02 Intelligent Signal Control



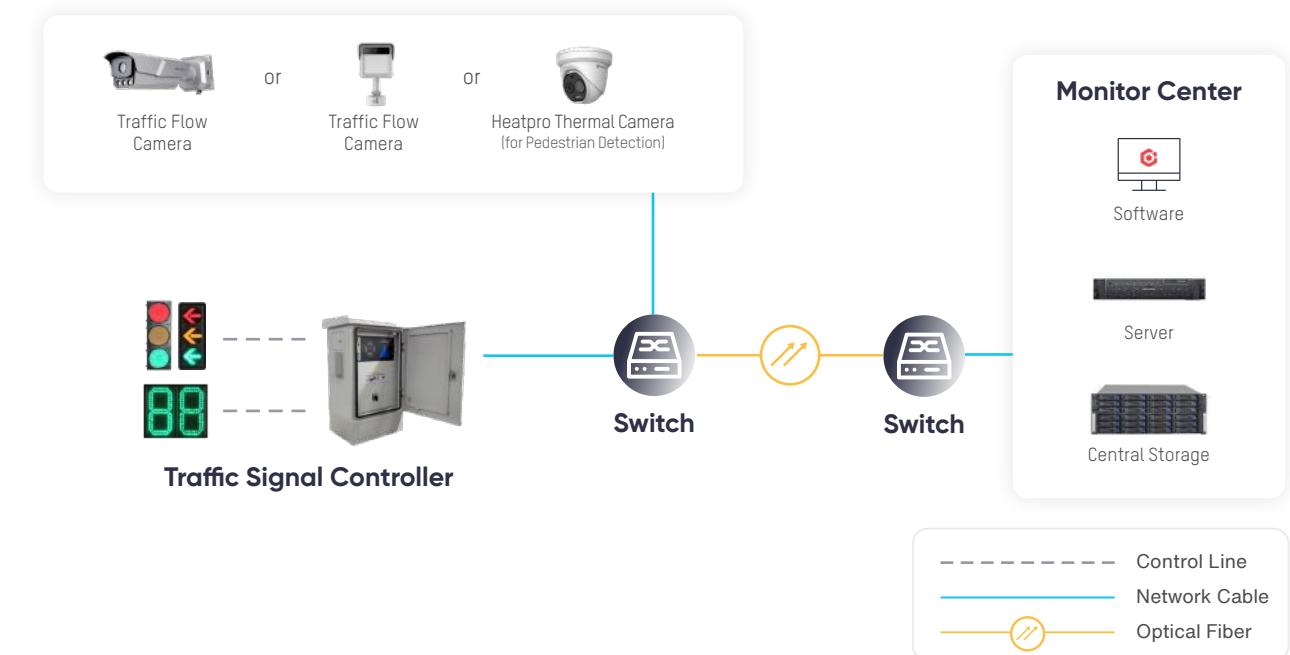
- **Single point actuated signal control and adaptive signal control** automatically optimize signal duration based on real-time traffic flow to ensure intersection traffic fluency.
- **Green wave control** coordinates multiple intersections for uninterrupted traffic on main roads.
- **Scenario-based signal control covers** VIP priority control, pedestrian crossing signal control, roundabout signal control, etc.

### 03 Traffic Data Analysis

Detailed **intersection, road section and regional** statistics help analyze traffic conditions and make informed decisions.



## Solution Topology



## Key Products

### Traffic Flow Cameras



iDS-TCD803-HI

- 8 MP, 1/1.8"CMOS sensor
- 8-32 mm motorized lens
- Covers up to 4 lanes
- Traffic flow detection



iDS-TCS802-HS

- 8 MP, 1.8"CMOS sensor
- 12 mm fixed lens
- Radar: 80 GHz, up to 200 m
- Speed measuring range: up to 250 km/h
- Covers up to 4 lanes

### 360°+360°SphereVision Camera



DS-2CD6984G1/VR-U/NFC

- 32 MP@30 fps
- Spherical vision (Horizontal 360° + Vertical 360°)
- Supports 3 preview modes
- On-board storage up to 512 GB (SD card slot)

### Signal Controller



DS-TSC300-44H

- Cabinet type: 44-ch
- Modular design for convenient installation and maintenance
- Independent yellow flash controller for security



DS-TSC200-11(22)(33)H

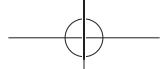
- Pole mounting type: 11-ch/22-ch/33-ch
- Modular design for convenient installation and maintenance
- Independent yellow flash controller for security

### Security Thermal Camera



HM-TD1228/G1/T3A

- Thermal 256 x 192@12  $\mu$ m, NETD < 35 mK; Optical: 5 MP
- Up to 84m perimeter protection
- -20~150°C temperature range with  $\pm 8^\circ$ C accuracy
- Smart Hybrid Light+ Audible Warning
- IP67, PoE (802.3af, class 3)



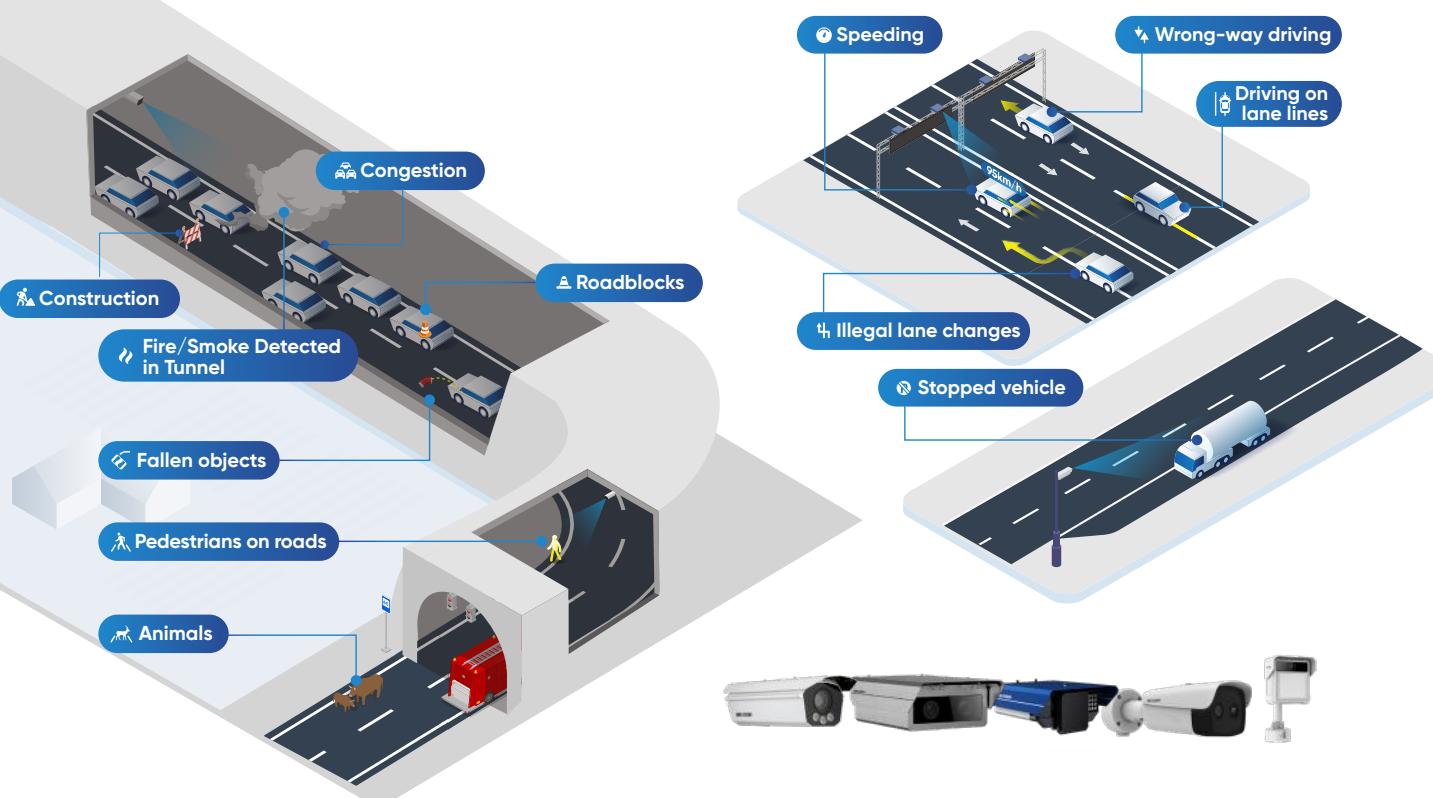
# Road Safety Management

HIKVISION

## Automatic Incident Detection

Quickly detect incidents on tunnels or highways to enable rapid response and reduce risks.

### 01 Incident Detection



#### Road Nomalies

Stopped vehicles, pedestrians, animals, fallen objects, congestion, road construction, smoke, etc.

#### Traffic Violations

Illegal lane changes, speeding, driving on the lane line, wrong-way driving, etc.

### 02 Incident Management



#### Traffic Event Search

Filter and search traffic events



#### Traffic Event Statistics

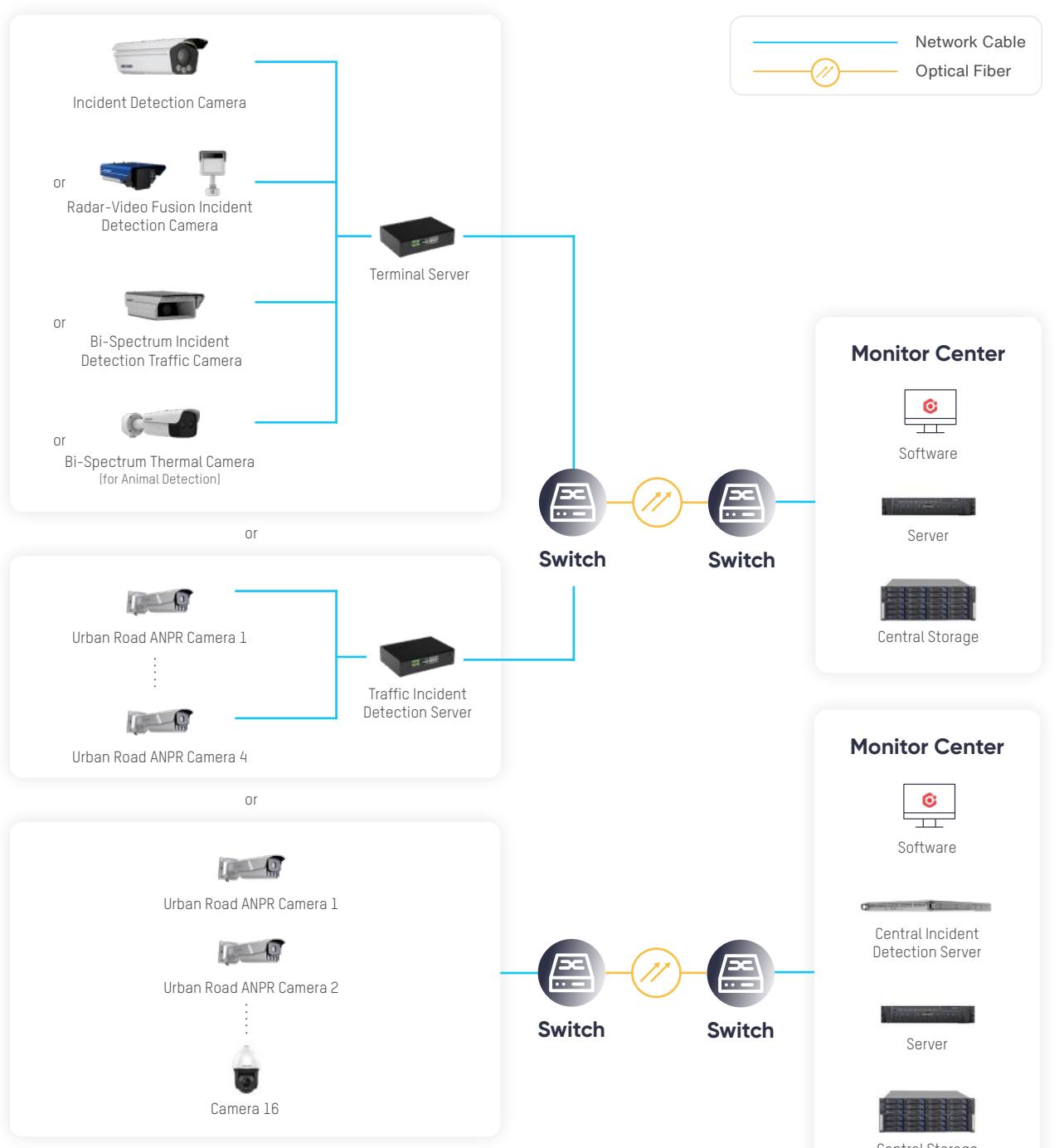
View event data by time or checkpoints



#### Traffic Event Alarm Analysis

Analyze event and alarm trends

## Solution Topology



### Monitor Center



Software



Server



Central Storage

### Monitor Center



Software



Central Incident Detection Server



Server



Central Storage



## Emergency Alarm Management

Quickly locate accidents and expedite alarm processing.



### Alarm Perception

- One-touch emergency button
- Two-way audio communication
- GPS geographic information



### Alarm Reception & Verification

- Incident time
- On-site condition
- Precise location
- Casualties



### Alarm Disposal & Data Analysis

- Staff assignment
- Event & alarm analysis



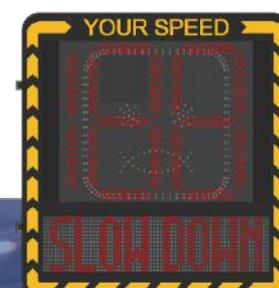
## Traffic Safety Warning

Warn drivers of speeding to reduce accidents.

### Speeding Warning



Provide alerts for speeding vehicles



Show vehicle speed in real-time

Vehicle speed detection within a specific range

#### Speed comparison



$V < V_m$



$V \geq V_m$

Speed is shown in **green**, and a  
“**THANK YOU**” sign is displayed

Speed is shown in **red**, and a  
“**SLOW DOWN**” sign is displayed

## Key Products

### AID Servers with Guanlan Large-Scale AI Models



Guanlan

iDS-TCS907-HIR

- 9 MP, 1"GMOS sensor
- 25 mm fixed lens
- Radar: 80 GHz, up to 350 m
- Speed measuring range: up to 250 km/h
- Covers up to 4 lanes
- 60% drop in false detection of fallen objects, pedestrians, and stopped vehicles



Guanlan

iDS-TCS900-HI

- 9 MP, 1"GMOS sensor
- 11-40 mm motorized lens
- Covers up to 4 lanes
- 60% drop in false detection of fallen objects, pedestrians, and stopped vehicles



Guanlan

iDS-TCS917-H/316

- 9 MP, 1"GMOS sensor
- 11-40 mm motorized lens
- Thermal camera: 640 × 512, VOx Uncooled Focal Plane Arrays
- Covers up to 4 lanes
- 60% drop in false detection of fallen objects, pedestrians, and stopped vehicles
- Stainless steel 316L material

### AID Servers with Guanlan Large-Scale AI Models



Guanlan

iDS-TSS500-H/16

- Accessing 16-ch 4MP cameras
- Storage: 2 \* 2T (up to 8T for one HDD)
- 60% drop in false detection of fallen objects, pedestrians, and stopped vehicles



Guanlan

iDS-TSS300-H/04

- Accessing 4-ch 4MP cameras
- Storage: 1 \* 4T (up to 8T for one HDD)
- 60% drop in false detection of fallen objects, pedestrians, and stopped vehicles

### Security Thermal Camera



Guanlan

HM-TD2638-G1/T3Y

- Thermal 384 × 288@12  $\mu$ m, NETD  $\leq$  20 mK; Optical: 4 MP
- Up to 455 m perimeter protection
- EIS in thermal channel; TPM2.0
- 20-150°C temperature range with  $\pm 8\%$  accuracy
- PoE (802.3af, class 3), IP67, IK10, NEMA 4X anti-corrosion

### Three-Digit Radar Speed Sign



YJP7681-188-R(L)

- Radar: 60 GHz, up to 100 m
- Speed display: up to 199 km/h
- RL model: traffic flow detection
- Multi-languages: English, Spanish, Portuguese
- Wi-Fi and 4G (Optional)
- Covers up to 3 lanes

### Emergency Alarm Management



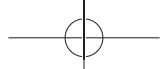
DS-KEP311X-ZJ

- Embedded Linux OS with high-performance SOC processor
- Network/audio-video self-adaptation for low latency
- 5 m-range two-way audio
- 24/7 monitoring via built-in 4MP camera
- Waterproofing, tamper-proofing, vandal resistance



DS-PEA103-CK1-E1

- Quick alarm, 2MP Camera, and two-way audio with the center
- Supports monitoring and broadcasting.
- Alarm lights and sirens are externally connected and can be controlled independently.
- Supports device tampering alarm and noise alarm.

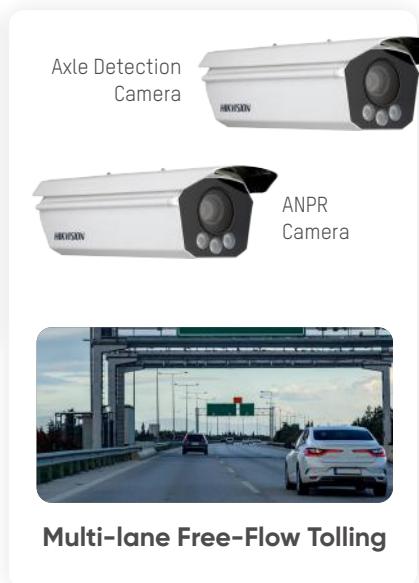
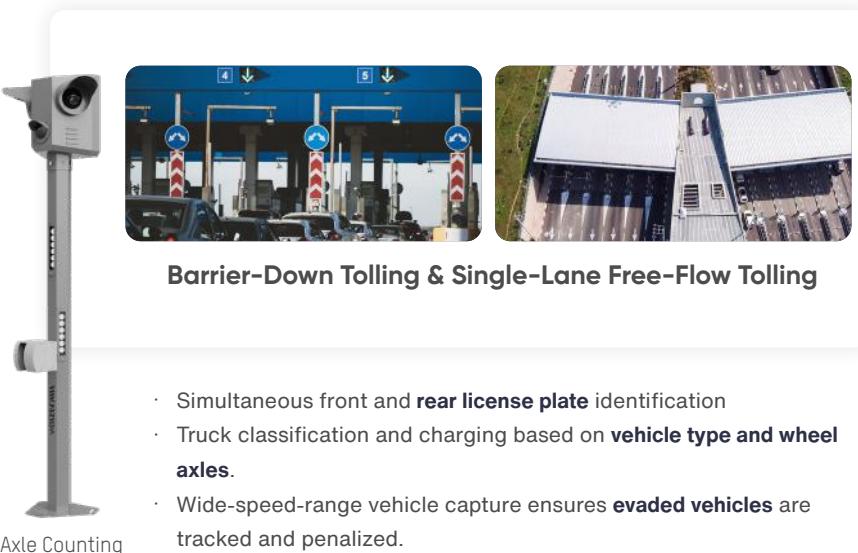


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# Highway Operation

## Highway Toll Collection

Optimize tolling processes and improve payment supervision on toll roads.



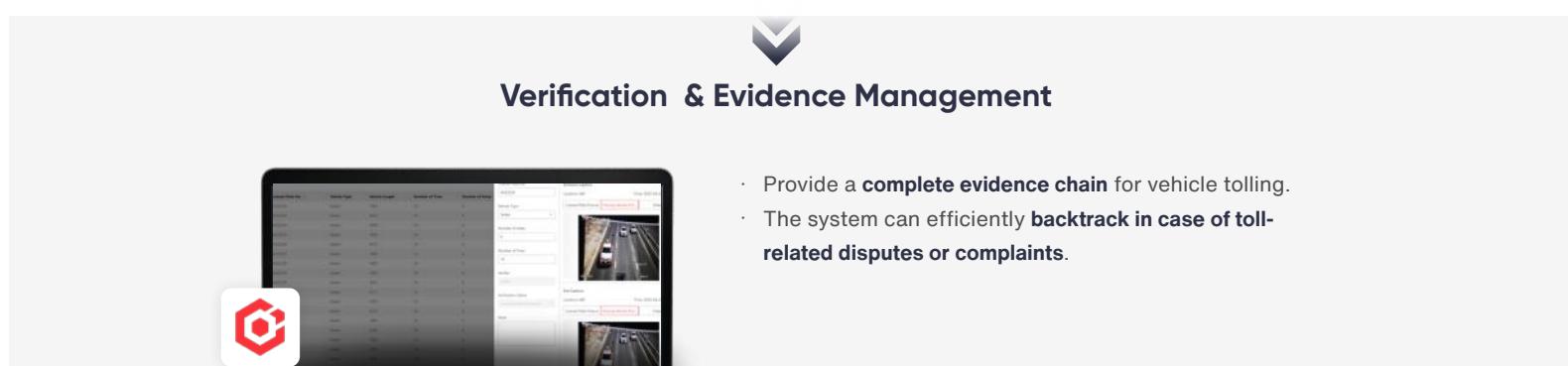
## Road Maintenance Assistance

Enhance inspection efficiency and patrol officer safety

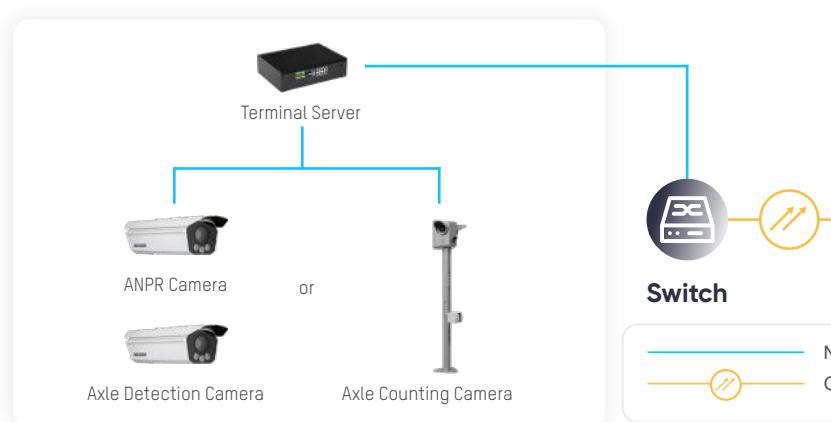


Intelligently identify road issues: potholes, transverse cracks, longitudinal cracks, etc.

Automatically report data to reduce manual intervention.



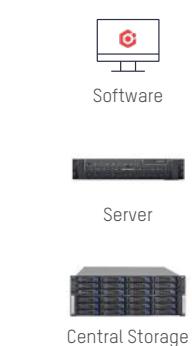
## Solution Topology



### Monitor Center



### Monitor Center



## Key Products

### Axle Counting Cameras



#### IDS-TCH55P-H(L)

- 3 x 5 MP CMOS, fixed focus lenses
- Recognizes number of vehicle axles, floating axle (LiDAR model only), and tires
- Captures and outputs full-side view of extra-long vehicles, plus vehicle head and tail

### Mobile Panoramic Positioning System



#### IDS-TCC446-HI

- 6 x 1/1.8"CMOS, 5.77 mm lens
- 4 MP PTZ camera, 23x optical zoom
- Road maintenance mode and ANPR & face capture mode available
- Onboard level vibration resistance design



#### DS-TP50-09H/gle/1t

- Video input: 5-ch, up to 4 MP resolution
- Built-in 1 × 1T SSD, maximum optional 2 × 2T SSD.
- Support GPS satellite positioning.
- Support wide power input: DC 8 ~ 36V



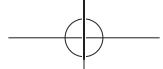
#### DS-1013K

- Supports forensics host GUI operations such as video, event capture, event playback, parameter setting, program upgrade, etc.
- Supports vehicle PTZ control like zoom, focus, brightness, shutter, fill light, PTZ preset, etc.
- Four dimensional rocker design, easy to operate



#### DS-MDP002

- 8-inch display, IPS LTPS 1280x800
- Front camera: 5 MP
- Rear camera: 13 MP
- 8500 mAh large capacity battery
- Android 14 (GMS)
- RAM+ROM: 4 GB + 64 GB



# Central Command

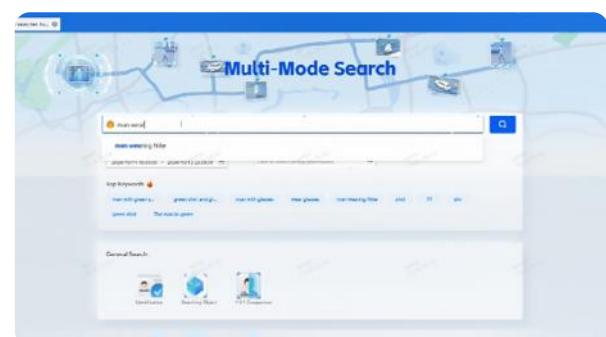
Offer real-time traffic insights through a holistic perspective and customized dashboards.

## Augmented Reality (AR)/Virtual Reality (VR)



- Use video fusion technology to display road operations and vehicle traffic conditions, aiding command and resource scheduling.

## Text-based Search



- Offer an open-feature search function for various objects such as vehicles, pedestrians, and motorcycles. It can precisely target the objects and support the targeted optimization of detection algorithms.

## Dashboard



- Provide a unified dashboard for traffic management and decision-making.

## Key Products

### PanoVu PTZ



DS-2DP8A845IXG1-LF  
DS-2DP8A440IXG1-LEF

- Panoramic: 64 MP@30 fps, 2 × 180° FOV
- PTZ: 8 MP@25 fps, 45x optical zoom
- Smart events, multi-target-type detection, people density, smart linkage, AR function on the HCP platform
- 500 m IR supplemental light

### 360°+360°SphereVision Camera



DS-2CD6984G1/VR-U/NFC

- 32 MP@30 fps
- Spherical vision (Horizontal 360° + Vertical 360°)
- Supports 3 preview modes
- On-board storage up to 512 GB (SD card slot)

### Hybrid San



DS-A806series

- High performance and economical storage for up to 550 channels
- User-friendly UI
- Support video, picture, schedule backup

### Cluster Storage



DS-A830XXS-ICVS  
DS-A810XXS-ICVS  
DS-A802XXSi-ICVS

- Support up to 30,000 channels, 300PB and 300 storage nodes for clustering
- Support online expansion
- High reliability, no video loss when 1-4 units are abnormal
- Support load balancing and unified IP.

### 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 for different functions and applications
- Various security and protection measures for system operation

### AcuSeek Back-end Products



Guanlan  
Fusion Server Ultra

DS-IX2128-C1U/XP  
DS-IX2256-C1U/XP

- AcuSeek, 128/256 channels, up to 5 units in a cluster
- AcuSearch, document aggregation
- OVD, object detection supported



Guanlan  
DeepinMind Pro

iDS-67XXNXI-P1  
iDS-76XXNXI-P2  
iDS-77XXNXI-P4

- AcuSeek
- AcuSearch, archive aggregation
- OVD, object detection supported



Guanlan  
I/V Pro Series

iDS-76XXNXI-I2/VPro  
iDS-77XXNXI-I4/VPro  
iDS-96XXNXI-I8/VPro

- AcuSeek, AcuSense IPC needed
- AcuSearch
- Facial recognition supported