

Smarter traffic, safer roads

Hikvision Intelligent Traffic Solution

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HIKVISION


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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.



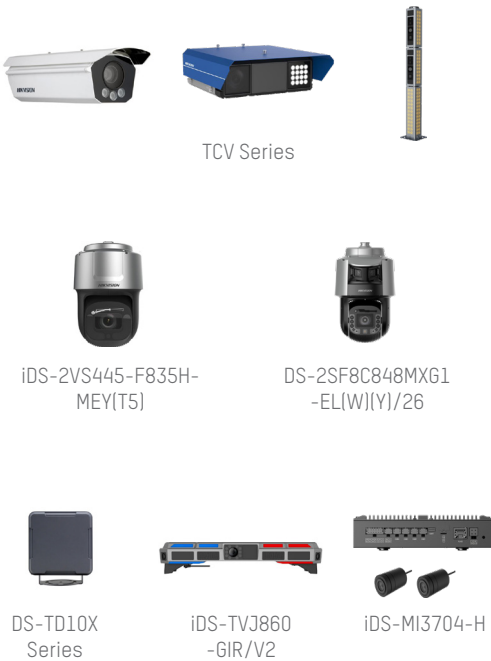
Darkfighter X minimizes supplement light impact and provides precise color rendering.



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



Incident Detection



Traffic Order Management



Emergency Alarm



Highway Operation



Network Speaker



Software



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

Highway Operation

Toll Collection System

- Barrier tolling
- Free-flow tolling

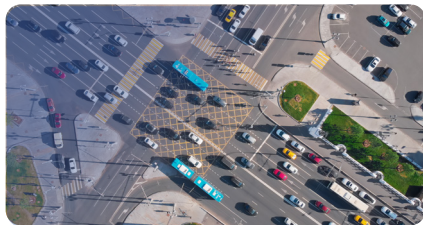
Road Maintenance

- Road maintenance assistance



Traffic Order Management

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



Traffic Violation Management

- Violation management
- Speed measurement
- Vehicle qualification checks



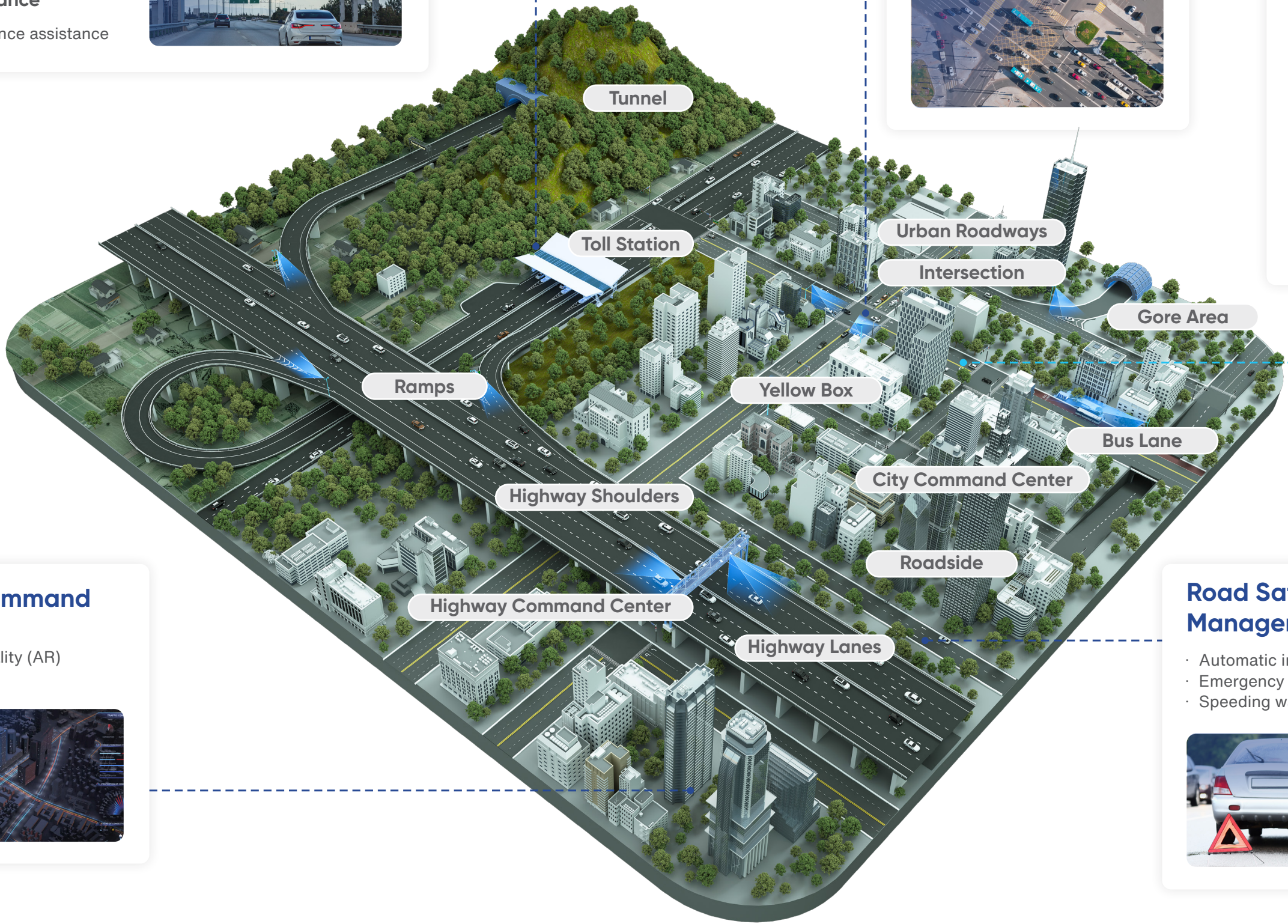
Road Safety Management

- Automatic incident detection
- Emergency alarm management
- Speeding warnings



Central Command

- Dashboard
- Augmented reality (AR) command



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



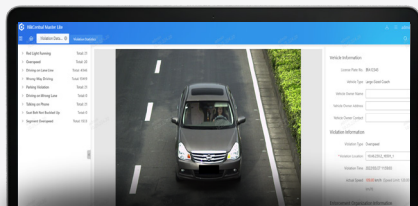
Using fake license plates



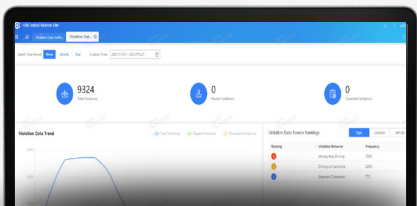
Failure to conduct annual vehicle inspection



Audit System for Violation Management



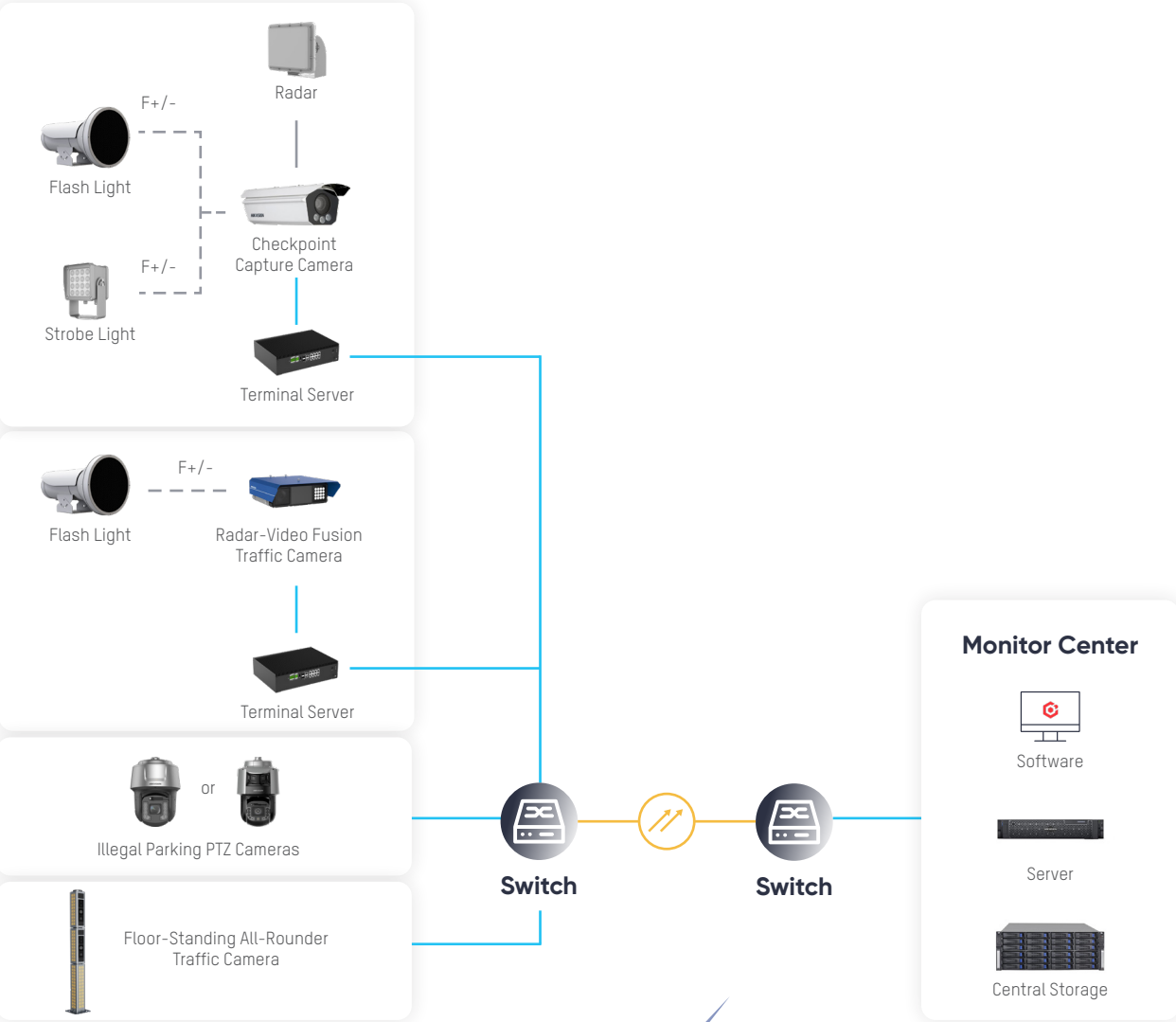
Violation Verification and Auditing



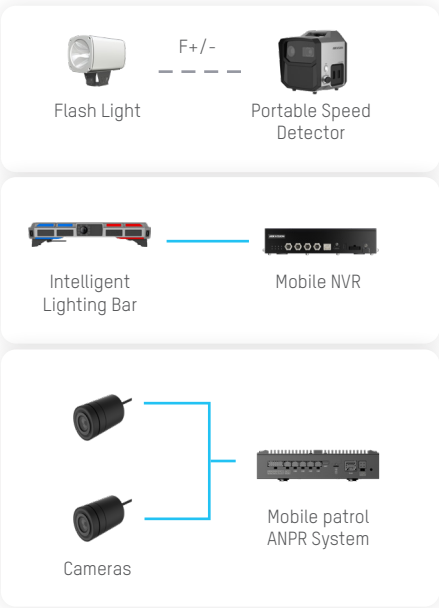
Violation Statistics Categorization and Administration

Solution Topology

General Violations



Portable Violations



- Control Line
- Network Cable
- Optical Fiber
- RS485

Key Products

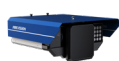
Checkpoint Cameras with Guanlan Large-Scale AI Models



Guanlan

IDS-TCV5(9)(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-TCV5(9)(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

Floor-standing ITS Pole



NEW

IDS-TCVKKP-HIR

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

Portable Radar Speed Detector



NEW



IDS-TDICC0-H
(Dual-lens)

IDS-TDIC00-HI
(Single-lens)

- IDS-TDICC0-H: 2 x 12 MP (1.1"CMOS), 25 and 50 mm
- IDS-TDIC00-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)

Urban Road ANPR Cameras with Guanlan



NEW

Guanlan

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



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

Intelligent Light Bar



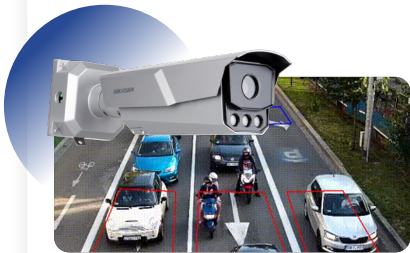
IDS-TVJ860-GIR

- 6 x 8 MP, 1/1.8"CMOS
- Wireless: 4G, Wi-Fi, GPS
- Built-in 1 TB SSD
- Radar frequency: 77 GHz
- Speed measuring range: up to 250 km/h
- Covers up to 3 lanes

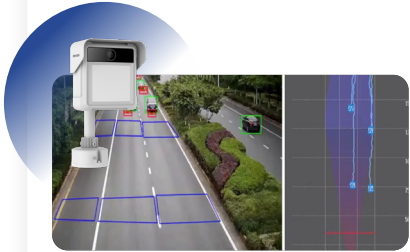
Traffic Order Management

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

Data Collection



Traffic Flow Camera



Radar-Video Fusion 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

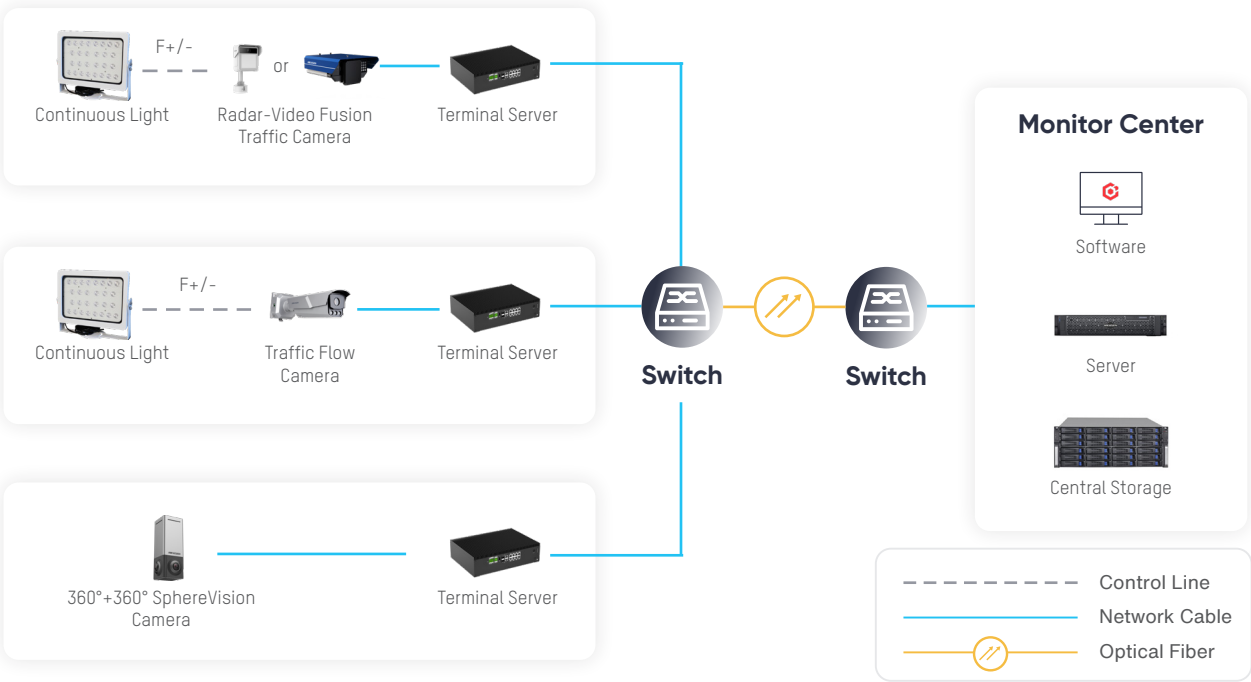
* Available with both devices
* Enhanced by radar-video fusion cameras



360°+360° VR Camera

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

Solution Topology



Signal Control

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

01 General Control Application



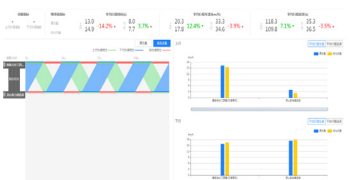
Remote Management



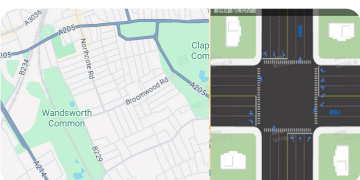
Static Signal Control

- **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.

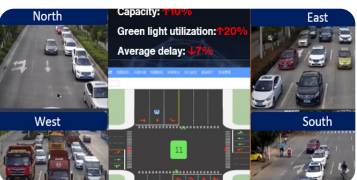
02 Intelligent Signal Control



Green Wave Control



Scenario-Based Signal Control



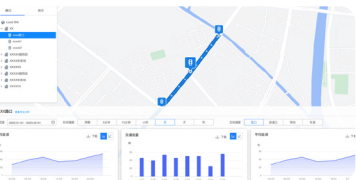
Actuated Signal Control



VIP Priority Control



Pedestrian Crossing Signal Control



Roundabout Signal Control

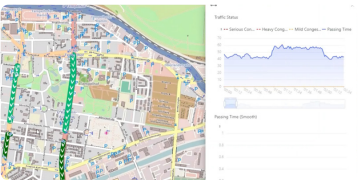
- **Single point actuated signal control and adaptive signal control** automatically optimize signal duration based on real-time traffic flow to ensure intersection traffic fluency.
- **Green wave control** coordinates multiple intersections for uninterrupted traffic on main roads.
- **Scenario-based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



Intersection Data Analysis

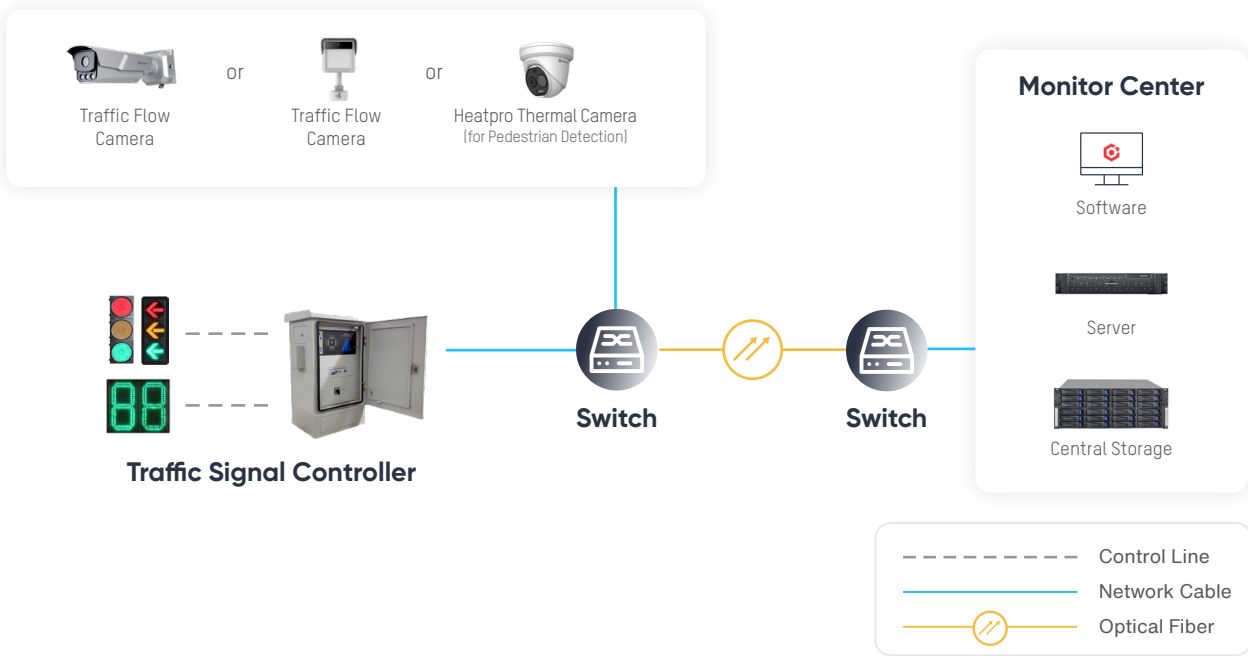


Road Section Data Analysis



Traffic Dashboard

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

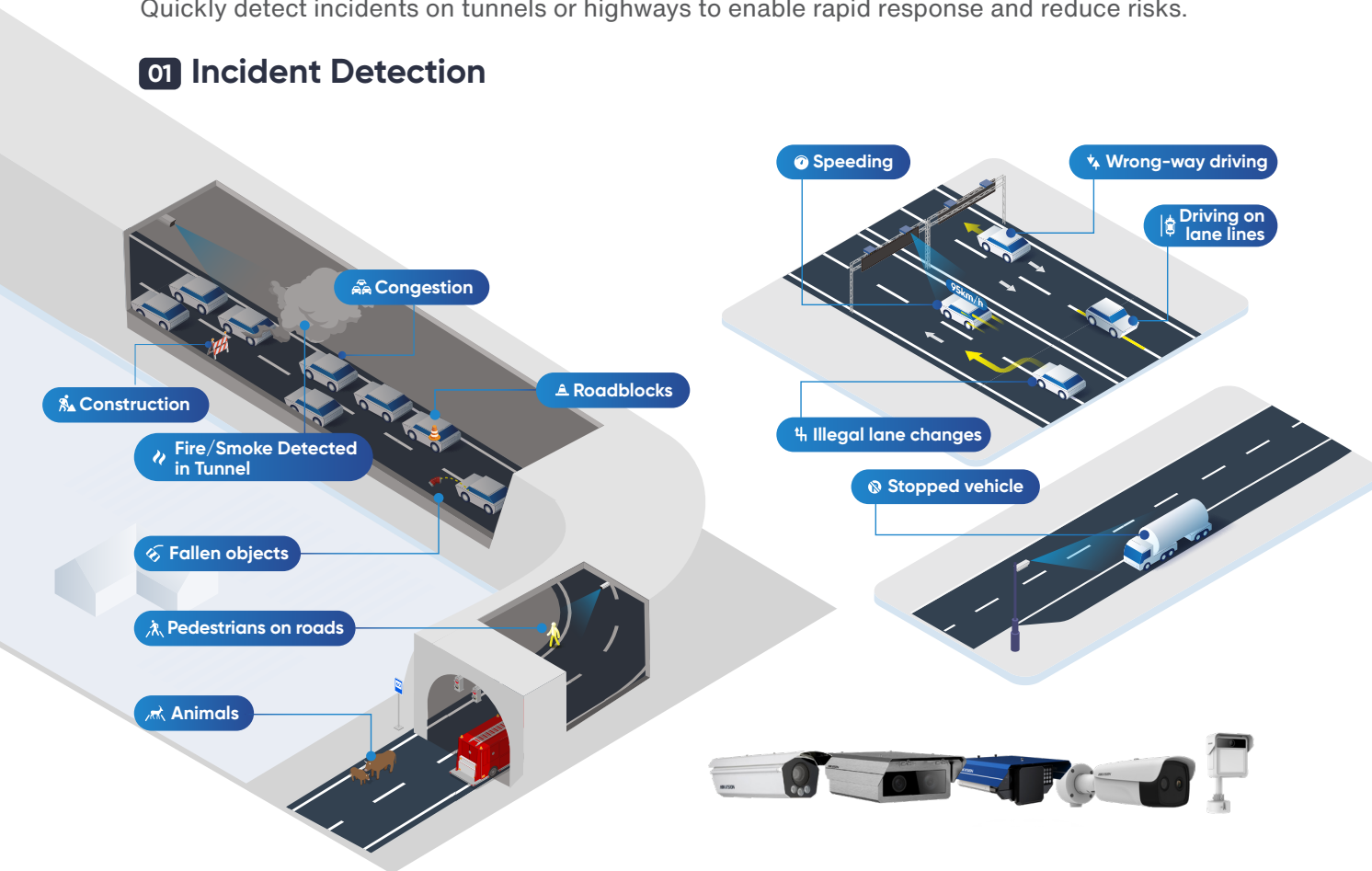
- Thermal 256 x 192@12 μm, NETD < 35 mk; Optical: 5 MP
- Up to 84m perimeter protection
- -20-150°C temperature range with ±8°C accuracy
- Smart Hybrid Light+ Audible Warning
- IP67, PoE (802.3af, class 3)

Road Safety Management

Automatic Incident Detection

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

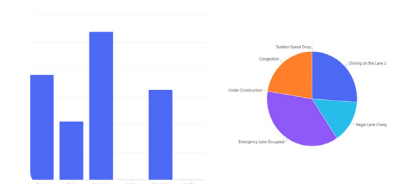
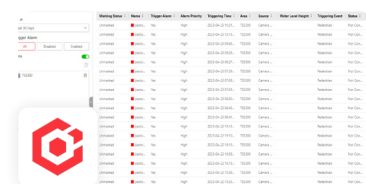
01 Incident Detection



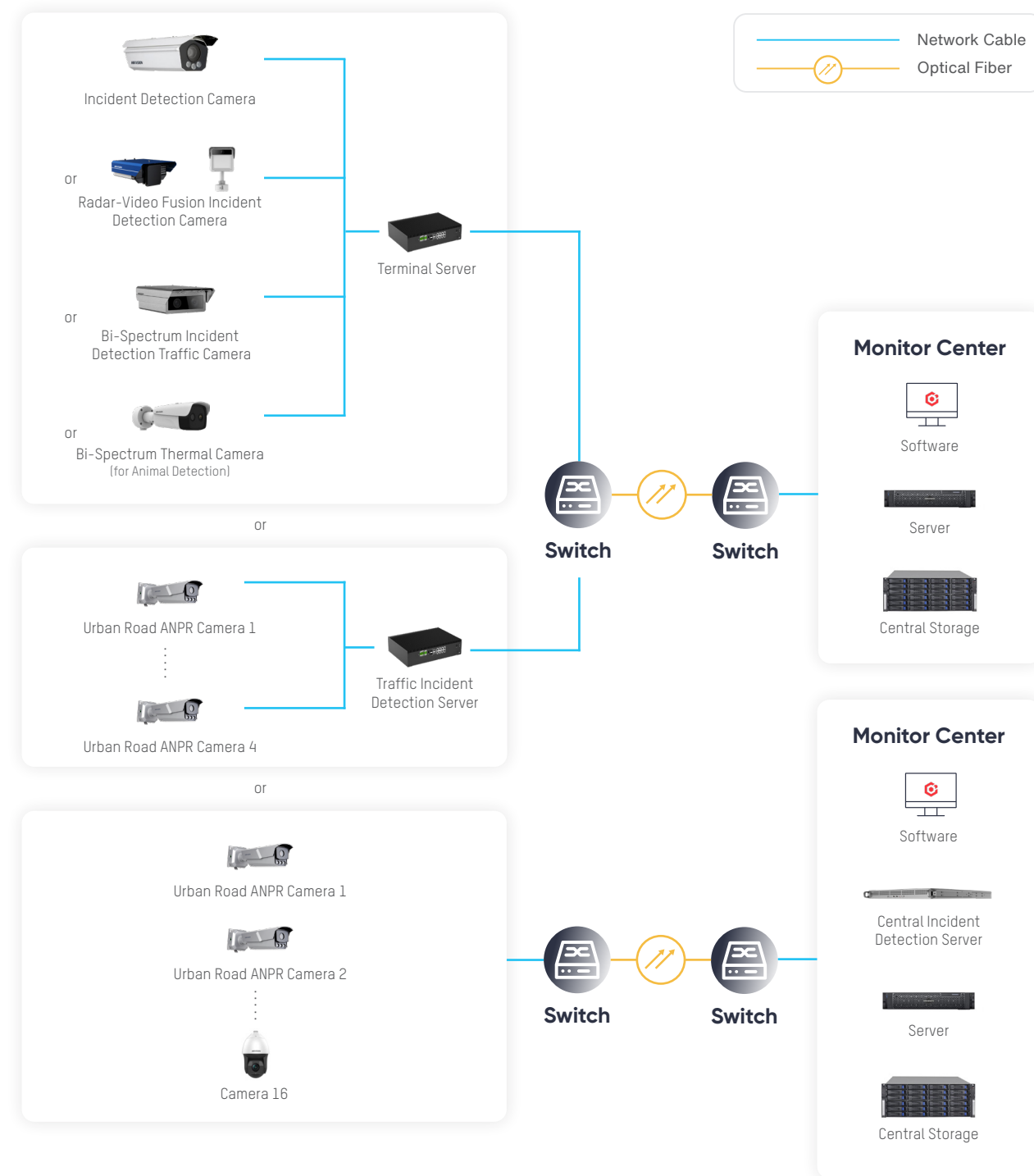
Road Nomalies
Stopped vehicles, pedestrians, animals, fallen objects, congestion, road construction, smoke, etc.

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

02 Incident Management



Solution Topology



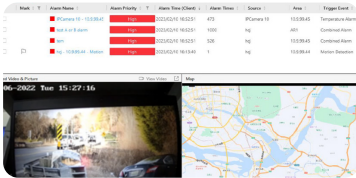
Emergency Alarm Management

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



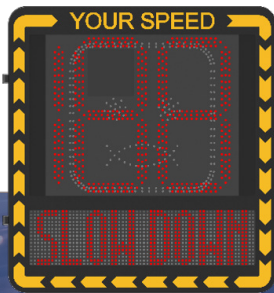
Traffic Safety Warning

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

$V < V_m$

$V \geq V_m$

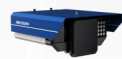
Speed is shown in **green**, and a “**THANK YOU**” sign is displayed

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

HIKVISION

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



Guanlan

HM-TD2638-G1/T3Y

- Thermal 384 × 288@12 μm, NETD ≤ 20 mk; Optical: 4 MP
- Up to 455 m perimeter protection
- EIS in thermal channel; TPM2.0
- 20-150°C temperature range with ±8°C 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.

Highway Operation

Highway Toll Collection

Optimize tolling processes and improve payment supervision on toll roads.

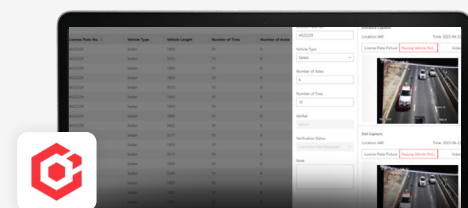
Barrier-Down Tolling & Single-Lane Free-Flow Tolling

- Simultaneous front and **rear license plate** identification
- Truck classification and charging based on **vehicle type and wheel axles**.
- Wide-speed-range vehicle capture ensures **evaded vehicles** are tracked and penalized.

Axle Counting Camera

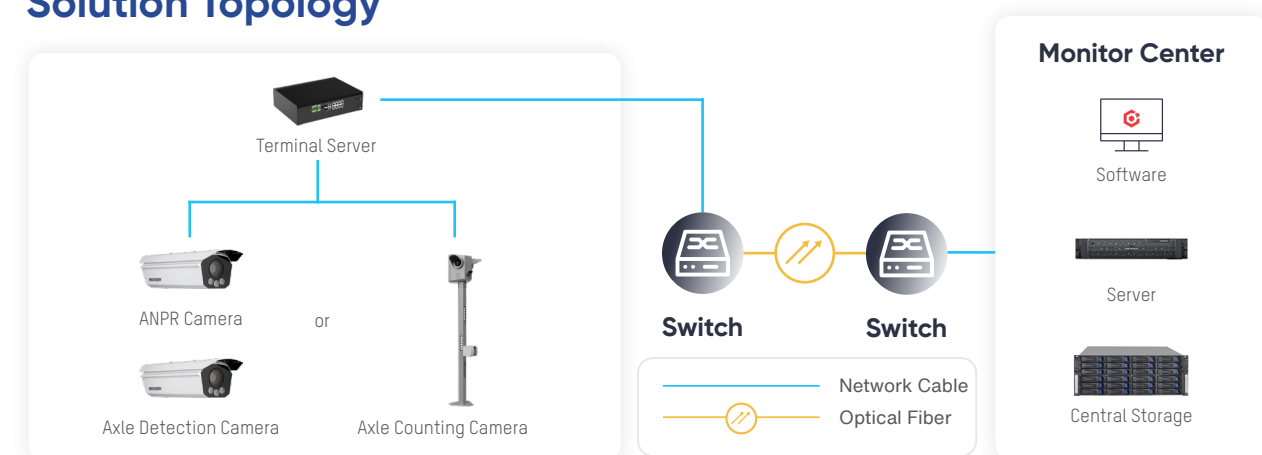
Multi-lane Free-Flow Tolling

Verification & Evidence Management



- Provide a **complete evidence chain** for vehicle tolling.
- The system can efficiently **backtrack in case of toll-related disputes or complaints**.

Solution Topology



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.

Key Products

Axle Counting Cameras



iDS-TCH55P-H(L)

- 3 x 5 MP CMOS cameras, 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



iDS-TCV500-HE(I)/IM

- 5 MP, 2/3" CMOS sensor
- 5.7-21 mm motorized lens
- Axle and tyre number recognition, axle type recognition



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-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-TP50-09H/6LE/1T

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



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

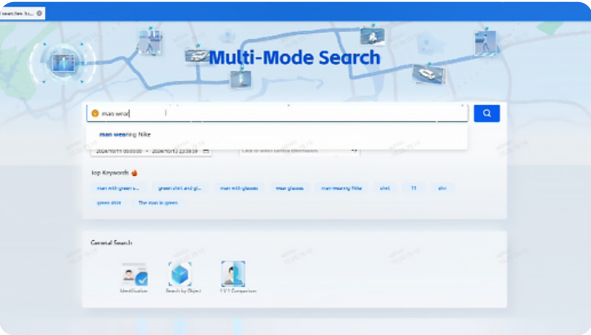
Offer real-time traffic insights through a holistic perspective and customized dashboards.

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