Traffic Analytics and Central Command

Hikvision provides traffic agencies with road status updates for intelligent analysis and decision making, improving traffic efficiency by facilitating the smooth flow of vehicles throughout the city.

Hikvision's command interface presents traffic statuses and trends in real-time, providing:

- Charts of average wait times, traffic volume, green light utilization rates, and other information at intersections
- Historical congestion information along road spans
- Alarm pop-ups and location tags overlaid on live traffic video feeds
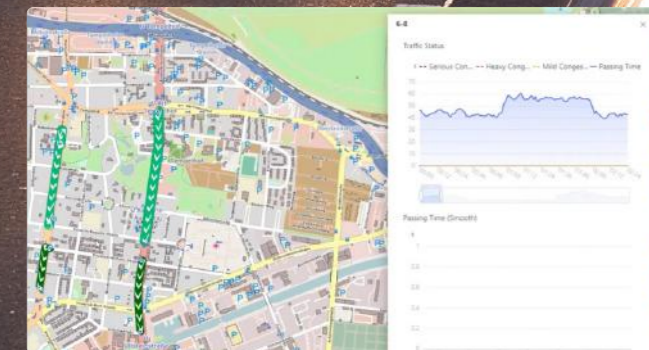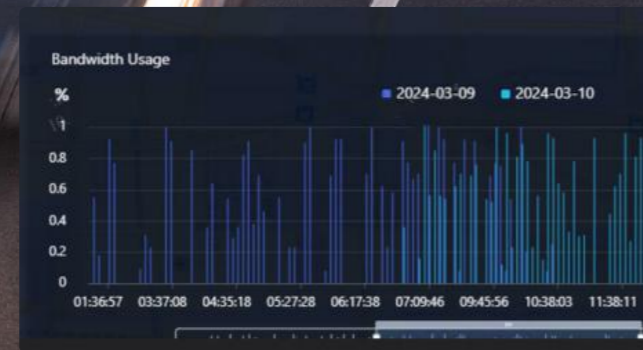
■ Charts for intersections

Traffic volumes

Average wait time

■ Charts for road sections

Congestion status

Bandwidth usage

Product Showcase

Traffic Flow Cameras
iDS-TCD403

- High-quality imaging with 4 MP resolution
- Color: 0.001 lux @ (F1.2, AGC ON)
- IP67, IK10
- Multiple-target detection in up to six bi-directional lanes of up to 128 targets in total
- Multiple traffic data perceptions, including traffic flow, speed, status, queue, time headway, space headway, number of vehicles stopped in an area, space occupancy, and time occupancy

Radar-assisted Traffic Camera
iDS-TCD402

- High-frequency millimeter-wave radar
- High-quality imaging with 4 MP resolution
- Multiple-target detection in up to six bi-directional lanes of up to 128 targets in total
- Supports a vertical coverage of 200 m
- Deep learning algorithms for license plate recognition and video structuring
- Multiple traffic data perceptions, including traffic flow, speed, status, queue, time headway, space headway, number of vehicles stopped in an area, space occupancy, and time occupancy

Signal Controller
DS-TSC300

- Control and display panel to facilitate monitoring and adjusting signal status
- 44 channels of independently-controlled signal lights
- IP54 ingress protection for the cabinet
- GPS timing
- Operating temperature: -40° to 70° C (-40° to 158° F)

Signal Lights
JD300-3, FX300-3

- Central brightness: 5,000 to 15,000 cd/m²
- Visual distance: ≥ 400 m
- Equipped with red, yellow, and green light-emitting units that are powered independently
- Operating temperature: -40° to 80° C (-40° to 176° F)

Signal Light Timer
DX-3-T-1

- Central brightness: 5,000 to 15,000 cd/m²
- Visual distance: ≥ 400 m
- Equipped with red, yellow, and green light-emitting units
- Colored light and remaining time shown simultaneously
- Operating temperature: -40° to 80° C (-40° to 176° F)

HikCentral Master Lite

- Remote management and configuration of network-connected signal controllers
- Integration of traffic signal control and video live view
- Supports intelligent traffic signal control modes including fixed-time control, fully-actuated control, semi-actuated control, adaptive control, coordinated green wave control, intersection group control, special task route control
- Intelligent operation and maintenance, such as signal controller operation status patrol and green wave operation failure monitoring
- AIoT perception and fusion of comprehensive traffic information about vehicles, intersections, and events
- Traffic flow analytics for intersections and road sections

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HIKVISION

Smarter Signals, Smoother Flow

Hikvision Traffic Order Management Solution

Solutions

HIKVISION®

Optimizing traffic flow and order in a city is the goal of municipal traffic agencies. Unfortunately, conventional traffic order management systems remain inefficient in reducing congestion and responding to critical events. They scarcely provide a comprehensive picture of the traffic situation, and cannot utilize traffic data to their fullest potential.

All of these factors make such systems inadequate for the ever-evolving demands of modern urban mobility.

But now, with connected devices and real-time AI analytics, Hikvision's Traffic Order Management Solution helps traffic agencies reduce bottlenecks on the roads and provide multidimensional data to support a better traffic system design.

Read on to see how Hikvision does it.

Traffic Data Perception Made Easy

Hikvision provides specifically designed **video cameras** and **radar units** to perceive traffic conditions at intersections and on the roadways. These AI-enabled devices detect various types of traffic information with high precision, regardless of the weather or light conditions.

Note: The last three types of traffic information on the list are provided by Radar-assisted Traffic Cameras only.

√ Traffic volume
√ Vehicle speed
√ Lane traffic status
√ Lane queue length
√ Time headway
√ Space headway
√ Time occupancy
√ Space occupancy
√ Wait time at traffic lights
√ Number of stops in traffic
√ Average wait time

Network-Connected for Remote Management

Hikvision's network-connected signal controllers support remote control and management, reducing traffic agencies' efforts for on-site checking and configuration.

Traffic agencies can intuitively monitor the **signal controller status** on a map and manage the **signal operation schedules** at each intersection – all from the command center.

Combined with the cameras' live video feeds, operators can monitor traffic conditions at multiple intersections in real-time and make adjustments accordingly.

Online
Offline

Signal controller status   All-in-one signal status display   Multi-intersection monitoring

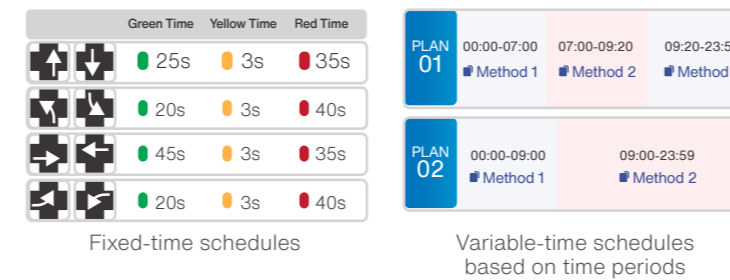# Multiple Modes for Traffic Signal Control

Traffic signals must be programmed to suit the needs of each specific traffic environment. Hikvision's solution offers multiple traffic signal control modes to help optimize safety, comfort, journey time, and fuel consumption, on any route a driver chooses.

Single-Intersection Signal Control

Hikvision provides fixed-time, actuated, or adaptive signal control at an intersection.

1 Fixed-Time Signal Control

The fixed-time signal control mode helps to efficiently utilize the green-light phase at intersections where traffic volumes and patterns are consistent. It also suits newly constructed intersections.
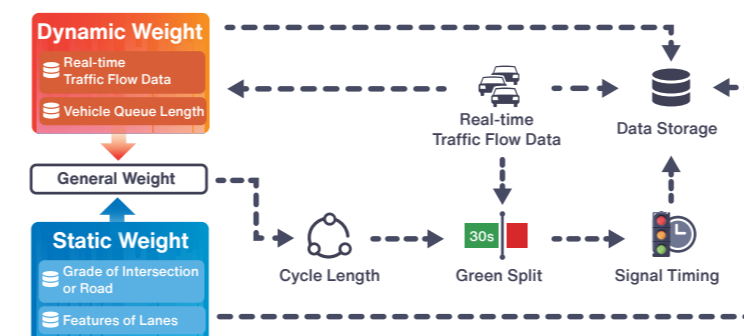
	Green Time	Yellow Time	Red Time
	25s	3s	35s
	20s	3s	40s
	45s	3s	35s
	20s	3s	40s

Fixed-time schedules

PLAN 01	00:00-07:00 Method 1	07:00-09:20 Method 2	09:20-23:59 Method 1
PLAN 02	00:00-09:00 Method 1		09:00-23:59 Method 2

Variable-time schedules based on time periods

2 Actuated Signal Control

The actuated signal control mode extends the green time in congested directions within a reasonable range, optimizing travel through intersections with low or irregular traffic flows.

Vehicles on the main-road
Default Max 25s 45s
Main-road actuated control

Vehicles on the side-road
Side-road actuated control

Vehicles on the side-road
Vehicles on the main-road
Default Max 25s 45s
Fully-actuated control

3 Adaptive Signal Control

The adaptive signal control mode optimizes the time schedule of the next light cycle according to the traffic flow of the current light cycle. Cameras and radar continually perceive traffic flow of each cycle so that traffic conditions can be constantly evaluated to develop and improve the best signal timing.
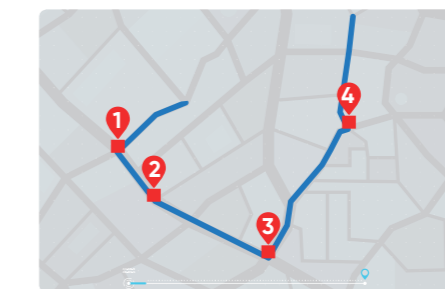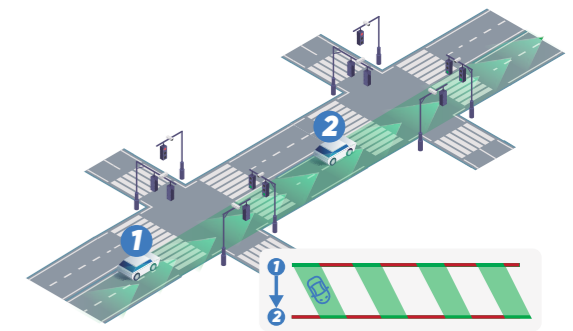
Dynamic Weight
Real-time Traffic Flow Data
Vehicle Queue Length

General Weight

Static Weight
Grade of Intersection or Road
Features of Lanes

Real-time Traffic Flow Data
Data Storage
Cycle Length   Green Split   Signal Timing

Multi-Intersection Signal Control

Hikvision also provides dedicated signal control modes for maximum traffic efficiency across multiple intersections.

1 Static Green Wave Control

The static green wave control mode coordinates sequential signals on a major road to provide a non-stop travel experience for drivers traveling within a certain range of speeds, without stopping.

This optimizes the entire traffic flow in an area, eliminating costly delays and increasing overall efficiency.

2 Special Task Route

The special task route mode provides traffic signal control for special tasks such as state visits by foreign leaders.

Traffic agencies can carry out special task route planning and route monitoring to ensure the smooth flow of vehicles along the route, reduce delays at red lights, and ensure the efficiency of the journey.

Roundabout Signal Control

Hikvision offers different signal control strategies depending on the traffic volumes at the roundabouts, allocating right of way to vehicles in terms of time and space, reducing traffic congestion and increasing roundabout capacity.