

HIKVISION®



ADVANCED SECURITY
SAFER SOCIETY
SAFE CITY SOLUTION

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

RAPID GROWTH

Hikvision is the world's leading supplier of video surveillance products and solutions, featuring the industry's strongest R&D workforce and state-of-the-art manufacturing facilities. Since 2001, Hikvision has grown from being a single-product supplier to a complete solution provider to a global market leader. Now, Hikvision has established one of the most extensive marketing networks in the industry, comprising 33 overseas regional subsidiaries throughout the world, ensuring quick responses to the needs of customers, users and partners.



FUTURE INNOVATION

Hikvision's Research Institute conducts innovative research and development to keep us at the forefront of technology.

- Research topics include : Perceptive Technology, Intelligent Analysis Technology, Big Data and Cloud Storage Technology, and Multimedia Technology.
- The largest R&D team in Artificial Intelligence in the security industry.
- Sophisticated experience in video target detection, image segmentation, video structuring and video retrieval.
- Ranked No.1 in Scene Classification at ImageNet 2016 challenge and ranked top in the MOT Challenge Evaluation.
- Introduced the AI Cloud structure that combines cloud and edge computing



7-8%
Of annual revenue
invested in R&D



Research Institutes
• Hangzhou, China
• Shanghai, China



7 R&D Centers
• Montreal, Canada
• London, UK
• Hangzhou, Wuhan,
Shanghai, Xi'an, Chengdu
in China



**The largest Artificial
Intelligence-
focused R&D team**
in the security industry



• 770+ Copyrights
(170+ increase from 2017)
• 1,900+ Patents
(600+ increase from 2017)

TECHNOLOGY PARTNER PROGRAM BUILD WIN-WIN SOLUTIONS WITH HIKVISION

Hikvision continues to build close partnerships with distributors, system integrators and installers, as well as third-party technology partners. Today, Hikvision has over 500 technology partners globally. With the AI Cloud platform in operation, Hikvision will join hands with all partners to build a powerful AI ecosystem together.

When joining this partner program, you will enjoy access to a wealth of technical and commercial resources, and we ensure that your solution enjoys strategic marketing through our communication channels. You will also get instant access to our entire sales organization. A vital part of our program is the streamlined online communication with our technical teams as well as the tools to plan the go-to-market activities.

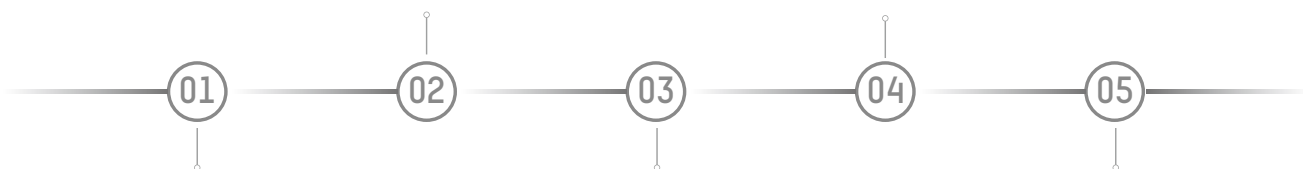


NEW COOPERATIVE BUSINESS MODEL

- HEOP – Hikvision Embedded Open Platform
- Online License Activation

GLOBAL TECHNOLOGY PARTNER PORTAL

- Value Sharing Platforms
- High Quality Integration Service



01 STANDARDIZED INTEGRATION TECHNOLOGIES

- ISAPI
- ONVIF
- HCNetSDK
- Hik Gateway

03 VALUE-ADDED CORPORATE SOLUTIONS

- Global Release
- Co-marketing Exposure
- Local Connections

05 FUTURE-PROOF CO-DEVELOPMENT

- AI Cloud + Partner Applications
- CCTV to IoT
- Limitless Possibilities in Multiple Sectors

PARTNER PORTAL A VALUE-SHARING PLATFORM

We want to share our success with you and to see your business ventures succeed in every way possible. As a certified Partner with Hikvision, our marketing materials and other assets will be available to you. The "Partner Portal" is just one of the ways we demonstrate how much we value each and every partnership.

Authorized users can access the Partner Portal online, anytime, for all kinds of helpful information. It's easy to do, and you will find everything you need to help you get to the next step. When you need us, the Partner Portal is the doorway to support and to new opportunities for you!



SAFE CITY SOLUTION

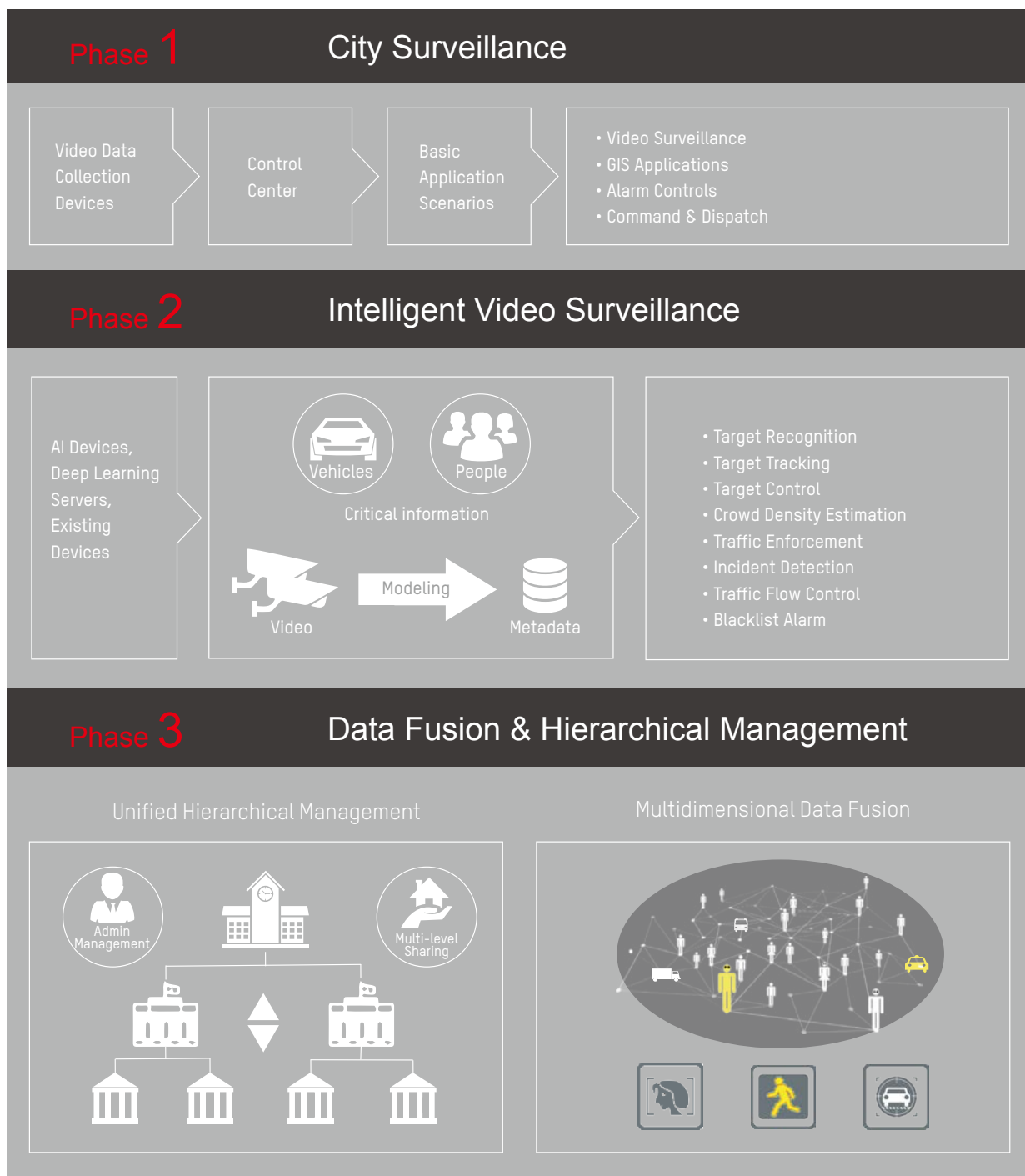
The Hikvision Safe City Solution provides sound, stable, and reliable municipal security. It features a series of advanced technologies and various security subsystems to safeguard industries, centralize operations, and integrate security platforms. These integrated technologies enable rapid and effective responses to security needs and events. All componentry, software, and services in the Safe City Solution reinforce public administration, improve people's lives, and boost substantial, long-term development.

Hikvision's Safe City Solution features:

- Data collection with front-end processing, entrance & exit control, ID verification, under-vehicle surveillance, alarm linkage, and smart linkage;
- Personnel protection, forensic investigation, vehicle surveillance, parallel analysis, video patrol, and information retrieval;
- Status analysis, comprehensive assessment, preventive measures, data relationship mining, centralized security footage, and valuable statistics.



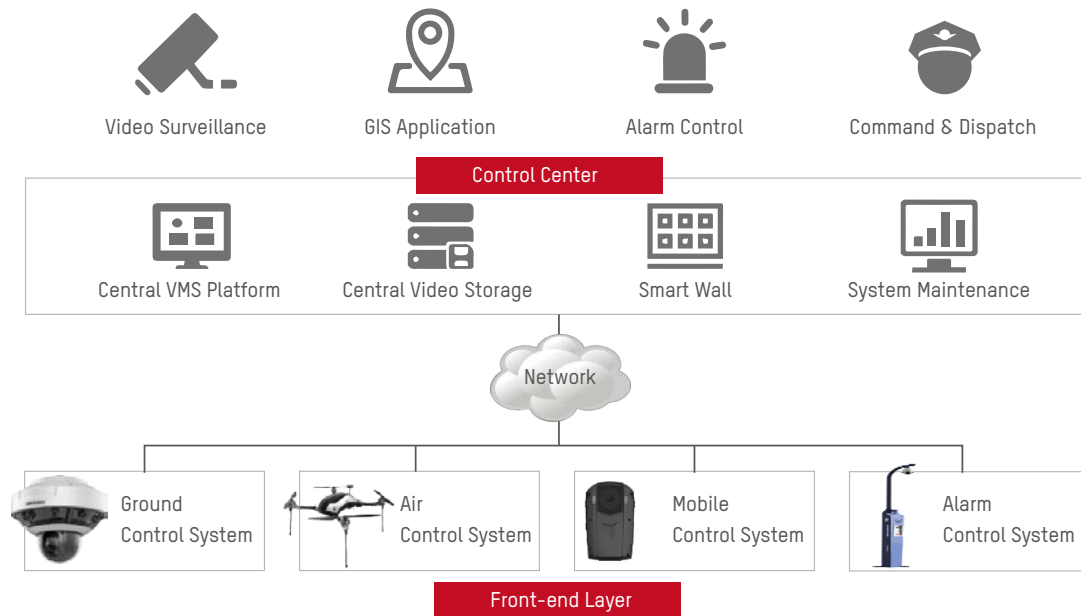
THREE DEVELOPMENT PHASES FOR A SAFE CITY





CITY SURVEILLANCE

A well-crafted city surveillance system will deter vandals and prevent security threats, and the best installations go unnoticed by the public at large. Hikvision provides a series of front-end devices in various applications to provide strategic surveillance and prevent criminal activities. And when events do occur, this City Surveillance System significantly improves efficiency for post-event investigation.

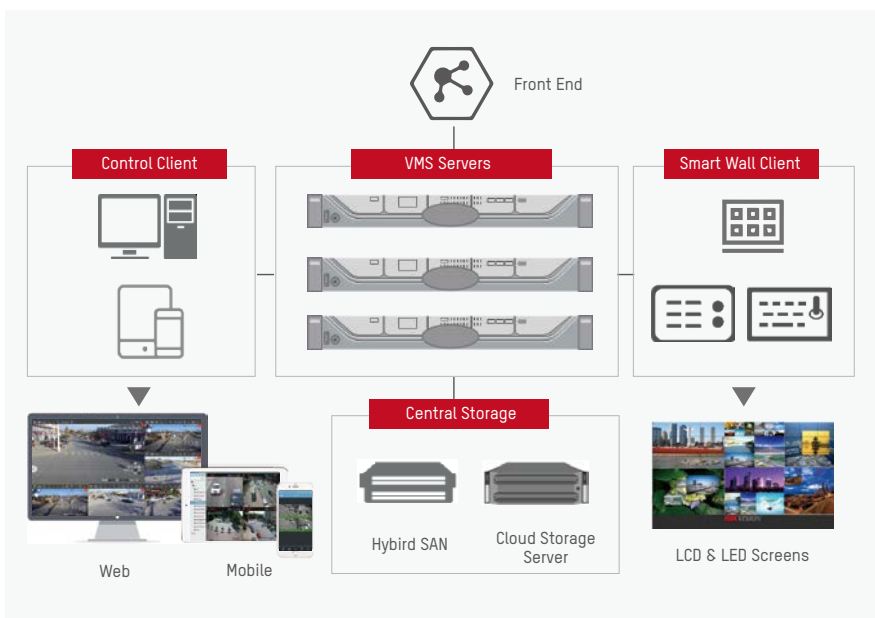




CONTROL CENTER

The Control Center creates the utmost reliability and management ability for video footage protection and daily operations.

- Provides management, video playback, and control for all daily operations among all devices in a centralized VMS platform
- Extends data into cloud storage when storage device capacity is overloaded
- Generates multiple viewing modes, from standalone monitors to large smart walls
- Centralizes display of general system health on the dashboard for up-to-the-minute status report

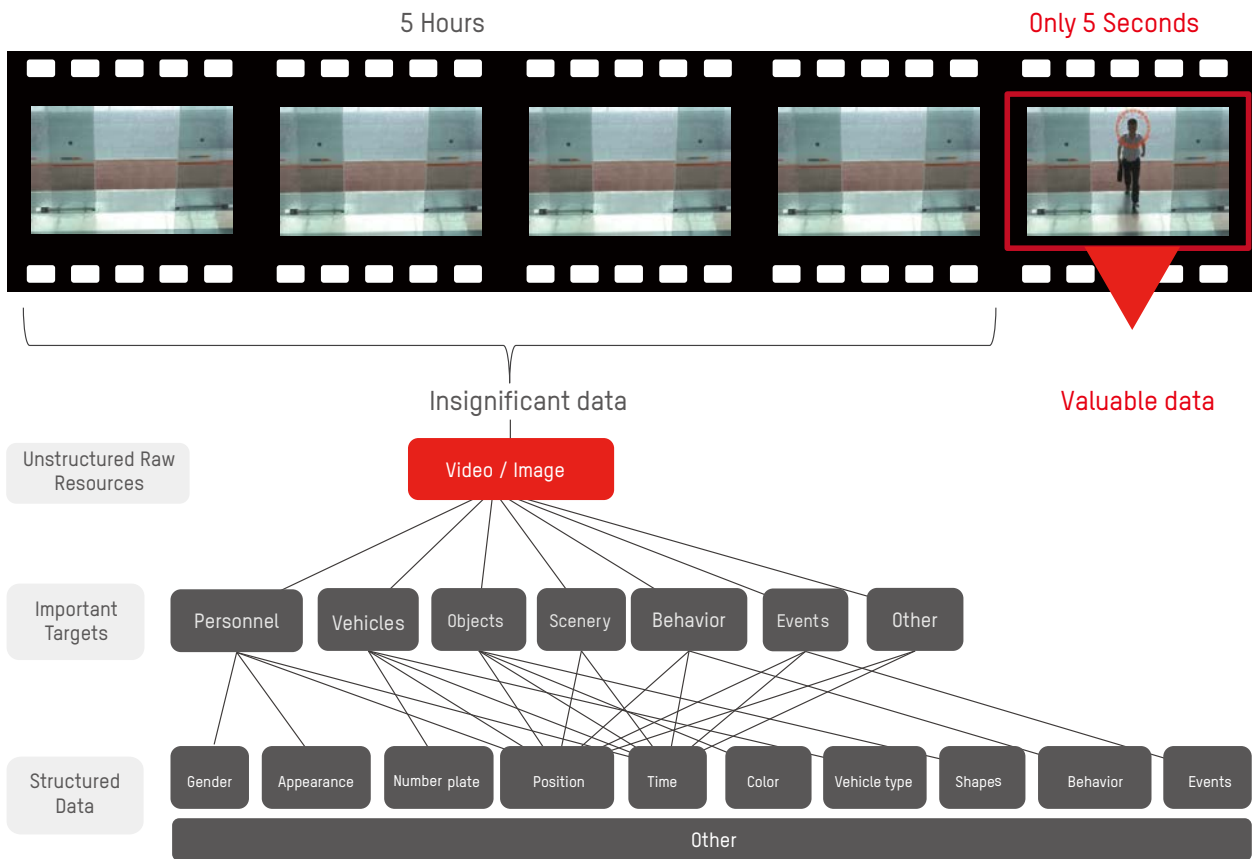


DEDICATED VIDEO STORAGE WITH FAIL-SAFE PERFORMANCE:

- Direct stream data storage for video
- Full lifespan management of security data
- 24/7 uninterrupted storage
- Decoupling of VMS applications and storage architecture
- Multi-thread high-speed downloading
- High-speed data recovery
- Multiple streaming protocols supported
- Third-party storage device compatibility

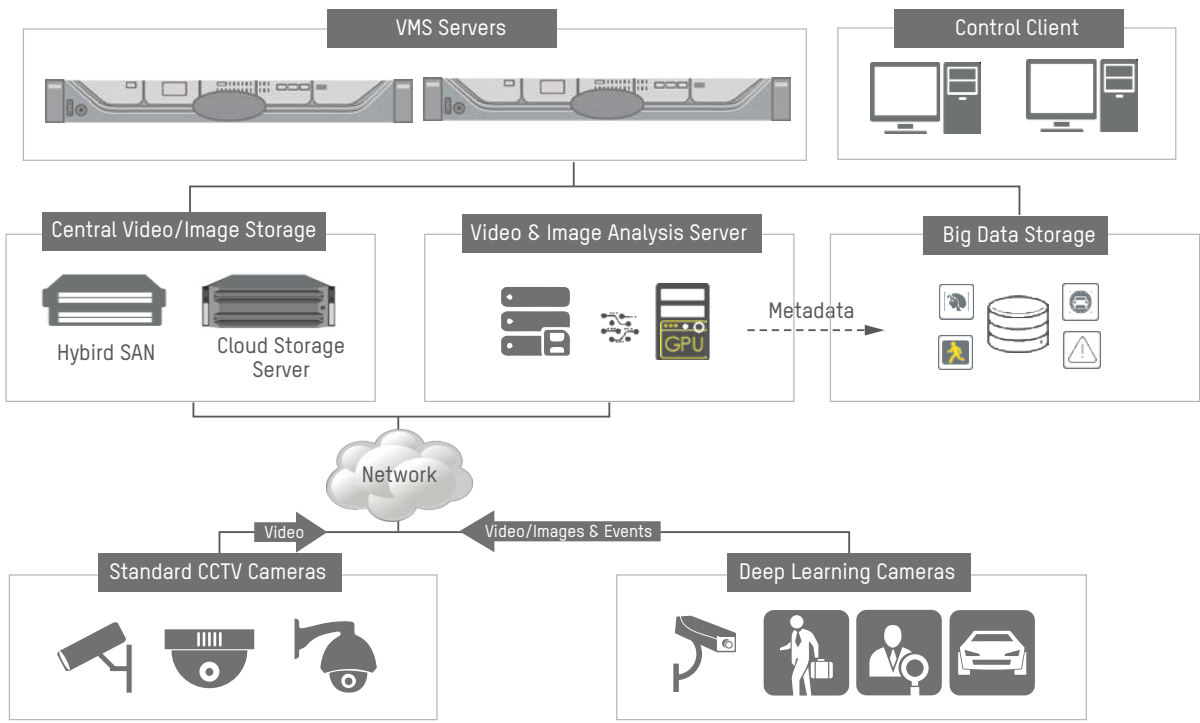


INTELLIGENT VIDEO SURVEILLANCE





SYSTEM TOPOLOGY



VEHICLE MANAGEMENT

One of the key features of Hikvision's Safe City Solution is its ability to help authorities manage traffic and monitor vehicles.



TRAFFIC ENFORCEMENT APPLICATIONS

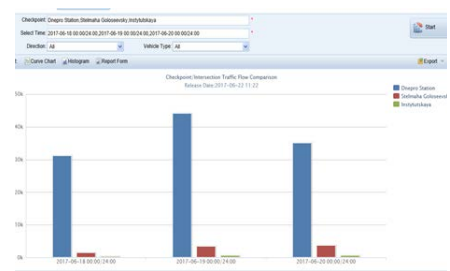
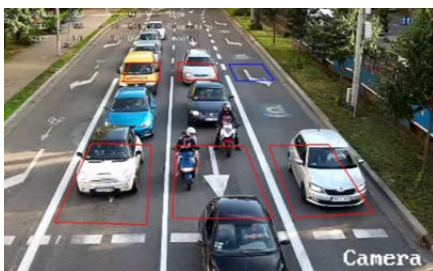
Ensuring road safety and smooth travel, the system can detect violations & behavior for further analysis.

- Red light violation
- Wrong-way driving
- Illegal lane change
- Illegal parking
- Speeding violation
- Unfastened seatbelt

TRAFFIC FLOW MANAGEMENT

Traffic big data analysis predicts traffic in advance to prevent traffic jams, as well as conducts effective signal control and guidance.

- Traffic guidance
- Traffic signal control
- Traffic event detection



Vehicle Counting System

Based on video streaming analysis technology, the operator can predict or take precaution to prevent accidents from happening.

Traffic Event Detection

The traffic control system is able to report traffic flow and display congestion status to the public in real-time, effectively guiding vehicles to avoid jammed areas.

Traffic Flow Report

The system is able to generate traffic flow reports and to display relevant data in different charts and diagrams.

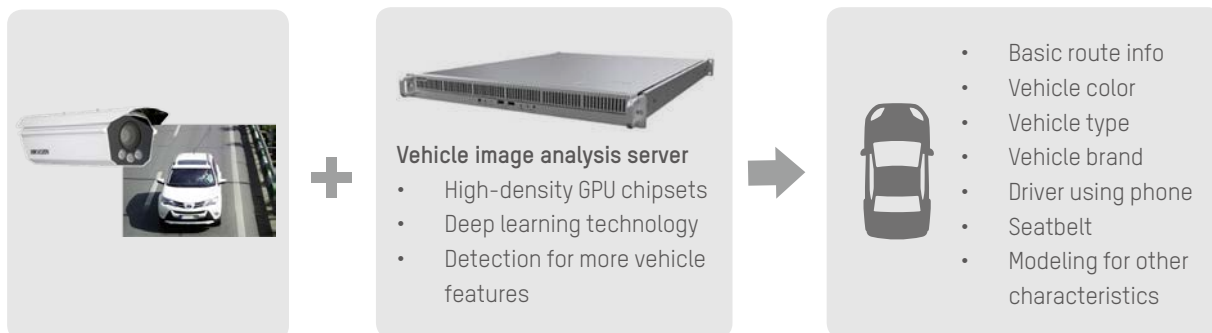
- Real-time traffic flow
- Traffic flow comparison
- Report on vehicle violation



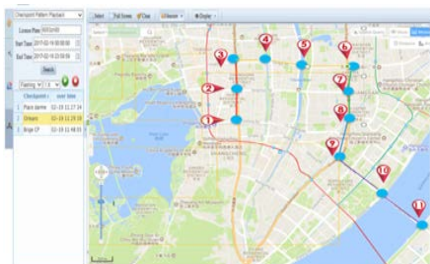
VEHICLE APPLICATIONS FOR PUBLIC SECURITY

Combining ANPR cameras with back-end analysis servers allows the Hikvision traffic system to recognize not only generic features such as license plates or vehicle color, but also to identify characteristics specific to one vehicle - such as the number of stickers on the wind shield - through data modeling.

Similarity tests among vehicle types helps law enforcement to identify a suspected vehicle. This is a useful addition to the conventional method of identification using structured data such as license plate numbers, for example.



ANPR and the vehicle characteristics analysis algorithm together provide law enforcement officials a more efficient way to investigate incidents.



Driving Pattern Analysis



Vehicle Blacklist Alarm

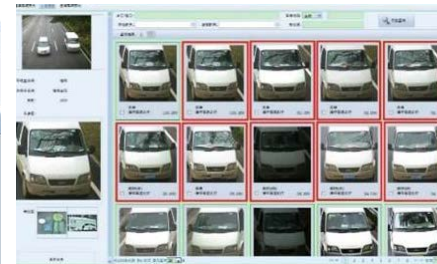


Image Comparison and Matching

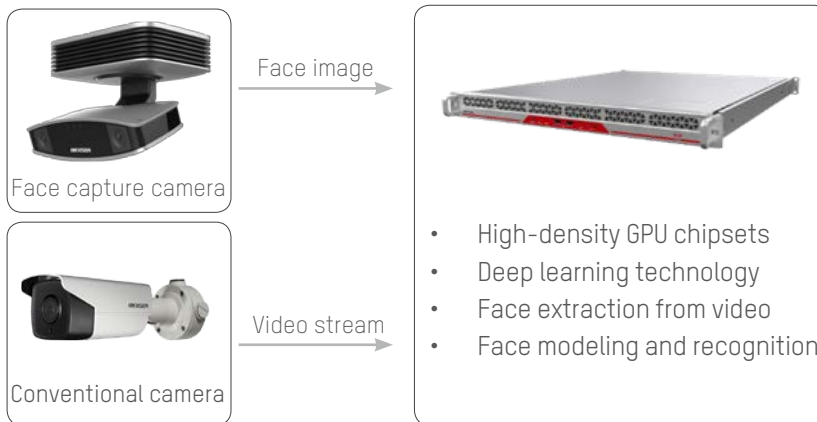


PEOPLE MANAGEMENT

FACIAL RECOGNITION

The system provides accurate facial recognition results thanks to the Hikvision face capture cameras and powerful servers.

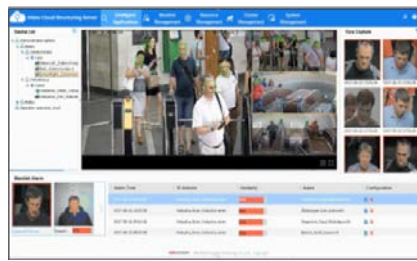
Hikvision optimizes facial recognition algorithms for different countries and regions to achieve higher accuracy rate.



- Face image comparison
- Search from all captured images
- Facial image retrieval – 1:N comparison
- 1V1 image comparison
- Face searching app
- Real-time facial image capture and blacklist alarm



Image comparison via mobile app



Real-time facial image capture and blacklist alarm

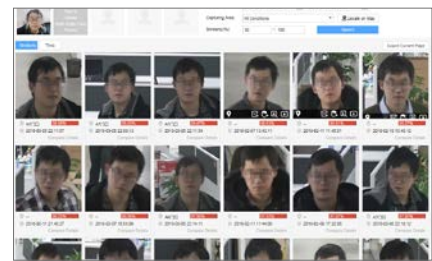
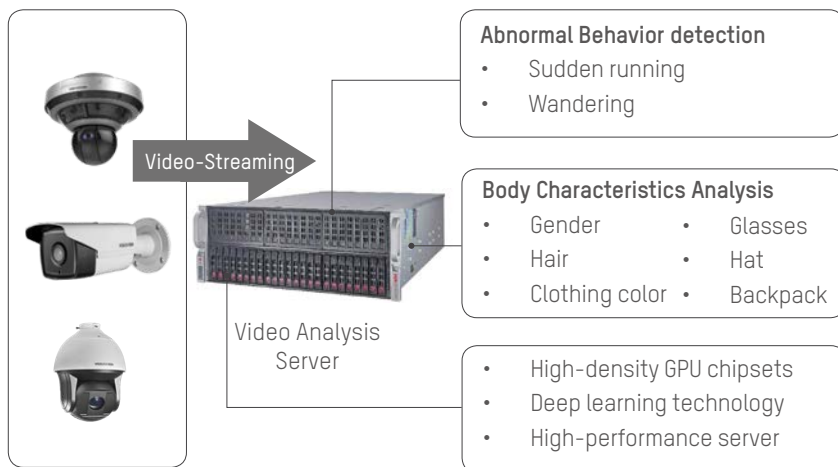


Image comparison and matching

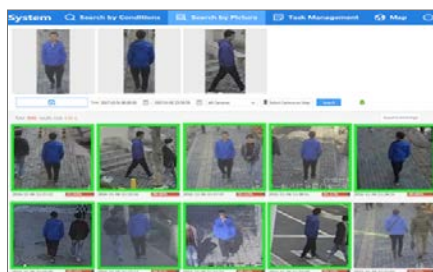


BODY CHARACTERISTICS AND ABNORMAL BEHAVIOR

The real-time video analysis algorithm can model an individual's body characteristics using video streams from existing cameras. The back-end analysis server is also equipped with algorithms that can detect abnormal behavior, such as sudden running, wandering, or intrusion, via video streams.



- Supports real-time standard video-streaming analysis
- Supports analysis from video footage
- Generates direction of travel movement on the GIS map
- Search using one image with body characteristics
- Search using multiple image with body characteristics
- Search by other features such as clothing color, figure, gender, etc.
- Supports locating specific person on the map
- Supports perimeter detection such as intrusion, line crossing



Search using multiple images with body characteristics



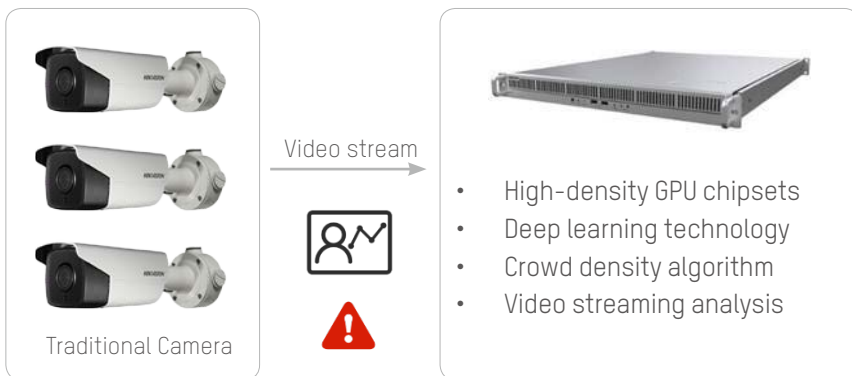
Direction of travel movement



CROWD DENSITY PREDICTION

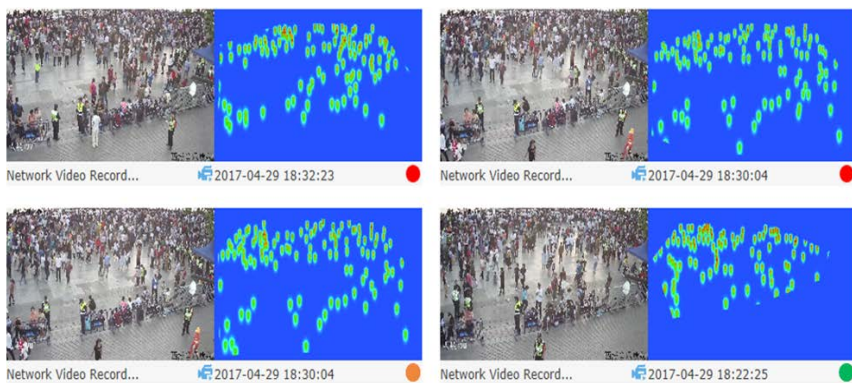
The crowd density analysis system is designed for large open areas such as public squares, stations, and airports.

Through high-definition video stream analysis, the system is able to calculate the population density within a designated area. If the density exceeds the preset threshold, alarm notification will be shown.

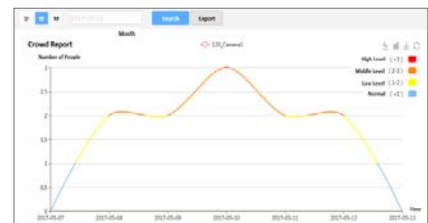


Features and applications

- Supports 4CIF to 3 MP streaming analysis
- Supports customization of alarm threshold for crowd density
- Alarm notification on VMS client after triggered
- Intuitive display of alarm level by using different colors
- Various data display mode



Using different colors to represent alarm level

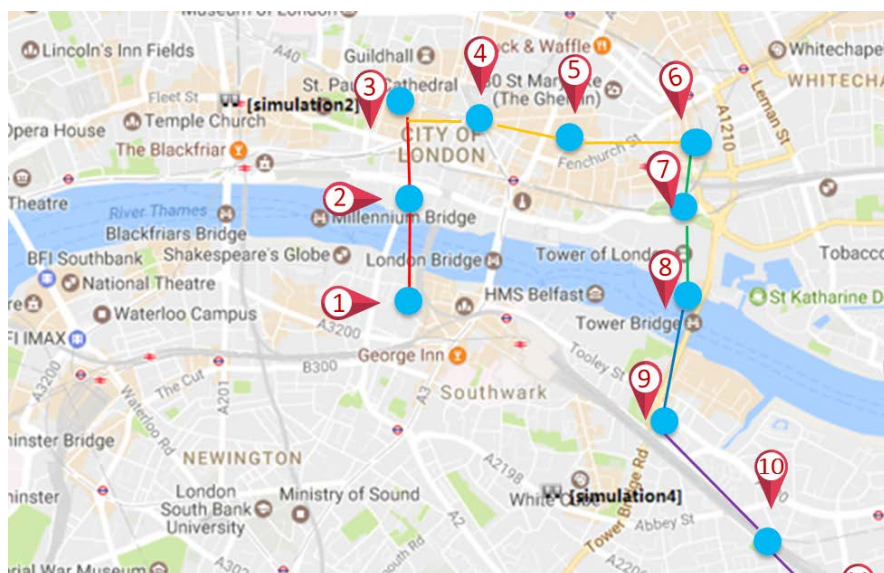


MULTI-DIMENSIONAL DATA FUSION & ASSOCIATION

As more multi-dimensional data is collected, the utilization of only one single data category (i.e., vehicle data, facial data, etc.) no longer fulfills the increasingly complicated security needs. Therefore, breaking down data silos and merging various data types together becomes crucial for safe city construction.

Human bodies and faces are associated using big data for data fusion analysis.

A driver can be identified by face recognition and then associated with related vehicle information (i.e., license plate information) based on unified big data.



TRAIL TRACKING BASED ON DATA FUSION

This application is based on big data fusion from multiple resources, like vehicle data, human face data, and body characteristics data.

Vehicle

When a suspect flees from a crime scene by car, the system can generate a trail based on license plate photos captured by checkpoints.

Human Face

Even if the suspect leaves the car and walks, the trail continues with facial recognition at checkpoints which can associate vehicle information with specific face images.

Video

Once the suspect is out of the facial recognition area, the system can still detect the suspect by specific body characteristics through video analytics.

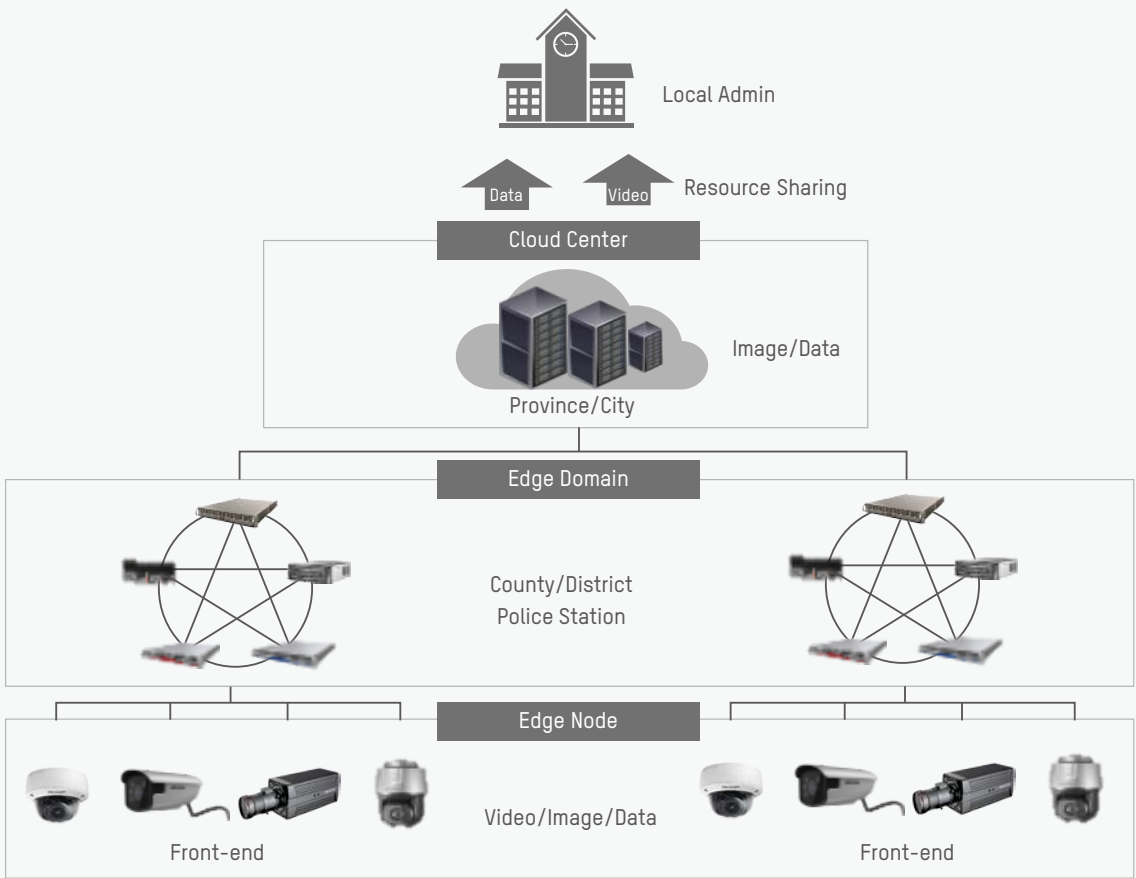
HIERARCHICAL MANAGEMENT

In addition to establishing a safe city, local administrators prioritize and manage all resources from various cities. Here's how it happens:

The **Cloud Center** focuses on multidimensional data fusion and big data analysis.
 - **Application:** Prediction & warning, multidimensional analyses - Responds on demand

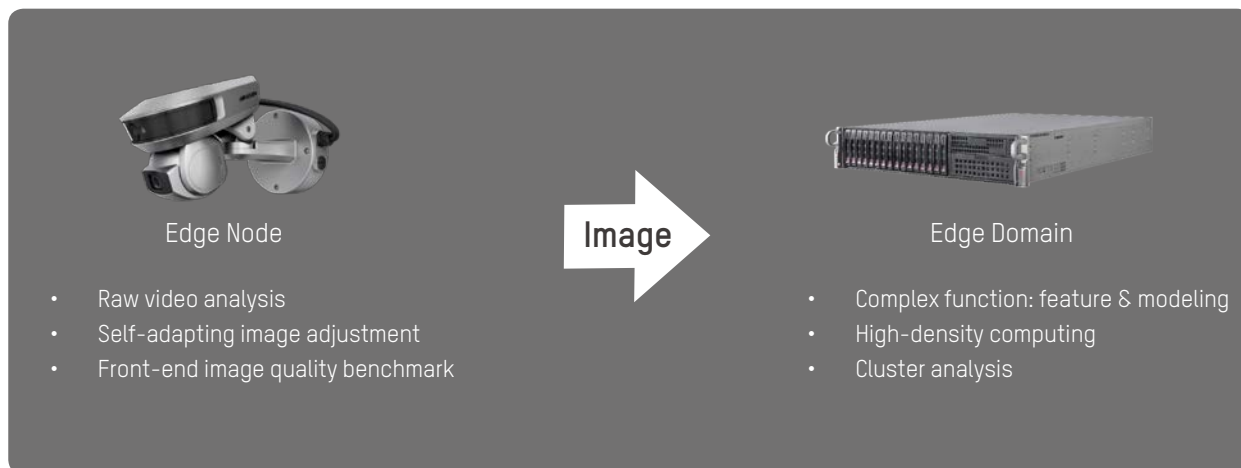
The **Edge Domain** focuses on data storage, intelligent processing, association analyses, and rapid response.
 - **Application:** Trail tracking, command scheduling, and more - Timely response

The **Edge Node** focuses on multidimensional data collection and front-end intelligence processing.
 - **Application:** Facial attendance, person / vehicle barrier control, and more - Real-time response

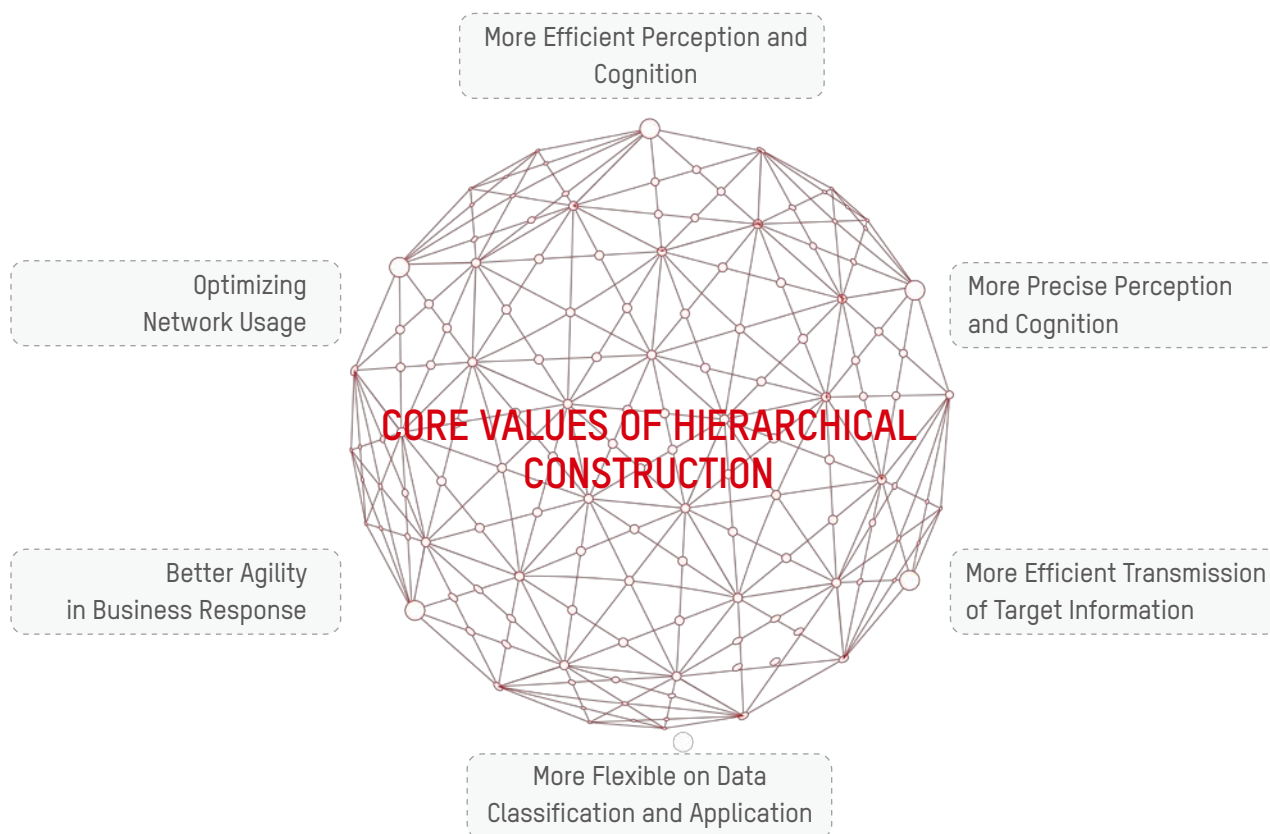


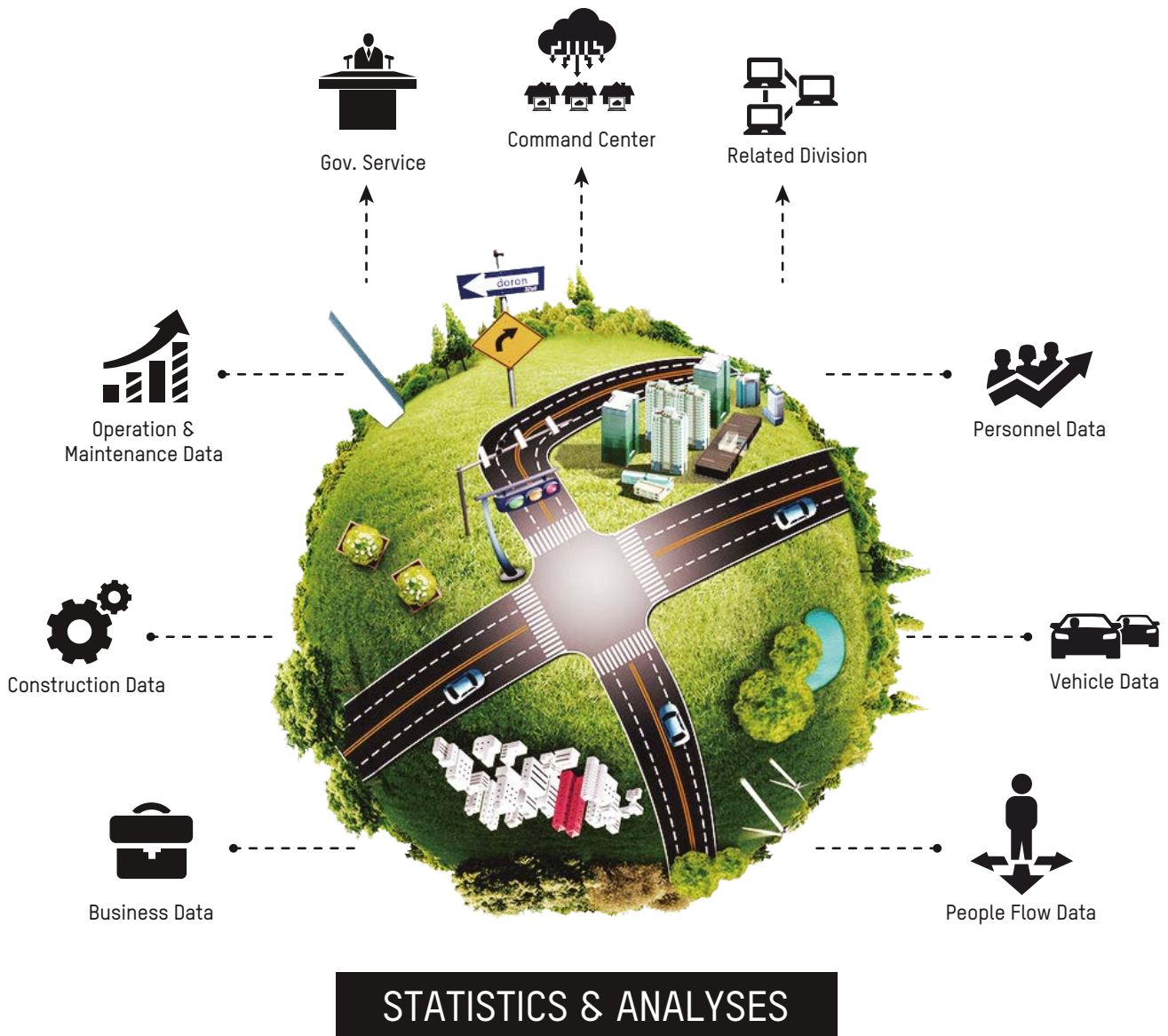
Data Gathering on Demand

WHY DO WE NEED THE EDGE NODE AND DOMAIN?



- Elasticity Architecture
- Low TCO(Total Cost of Ownership)





OPEN ECOSYSTEM FOR SMART CITIES

Hikvision provides a scalable Safe City Solution to fulfill the various development phases for any scenarios. Meanwhile, Hikvision also creates opportunities to build an ecosystem with our partners, making cities smarter and safer.

- Open Infrastructure (for third-party hardware or system)
- Open Application Interface
- Open Data Resources
- Open Platform Services
- Open Video Resources
- Open Third-party Algorithm Integration



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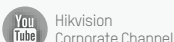
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