

International Product and Solution Center

HIKVISION

NEW DEEPINVIEW 7 SERIES

- ① Overview
- ② Intelligent Functions
- ③ High-quality Image
- ④ Ease of Use
- ⑤ Product Showcase

CONTENTS

1

Overview



OVERVIEW

HIKVISION®

Accelerate Your Business With AI

DeepinView series has a variety of intelligent functions, which can be widely used in retails, public security, buildings and other industries, to improve monitoring efficiency and save the human cost.



High-quality Image

Meeting the monitoring requirements of different environment



Multiple Intelligent Functions

Collecting a variety of algorithms in one device to meet the needs of different industries



Ease of Use

Ease of integration and protection

2

Intelligent Functions



7 INTELLIGENT FUNCTIONS

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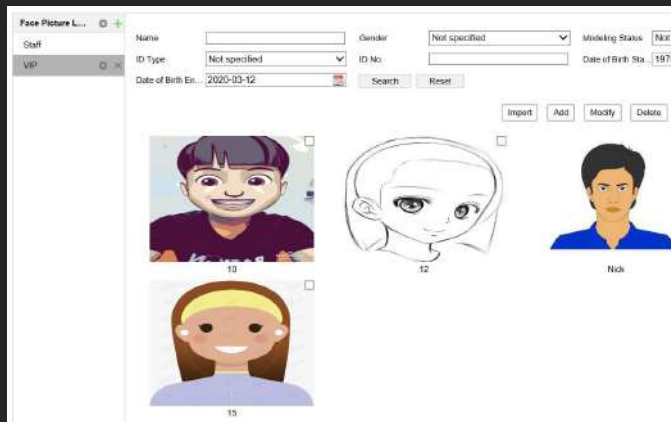




FACIAL RECOGNITION

HIKVISION®

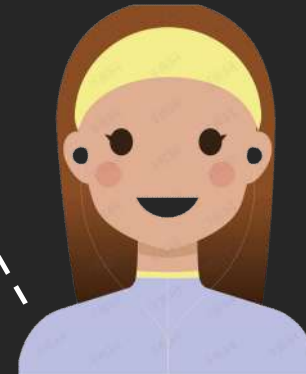
1. Face Picture Library



2. Face Capture

Best shot / Quick shot

3. Face Comparison



4. Result

Comparing the captured face image with face images in face picture libraries to get the comparison result.



FACIAL RECOGNITION

HIKVISION



- Hikvision facial recognition cameras support human **face detection, capture, recognition and features analysis** at the same time
- **List alarm** based on the comparison result
- 3 face libraries with **90,000 faces** in total



FACIAL RECOGNITION APPLICATION

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Consumption Places

- Hotels, 4S shops, retails, etc.
- Improving service quality through VIP customer recognition



Public Security

- Bank, industry park, school, safe city etc.
- Enhancing the security of public areas through list alarm



FACE COUNTING

HIKVISION®

Shop staff are counted in duplication by face counting cameras

Recognition Record			
	Customer		Security Man
	Customer		Customer
	Customer		Shop Manager
			Staff
			



Exclusion Targets

- Shop Staff
- Shop Manager
- Cleaning Staff
- Security Staff
- Repairman
-

Repetitive consumer are counted in duplication by face counting cameras

A customer comes



The customer goes out for a certain time (making phone call / going to the rest room...) and comes back soon



ENTER+1
DUPLICATION+1



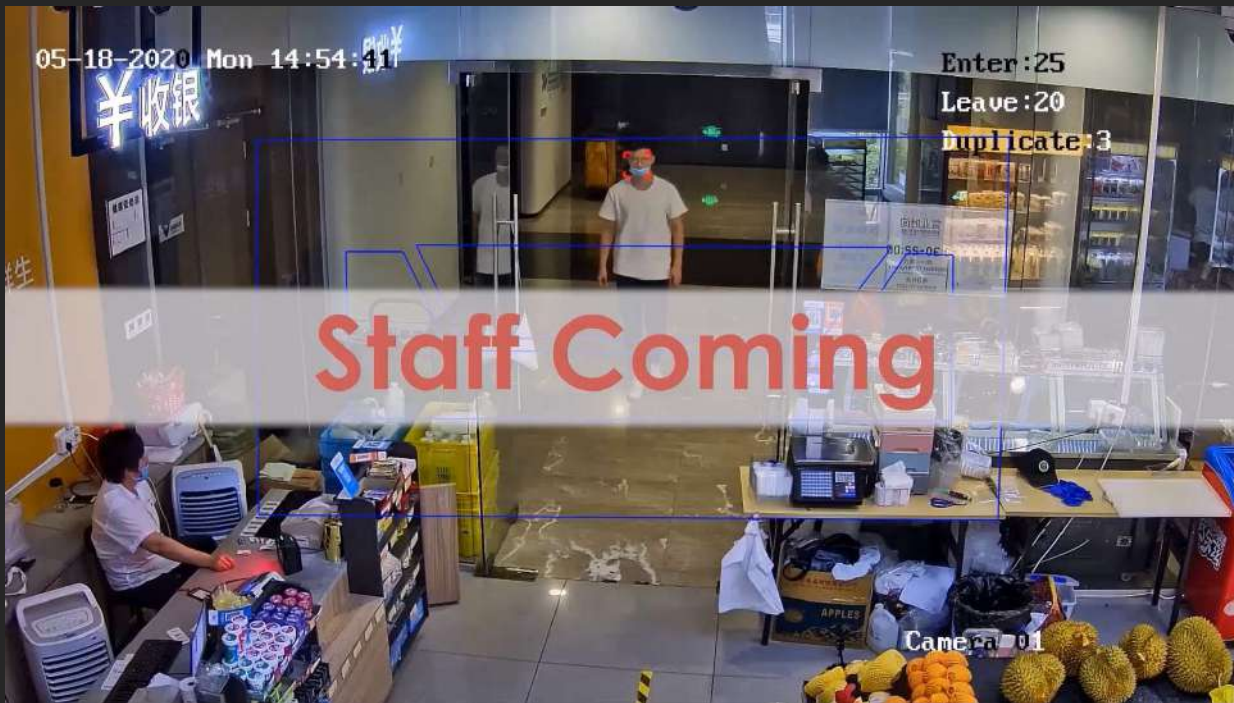
ENTER+1





FACE COUNTING

HIKVISION®



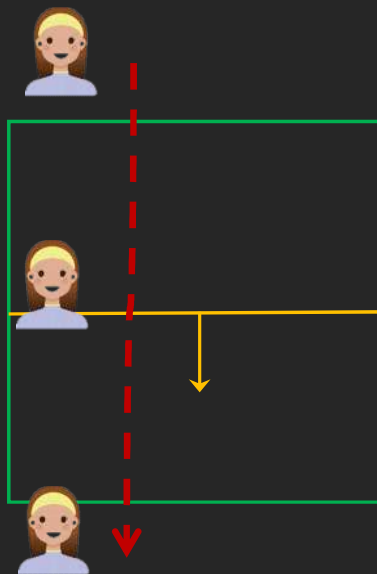
1. Counting the numbers of people coming in and out.
2. Duplication will add if the entering person is an employee or a repeat customer (the employee face images libraries and deduplication time need to be set).
3. The maximum people counting deduplication time can be set from 0s to 23h59min59s.(for repeat customers)



FACE COUNTING

HIKVISION®

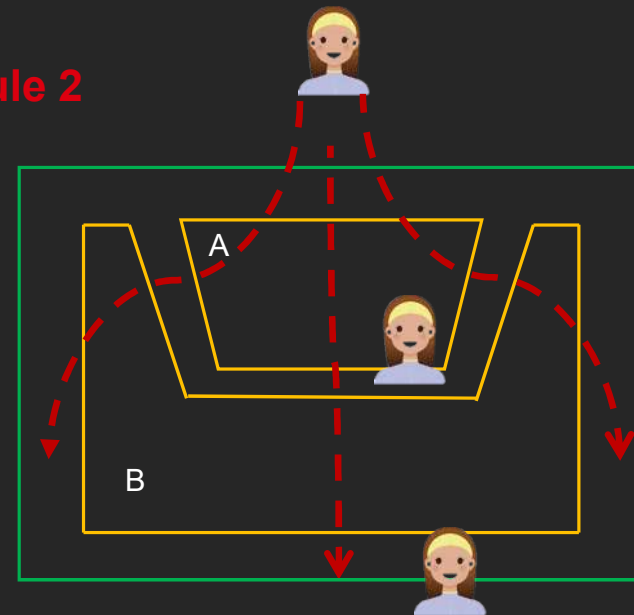
Rule 1



1. The face enters the detection area
2. The face crosses the line
3. The face leaves the detection area
4. To determine the face whether a staff or a repeat customer



Rule 2



1. The face enters region A
2. The face leaves region A then it enters region B
3. The face leaves region B
4. To determine the face whether a staff or a repeat customer



FACE COUNTING

HIKVISION®



People counting by triggering rule 1.



Rule 1 is inappropriate in some scenarios.



Rule 2 is more recommended for this scenario.



FACE COUNTING - ATTRIBUTE

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SKU selection for different stores based on the consumers attributes (gender, age, consumer expression...) analysis is the core application of offline data analysis.

Sample: If children make up more than 30% of customers in the supermarket, the operator should improve SKU of candy and toy to increase turnover.

7 Series
Camera



Scenario: facing the entrance to recognize customers coming in and record face attributes.





FACE COUNTING APPLICATION

HIKVISION®

1 camera



Accurate People Counting

Accurate customer counting helps industries which focus on effective customer number to optimize operation, such as 4S shops, luxury stores, high-end retail, etc.



Attributes analysis

Customer attributes analysis can help operators locate customer features accurately, to implement precision marketing.



List Alarm

Providing targeted services to VIP customers to improve service quality, and enhancing the security through list alarm.



MULTI-TARGET-TYPE DETECTION

HIKVISION®

Real-time Analysis

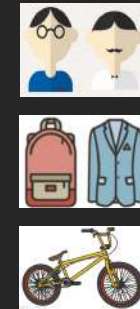
Camera Name	Camera 01	Capture Time	2024-01-02 00:46:56		
Gender	Female	Age	28	Age Group	Middle Age
Wearing Gla...	No	Wearing Mask	Yes	Facial Expre...	No Expression
Wearing Hat	No	Full Beard	No	Moving Dire...	Right
Top Color	White	Bottom Color	Blue	Carrying Ba...	No
Carrying Thing	No	Top Type	Long Sleeve	Bottom Type	Pants
Hairstyle	Long Hair	Riding Bicycle	Unknown	Riding with...	Unknown

Camera Name	Camera 01	Capture Time	2024-01-02 00:47:23		
Gender	Male	Age	21	Age Group	Youth
Wearing Gla...	Yes	Wearing Mask	Yes	Facial Expre...	Sad
Wearing Hat	No	Full Beard	No	Moving Dire...	Right
Top Color	Black	Bottom Color	Unknown	Carrying Ba...	No
Carrying Thing	No	Top Type	Long Sleeve	Bottom Type	Pants
Hairstyle	Short Hair	Riding Bicycle	Unknown	Riding with...	Unknown

Attributes Extraction & Modeling



Face and body



Gender
Age
Glasses
Tops color
Baggage
Bicycle
... ..

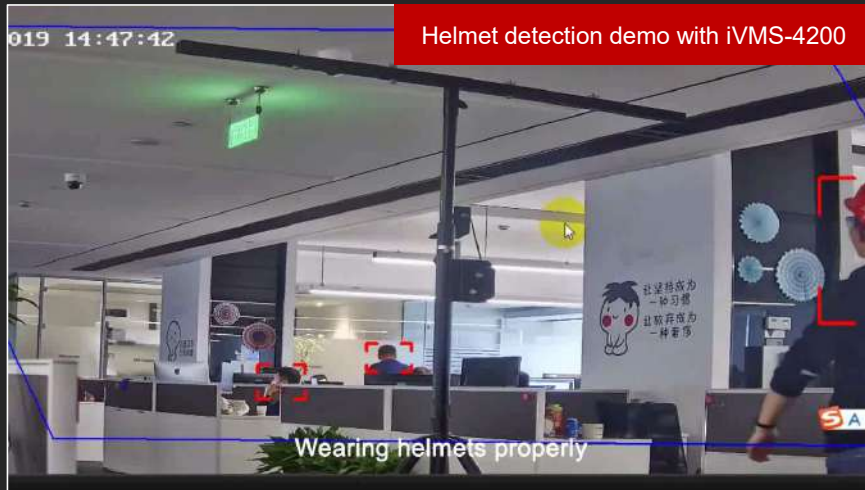
- Modeling by cameras to reduce the burden of back-end device
- Quickly search by attributes to improve efficiency (in back-end)



HELMET DETECTION

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Safety Above All Else: detects whether a person wears a helmet or not, and timely triggers alarm when someone does not wear a helmet, which is essential to ensure safety.



Scenarios:



Construction site



Mining industry



Smelting industry



Substation



PERIMETER PROTECTION

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For conventional cameras, all targets crossing perimeters will send alarms which causes a lot of troubles to users. Now, the perimeter protection camera supports only sending the alarms which are triggered by human or vehicle or human and vehicle.

Improving efficiency and saving bandwidth by target classification and false alarm reduction



Triggered by Human Only



Triggered by Vehicle Only



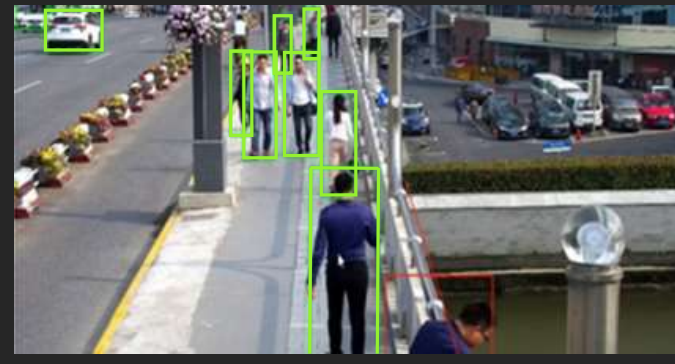
PERIMETER PROTECTION

HIKVISION®

1st Generation



2nd Generation Upgrade



Single-target scenarios



Scenarios with human and vehicle targets



Multi-target scenarios



PERIMETER PROTECTION - AUTO TRACKING *HIKVISION*



▲ Auto Tracking Performance Video

- The video will only track humans and vehicles based on EPTZ. Not only does it help users **get more details** about effective objects in a limited bandwidth, but also helps users **save storage** by only storing effective objects.
- Hikvision 7 series cameras support automatic tracking of humans, or vehicles, or humans and vehicles.
- EPTZ function is realized in the **fourth stream**.



QUEUE MANAGEMENT

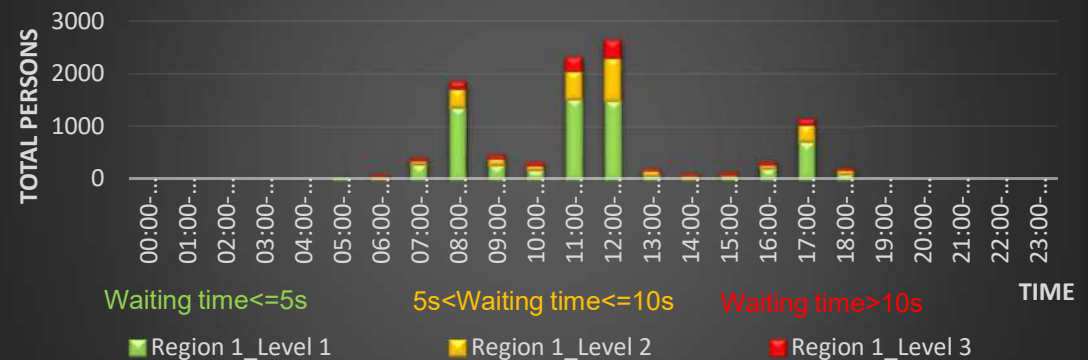
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- Queue management cameras support generating **reports** to help users analyze queues.
- Queue management is the process of managing and optimizing queues to **improve operational efficiency** and **the queuing experience**.

- These cameras support detecting **the number of persons** and **the wait times of each person** in the line.
- The cameras will trigger an **alarm** when the number of persons or the wait time of each person exceeds the set threshold.
- A queue management camera supports **3 detection areas**.

Region1 People Queuing-Up Time Bar Chart



Flow Analysis Introduction — Deep learning technology



ID tag & waiting time
of each person

Accurate counting
of people

Flow Analysis Introduction — Key parameters



- Waiting time of each person
- **Waiting time alarm!**
- The number of queuing-up people
- Alarm interval prevents repeated alarms

Region \ Alarm Threshold	People number	Waiting time /s	Alarm interval /s
Region1	15	30	10
Region2	5	5	10

Flow Analysis Introduction — Key parameters



- Waiting time of each person
- The number of queuing-up people
- ▲ People number alarm!
- Alarm interval prevents repeated alarms

Region \ Alarm Threshold	People number	Waiting time /s	Alarm interval /s
Region1	10	30	20
Region2	5	5	20

Flow Analysis Introduction — Key parameters



- The number of queuing-up people
- Waiting time of each person
- Alarm interval prevents repeated alarms
13 s → 23 s → 33 s alarm!

Region \ Alarm Threshold	People number	Waiting time /s	Alarm interval /s
Region1	15	30	10
Region2	5	5	10

Flow Analysis Introduction — Charts

To help end-users **understand reports more easily** and **get more information** from reports, report charts have been upgraded to new style, compared with old version:



Queueing-Up Time Analysis

average waiting time can be displayed, which may help users get more information.



Queueing-Up Status Analysis

comparison result between different regions can be displayed in charts, which can help users look into different areas.



Queueing-Up Time Analysis
Regional Comparison



Queueing-Up Time Analysis
Multi-Level Comparison



Queueing-Up Status Analysis
Regional Comparison

Flow Analysis Introduction — Charts

Queueing-Up Status Analysis charts are also upgraded to make data can be understood more easily:

- Regional Comparison: the waiting time is divided into up to 3 levels, and the report can show the percentage occupied by certain level and display the information by zones and time in the same chart.
- Multi-Level Comparison: the queue length is divided into three levels, percentage occupied by each level for are all displayed by time and zones in different charts.



**Queueing-Up Status Analysis
Regional Comparison**



**Queueing-Up Status Analysis
Multi-Level Comparison**

Flow Analysis Introduction — Charts

Meanwhile, flow analysis report can be displayed in new style charts. For new Queueing-Up Time Analysis

- Regional Comparison: total number of people in queue will be displayed by zones in the same chart, meanwhile average waiting time of each zones are displayed.
- Multi-Level Comparison: in this report, the waiting time is divided into up to three levels, percentage occupied of each level, total number of people in queue, and average waiting time are all displayed by zones in different charts.



**Queueing-Up Time Analysis
Regional Comparison**



**Queueing-Up Time Analysis
Multi-Level Comparison**

Flow Analysis Introduction — Accuracy

To improve **flow analysis accuracy** and **false alarm reduction rate**, target size, target displacement, minimum waiting duration and validity can be configured.

Meanwhile, new firmware supports **more alarm trigger conditions**, which make flow analysis cameras can be applied to more scenarios, like bank vault, assembly line, and etc.

Rule
Advanced Configuration

Queue Management Vers... V4.3.2build181211

Filter

Target Size 128

Target Displacement 128

Min. Waiting Duration 1 s

Validity 50

Save

Filter Configuration

Region Region1

Region Name Food1

Alarm Interval 6 s

Regional People Queuing-Up Settings

☒ OSD

Alarm Trigger Condition Greater than Threshold

Alarm Threshold

Waiting Time Detection Settings

Alarm Trigger Condition Greater than Threshold

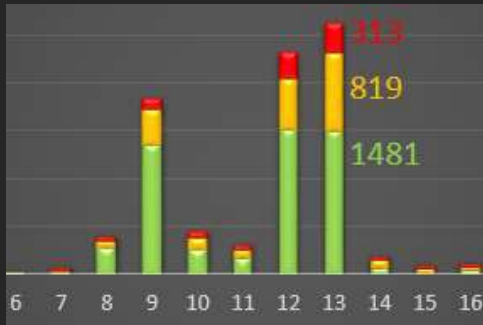
Alarm Threshold 15 s

Alarm Trigger Condition Configuration



QUEUE MANAGEMENT

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Optimizing Queue Management

Increasing or reducing the number of cashiers according to the queue data improves operational efficiency.



Improving Shopping Experience

Queue management systems will alert cashiers when the number of persons or the wait time of anyone in the line is more than the threshold; operators can then implement strategies to improve the customer experience.



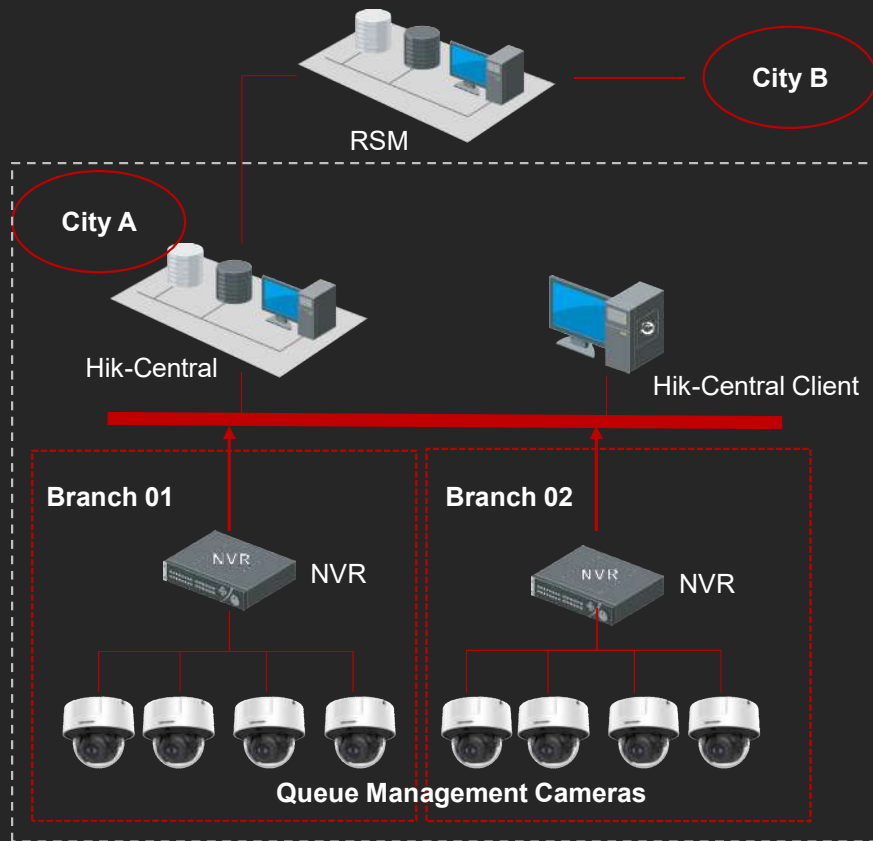
Increasing turnover

Digital queue management application can result in operational improvement, cost reduction, and increased profitability.



QUEUE MANAGEMENT

HIKVISION®



Centralized queue management and operation for multiple stores

Application Scenarios



Shopping Mall



Supermarket



Airport



Exhibition Hall



VEHICLE ANALYSIS

HIKVISION®

UPGRADE



Dual Modes

To capture and recognize license plates accurately in different scenes.



High Performance

To reduce missing rate effectively.



Vehicle attributes analysis

To support vehicle analysis in checkpoint of city streets.

ANPR Introduction

► False capture rate

- Forward Direction < 2%
- Reverse Direction < 5%



Pedestrian Crossing



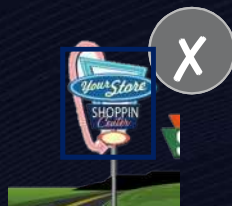
Pedestrians clothing



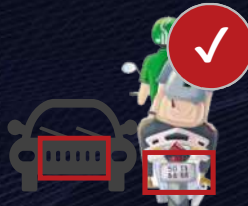
Roadside Fence



Characters on the side of the vehicle



Billboard



Vehicle and License Plate

► No-plate vehicle detection

- 1st Recognize whether it's a car or not
- 2nd Read the license plate



ANPR Introduction

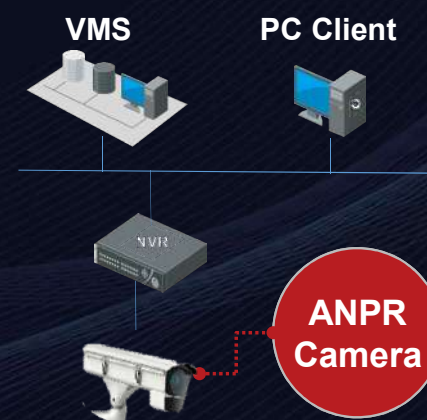


Necessary Precondition!

1. Recommended installation and lighting conditions.
2. Suggested application scenarios: entrance and city road.

✓ Highlights

- ✓ Capture rate **> 98%**
- ✓ Recognition rate **> 98%** (the accuracy rate in different countries varies according to the actual license plate situation and algorithm complexity)
- ✓ Country recognition rate **> 98%** (when the country attributes can be distinguished clearly in both Color and B/W image mode)
- ✓ False capture rate: **forward direction < 2%, reverse direction < 5%**
- ✓ **No-plate vehicle** detection
- ✓ **Motorcycle** recognition (check point standard installation conditions)



✓ Others

- ✓ H.265, IK10, up to IP67
- ✓ NEMA4X (7A support customization)
- ✓ Wiegand (7A support customization)

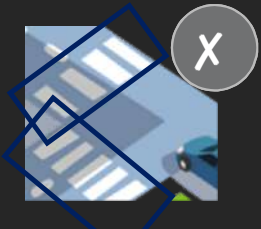


VEHICLE ANALYSIS - ANPR

HIKVISION®

➤ Dual modes switchable to reduce false recognition

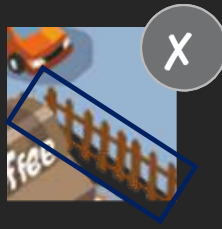
1. Vehicle priority: recognizes the license plates after detecting vehicles
2. License plate & vehicle: detects license plates and vehicle at same time



Pedestrian crossing

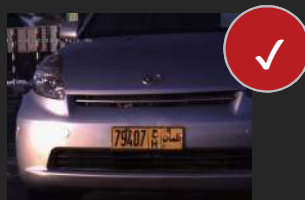


Pedestrians clothing

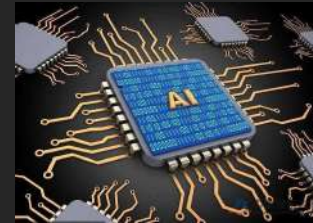


Roadside fence

* Mode 2 is recommended when the vehicle can't be detected because of low light or installation environment



➤ Higher performance to reduce missing rate



Deep Learning algorithm runs on high performance chips

➤ No-plate vehicle detection



Recognition result: No Plate

➤ Direction detection

Linkage Method	
Direction ☒ All ☐ Forward ☐ Reverse	
☐ Normal Linkage	☒ Trigger Alarm Output
☒ Notify Surveillance Center	☒ A->1
☐ Upload to FTP/Memory Card/...	☒ A->2



VEHICLE ANALYSIS - ATTRIBUTE

HIKVISION®

Hikvision ANPR cameras support vehicle analysis in checkpoint of city streets.

The screenshot displays the Hikvision Smart Display interface. At the top, there is a navigation bar with tabs: Live View, Playback, Picture, Application, Configuration, and Smart Display (which is currently selected). The top right corner shows a user profile icon labeled 'admin' and a 'Help' icon. The main content area is divided into two sections. On the left, a large live video feed shows a street scene with a white van. Overlaid on the video is a timestamp '03-16-2020 Mon 11:36:40' and a small inset showing 'Enter: 98' and 'Leave: 142'. On the right, the 'Real-time Analysis' section displays a small thumbnail of the vehicle and a table of attributes:

Camera Name	海外H7	Capture Time	2020-03-16 11:36:38
Plato No.	AAH72N9		
License Plat...	Unknown	Vehicle Type	Large Bus
Vehicle Brand	Unknown	Moving Dire...	Reverse
Country	Australien	List library n...	otherList
Vehicle Color	White		

Below the main analysis section, there is a 'Vehicle Detection' section showing a grid of four small video thumbnails, each with a license plate number: AAH72N9, ALT709, AM9U70, and AA6S6T6. At the bottom of the interface, a copyright notice reads: '©2020 Hikvision Digital Technology Co., Ltd. All Rights Reserved.'

- License plate
- Vehicle type
- Vehicle color
- Vehicle brand
- Moving direction

➤ Quickly search by vehicle attributes to improve efficiency (in back-end)

3

**High-quality
Image**



DARKFIGHTER

HIKVISION®



▲ 4 MP DarkFighter



▲ 4 MP Normal



LIGHTFIGHTER

HIKVISION®



▲ 4 MP LightFighter WDR On



▲ 4 MP WDR Off



SMOOTH STREAMING

HIKVISION®

Smooth Streaming can **automatically adjust bit rate and resolution** according to real-time network condition to ensure smooth live view.

Condition: network bandwidth 800 kbps (1920*1080p at 25 fps, bitrate 4 Mbps)

➤ The video with smooth streaming is much **smoother**.





SMOOTH STREAMING

HIKVISION®

The **data self-correcting mechanism** for smooth streaming is able to solve mosaic or delay problems caused by packet loss or error code in complicate network.

Condition: 2% packet loss in complicated network (1920*1080p at 25 fps, 4 Mbps)

➤ The video with smooth streaming is much **smoother**.



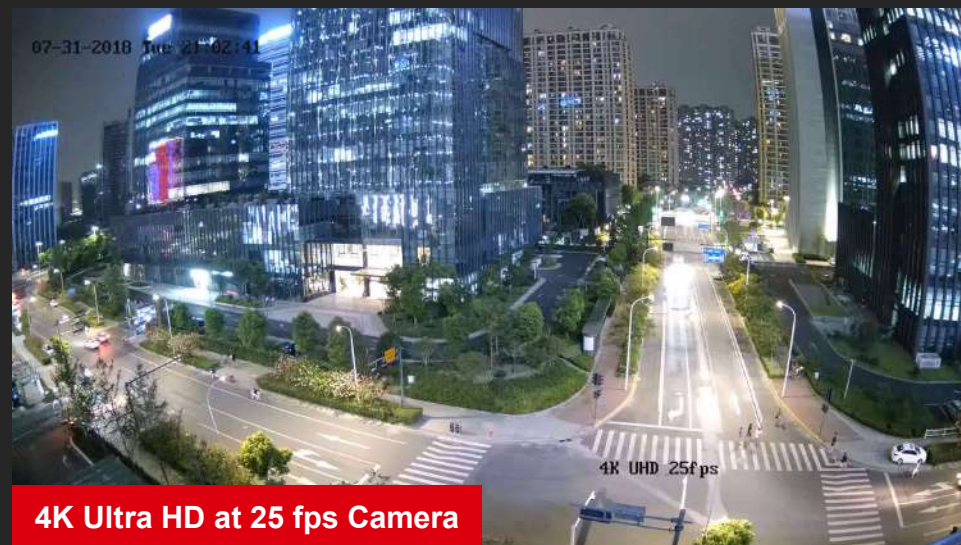


4K

HIKVISION®



Ordinary 4K camera



Hikvision 7 Series 4K camera

The 4K video is **smoother** which is captured by Hikvision 7 Series high performance camera.

4

Ease of Use



MULTIPLE STREAMS

HIKVISION®

5 defined streams + 5 custom streams

All streams support
H.265



MJPEG up to
2 MP at 30fps



Recording



Cellphone surveillance



Preview



Third party integration

- Multiple streams are convenient for integration with different applications.



METADATA

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Intelligent Function



Intrusion

Line Crossing

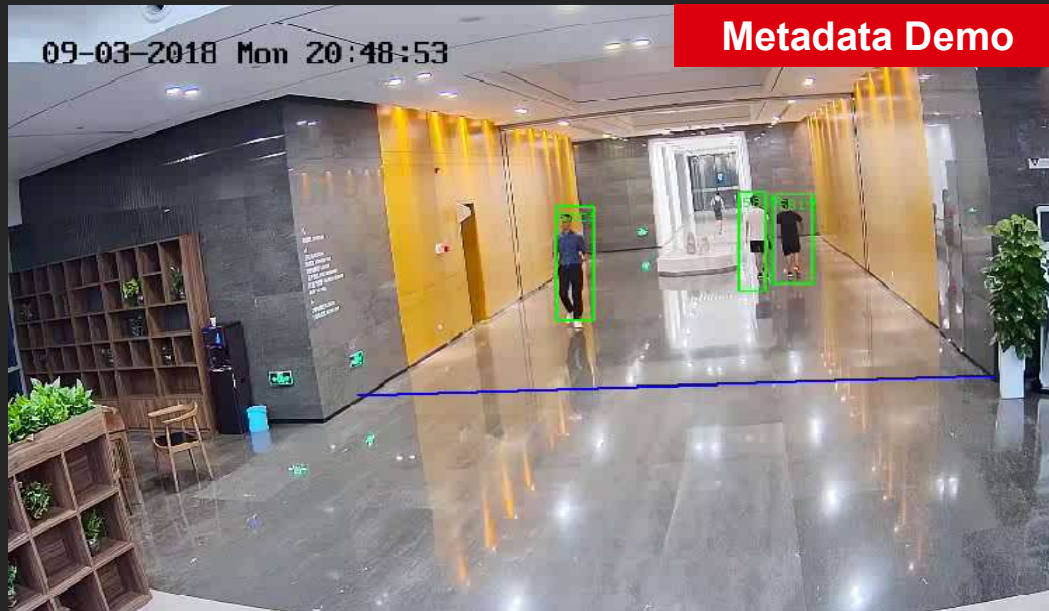


Region Entrance

Region Exiting



7 Series cameras can provide **metadata** based on ONVIF & ISAPI, which provides the ability for third-party platform to support the function of quickly retrieving relevant images from abundant video data in the backend device, or tracing targets to make more analysis.



Metadata Demo

Intelligent Function



Face Capture



Flow Analysis



ANPR



NETWORK SECURITY

HIKVISION®





VIBRATION DETECTION

HIKVISION®



Hikvision 7 Series outdoor cameras support vibration detection to avoid violent destruction.

5

**Product
Showcase**



PRODUCT SHOWCASE

HIKVISION®

Appearance				
6 functions in 1 /E: with housing -Y: NEMA 4X -R: EN50121-4 /F11: optical port	iDS-2CD7026G0-(AP)	iDS-2CD7126G0-IZS	iDS-2CD7526G0-IZHS	iDS-2CD7A26G0-IZHS
	iDS-2CD7046G0-(AP)/(F11)	iDS-2CD7146G0-IZS	iDS-2CD7546G0-IZHS	iDS-2CD7A46G0-IZHS
	iDS-2CD7086G0-(AP)	iDS-2CD7186G0-IZS	iDS-2CD7586G0-IZHS	iDS-2CD7A86G0-IZHS
	iDS-2CD70C5G0-(AP)	iDS-2CD71C5G0-IZS	iDS-2CD75C5G0-IZHS	iDS-2CD7AC5G0-IZHS
	iDS-2CD7026G0/E-IHSY(R)		iDS-2CD7526G0-IZHSY(R)	iDS-2CD7A26G0-IZHSY(R)
	iDS-2CD7046G0/E-IHSY(R)/(F11)		iDS-2CD7546G0-IZHSY(R)	iDS-2CD7A46G0-IZHSY(R)
	iDS-2CD7086G0/E-IHSY(R)		iDS-2CD7586G0-IZHSY(R)	iDS-2CD7A86G0-IZHSY(R)
	iDS-2CD70C5G0/E-IHSY(R)		iDS-2CD75C5G0-IZHSY(R)	iDS-2CD7AC5G0-IZHSY(R)
Vehicle Analysis	iDS-2CD7026G0/P-AP			iDS-2CD7A26G0/P-IZHS(Y)
	iDS-2CD7026G0/EP-IHSY			iDS-2CD7A46G0/P-IZHS(Y)
	iDS-2CD7046G0/P-AP			
	iDS-2CD7046G0/EP-IHSY			
/S: no face function version	iDS-2CD7026G0/S-AP	iDS-2CD7146G0/S-IZS	iDS-2CD7546G0/S-IZHSY	iDS-2CD7A46G0/S-IZHSY
		iDS-2CD7186G0/S-IZS	iDS-2CD7586G0/S-IZHSY	iDS-2CD7A86G0/S-IZHSY

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2020 THANKS

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