



Insight of surveillance

XVR8000-4KL/4K-I AI HDCVI Recorder

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HDCVI Technology Overview

2018 -2019

HDCVI 5.0

(Face Recognition / Perimeter Protection / Metadata Search / Active Deterrence / Starlight&Full-color)

2017 -2018

HDCVI 4.0

(4K UHD / H.265 / IoT / PoC / AI)

2015 -2016

HDCVI 3.0

(Full compatibility / 2K HD / Intelligence)

2013 - 2014

HDCVI 2.0

(Complete HDCVI solution)

HDCVI
High Definition Composite Video Interface

launched **2012**

Dahua led the industry to launch HDCVI Technology since 2012, and continues to enhance the technology

Leadership with the mission of
"Enabling a safer society and smarter living".

Dahua will keep on providing more opportunities to customers as well as improve its services with innovations and technological advancements.

What Can XVR8000-4KL/4K-I Do?



Perimeter Protection



POS



High Network Performance



Face Recognition



Active Deterrence Linkage



4K@60fps Output



Metadata Search





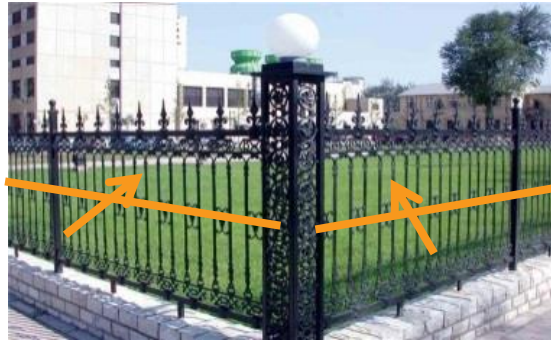
Perimeter Protection

What is Perimeter Protection?

Perimeter protection system refers to the fortifications built to either keep intruders out or to keep captives contained within the area the boundary surrounds.

Monitoring Area

Plant perimeter, fence...



Limited Access Area

No parking area, military base



Danger Area

Construction site, river bank



Customer Requirements of Perimeter Protection



End user

- ➔ Reliably and accurately alarm when intrusion
- ➔ Quickly response & early warning
- ➔ Low maintenance cost
- ➔ Tracking & Accurate positioning



SI/Installer

- ➔ Easy installation & adjustment
- ➔ High stability/performance
- ➔ High cost performance

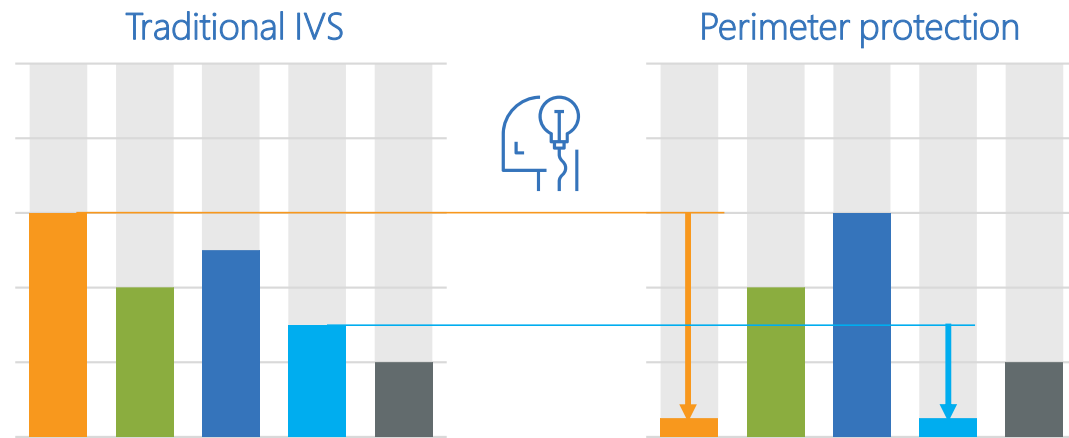
False
Positives
Rate

False
Negatives
Rate

AI creates value for Perimeter Protection



Lower False Alarm Rate



Lower False Negatives Rate



Customized Classification



AI Search

- False alarm, False Negatives
- Installation complexity
- Application cost
- Influenced by environment
- Maintenance Cost

Lower False Alarm Rate

Accuracy

Traditional IVS

Perimeter protection



Traditional IVS

Perimeter protection

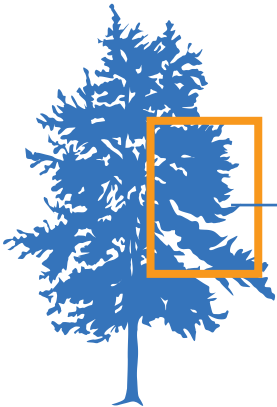


Traditional IVS

Perimeter protection



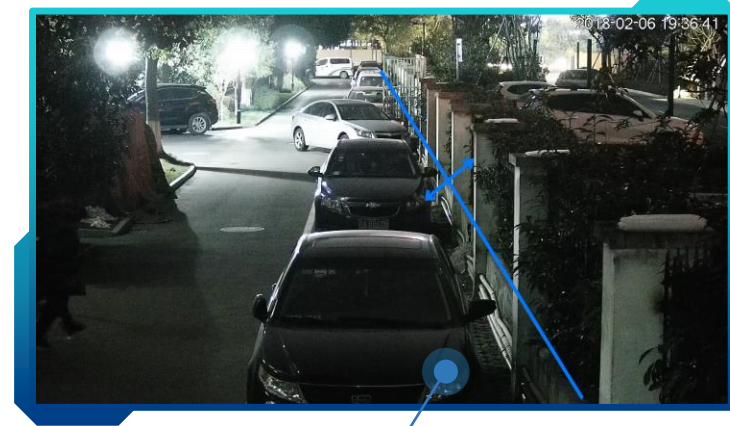
Bright light



Tree movement



Animals

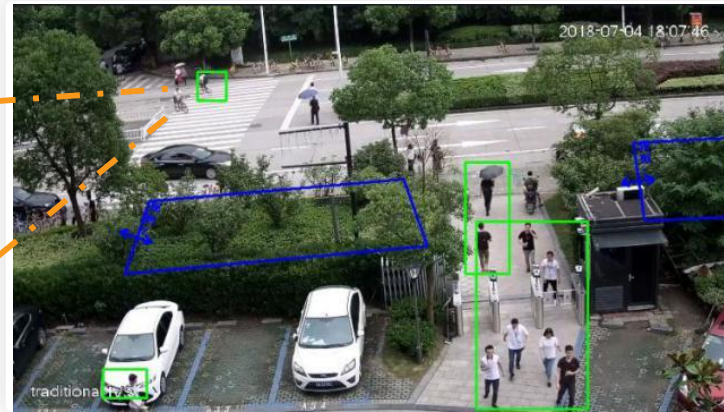
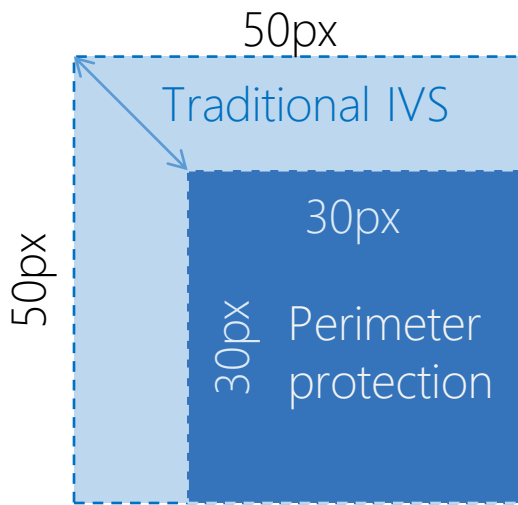


Lower False Negatives Rate

Accuracy

64% lower Pixel Count Requirement

Requires 64% less pixels in order to detect and trigger intrusion alarms compared to traditional IVS solutions without compromising its accuracy or error rate, allowing each perimeter protection camera to cover larger areas from further away.



Traditional IVS

- Missed alarms
- Groups of people are regarded as 1 trigger
- Distant objects are not tracked

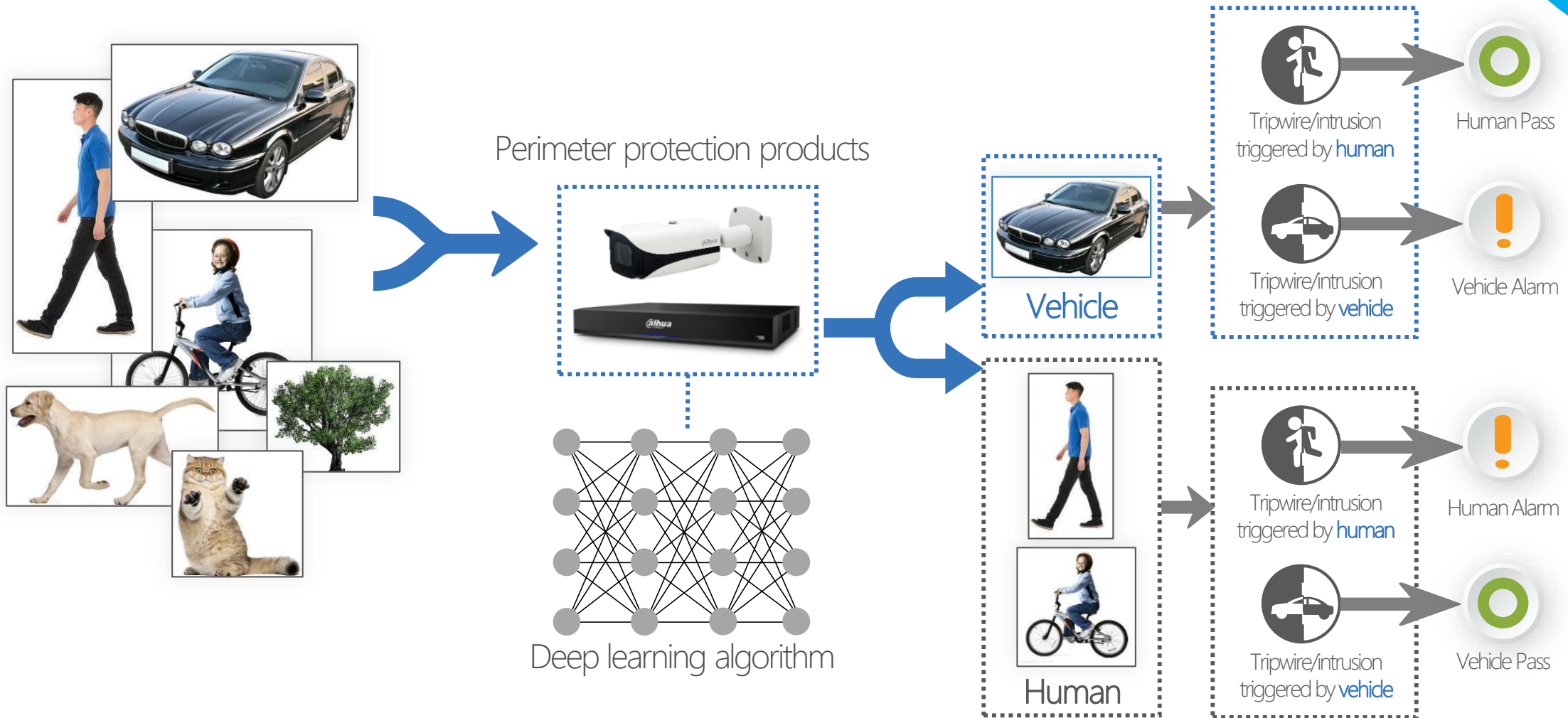


Perimeter protection

- All humans & moving cars detected
- Each person is counted and tracked individually
- Distant objects can be detected

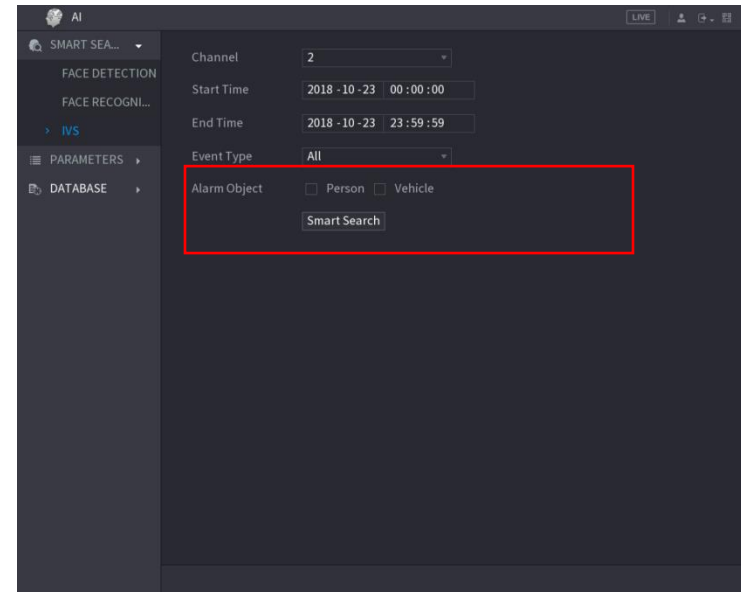
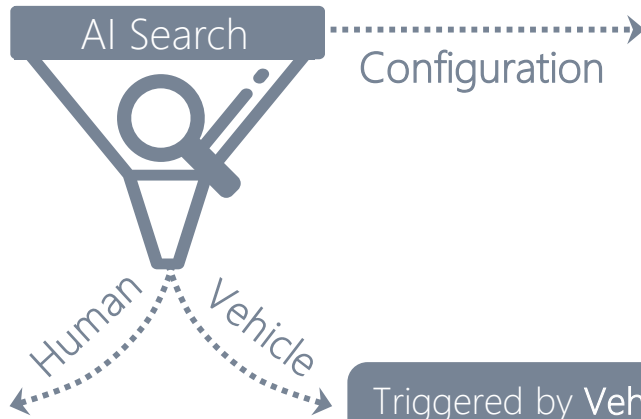
Custom Perimeters based on Object Type

Classification

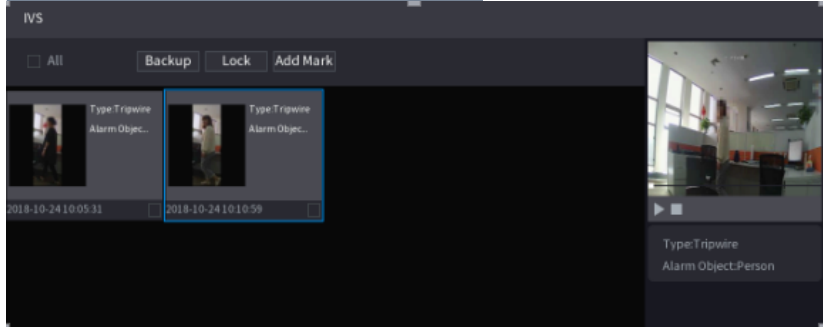


Search the video footages by Object Type

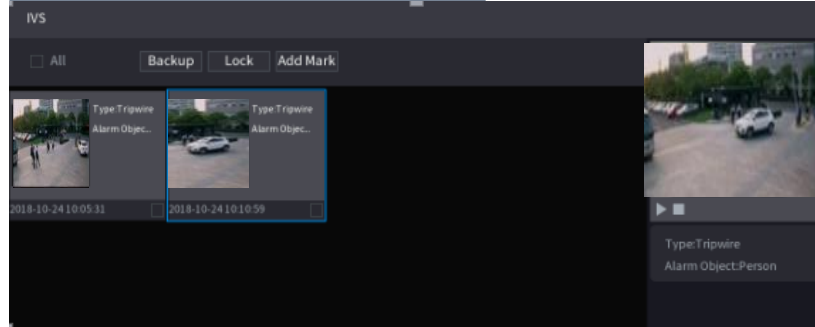
AI Search



Triggered by Human



Triggered by Vehicle



Where to use?

All kinds of industries and scenarios that require high alarm accuracy.

Bank



Retail



Community



Museum



Casino



Villa





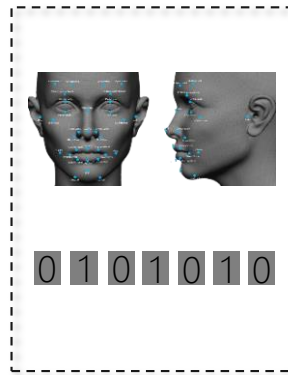
Face Recognition

What is Face Recognition?



Video shot by camera

Modeling



Face Recognition



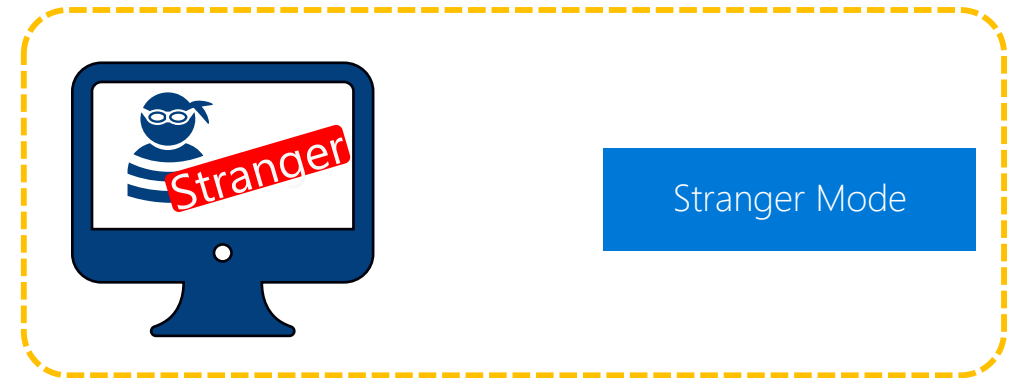
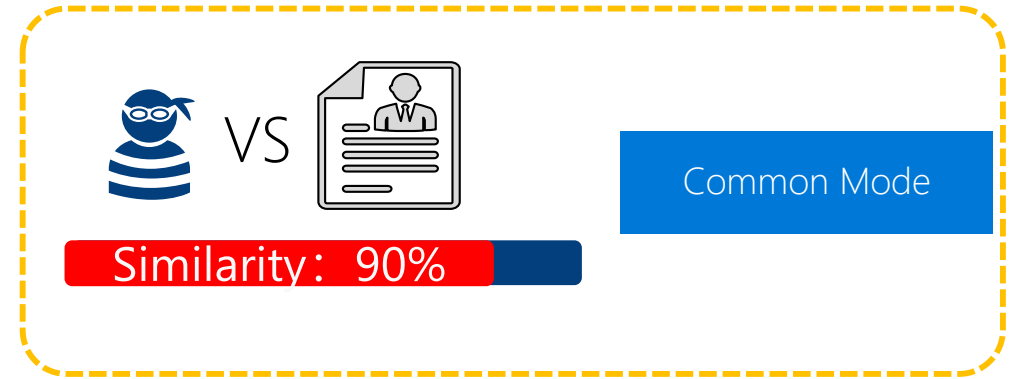
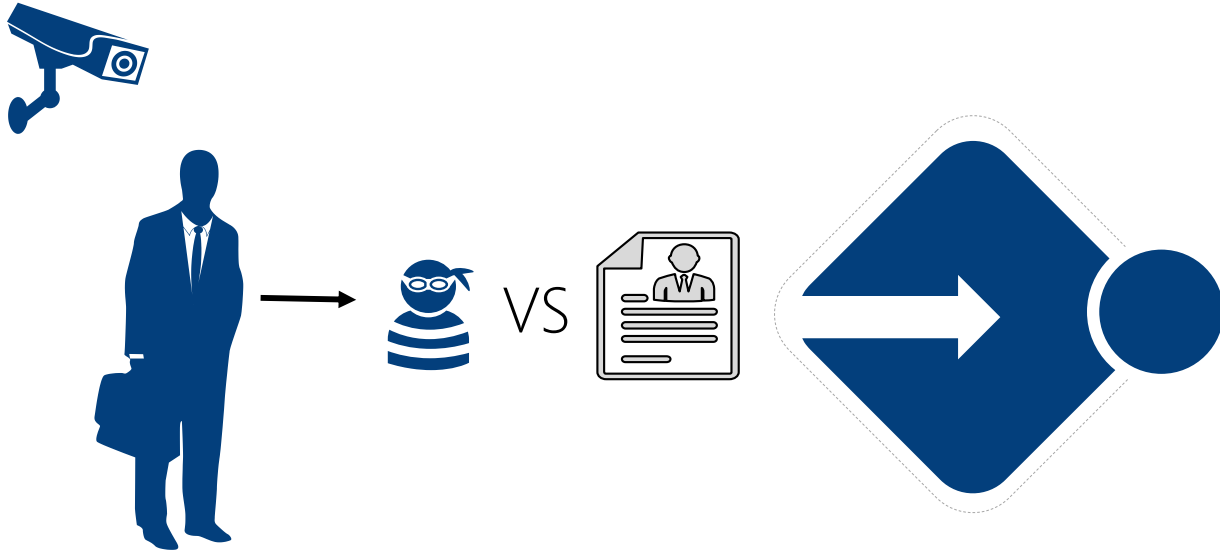
Real-time Recognition



Image Search



Real-time Recognition

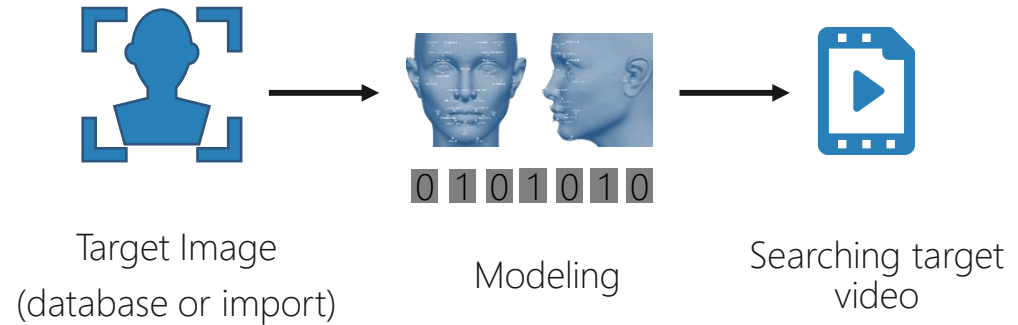
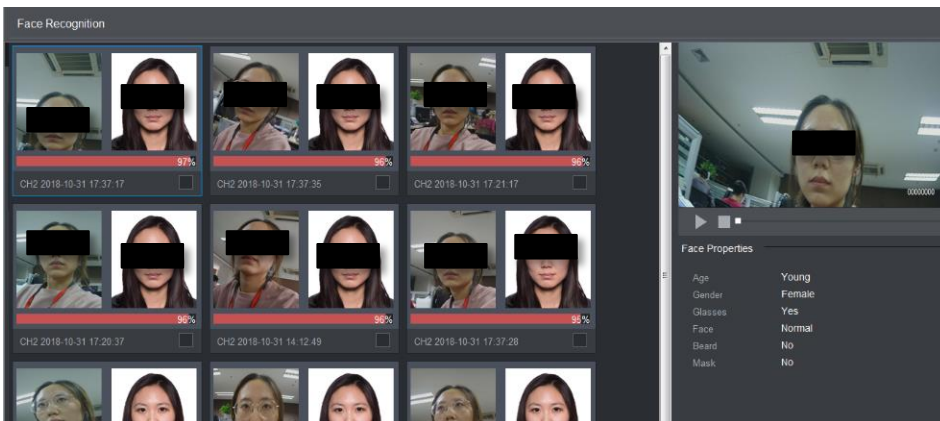
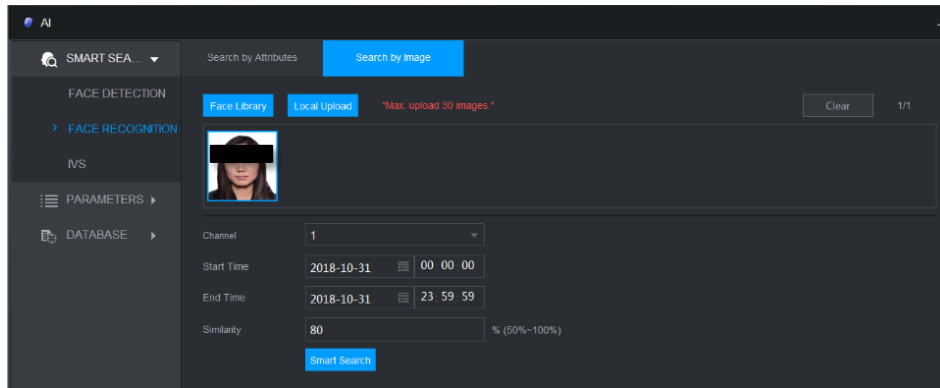


Real-time Recognition

- Preview and verification of personals in real-time
- Active comparison with database, setting alarm trigger
- Supports up to 24 pic/s face recognition and 20 databases with up to 100,000 face images,.

Image search

Search by face image function enable operators to quickly and easily search through multi channels and 7days duration, efficiently find out when and where a person of interest appeared.



- High searching accuracy for target persons, even for persons not yet included in the database by uploading face images.
- Up to 8 target face images search at same time.
- Support similarity threshold set for each target face image.

Where to use?



- Business Parks, Schools and other entrances and exits, attendance by Face Detection
- Main entrances and exits of Irregular Security Monitoring Point, Escaped Prisoner Identification
- Prison Entrance, Registration and Identification of Visitors
- Entrance of Supermarket/Shopping Mall, Petty Thief Recognition
- Football Field Entrance, Hooligan Recognition
- Key Areas of Banks, Non-Staff forbidden



Metadata

Why need Metadata?

Big data era, Big challenges to security industry. How to manage the data, get useful information and seek interested information from the storage data is very important.



Less space

Metadata is "data about data". It will get useful and efficient data from massive data. In other word, even if you do not record all the time, but you will not lose any important events and alerts.



Higher efficiency

It may take a trained officer or analyst using traditional methods to 1.5-2 hours to review just an hour of raw video footage. Metadata let searching more efficiency.



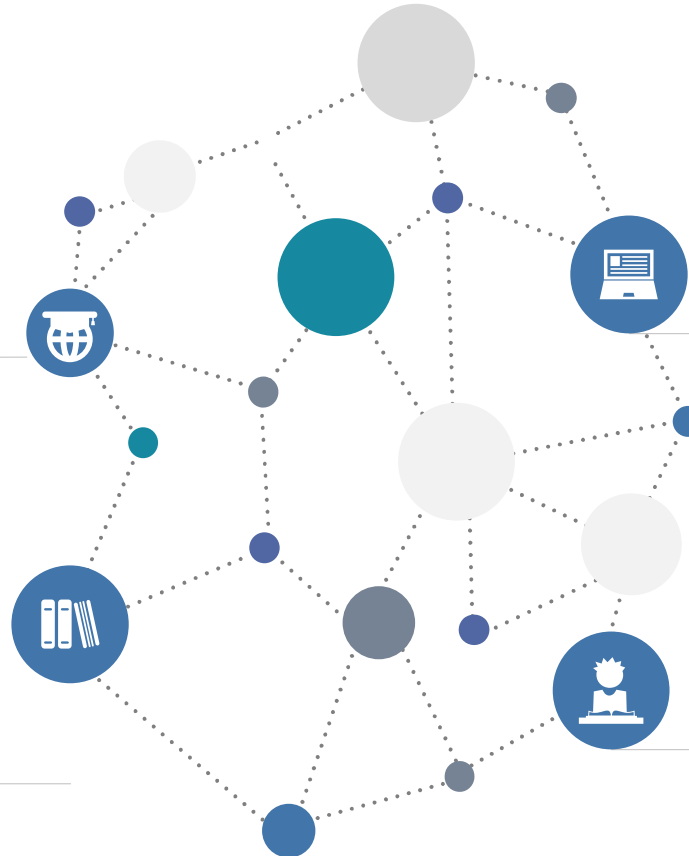
Better Compatibility

Video data can be easily understand by computer. Metadata makes data be useful to other platforms and business application



Real-time alerts

According to the metadata, real-time monitoring when events occurs
More reliable danger prevention.



What Metadata we have?



Face display

Gender: Male
Age: Young
Glasses: Y
Expression: Smile
Date

Gender: Male
Age: Young
Glasses: Y
Expression: Smile
Date

similar%

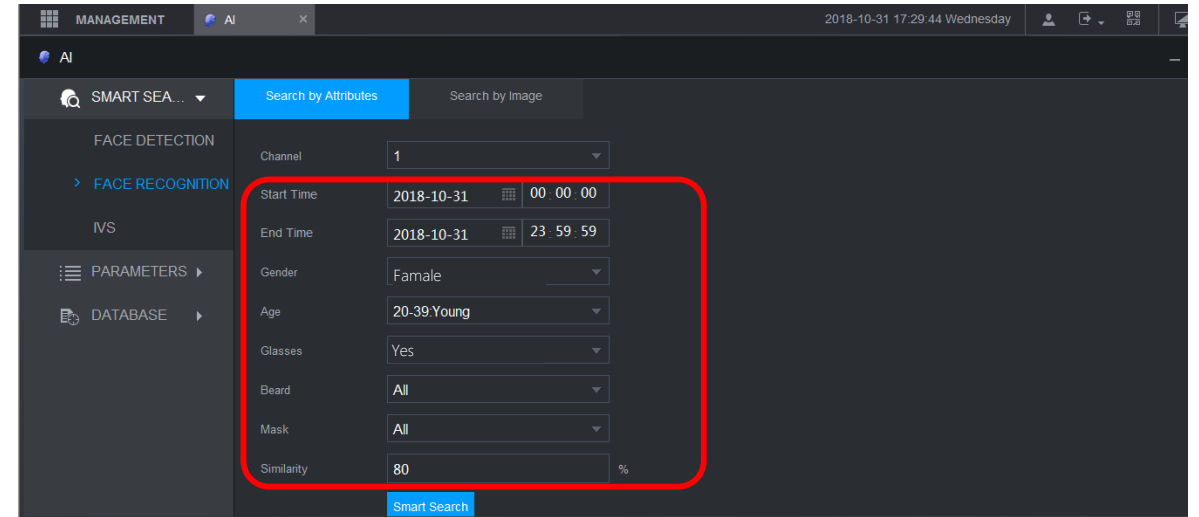
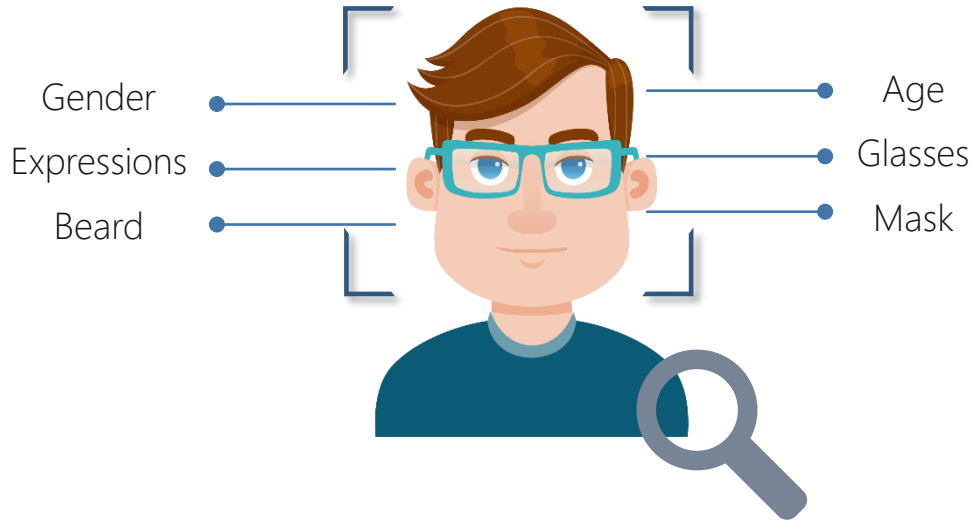
Set displayed features : (*Max. 4 items)

Gender Age Glasses Expression Mouth Mask Moustache

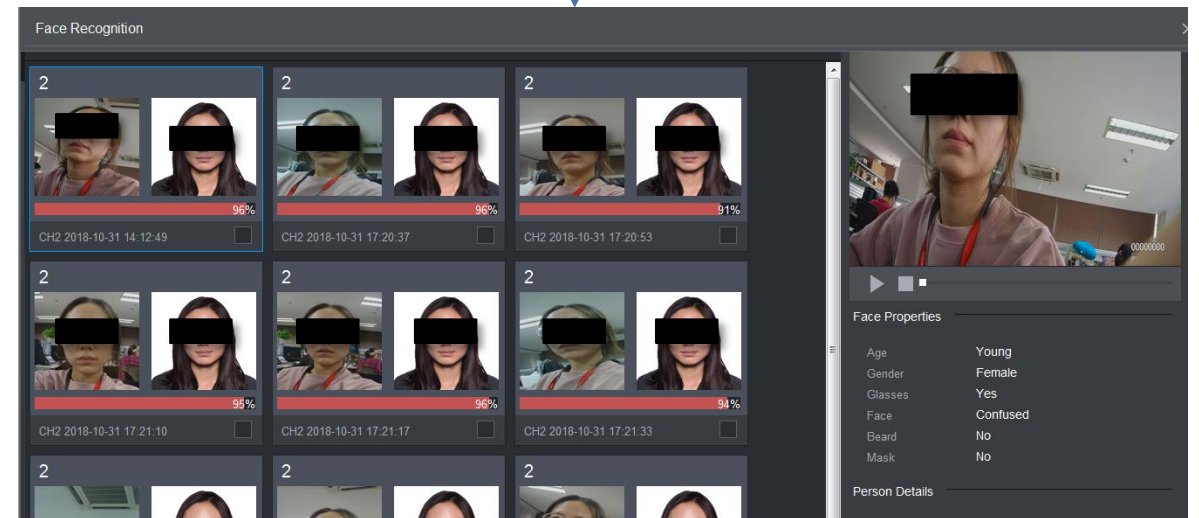
Face Metadata

Gender	Female, Male
Age	Infant (1~6) / Child (7~13) / Teenager (14~19) / Young (20~39) / Middle-aged (40~59) / Elderly (≥60)
Expression	Sad, Smile, Laugh, Normal, Confused, Surprised, Happy, Disgusting, Screaming, Scared, Angry
Glasses	Yes, No
Beard	Yes, No
Mask	Yes, No

Metadata Search



- Enhancing searching accuracy and efficiency
- Finding target persons quickly with facial metadata, including age, gender, glasses, mask, beard and expression
- AI searching video or pics from all channels within 7days videos



What else?



Active Deterrence Linkage



POS



4K@60fps Output

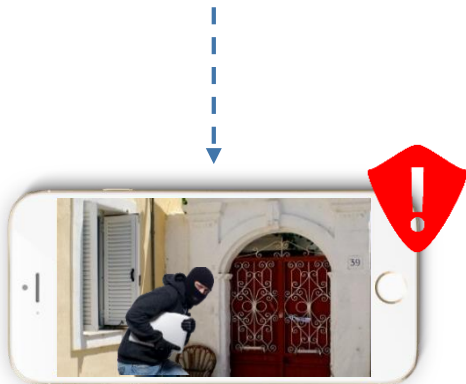


High Network Performance

Active Deterrence Linkage

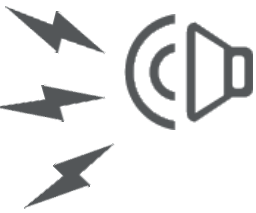
- PIR detects human intrusion.
- White light turns on or flashes.
- Siren starts to alert.
- XVR sends alarm to user.

! These steps happen at the same time



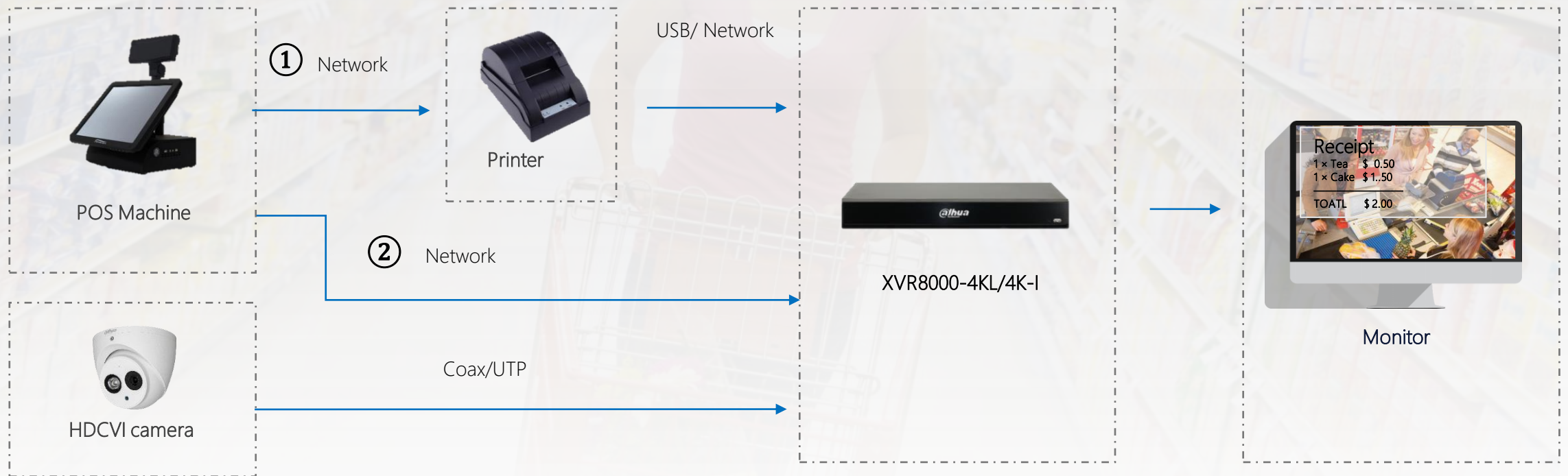
White Light

Siren



POS

XVR8000-4KL/4K-I integrates the POS (Point of Sale) function. Video and corresponding POS information can be shown simultaneously in both preview and playback modes.



4K@60fps Output



Exquisite image

4K output present images with impressive clarity

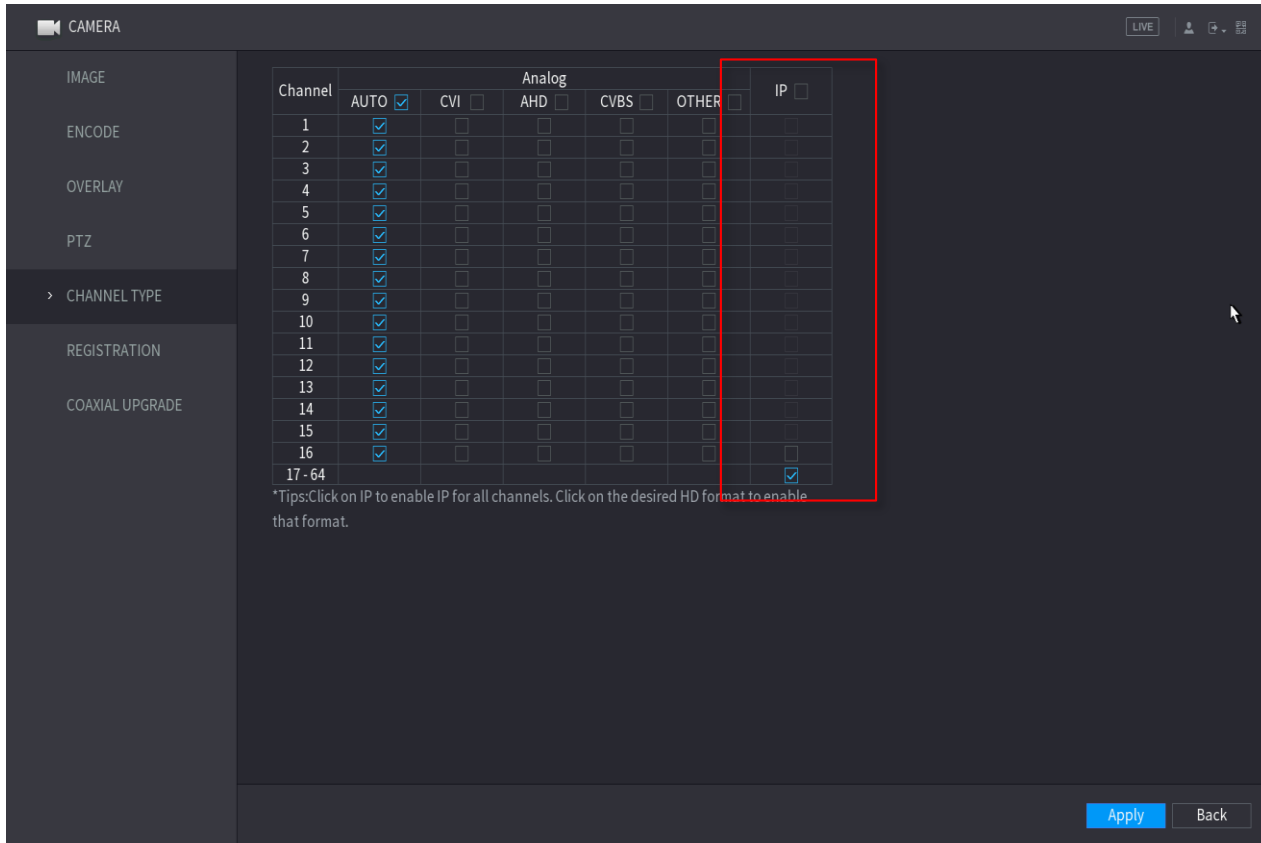
Rich details

60fps features 2 times the transmission speed of 30fps, which present more image details

Smooth video

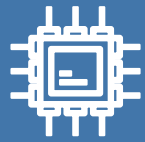
The higher the frame, the smoother the video. The intuitive experience can be improved greatly

High Network Performance



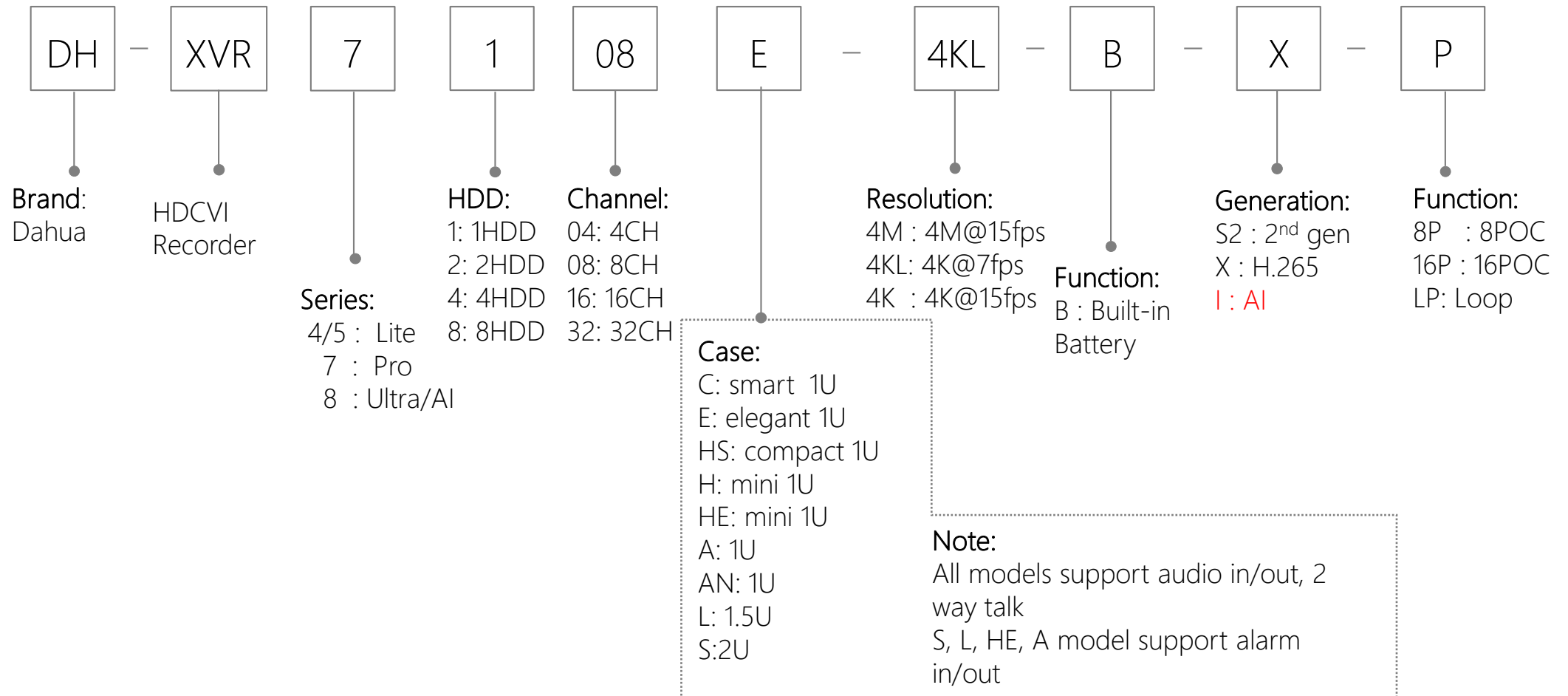
Model	IPC access
XVR8208A-4K-I	8+56 channels of IPC input, each channel up to 12MP
XVR8216A-4KL-I	16+48 channels of IPC input, each channel up to 12MP

XVR full channels support analog channel to digital channel conversion, and additional IP channel extension. Just click the IP switch box, XVR can be quickly switched to NVR.





Product Info

Naming Rule



Performance

Model	 <p>XVR8208A-4K-I</p>	 <p>XVR8216A-4KL-I</p>
Face Recognition	Up to 24 face pictures /sec processing (4 channel video)	
Database	20 libraries, 100,000 face images in total	
Perimeter Protection	8 channel, 10 IVS rules for each channel	16 channel, 10 IVS rules for each channel
Metadata	4 channels	
IPC Input	Max 64 channels, each channel up to 12MP	
POS	All channels POS info. overlay and search	
Encoding	All channels 4K@15fps / 6MP@20fps / 5MP@20fps / 4MP/1080P/720P@25/30fps	All channels 4K@7fps / 6MP@10fps / 5MP@12fps / 4MP@15fps / 1080P/720P@25/30fps

FAQ

Q: Can I use a IPC matched with XVR to achieve AI functions ?

A: No. So far this series only supports analog cameras for AI. And do not support front-end intelligence including Smart IPC of FD, FR, IVS and normal face detection.

Q: What's the requirement for the analog camera ?

A: Because AI function is achieved by back-end intelligence, there's no restriction for the camera's resolution. 1080P and above are recommended for high accuracy.

Q:What's the accuracy of AI function?

A: The accuracy is also related to the environment including brightness, installation angle etc. The recommended installation distance and angle can be referred to the Smart IPC installation manual.



Enabling a safer society and smarter living

-- Dahua Technology

A world-leading video-centric smart IoT solution & service provider