



# WizSense

Focus on human and vehicle



Intelligent



Simple



Inclusive

## Overview

According to relevant academic reports, people watching a single video monitor for more than twenty minutes lose 95% of their ability to maintain focus and attention that are needed to discern significant events. In addition, the security industry reports show that over 98% of generated alarms are false. Limitations in the ability of humans to vigilantly monitor video surveillance's live footage paved way to the demand for artificial intelligence that could efficiently perform such task. To solve these problems, Dahua released WizSense to ensure your personal safety and property. Let's see how WizSense works!



### What is WizSense

Launched by Dahua Technology, WizSense is a series of wide range AI products and solutions that adopt independent AI chip and deep learning algorithm. It can recognize human and vehicle in an image with high accuracy, enabling users to focus on real targets. Based on Dahua's advanced technology, WizSense makes your video intelligent, simple and inclusive.

 <b>Intelligent</b>	 <b>Simple</b>	 <b>Inclusive</b>
<p>Powered by AI chip and deep learning algorithm, WizSense provides various features that realizes accurate alarms for human and vehicle, and quick target search, maximizing resources to increase overall efficiency.</p>	<p>WizSense offers simple configuration, especially for SMD Plus that can be enabled by just a single button. It eases your customer's daily job and also empowers them to make better business decisions.</p>	<p>Inclusivity of WizSense is the idea that everyone gets the opportunities and benefits from AI. With affordable prices and easy configuration of Dahua WizSense, AI is no longer confined to an ivory tower, but applied to real scenarios instead.</p>

Empowered by deep learning, WizSense provides full protection for customers' property and improves working efficiency before, during and after an event happens.

## User Benefits

				
<p>Accurate prediction before an event</p>	<p>Instant deterrence during an event</p>	<p>Quick target search after an event</p>	<p>Storage saving while ensuring target details</p>	<p>Privacy protection and defense against attacks</p>
<p>False alarm rate <b>&lt; 1%</b></p>	<p>Alarm pushing time <b>&lt; 1s</b></p>	<p>Target search efficiency <b>↑ 98%</b></p>	<p>Bandwidth saving <b>&gt; 50%</b></p>	<p><b>TUV</b> and <b>UL</b> certified</p>

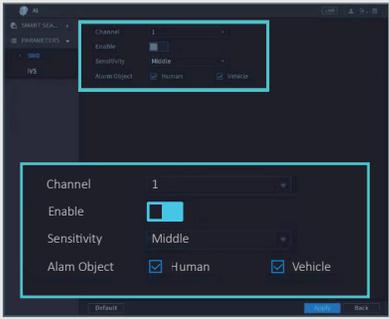
- **Accurate Prediction before Events**

Different from the traditional CCTV system, WizSense can effectively transfer "post-evidence" to "pre-warning" through accurate prediction before events.

WizSense technology includes SMD Plus, Perimeter Protection, and Face Recognition that can extract human and vehicle information from massive data, significantly reducing false alarms caused by non-target objects.

### SMD Plus

SMD Plus analyzes human and vehicle shapes based on motion detection through adoption of deep learning algorithm, allowing users to focus on real threats.

<p><b>One key to enable</b></p> 	<p><b>False alarm rate &lt; 2%</b></p> 
<p>Alarm filtered</p> 	<p>Alarm triggered</p> 

## Perimeter Protection

The perimeter protection – based on tripwire and area intrusion – sends an alarm only when unwanted movements triggered by human or vehicle occur, saving users from unnecessary actions caused by false alarms.



### Traditional IVS

Causes of false or missed alarms









### Perimeter Protection

Alarm will be triggered only when a human or vehicle violates a rule



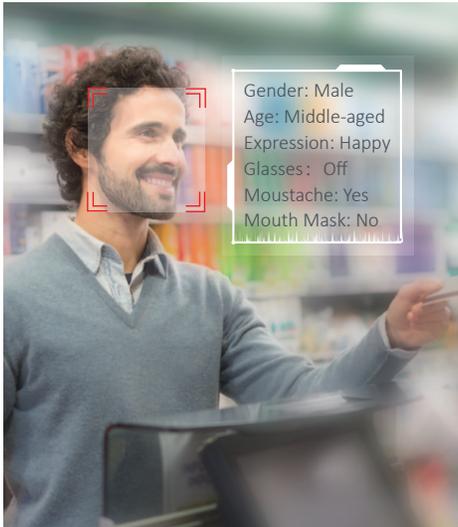

False alarm rate < 1%

Difference between Perimeter Protection and SMD Plus:

	Perimeter Protection	SMD Plus
Supported channels (For back-end intelligence)	Several channels	Full channels
Configuration	Draw tripwire or intrusion rules	Enable via single button
Application Scenario	Applicable to specific area, especially where needs to detect direction	Whole scene by default

## Face Detection

After identifying a human-type intrusion, WizSense helps users recognize human attributes via face recognition.

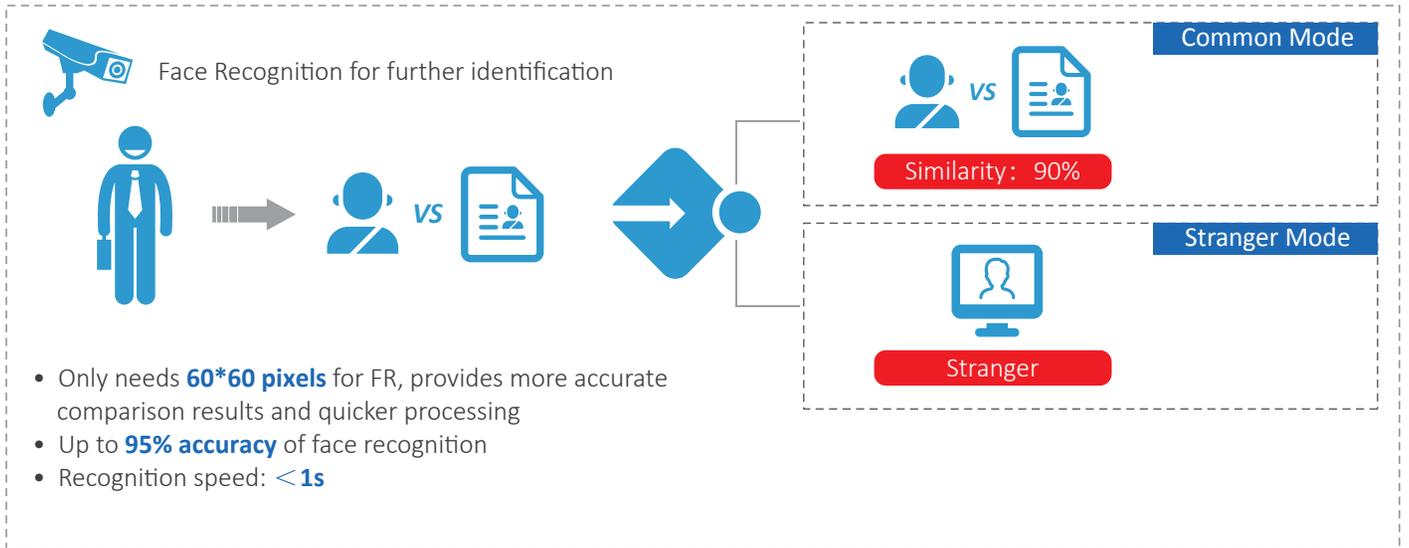


Face Attributes	
Gender	Female, Male
Age	Age value, Infant/Child/Young/Middle-aged/Elderly, Ten years for a period
Expression	Angry, Disgusted, Fear, Happy, Sad, Confused, Surprised, Calm
Glasses	Yes (Regular Glasses, Black Frame Glasses, Sunglasses, Others), No
Moustache/Beard	Yes (Beard, Moustache, Others), No
Mouth Mask	Yes, No

- Only needs **30\*30 pixels** for FD, provides more accurate detection results and quicker processing
- Up to **98% accuracy** of face detection
- Supports up to **12 pics** of face attributes detection for single channel
- Supports up to **6 kinds** of face attributes

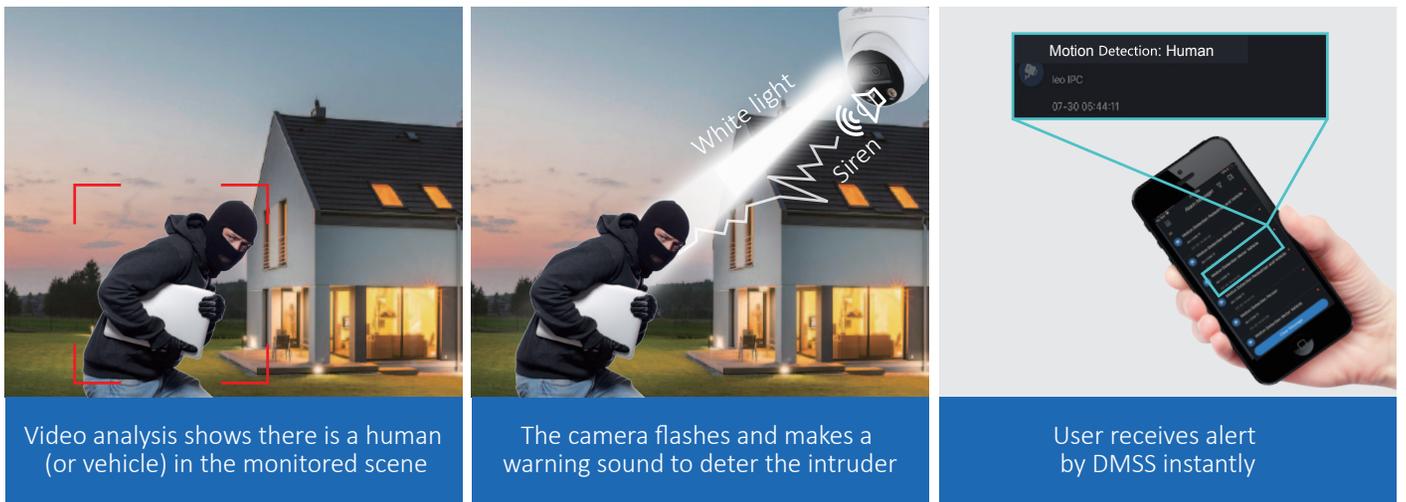
### Face Recognition

By comparing detected face image with a customized face database, users can gain more business value through VIP recognition, blacklist alarm, stranger alarm, etc.



### • Instant Response & Active Deterrence during an Event

- Actively warns off intruders once they have been detected to significantly reduce the probability of any incident to happen.
- Alerts users with a real-time push notification that shows trigger type (human or vehicle), and enables users to easily verify alarms through captured videos.

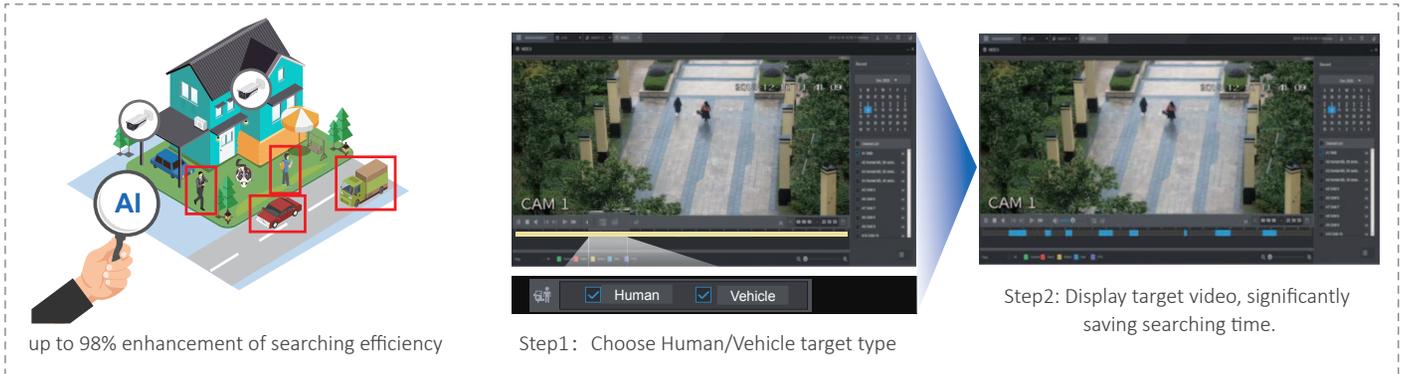


Alarm receiving time **< 1s**

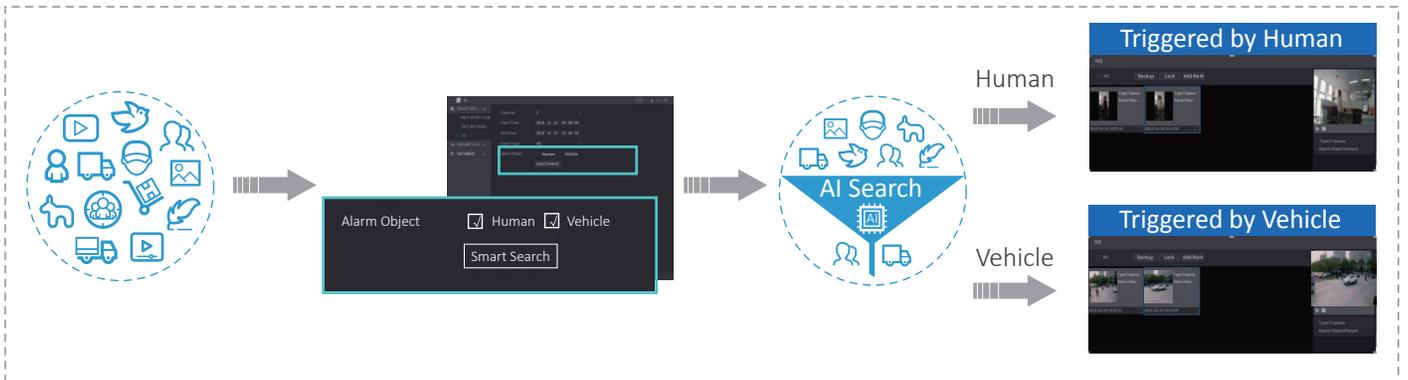
• Quick Target Search after an Event

Quick search powered by WizSense helps users to quickly locate targets through human and vehicle classification, making it easy for end users to trace and analyze information history and saving retrieval time.

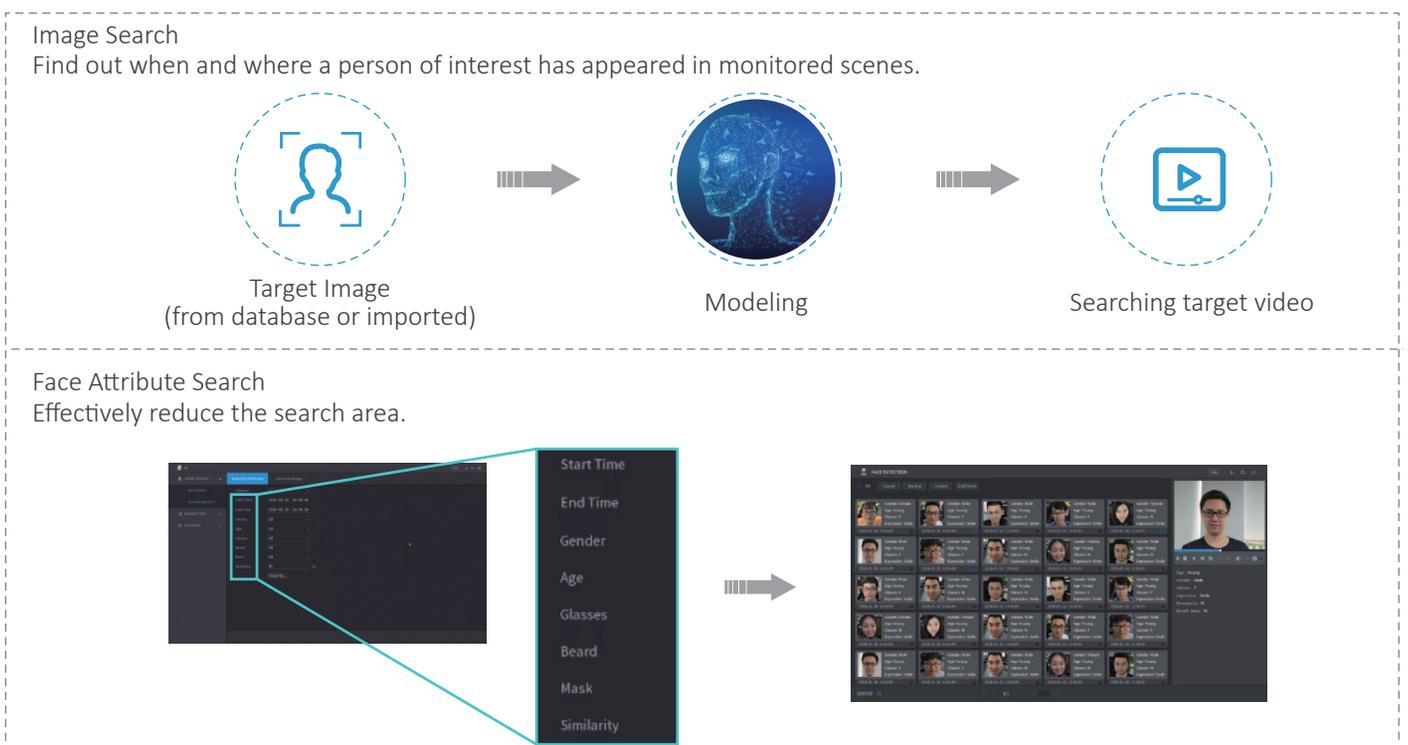
SMD Plus



Perimeter Protection



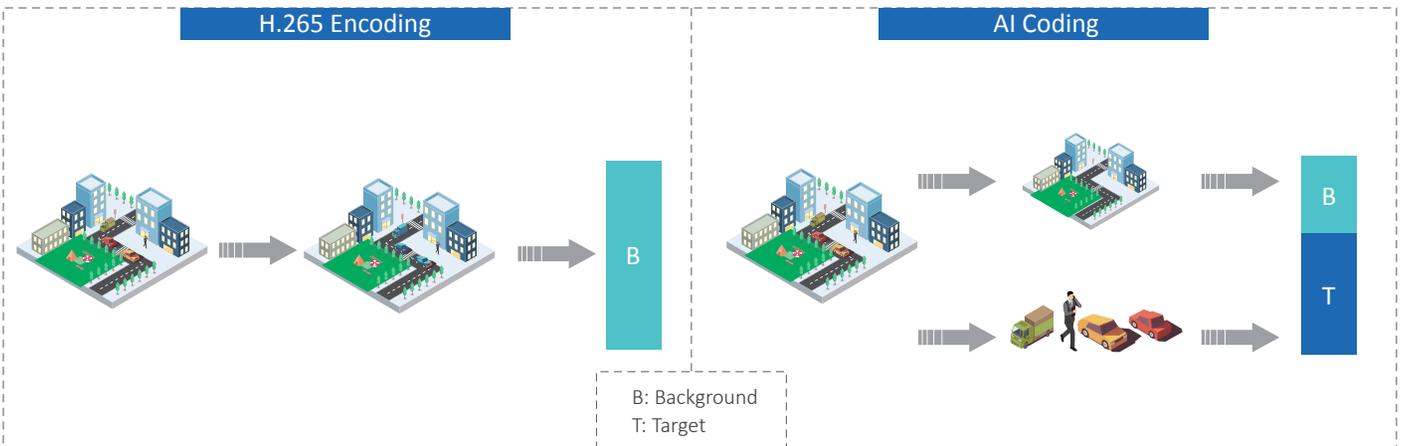
Face Search



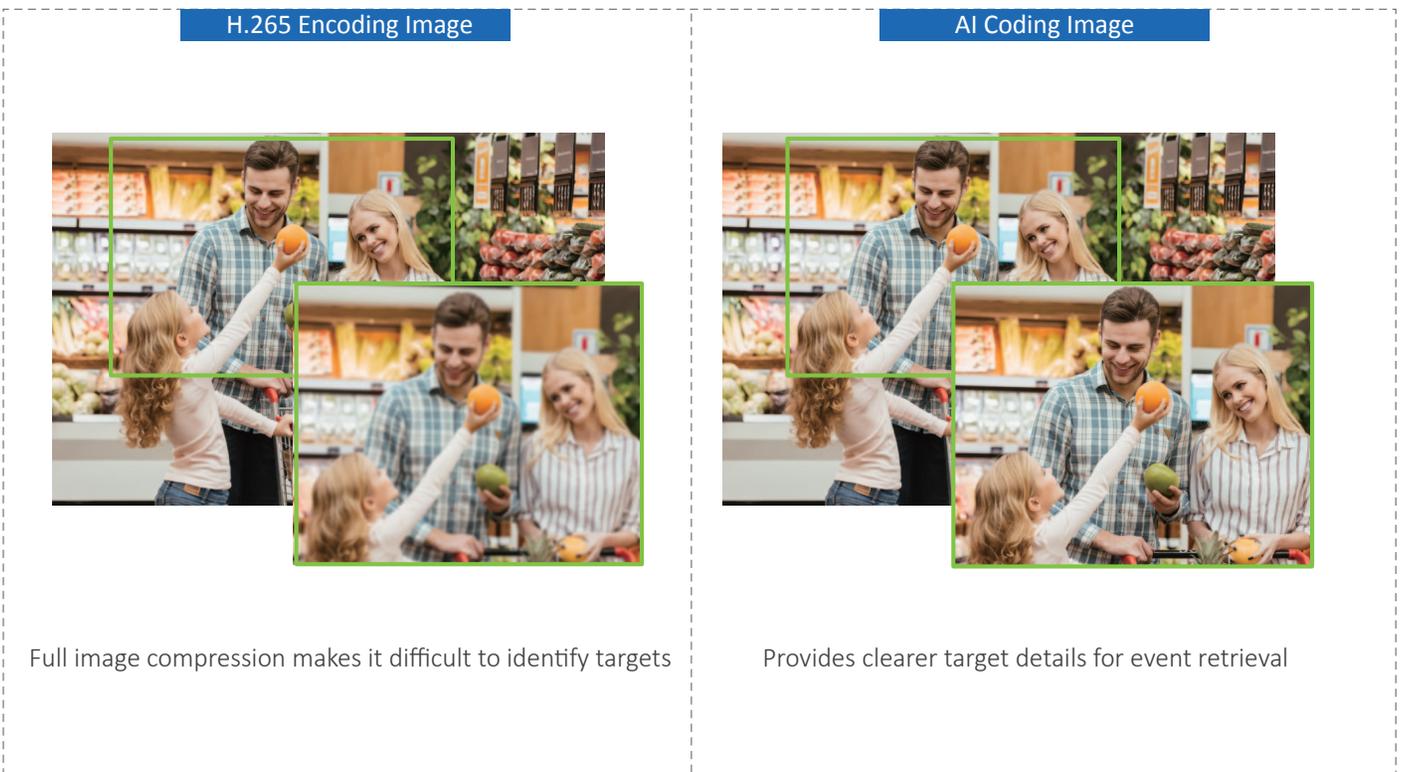
- Saves Storage while Maintaining the Image Quality of Target

AI Coding

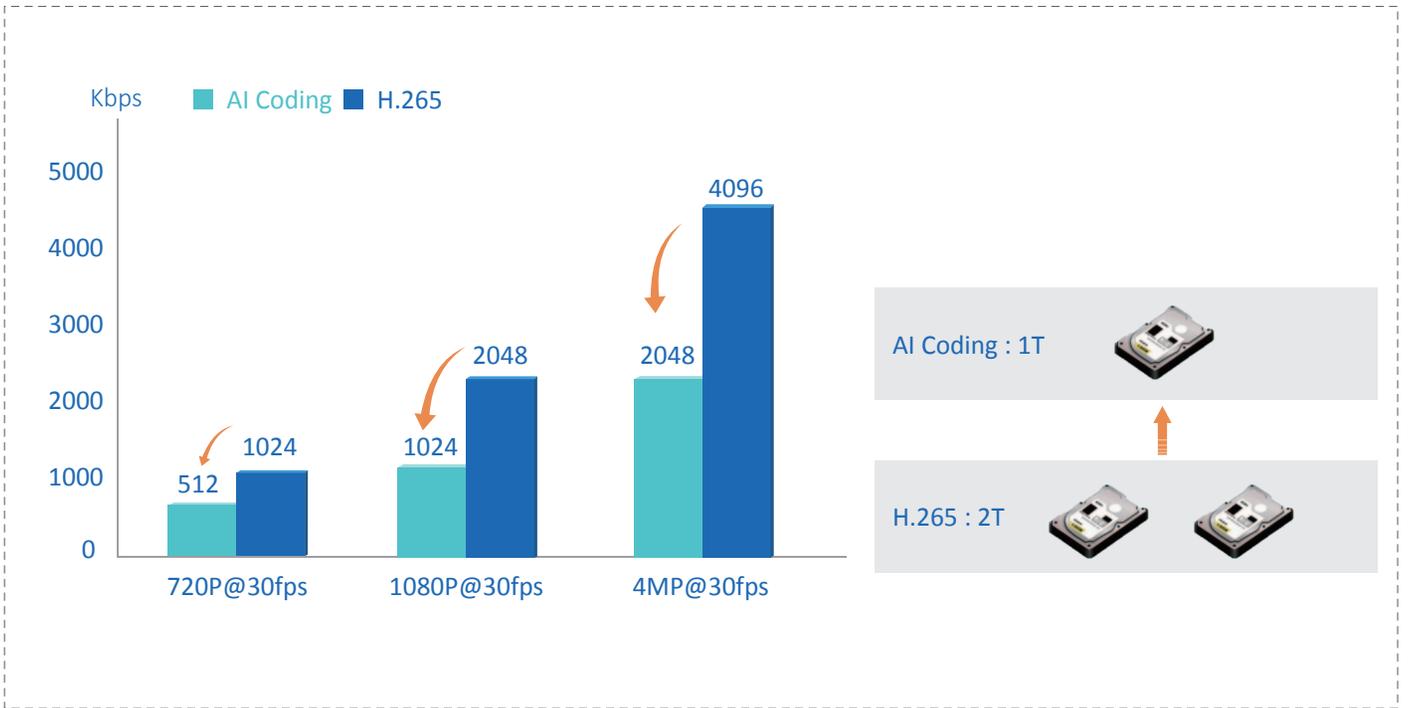
With the improvement of monitoring resolution, how to maintain image quality while saving storage cost has become one of the most concerning problems of users. Based on CBR (Constant Bit Rate), WizSense AI Coding dynamically allocate bit rate, providing clear target images while saving more than 50% bit rate compared with H.265.



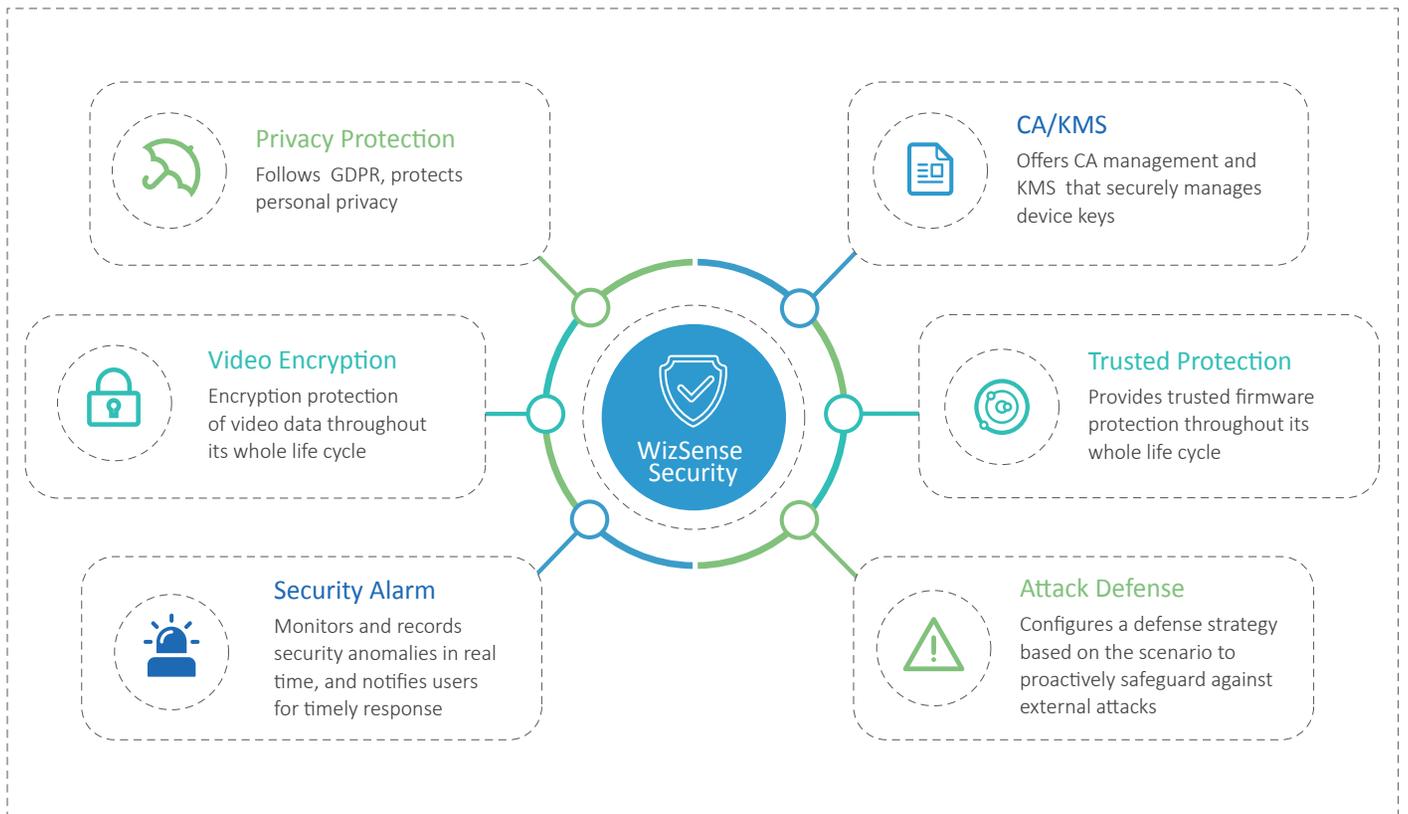
With same low bit rate, AI Coding gives bit rate allocation priority to human and vehicle, effectively improving key target details.



With same image quality, AI Coding based on CBR only needs 50% of bit rate and storage costs compared with H.265.



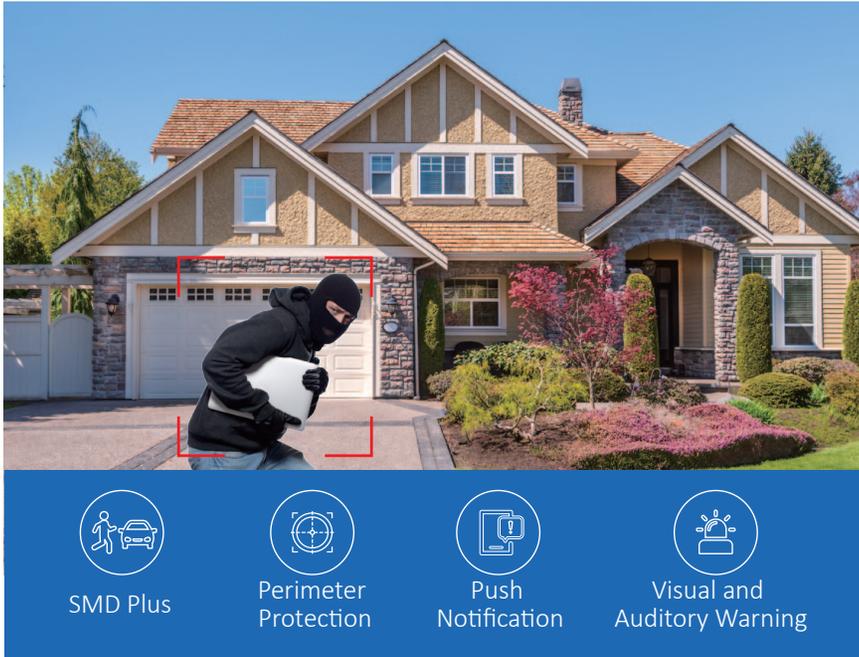
• Privacy Protection and Defense Against Attacks



## Application Scenarios

- Villa's yard

WizSense effectively protects your property when you are away from home.



### Requirements

Have you ever received tons of false alarm notifications while you were away from home? Have you ever received an intrusion detection alarm, but unable to obtain the appearance of suspects? Let WizSense shield your home!

### False Alarm Reduction

False alarm rate less than 1%, enables you enjoy your perfect vacation without worrying about your home's security.

### Notification Prompt via Smartphone

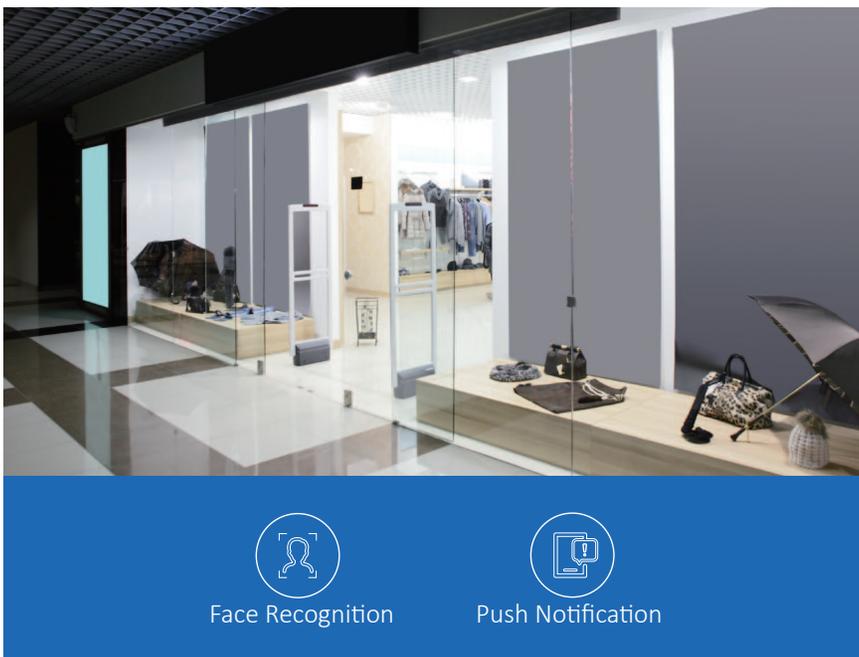
You will receive a mobile push notification when the alarm has been triggered.

### Light and Sound Intruder Deterrence

The powerful visual and auditory warning can warn off intruders as soon as they are detected, protecting your properties at all times.

- Luxury shop's entrance

WizSense creates business value while enhancing security.



### Requirements

With a large trading volume everyday, luxury shops are constantly exposed to security threats. In addition, improving VIP customer experience and management efficiency has emerged as a major demand.

### Assists VIP service

WizSense can accurately identify VIP customers and push notifications to the shop manager via APP, improving management efficiency to enhance users' satisfaction.

### Secures shops

Once a person with previous criminal record has been detected in our system, the WizSense products will quickly target him/her, and at the same time send an alarm to the security center.

- **Establishment's monitoring center**

WizSense improves the efficiency of monitoring center's security guard.



### Requirements

With limited manpower that can focus on huge amount of details, 24/7 monitoring has been a pressing challenge to security guards.

### Accurate Alarm

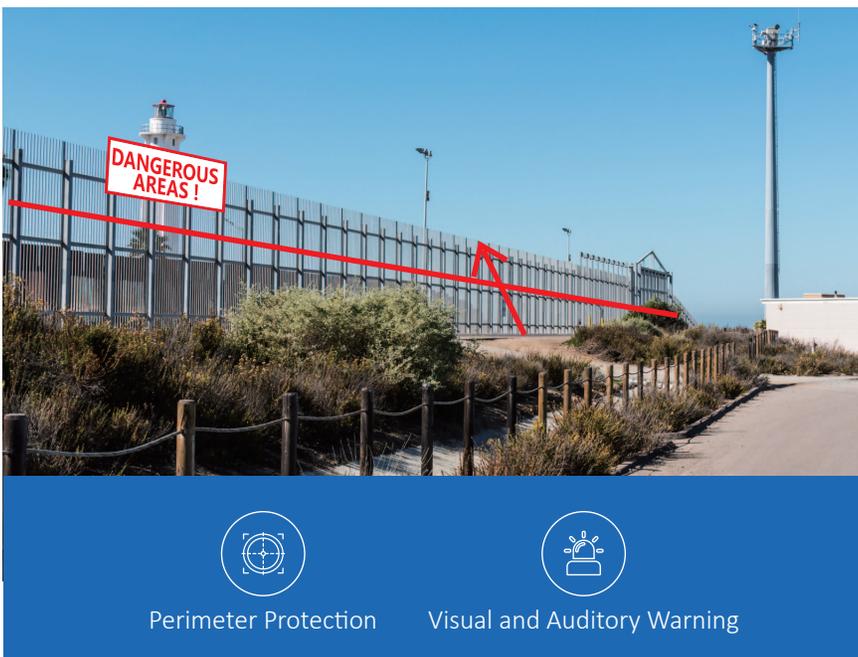
Wizsense filters out useless alarms caused by leaves, light, pets etc., saving users' time and effort.

### Efficient Search

WizSense extracts and classifies humans and vehicles from massive video data, making it easy for end users to trace and analyze information. The human and vehicle options for video playback speeds up the target search and saves retrieval time.

- **Dangerous Area**

WizSense keeps people away from dangerous areas with flexible configuration.



### Requirements

It has been a long-standing problem for public places to ensure that visitors are safe from dangerous areas.

### Flexible Rules for Monitoring Area

Flexible rules can be set up depending on the structure of the fencing in order to prevent people from climbing over it.

### Custom Voice Alert

Human voice is more effective than a signage. Customized voice alert will be activated once perimeter protection alarm has been triggered.

## Solutions & Products

### • Solution

WizSense IP Cameras + WizSense NVR



SMD Plus



Active Deterrence  
(PV Cameras)



Face Recognition



Perimeter Protection



Conventional IP/PTZ Cameras + WizSense NVR



SMD Plus



Face Recognition



Perimeter Protection



HDCVI Cameras + WizSense XVR



SMD Plus



Active Deterrence



Face Recognition



Perimeter Protection



WizSense IP/PTZ Cameras + Conventional NVR



SMD Plus



Perimeter Protection



## Solutions & Products

### • WizSense IPC

#### IPC New 3 series



(2M/4M/5M/8M)

- Starlight
- Smart H.264+/H.265+, triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- SMD Plus, Perimeter Protection
- Micro SD card, IP67, POE
- Support Active Deterrence(coming soon)

### • WizSense PTZ

#### PTZ SD49 series



(2M/4M)

- IR distance up to 100m, Starlight
- Powerful 25x optical zoom
- Smart H.264+/H.265+, triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- SMD, Perimeter Protection, Face Detection
- IP66, POE+
- 4G(only for SD49425XB-HNR-G)

#### PTZ SD5A series



(2M/4M)

- IR distance up to 150m, Starlight+
- Powerful 45x optical zoom
- Smart H.264+/H.265+, triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- SMD, Perimeter Protection, Face Detection
- Auto tracking
- IP67, IK10, POE+

### • WizSense NVR

#### NVR2000-I series



- H.265/H.264 codec decoding
- Max 80Mbps incoming bandwidth
- Max 80Mbps outgoing bandwidth
- Up to 8MP resolution preview and playback
- Up to 4 channel Perimeter Protection
- Up to 1 channel video stream Face Recognition/4 channel picture stream Face Recognition(with FD camera)

### NVR4000-I series



- Smart H.265+/H.265/Smart H.264+/H.264/MJPEG
- Up to 4 channel Perimeter Protection
- Up to 2 channel video stream Face Recognition/8 channel picture stream Face Recognition ( with FD camera)
- Up to 12 face pictures /sec processing
- Up to 10 face databases with 20,000 face images in total
- 1-8 PoE Ports support ePoE and EoC

### • WizSense XVR

### XVR5000-I2 series



(5M-N/1080P)

- Up to all channel 5MP / 4MP / 1080P camera input
- Support all channel 5M-N@10fps / 4M-N@15fps / 1080P@15fps encoding
- Up to all channel SMD Plus
- Up to 2 channel video stream Perimeter Protection
- Up to 2 channel video stream Face Detection

### XVR5000-4KL-I2 series



(4K-N/5MP)

- Up to all channel 4K camera input and 4K-N@30fps / 4K@ 15fps preview
- Support all channel 4K-N@15fps or 4K@7fps encoding
- Up to all channel SMD Plus
- Up to 2 channel video stream Perimeter Protection
- Up to 2 channel video stream Face Recognition

### XVR7000-4K-I2 series



(4K)

- Up to all channel 4K camera input and 4K@30fps preview
- Support all channel 4K@15fps encoding
- Up to all channel SMD Plus
- Up to 2 channel video stream Perimeter Protection
- Up to 2 channel video stream Face Recognition

# ENABLING A SAFER SOCIETY AND SMARTER LIVING

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\*Design and specifications are subject to change without notice.

Ver.1, Jan. 2020

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