Sense

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.

Intelligent

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.

Simple

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.

Inclusive

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.

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

User Benefits

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

• Accurate Prediction before Events

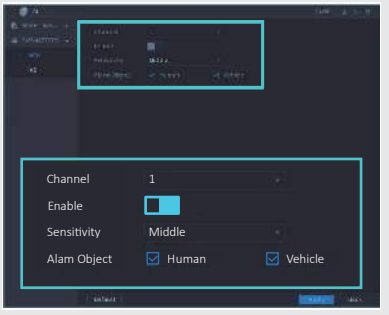
Different from the traditional CCTV system, WizSense can effectively transfer "post-evidence" to "pre-warning" through accurate prediction before events.

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

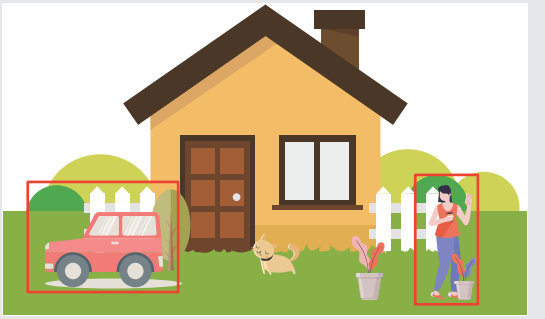
SMD Plus analyzes human and vehicle shapes based on motion detection through adoption of deep learning algorithm, allowing users to focus on real threats.

One key to enable



Alarm filtered

False alarm rate＜2%



Alarm triggered

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

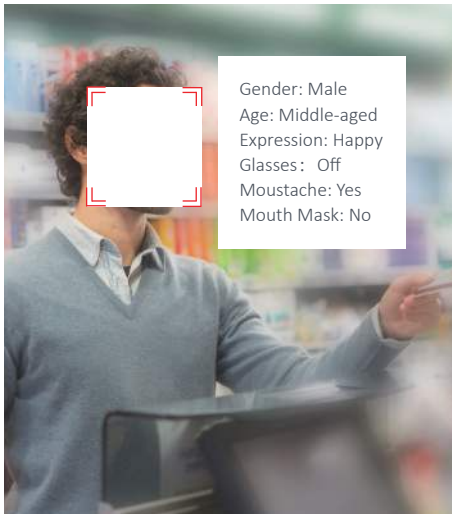
False alarm rate＜**1%**

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.

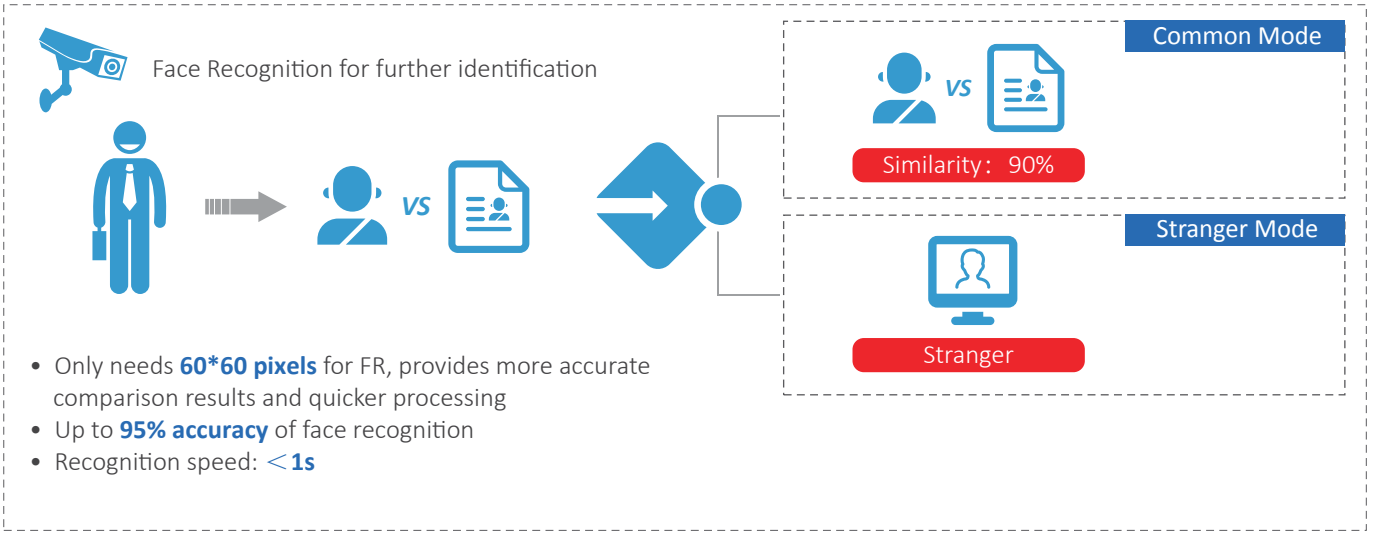


Face Attributes	
Gender	Female, Male
Age	Age value, Infant/Child/Young/Middle-aged/Elderly, Ten years for a period
Expression	Angry, Disgusted, Fear, Happy, Sad, Confused, Surprised, Calm
Glasses	Yes (Regular Glasses, Black Frame Glasses, Sunglasses, Others), No
Moustache/Beard	Yes （Beard, Moustache,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



- Only needs **60*60 pixels** for FR, provides more accurate comparison results and quicker processing
- Up to **95% accuracy** of face recognition
- Recognition speed: ＜**1s**

• 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.



Video analysis shows there is a human (or vehicle) in the monitored scene

The camera flashes and makes a warning sound to deter the intruder

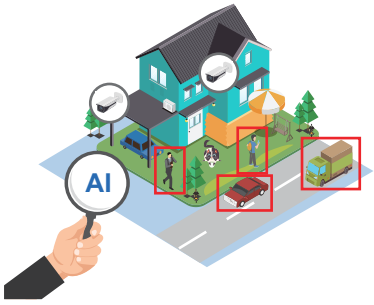
User receives alert by DMSS instantly

Alarm receiving time ＜ 1s

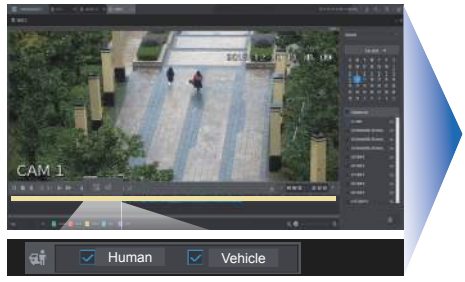
• Quick Target Search after an Event

Quick search powered y 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



up to 98% enhancement of searching efficiency

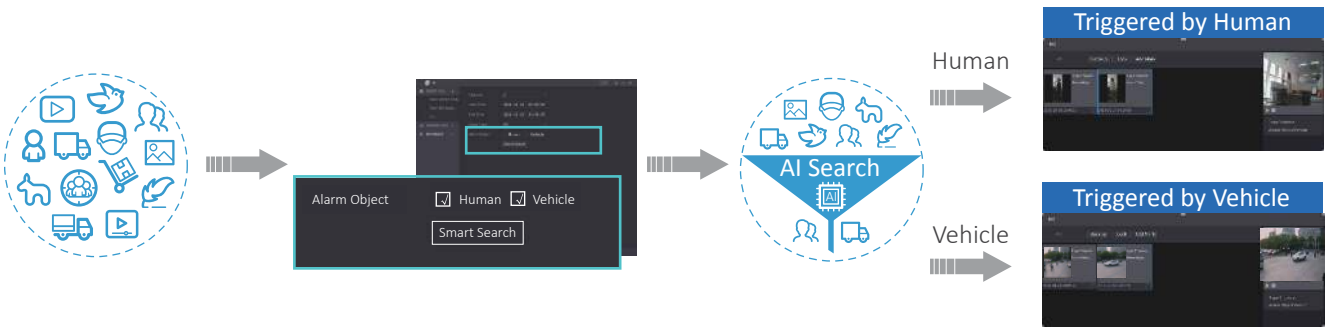


Step1： Choose Human/Vehicle target type



Step2: Display target video, significantly saving searching time.

Perimeter Protection



Face Search

Image Search
Find out when and where a person of interest has appeared in monitored scenes.

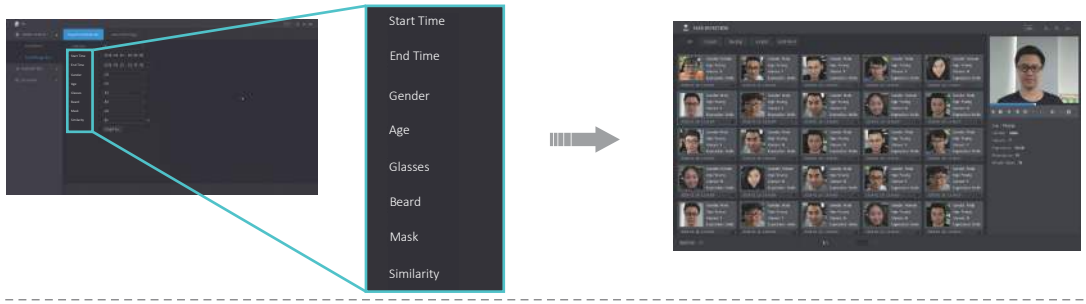


Target Image
(from database or imported)

Modeling

Searching target video

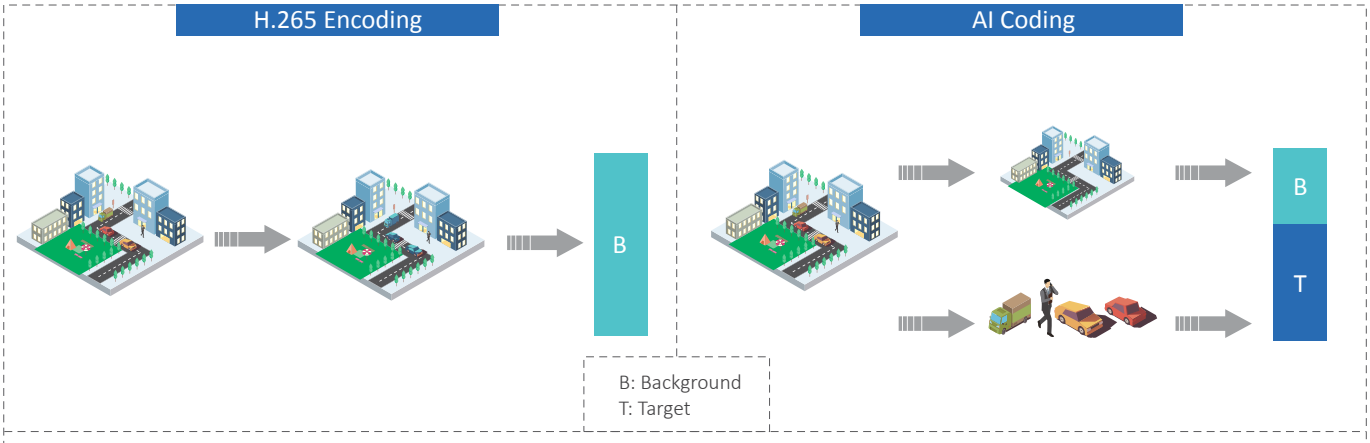
Face Attribute Search
Effectively reduce the search area.



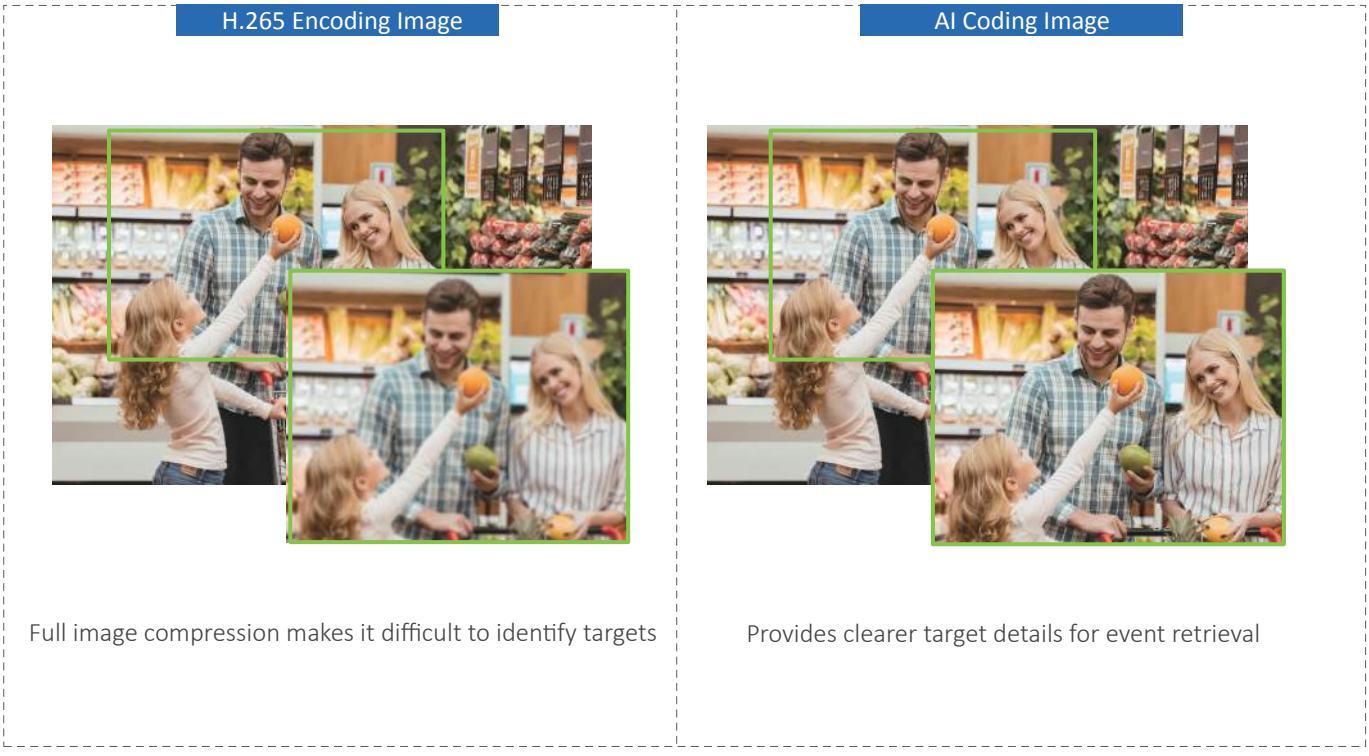
• Saves Storage while Maintaining the Image Quality of Target

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.



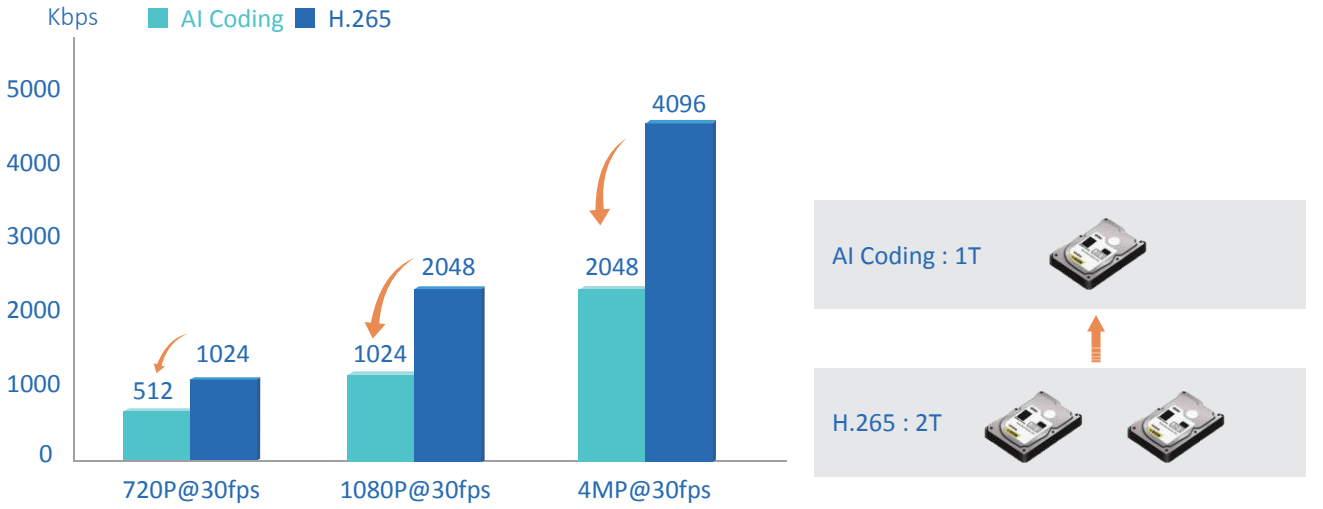
With same low bit rate, AI Coding gives bit rate allocation priority to human and vehicle, effectively improving key target details.



Full image compression makes it difficult to identify targets

Provides clearer target details for event retrieval

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



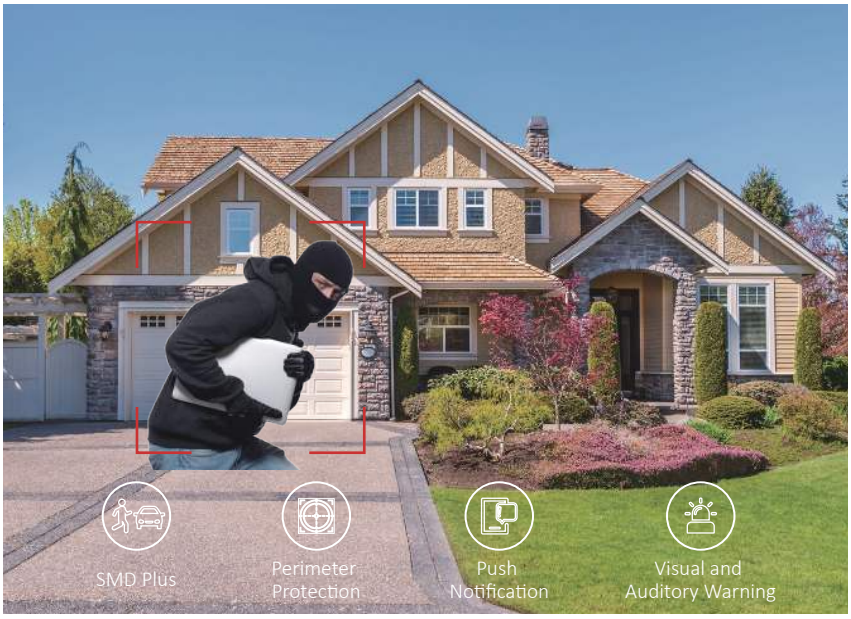
- Privacy Protection and Defense Against Attacks



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

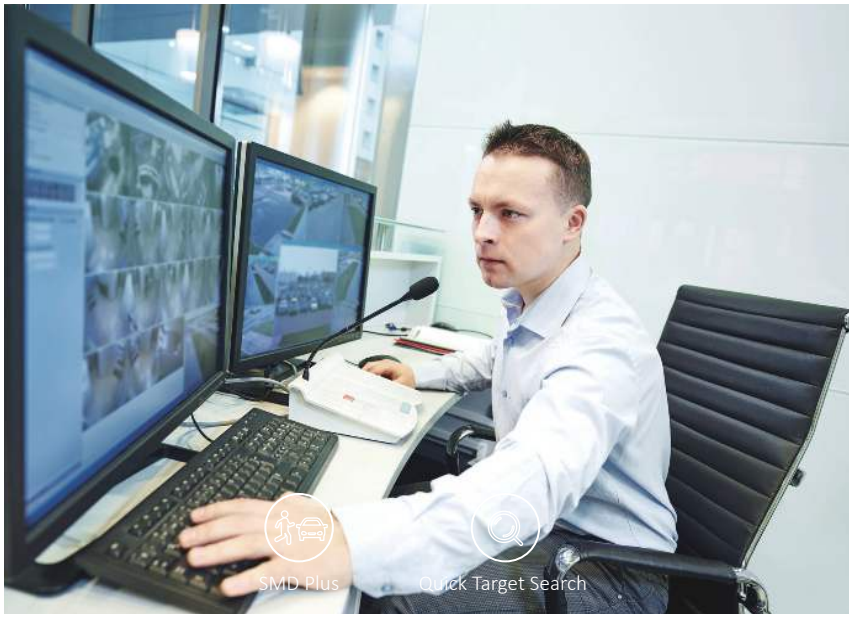
WizSense can accurately identify VIP customers and push notifications to the shop manager via APP, improving management efficiency to enhance users' satisfaction.

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.

• Industrial park perimeter

WizSense Keeps people away from exclusion areas with flexible configuration.



Requirements

It is required to protect the perimeter security of the industrial park with accurate alarm.

Strong Adaptability

The thermal camera converts the thermal radiation into the visible image, which can be clearly imaged in the harsh environment, such as no-light, backlight, haze and so on.

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.

Sound and light alert on site

Once perimeter protection alarms are triggered, built-in LED and loudspeaker are activated to alert the intruder and avoid delays caused by central processing.

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)

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

IPC New 3 PV series



(2M/4M/5M)

- SMD Plus, Perimeter Protection
- Build-in Mic & Speaker
- Smart H.264+/H.265+ triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- Micro SD card, IP67, POE

- WizSense PTZ

PTZ SD49 series



(2M/4M)

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

PTZ SD5A series



(2M/4M)

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

• WizSense Thermal

Thermal BF1241 series



- Fire detection & alarm, Smoking detection
- Smart alarm linkage with strobe light & audio, Perimeter Protection
- 256×192 Vox uncooled thermal sensor technology
- Athermalized Lens (thermal), Focus-free
- 1/2.8” 4Megapixel progressive scan CMOS
- Image fusion
- Built-in 1/1 alarm in/out
- Micro SD memory, IP67, PoE

Thermal DF1241 series



- Fire detection & alarm, Smoking detection
- Smart alarm linkage with strobe light & audio, Perimeter Protection
- 256x192 VOx uncooled thermal sensor technology
- Athermalized Lens (thermal), Focus-free
- 1/2.8” 4Megapixel progressive scan CMOS
- Image fusion
- Built-in 1/1 alarm in/out
- Micro SD memory, IP66, 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

NVR4000-I series



- 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
- Smart H.265+/H.265/Smart H.264+/H.264/MJPEG
- 1-8 PoE Ports support ePoE and EoC

- WizSense XVR

XVR5000-I2 series



(5M-N/1080P)

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

XVR5000-4KL-I2 series



(4K-N/5MP)

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

XVR7000-4K-I2 series



(4K)

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

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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