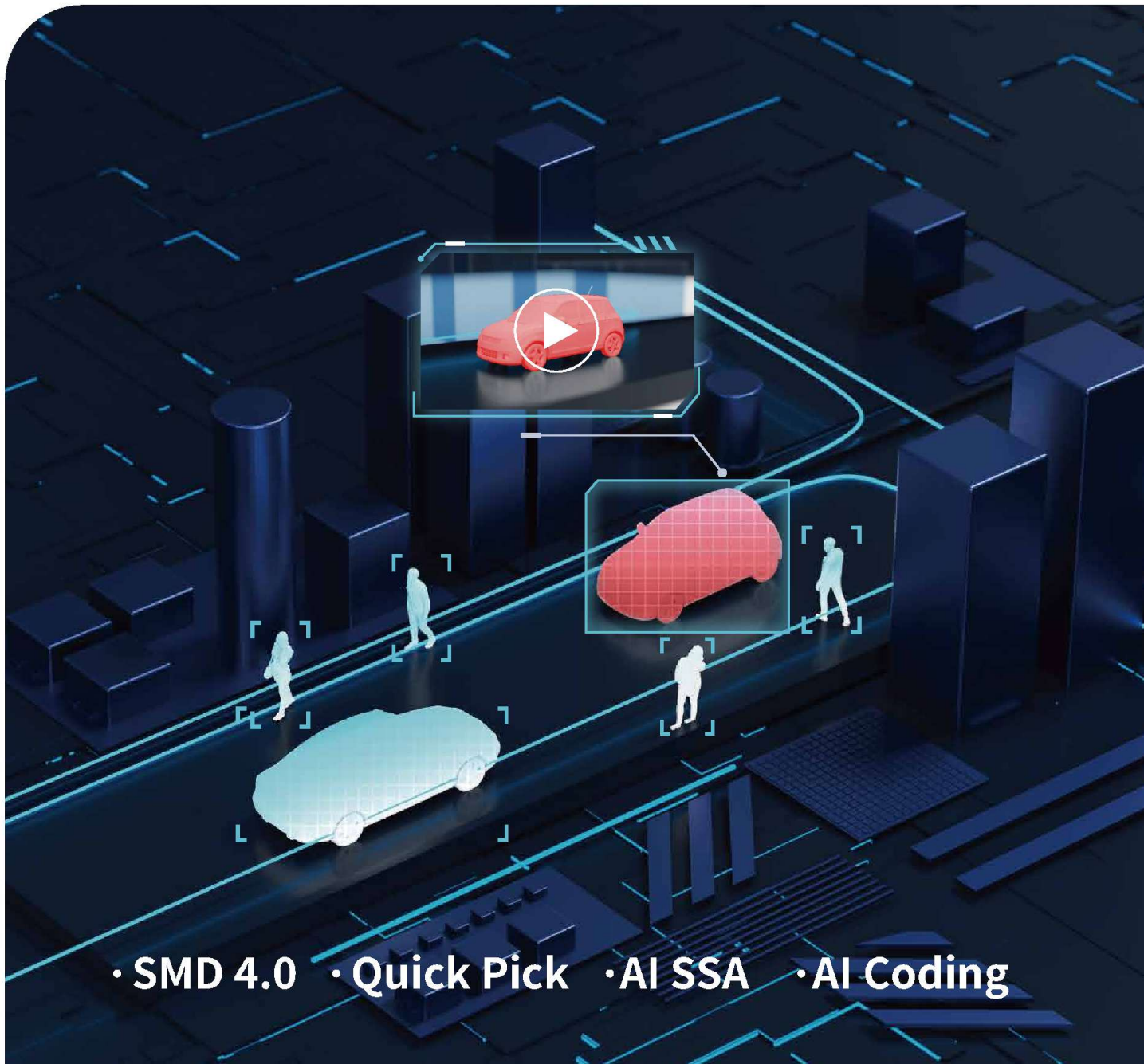


# **Wiz Sense**

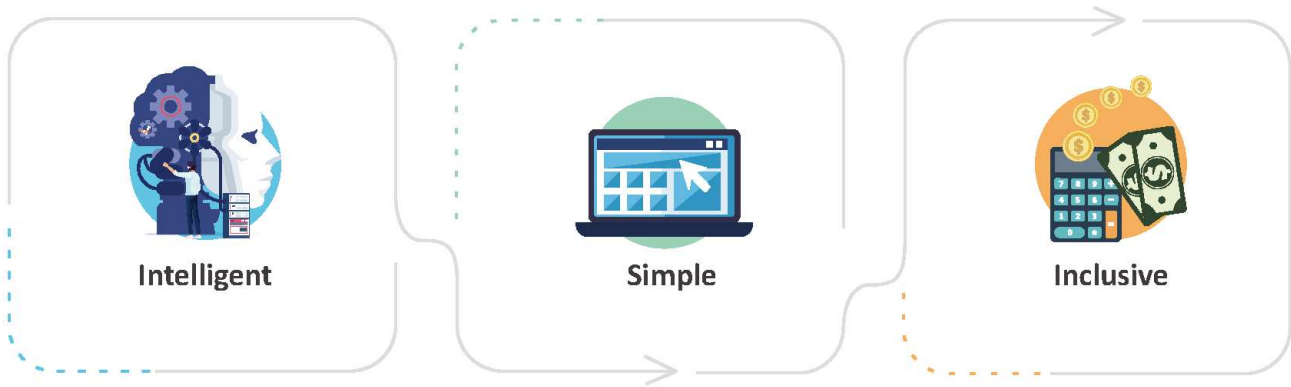
Focus on human and vehicle

---

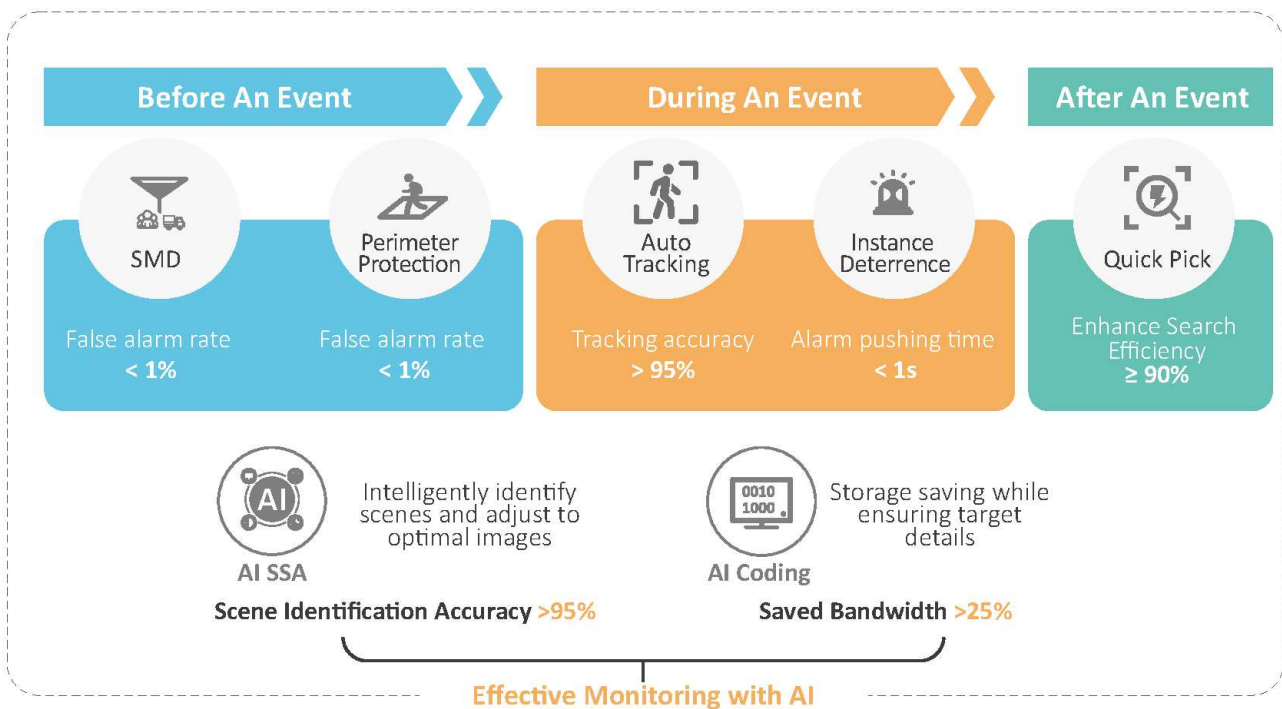


# Wiz Sense

- Dahua WizSense is a series of wide range AI products and solutions that adopt independent AI chip and deep learning algorithm.
- WizSense focuses on human and vehicle, benefiting everyone with intelligent functions, simple configuration and inclusive products.



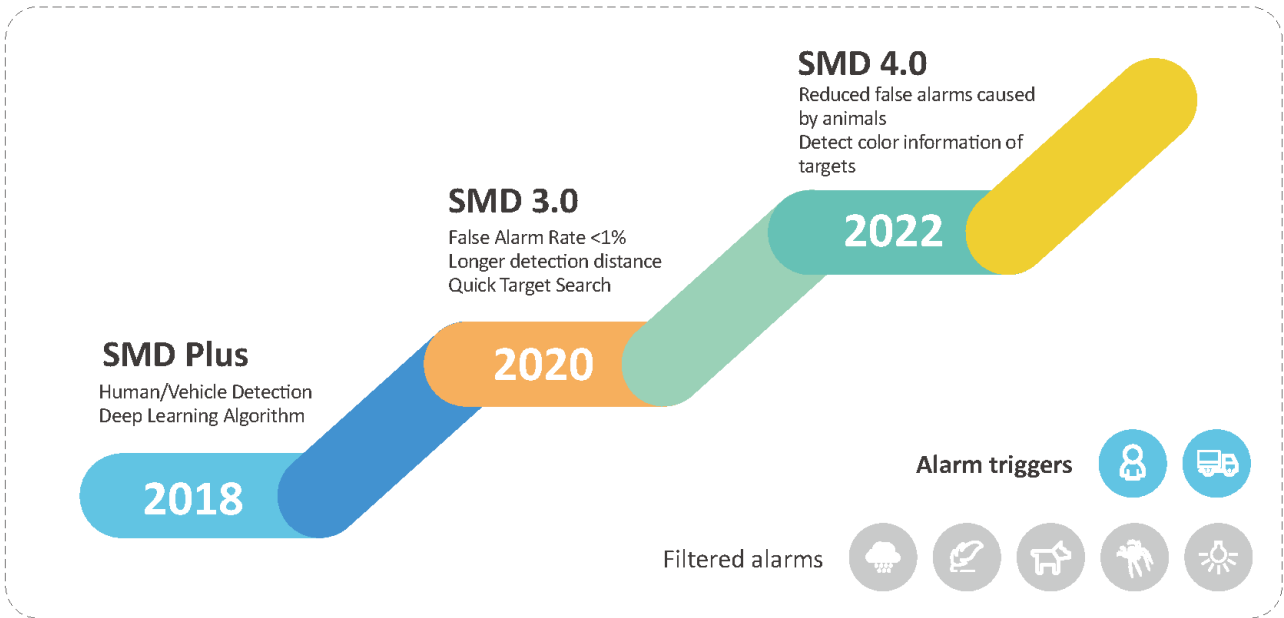
## What can Dahua WizSense provide you?



## Before an Event: Accurate Prediction

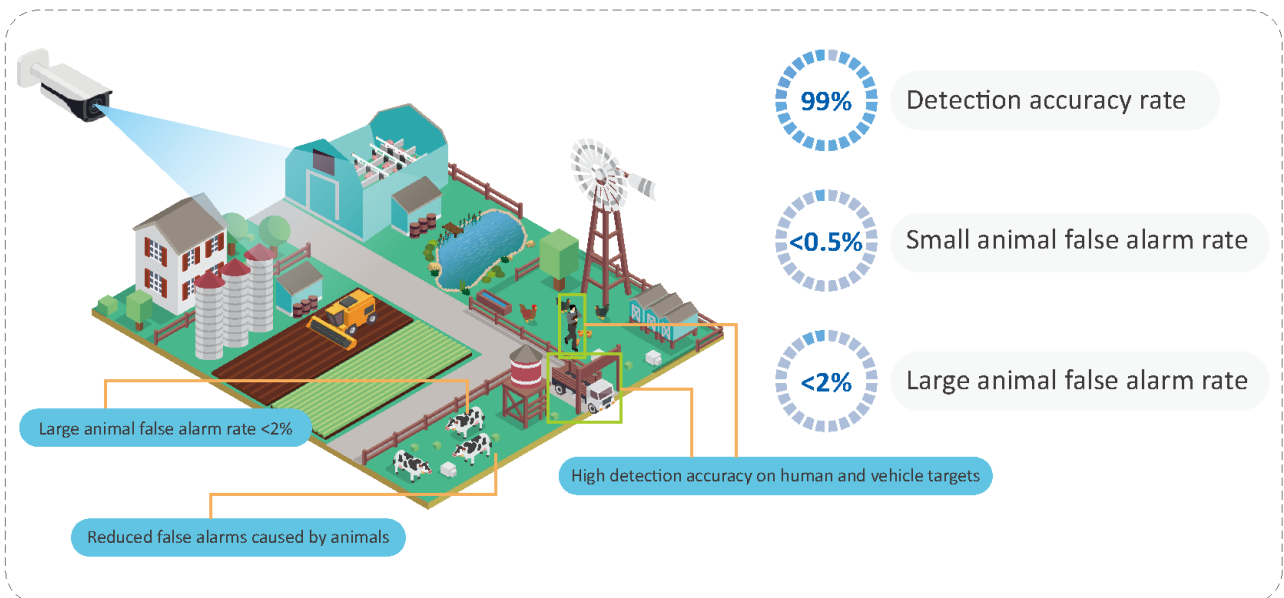
### SMD

Dahua Technology developed the Smart Motion Detection (SMD) technology to differentiate human and vehicle targets in the scene and send accurate alarms to help ensure the safety of users and their properties.





### SMD 4.0: Reduces false alarms caused by animals

With upgraded AI capabilities, the SMD function filters out irrelevant objects in the scene. Equipped with new deep learning algorithm, SMD 4.0 is optimized to filter out small and large animals in the scene to avoid triggering false alarms.

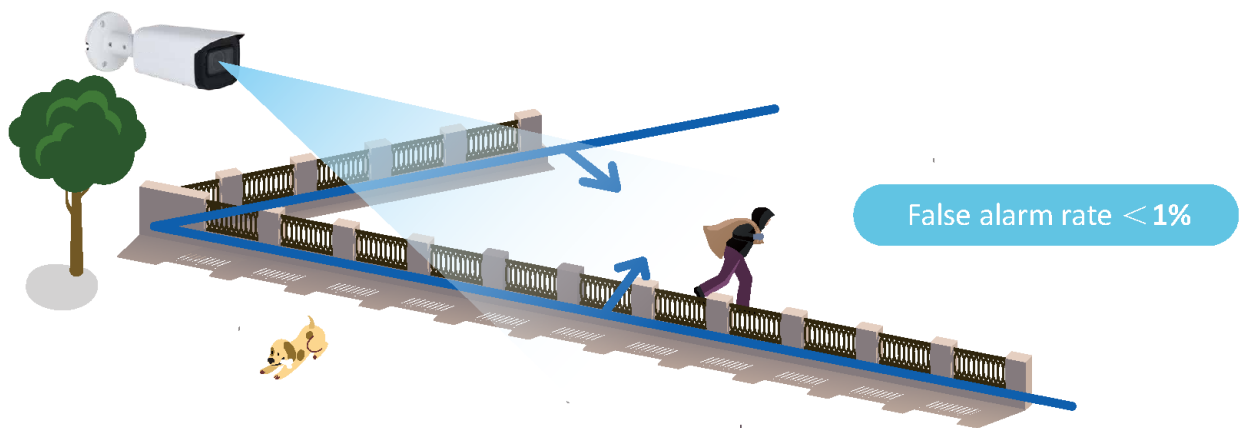


### SMD Comparison

	SMD 3.0	SMD 4.0
Detection accuracy rate (Human & Vehicle)	99%	99%
Human detection distance	IPC: Up to 12m (2.8mm fixed-focal camera) PTZ: Up to 400m (day) / 130m (night) (4.8-154mm vari-focal camera)	IPC: Up to 12m (2.8mm fixed-focal camera) PTZ: Up to 400m (day) / 130m (night) (4.8-154mm vari-focal camera)
Vehicle detection distance	IPC: Up to 18m (2.8mm fixed-focal camera) PTZ: Up to 1800m (day) / 130m (night) (4.8-154mm vari-focal camera)	IPC: Up to 18m (2.8mm fixed-focal camera) PTZ: Up to 1,800m (day) / 130m (night) (4.8-154mm vari-focal camera)
Small animals (cat, dog)	< 1%	 < 0.5%
Large animals (cattle, horse, sheep, deer)	< 5%	 < 2%
Quick Pick	/	Supported

### Perimeter Protection

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



Traditional  
IVS



Perimeter  
Protection

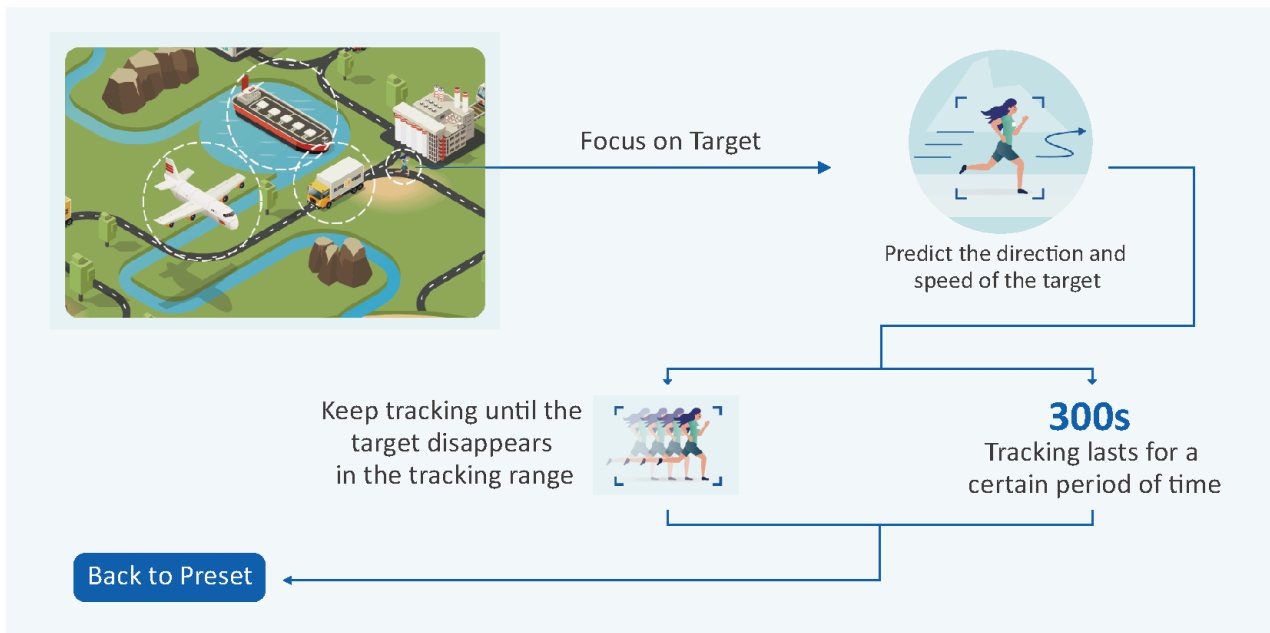


The alarm will only be triggered when a human or vehicle target violates the preset rule.

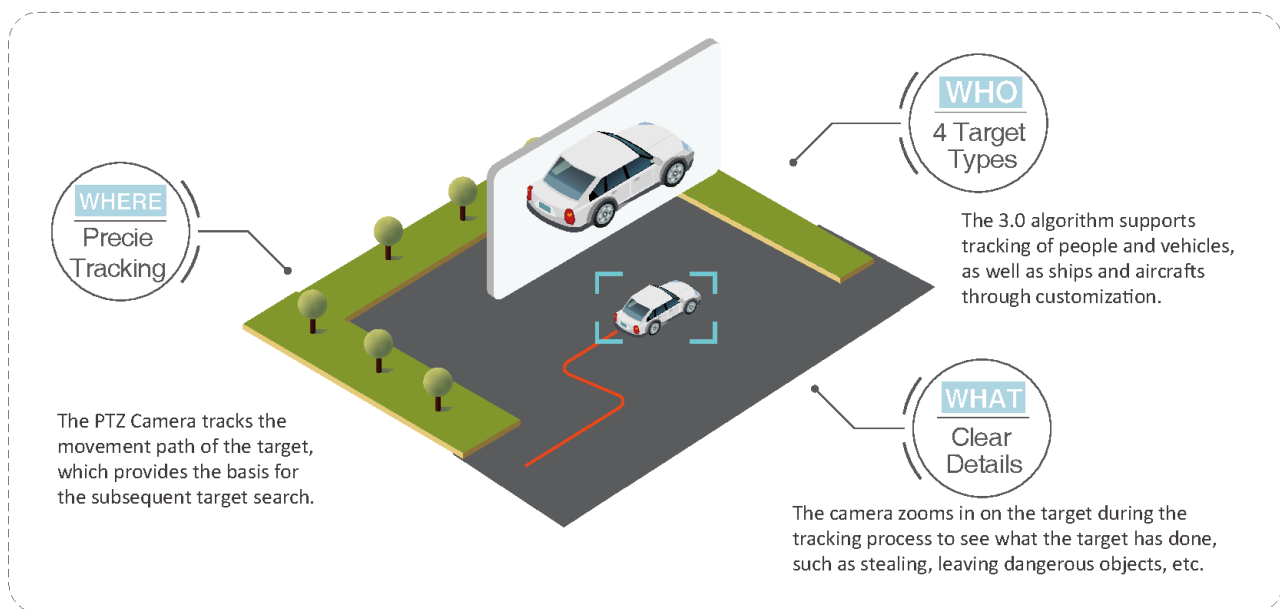
## During and Event: Auto Tracking & Active Deterrence

### Auto Tracking 3.0

When a target triggers the IVS rule, the camera uses the rotation (horizontal and vertical) and zoom features to lock the moving target in the center of the screen. Its AI algorithm then predicts the direction and speed of the target to continuously track the target in the scene.



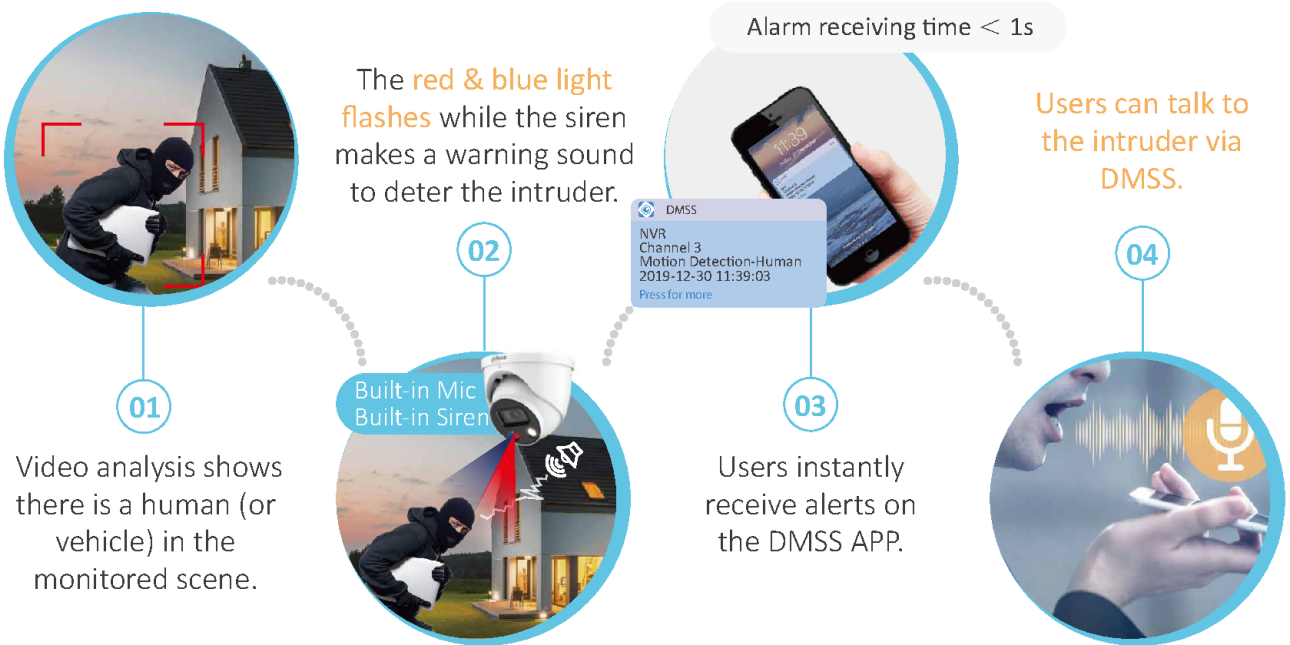
With Auto Tracking 2.0 algorithm as its foundation, the Auto Tracking 3.0 offers both upgraded software and hardware. The tracking performance has significantly improved in all three areas that customers focus on.



## Active Deterrence

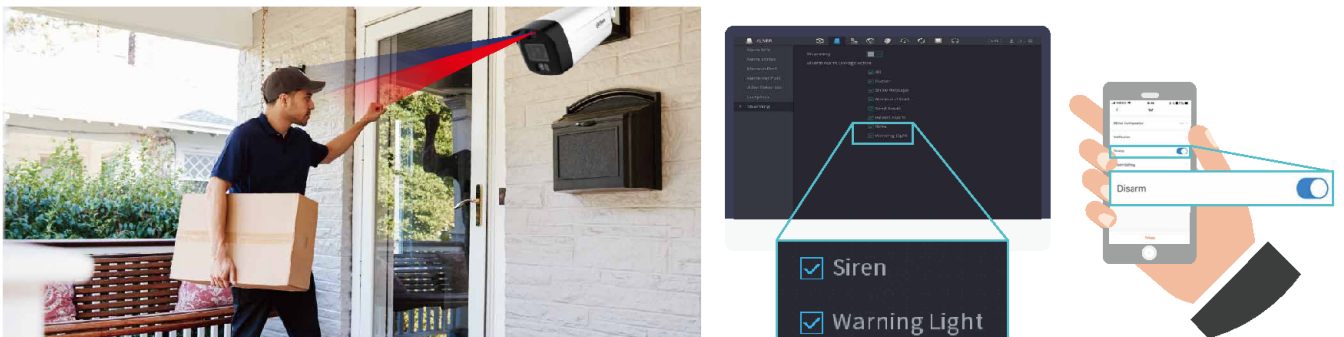
Actively warns off intruders once they have been detected to significantly reduce the probability of any incident from happening.

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.



## One Click Arming & Disarming

This feature offers a newly-added disarming option for the siren and warning light of the camera. It is also available on the DMSS app, making it easy and convenient for end-users.



## During or After an Event: Quick Pick

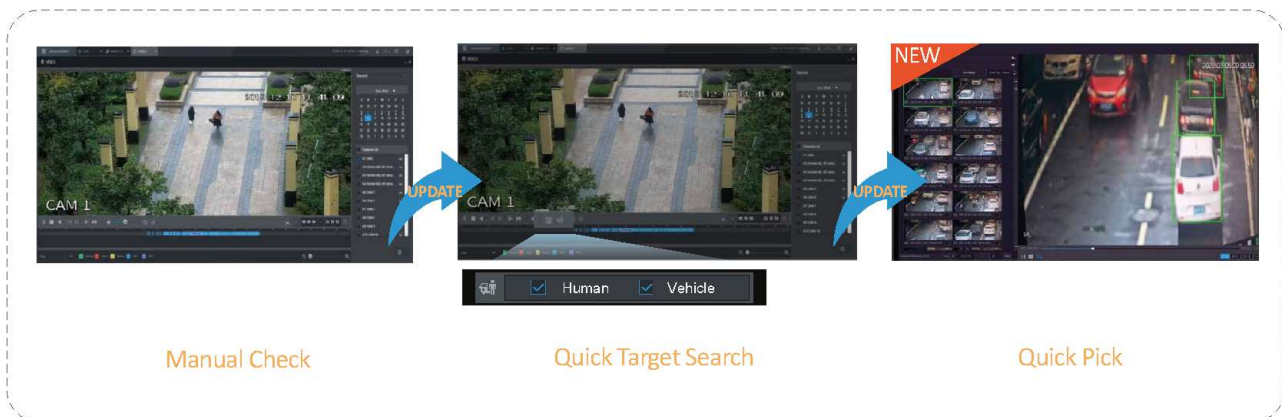
### Quick Pick

The Dahua Quick Pick technology can quickly identify human/vehicle targets of interest, which optimizes the search for relevant SMD events. With excellent integration of intelligent functions of both cameras and recorders, this feature can search human/vehicle targets based on AI algorithm that can extract and compare clothing and vehicle colors.



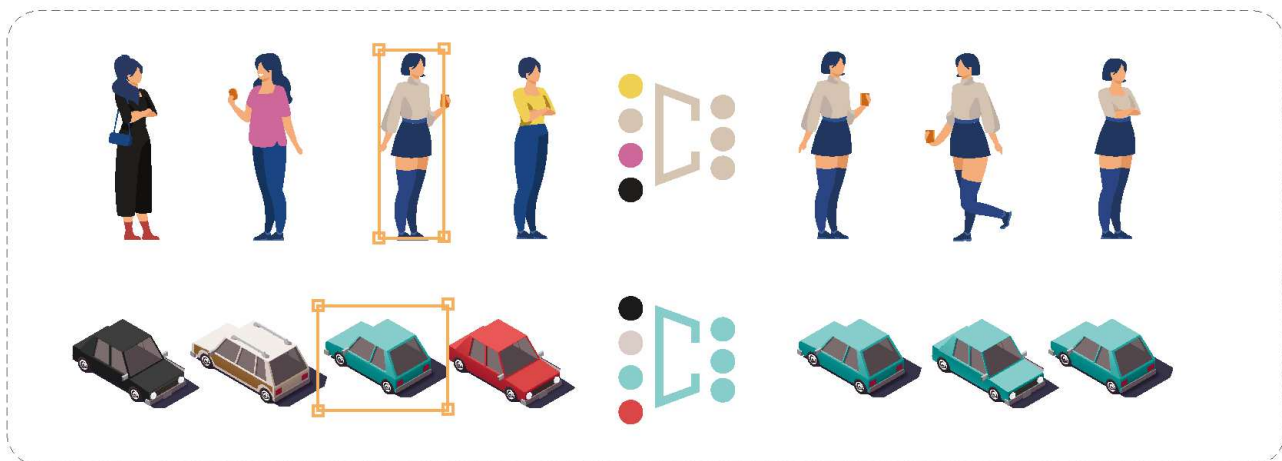
### Reduction of Manual Checking

Quick Pick simplifies search steps to save time and costs. It lets you automate what was once a several-hour manual effort.



### Filter Irrelevant Human/Vehicle Targets

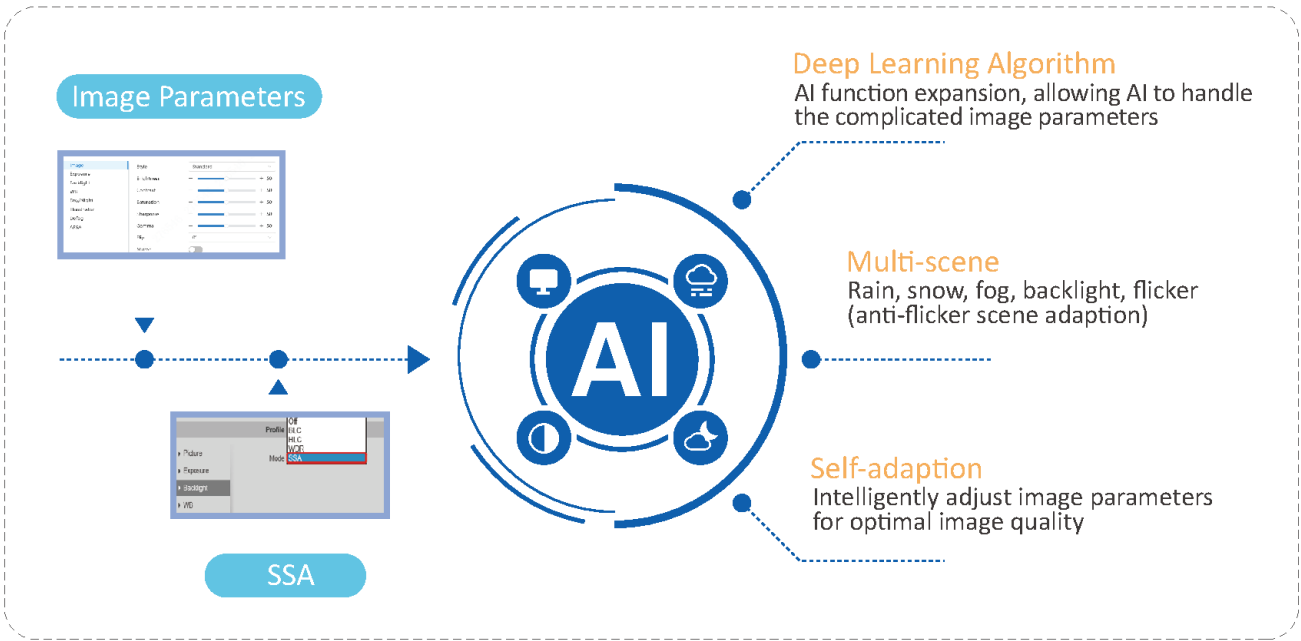
Based on AI algorithm that can extract and compare colors of clothing and vehicles, the Quick Pick function can filter out irrelevant human/vehicle targets. It helps users focus on the targets of interest and find useful information with higher accuracy.



# Effective Monitoring with AI

## AI SSA

With the continuous development of video surveillance and AI, the demand for images with higher quality is also increasing. The Dahua AI SSA (Scene Self-adaption) technology is based on deep learning algorithm that can intelligently identify multiple scenes and adjust to their optimal images.



### Multi-scene

AI SSA can identify multiple scenes such as rain, snow, fog, backlight and flicker, making the camera suitable for more indoor and outdoor application scenarios.

#### Rain, Snow, and Fog

Automatically switches to defog mode and adjusts image parameters.

#### Backlight

Identifies backlight scenes and adjusts WDR settings to ensure clear and vivid image.

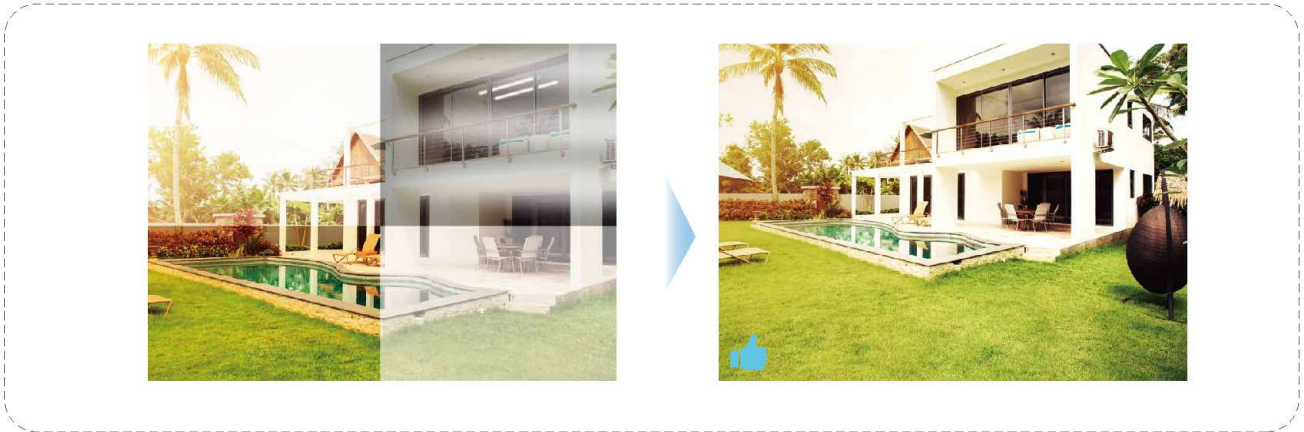
#### AFSA

The anti-flicker scene adaption solves the horizontal stripes problem caused by flashing LED lights.



### Self-adaption

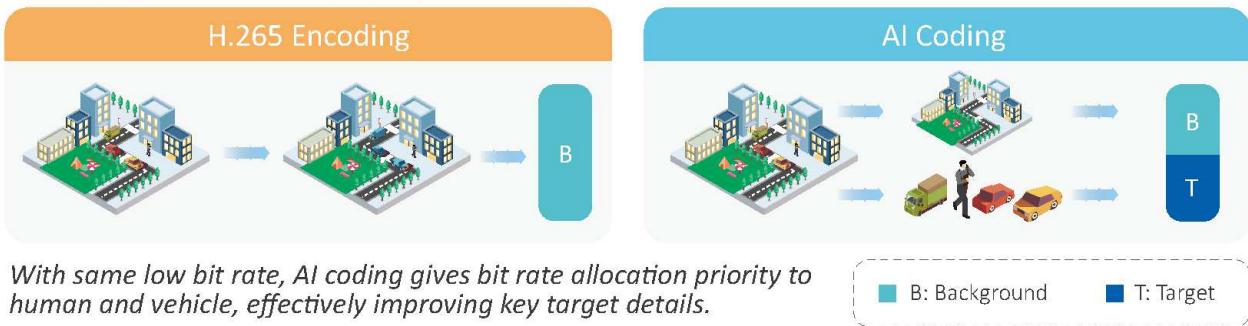
Based on the scene condition, AI SSA will adjust the image parameters such as exposure, lightness, or other specific image features to capture the highest quality images.



### AI Coding (IP Solution)

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 25% bit rate compared with H.265.

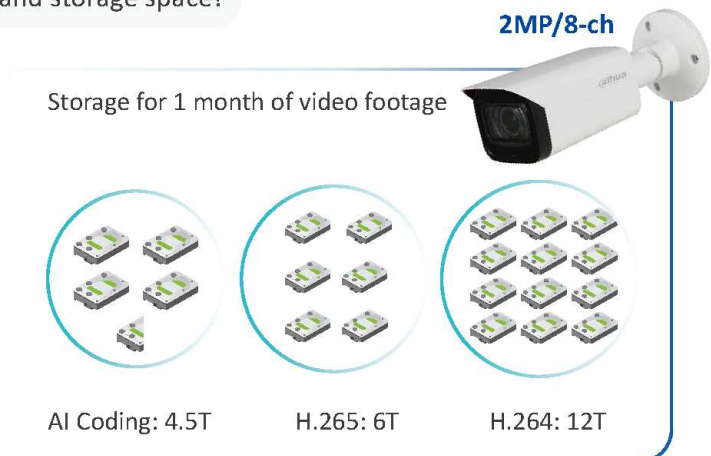
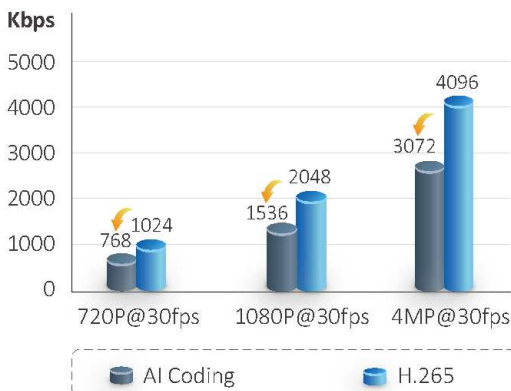
\*AI Coding function is enabled by default.



### Save Storage Space while Ensuring the Image Quality of Targets

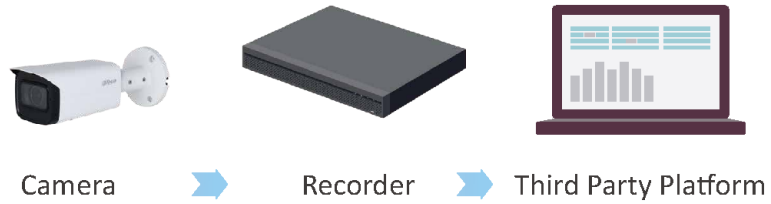


Saves more than 25% of bandwidth and storage space!

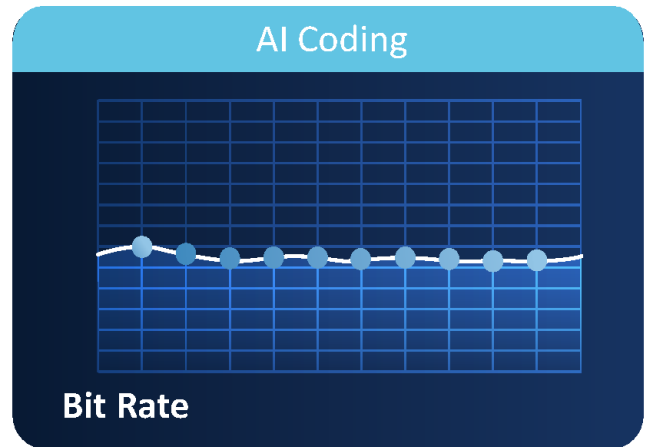
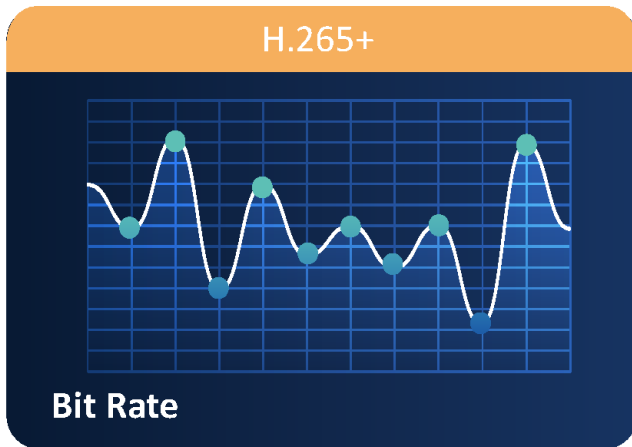


### High Compatibility

Through CBR (Constant Bit Rate), AI Coding does not lose its decoding compatibility when integrated with third-party players or platforms.



### High Stability



VBR (Variable Bit Rate) has high burstiness, which makes it difficult to calculate the required bandwidth.

Makes it easy to deploy bandwidth and improves bandwidth utilization.

Main Stream	
Coding Strategy	General
Type	General
Compression	H.265
Resolution	1920x1080(1080P)
Frame Rate (FPS)	25
Bit Rate Type	CBR
Quality	4
I Frame Interval	1sec.
Bit Rate (kb/s)	2048
Reference Bit Rate	512-5632 (Kb/s)
<b>H.265</b>	

Main Stream	
Coding Strategy	Smart Codec
Type	General
Compression	H.265
Resolution	1920x1080(1080P)
Frame Rate (FPS)	25
Bit Rate Type	VBR
Quality	4
I Frame Interval	1 sec.
Bit Rate (kb/s)	2048
Reference Bit Rate	512-5632 (Kb/s)
<b>H.265+</b>	

Main Stream	
Coding Strategy	AI Codec
Type	General
Compression	H.265
Resolution	1920x1080(1080P)
Frame Rate (FPS)	25
Bit Rate Type	CBR
Quality	4
I Frame Interval	1sec.
Bit Rate (kb/s)	1536
Reference Bit Rate	512-5632 (Kb/s)
<b>AI Coding</b>	

## Application Scenarios

### Villa's Yard

Protect your property when you're away from home



SMD



Perimeter Protection



Push Notification



Visual and Auditory Warning

False alarm reduction

Push notifications via smartphone

Active deterrence using warning lights and siren

### Shopping Mall

Detect suspicious targets of interest quickly



SMD



Quick Pick



AI SSA (IPC only)



AI Coding (IP Cameras)

Efficient search for human/vehicle targets

Clear images for more details of the event

24/7 time-sharing monitoring

### Factory

Keep people away from restricted areas



SMD



Time-sharing Monitoring



Push Notification



Visual and Auditory Warning

Highly accurate alarms for human/vehicle targets

Flexible perimeter protection rules according to fence structure

Sound and light alarms for active deterrence of intruders

### Farm

Safeguard your outdoor properties and reduce labor costs



SMD



Quick Pick



AI SSA (IPC only)



AI Coding (IP Cameras)

Accurate alarms; Filters out irrelevant objects

Efficient search; Saves labor cost

Better image quality; Easy configuration

## Solutions & Products

Solution: WizSense IP/PTZ  
Cameras + WizSense NVR



Quick Pick



AI SSA (IPC only)



AI Coding  
(IP Cameras)



SMD 4.0



Perimeter  
Protection



Face  
Recognition



Active Deterrence  
(PV Cameras)

## WizSense IPC

### IPC 3X41-S2 series (2M/4M/5M/8M)



- SMD 4.0, Quick Pick, AI SSA, AI Coding, Perimeter Protection
- 2.1mm (Wedge Dome only), 2.8mm, 3.6mm, 6mm/2.7-13.5mm
- Built-in mic
- Smart H.264+/H.265+ triple-stream encoding
- Starlight, WDR, 3D DNR, HLC, BLC
- Micro SD card, IP67, PoE



**IPC TiOC 2.0 series  
(4M/5M/8M)**



- SMD 4.0, Quick Pick, AI SSA, AI Coding, Perimeter Protection
- Built-in dual mic & speaker; Two-way Talk
- Smart H.264+/H.265+ triple-stream encoding
- Smart Dual Illuminators
- WDR, 3D DNR, HLC, BLC
- Micro SD card, IP67, PoE

*SMD 4.0/AI SSA will be supported by new FW (2022.06)*

**WizSense PTZ**



**PTZ SD5A-GA/GB series  
(2M/4M)**



- SMD 4.0, Perimeter Protection, Face Detection
- Auto tracking 3.0
- Quick Pick
- 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+




**SD49-GB series  
(2M/4M)**




- SMD 4.0, Perimeter Protection, Face Detection
- Quick Pick
- 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+


*This product will be released in August 2022.*





### SD6CE-GB series (2M/4M)

Coming  
Soon

  
SMD 4.0

  
Perimeter  
Protection


  
Auto  
Tracking

  
PFA


- SMD 4.0, Perimeter Protection, Face Detection
- Quick Pick
- Auto tracking 3.0
- IR distance up to 200m, Starlight+
- Powerful 32x optical zoom
- Smart H.264+/H.265+, triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- IP67, IK10, PoE+


This product will be released in September 2022.


## WizSense NVR




### NVR2000-I2

  
Quick Pick


  
Face  
Recognition

  
SMD 4.0


  
Perimeter  
Protection


- Up to 1 channel of Face Recognition video stream
- Up to 1 channel of Perimeter Protection
- Up to 4 channels of SMD Plus
- Max. 6 channels of 1080p@30 fps decoding capacity
- Max. 144/144/72Mbps incoming/storage/outgoing bandwidth


Quick Pick will be supported by new FW.




### NVR4000-4KS2/I

  
Quick Pick

  
Face  
Recognition

  
SMD 4.0

  
Perimeter  
Protection

- Up to 1 channel of Face Recognition video stream
- Up to 2 channels of Perimeter Protection
- Up to 4 channels of SMD Plus
- Max. 10 channels of 1080p@30 fps decoding capacity
- Max. 256/256/256Mbps incoming/storage/outgoing bandwidth

Quick Pick will be supported by new FW (2022.06).

## Dahua AI Technology Awards



### 2018

#### Object Search Field:

- Market1501, DukeMTMC-reID and CUHK03 Person Re-identification No. 1
- PRCV2018 Large-scale Pedestrian Search Competition – No. 1 in two items

#### Scene Recognition Field:

- KITTI VISION (Scene Flow Evaluation) No. 1
- KITTI VISION (Optical Flow Evaluation) No. 1

#### Object Segmentation Field:

- KITTI VISION (Road/Lane Detection Evaluation) Driving Area Road Class No. 1

#### Object Detection Field:

- KITTI VISION (2D Object Detection Evaluation) Vehicle Class No. 1
- KITTI VISION (2D Object Detection Evaluation) Human Body Class No. 1
- KITTI VISION (3D Object Detection Evaluation) Vehicle Class No. 1

#### Object Tracking Field:

- MOT (Multiple Object Tracking) Pedestrian Class No. 1
- MOT (Multiple Object Tracking) Vehicle Class No. 1
- KITTI VISION (Object Tracking Evaluation) Vehicle Class No. 1

### 2019

#### Semantic Segmentation Field:

- KITTI VISION (Semantic Segmentation Evaluation) Image Semantic Segmentation Class No. 1

#### Object Segmentation Field:

- KITTI VISION (Semantic Instance Segmentation Evaluation) Object Segmentation No. 1

#### Object Search Field:

- Market1501, DukeMTMC-reID
- CUHK03 Pedestrian Repeated Identification No. 1

### 2020

#### Semantic Segmentation Filed:

- Cityscapes Dataset: Pixel-Level Semantic Labeling Task Urban Scene Data Set: Semantic Segmentation Task No. 1

#### Target Tracking Filed:

- GOT-10k (Generic Object Tracking) Universal Target Tracking No. 1

#### Semantic Segmentation Field:

- ADE20K (MIT Scene Parsing Benchmark) Semantic Segmentation No. 1

#### Binocular Stereo Matching Field:

- KITTI (Stereo Evaluation 2015) Binocular Stereo Matching No.1

#### Target Detection Field:

- OSCD (Onera Satellite Change Detection) Remote Sensing Image Change Detection Dataset of French Aerospace Research Institute No. 1
- DOTA (A Large-scale Dataset for Object Detection in Aerial Images) Large-scale Aerial Image Target Detection Dataset No. 1

#### Target Search Field:

- Market1501, DukeMTMC-reID, CUHK03 Repeated Pedestrian Identification No.1

#### Gait Recognition Field:

- CASIA-B Gait Dataset No. 1

### 2021

#### Semantic Segmentation Filed:

- Cityscapes Dataset: Instance-Level Semantic Labeling Task No. 1
- MSCOCO Dataset: COCO Detection Challenge (Segmentation Mask, Test-dev) No. 1
- Weakly Supervised Semantic Segmentation for Lung Adenocarcinoma No. 1

#### Target Tracking Filed:

- MSCOCO dataset: COCO Detection Challenge (Bounding Box) No. 1

#### Target Search Field:

- VERI-Wild Vehicle Image Search Dataset No. 1

#### OCR Field:

- ICDAR 2019 ReCTS: Chinese Signboard Recognition No. 1
- Challenge Single Character Recognition, Character Line Recognition No. 1

#### Gait Recognition Field:

- CASIA-B Gait Dataset No. 1

# ENABLING A SAFER SOCIETY AND SMARTER LIVING

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

Ver. 1, May, 2022

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LinkedIn



Partner App



Website



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4.9 ★★★★★ 276 Google reviews

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**+65 9853 4404**



**Sim Lim Square 02-81 11am-6pm daily**

Website Directions ★ Saved Call

4.9 ★★★★★ 276 Google reviews

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