

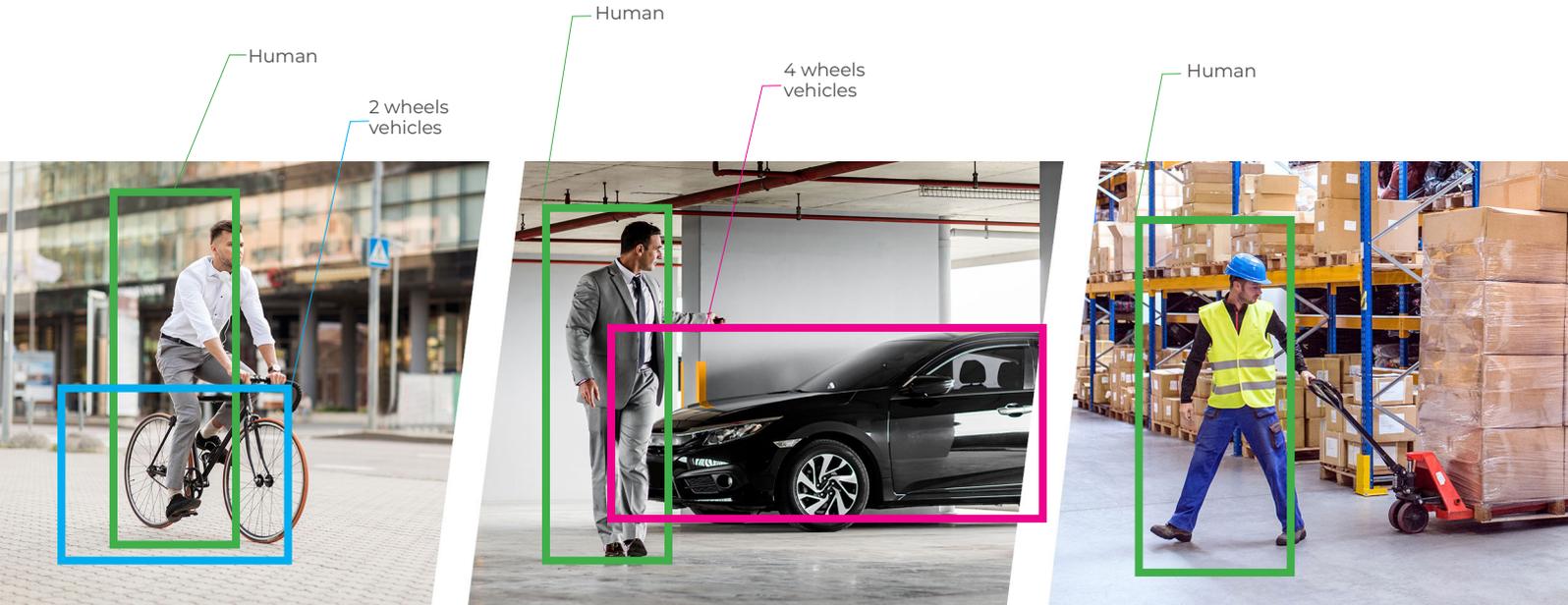
## DDA VIDEO ANALYTICS

**Detect. Distinguish. Alert.**

DDA VIDEO ANALYTICS is part of the Artificial Intelligence features developed by Provision-ISR. Nowadays the security market is changing fast and Artificial Intelligence is changing the rules of the security industry by increasing the detection accuracy and reducing false alarms. Our main duty, as a manufacturer, is to offer the best AI solutions available.

## Detect. Distinguish. Alert.

Based on smart objects recognition technology, DDA VIDEO ANALYTICS allows the system to distinguish between human beings 4-wheel vehicles and 2-wheel vehicles. Thanks to this technology, the system triggers alarms or sends push notifications only when the desired object is detected and by doing so reduces annoying false alarms caused by shadows, light changes, shaking trees, animals, etc



## PROVISION-ISR IP series supporting DDA analytics



IP - EYE SIGHT V2



IP - SMART SIGHT V2

## DDA analytics options

### DDA LINE CROSSING

The user draws a line in the scene and sets both the crossing direction and crossing permissions.  
 Example:  
 If vehicles are not allowed to cross the line (but humans are) the system will generate an alarm only to the passage of a vehicle. No alarm will be generated if a person cross the line.

### DDA STERILE AREA

The user draws a area in the scene and sets access permissions.  
 Example:  
 If vehicles are not allowed to access the area (but people are) the system will generate an alarm only when a vehicle enter the limited area.  
 In addition, the user can configure if entering/exiting the area will trigger an alarm

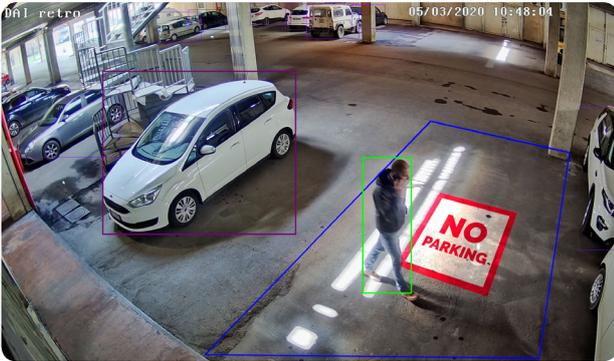
### DDA HUMANS/VEHICLES COUNTING

The user positions the camera at a gate entrance/exit to get a real-time entrance and exit monitoring.  
 Example:  
 If the observed vehicle counting area is set at the entrance of a parking the system will allow to monitor when the parking reach the maximum number of vehicles allowed.

# DDA ANALYTICS APPLICATIONS

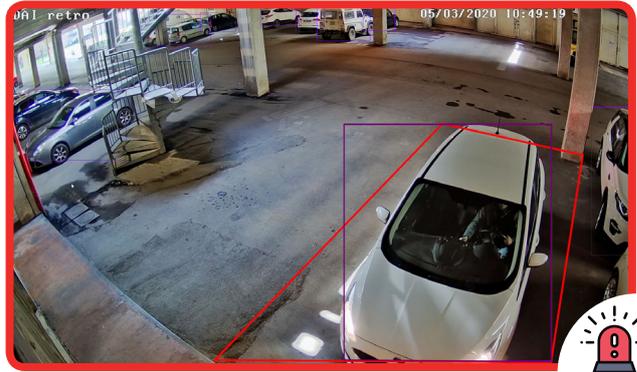
## EXAMPLE 1 - NO PARKING AREA - STERILE AREA

HUMANS ALLOWED / VEHICLES NOT ALLOWED



The system detects and distinguishes the object as a human. The event is registered but no alarm will be generated.

Humans  2 wheels  4 wheels



When the system detects and distinguishes the object as a car that is not allowed to enter the limited area an alarm will be generated.

## EXAMPLE 2 - PERIMETER PROTECTION

VEHICLES ALLOWED / HUMANS NOT ALLOWED



The car outside the gate enters the area drawn by the user. When the system detects and distinguishes the car as a vehicle allowed to enter the limited area it doesn't generate any alarm.

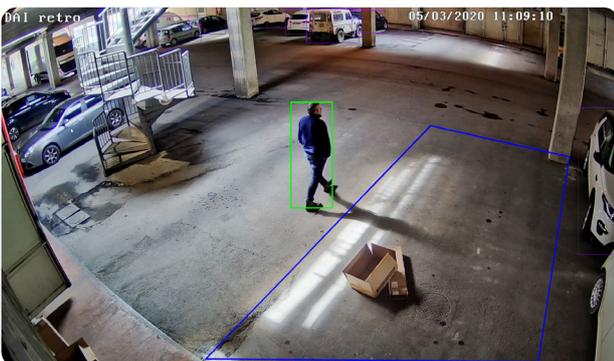
Humans  2 wheels  4 wheels



Someone enters the area drawn by the user. When the system detects and distinguishes as a human the person who is trying to climb over the fence it generates an alarm.

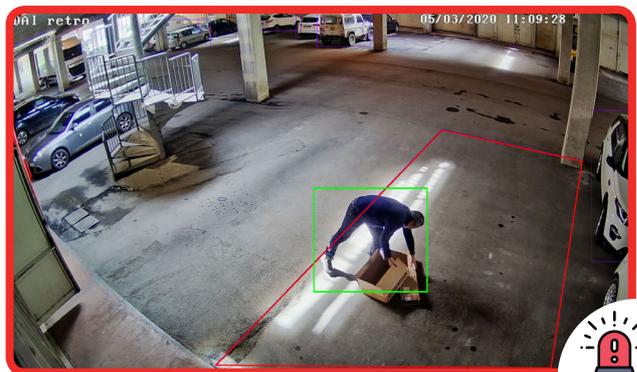
## EXAMPLE 3 - DISTINCTION BETWEEN HUMANS / VEHICLES / OBJECTS

VEHICLES AND HUMANS NOT ALLOWED



The object left within the limited area doesn't generate any alarm (no vehicles or humans are detected by the system)  
The shadow of the person enters the limited area but doesn't generate any alarm

Humans  2 wheels  4 wheels



When the system detects and distinguishes as a human the person who is entering the restricted area it generates an alarm.



This “knowledge sharing” section aim at providing simple installation and settings recommendations for Provision-ISR’s DDA Video Analytics cameras. By reading these pages you will understand the main aspects that affect the detection and recognition algorithms in order to achieve the optimal installation and the best analytics results for the following DDA functions:

- DDA - Line Crossing
- DDA - Sterile Area
- DDA - Area Entry
- DDA - Area Exit
- DDA - Object Counting

### Target size

Please, place the camera or adjust the lens zoom in order to allow the object size in the scene to meet the requirements mentioned in the table. Increasing the detection sensitivity might detect and recognize objects out of the recommended range but with a lower accuracy.

**Please note:** The mentioned proportions are referred to the screen resolution Width.

For example, if the screen is **1920x1080**, the minimum human resolution should be **80x160** ( $W = 1920 \times 4\% = 80$ ,  $H = 1920 \times 8\% = 160$ )

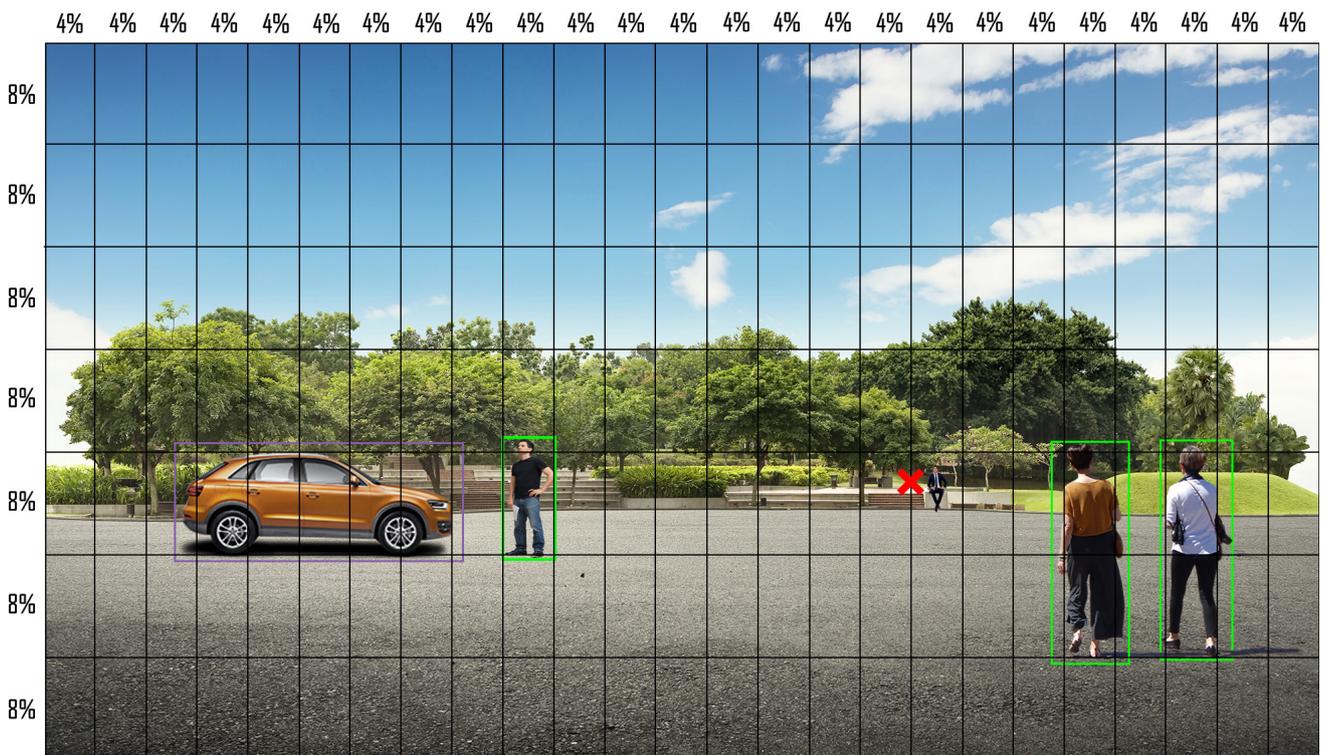
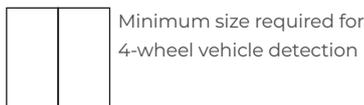
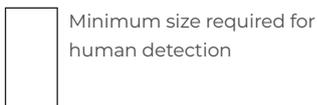
| Proportions<br>(Width x Height) | HUMAN     | 4 WHEEL VEHICLE | 2 WHEEL VEHICLE |
|---------------------------------|-----------|-----------------|-----------------|
| Minimum                         | 4% x 8%   | 8% x 8%         | 4% x 4%         |
| Maximum                         | 50% x 50% | 50% x 50%       | 50% x 50%       |

### Correct settings

The image shows different objects (humans and 4-wheel vehicles).

The objects closer to the camera (such as the car and the two women from the back) meet the minimum size requirements and are correctly detected. The further objects (such as the man in the distance) don't meet the mentioned requirements.

In this case the DDA Analytics will be “less accurate”.



## Camera angle

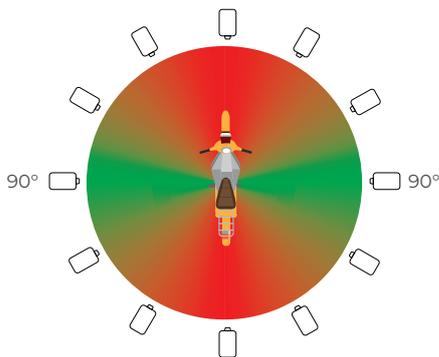
### RECOMMENDED CAMERA ANGLE FOR HUMAN DETECTION

When it comes to human detection, there is no special camera angle requirement. The upper human body must be visible to the camera.



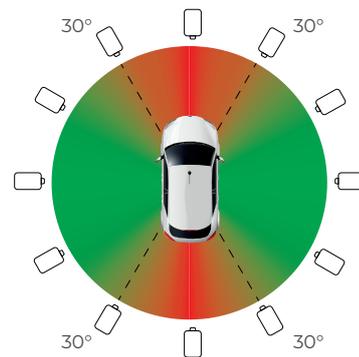
### RECOMMENDED CAMERA ANGLE FOR 2-WHEEL VEHICLE DETECTION

The optimal requirement for the correct detection and recognition of a two-wheel vehicle is the sideways view. The front / back view will cause a lower detection/recognition rate.



### RECOMMENDED CAMERA ANGLE FOR 4-WHEEL VEHICLE DETECTION

The algorithm works better in lower installation angles. The optimal camera angle is ~30°- 45° toward the detected objects. It is recommended that the object won't be head on in front of the camera but slightly sideways.



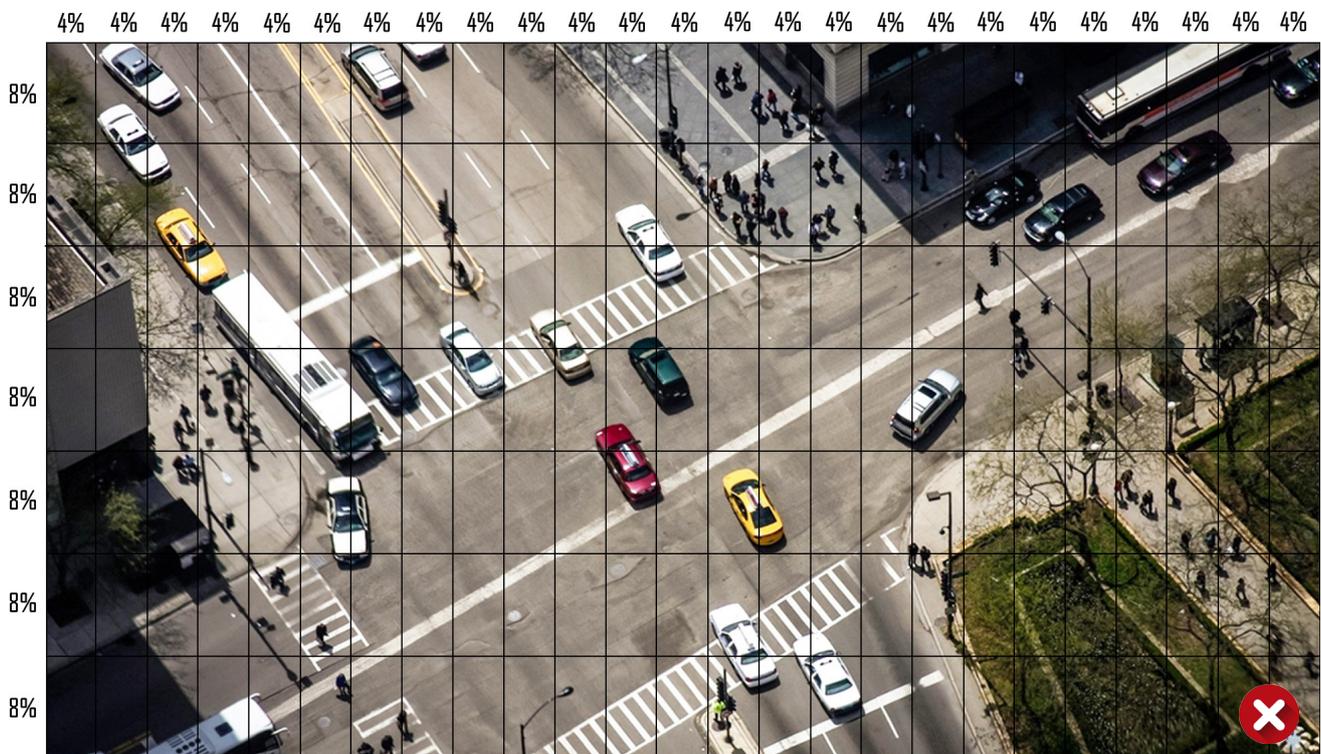
## Recommendations for the correct installation

The optimal detection / recognition range of a DDA VIDEO ANALYTICS CAMERA depends on the focal length. The table below includes recommendations for 2.8mm / 3.6mm / 12mm / 22mm focal lengths.

| LENS  | HEIGHT (M) | PEDESTRIAN, NON-MOTOR VEHICLES |                          | VEHICLES             |                          |
|-------|------------|--------------------------------|--------------------------|----------------------|--------------------------|
|       |            | Longest distance (m)           | Recommended distance (m) | Longest distance (m) | Recommended distance (m) |
| 2,8mm | 3-10       | 8                              | 4-8                      | 15                   | 10-15                    |
| 3,6mm | 3-10       | 10                             | 5-10                     | 20                   | 20-25                    |
| 12mm  | 3-10       | 25                             | 10-20                    | 35                   | 15-30                    |
| 22mm  | 3-10       | 45                             | 30-40                    | 70                   | 20-50                    |

Default Human height: 180cm  
Default Vehicle width: 180 cm

## Wrong installation example



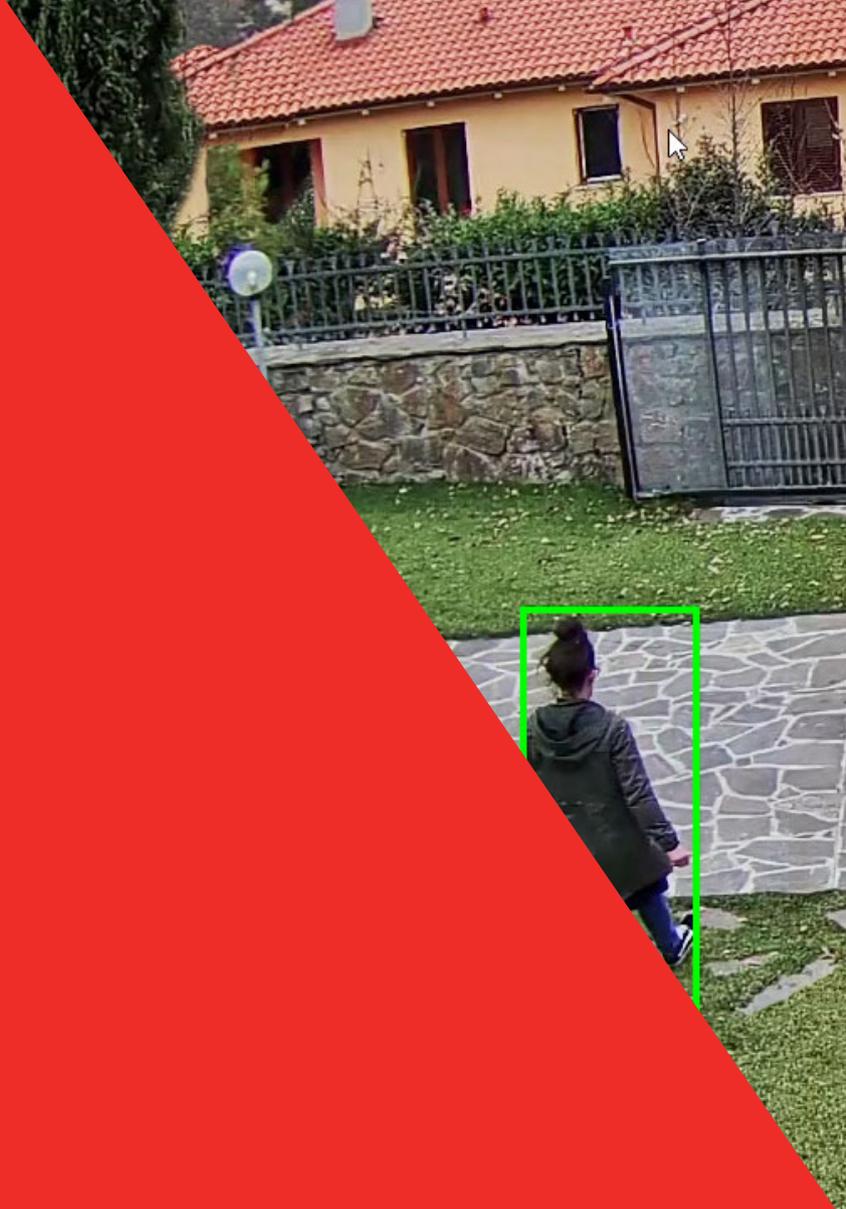
Why does the above picture show a wrong installation example?

- 1) The objects don't meet the minimum size requirement (minimum human size should be 4%x4% ; minimum vehicles size should be 8%x8%).
- 2) The camera angle is too steep (>75°): the correct angle should be ~30°-45°.



**Take a look at our YouTube channel  
to discover more about DDA Video Analytics**





## PROVISION-ISR: ISRAELI KNOW-HOW FOR A SMARTER AND SAFER WORLD.

Provision-ISR is a fast growing Israeli company founded in 2007 to meet the demand for high quality products in the medium segment of the CCTV market.

Our wide range of products includes:

- IP and HD technologies able to respond to the diversified demand of the market.
- Advanced CCTV software and APPs developed by our Israeli engineers with the aim of keeping the user experience simple and intuitive;
- A complete range of accessories specifically designed for CCTV market, making of Provision-ISR a One-Stop-Shop for all CCTV product needs.

We aim at building a smarter and safer world by giving security professionals all the tools they need to make the difference: constant training, professional and reliable technical support and effective marketing tools.

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