



HOW TO SETUP A PROTECTION PERIMETER USING A DVR

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This quick guide shows you how to set up an accurate perimeter guarding system with TrueSense DVR. All operations in the quick guide are based on new graphic user interface.

False Alarm Filter Configuration

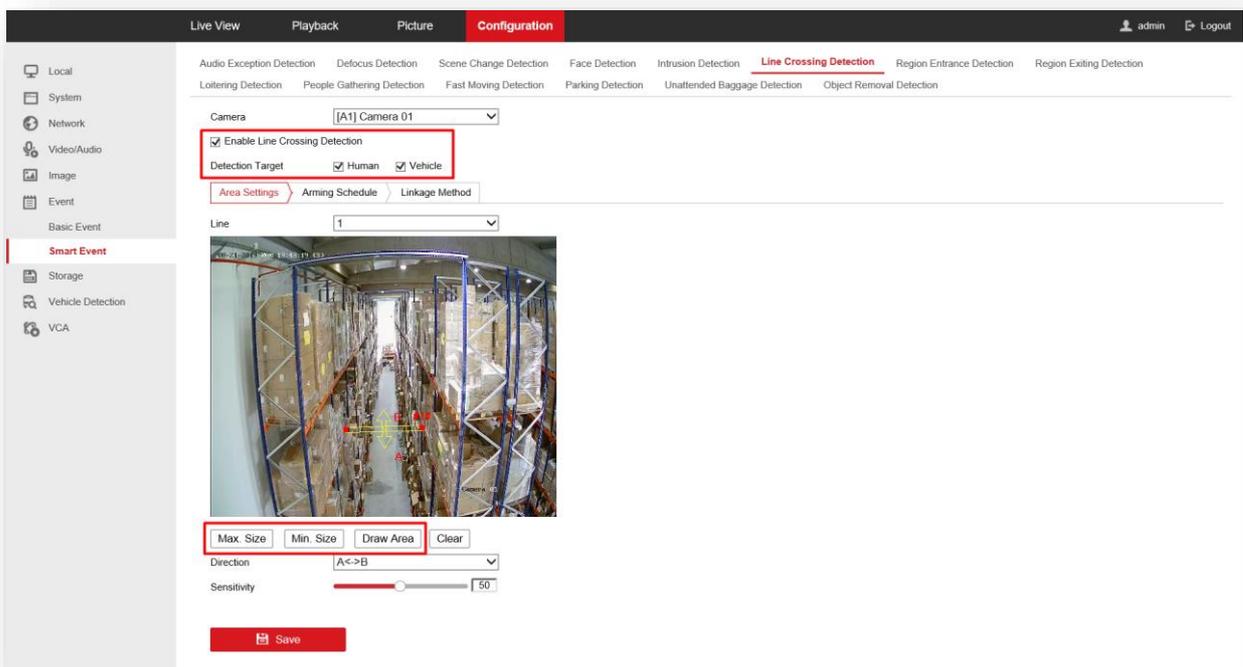
1. Go to DVR local GUI or web interface. **System / Event / Smart Event**
2. Choose and enable the event you want to detect (line crossing or region intrusion)
3. Check the target of interest.
4. Draw line or area to apply the rule.
5. Cameras can not perceive depth. in order to consider depth variations set the target size in the nearest and furthest location using Max. Size and Min. Size buttons.

If you tick '**Enable Smart Analysis**', DVR will detect event with smart algorithm and no camera smart detection function will be needed. Which is to say, DVR is able to detect smart event even if the camera doesn't support these functions

You can choose between 3 modes: **Human**, **Vehicle** or **Human& Vehicle**.

Once the target detection is enabled, DVR will filter most of the false alarms based on the deep learning algorithm automatically.

This detection mode has a higher accuracy and is recommended when there are massive false alarms from front cameras.

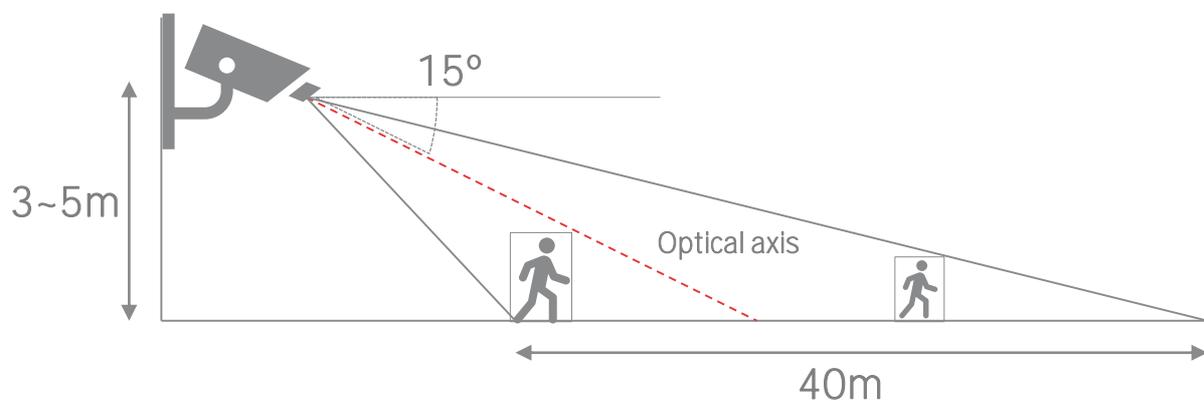


Installation Specification & Rule

In order to make the whole system more accurate, there're some mounting and rule requirements for cameras.

In this chapter, we take several typical scenarios as examples to help you setup a better perimeter system.

Camera installation



- ✓ Camera is recommended to be installed 3-5 meters high. If there is fence, the installation height must be higher than the fence.
- ✓ Angle between the optic axis and the horizontal line should be larger than 15°.
- ✓ The monitoring distance is recommended to be within 40 meters.

Rule size

The detection area should be larger than 1/4 of the image, which means the vertical rule line should longer than 1/4 of the image vertical size while the horizontal rule line should longer than 1/4 of the image horizontal size.

Target size

Avoid situations where personnel targets are too large. The target size should be between 1/16 and 1/2 of the image's vertical size. For example, the camera's resolution is 1080p, and the vertical size of the target should be between 64 to 540 pixels.



Influence factors

1) Illumination

It's easy to deduce that once the scene is too dark, camera or DVR can't detect target precisely. Lighting supplement or low light cameras is recommended in scene below.



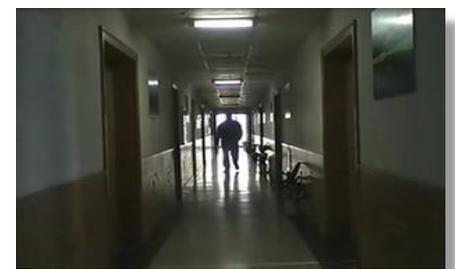
2) Obstacle

Obstacles might block the target you are really interested in. Scene in picture below is not an appropriate one for detecting.



3) Strong light

In some scenarios, strong light interference makes a target hard to be detected. Strong light generally can be divided into two kinds: **strong background light** and **strong foreground light**.



Strong background light makes foreground target totally dark, as what is shown picture below, the man in corridor looks like a shadow. WDR or BLC function is recommended in this scene.

Strong foreground light is usually generated by sudden light intensity change such as car light, flash light, sunshine reflection. We suggest customer change Camera's angle to avoid strong light or use cameras with HLC function.

4) Complex scene

We suggest customer use perimeter guarding alarm to detect human who is not supposed to enter a region or cross a line, so it's not applicable in a scenario such as train station with large people flow.



The scene below has too many people and a vast number of alarms will be created, it's not a recommended scene for false alarm detection.

5) Detection rule

In addition to installation guide, appropriate rule is also a critical part in perimeter guarding system.

Here's an example, customer wants to detect man who walks across the door on the left side.



However, the rule is too near to the edge. Once a man appears in the scene, there's not enough time for DVR or Camera to detect. We highly recommended customer set detection rule in the center of the scene, or not near the scene's edge.

6) Rule position

Although AcuSense DVR is able to filter false alarms created by leaves, animals etc., it is highly recommended to set rule in a static field/environment.



One customer sets line crossing rule on grass in a scene below, grass continuously makes false alarms which occupy DVR smart resource and storage space.

7) Focal length

If the focal length is too small, the target will be too small to detect as shown in the following figure, which may cause missed detection. So we need to select the proper focal length to avoid missed detection according to the scene.



Standard scenario



Camera selection

If customer wants to use smart detection in an indoor environment, camera with WDR and wide FOV is recommended.

In some outdoor scenarios, bullet camera is a better choice than dome camera. Some raindrops might be stuck to the surface of dome camera, with raindrops accumulated, it decreases accuracy of smart detection.

