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AI People Flow Control Configuration Guide

1. Introduction

With the combination of DeepinMind NVR and people counting camera, it can realize people flow control. The DeepinMind NVR must be upgraded to the special version, and need to be restored after upgrading.

Product Showcase:

Product	Product Model	Note
People counting camera	DS-2CD6825G0/C-I(S)	Baseline version
	DS-2CD6845G0/C-I(S)	
	iDS-2CD6810F/C	
	iDS 7series Face Counting Camera	
Conventional camera (without people counting ability)	Conventional camera (without people counting ability) Some models of camera which support counting / people counting / face people counting ability cannot enable people counting by DeepinMind NVR.	Baseline version
DeepinMind NVR	iDS-9616(/32/64)NXI-I8/X(B)(T)	Please upgraded to the special firmware version
	iDS-7716(/32)NXI-I4/X(B)(T)	
	iDS-6708-I/8F(B)(T)	

Firmware download:

For DeepinMind NVR:

<ftp://hikftp.hikvision.com:400/01 All Materials of Temperature Screening Solution/02 DeepinMind NVR/05 Firmware/DeepinMind NVR/>

For Thermal Camera:

<ftp://hikftp.hikvision.com:400/01 All Materials of Temperature Screening Solution/02 DeepinMind NVR/05 Firmware/Thermal Camera/>

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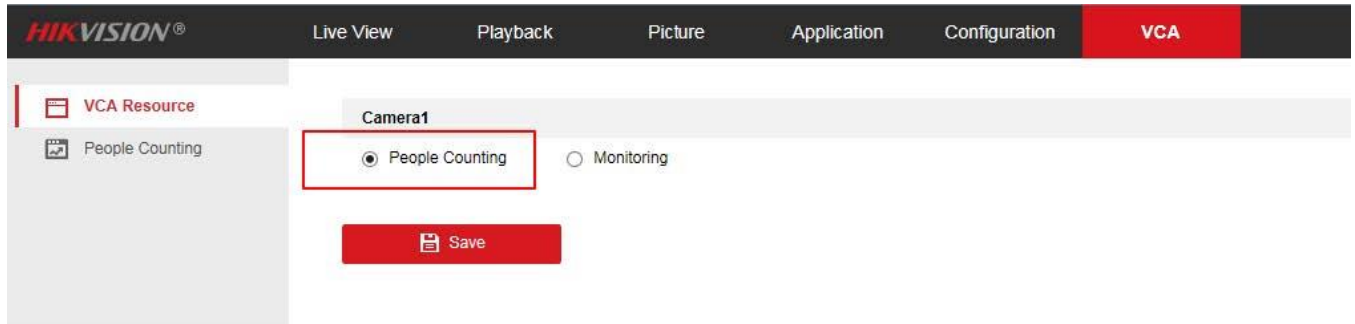
2. Solution



3. Configuration Steps

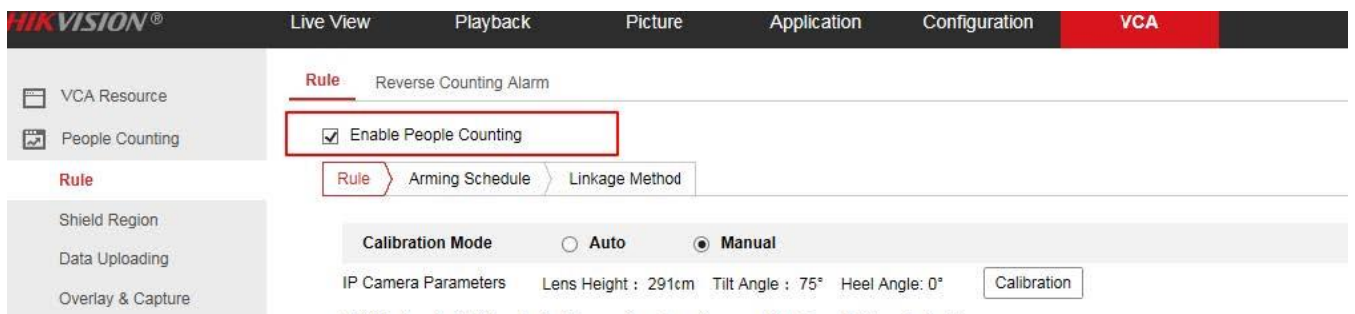
3.1. People counting rule configuration (Taking Dual-lens 6825 for example)

3.1.1 Select VCA Resource



3.1.2 Rule configuration

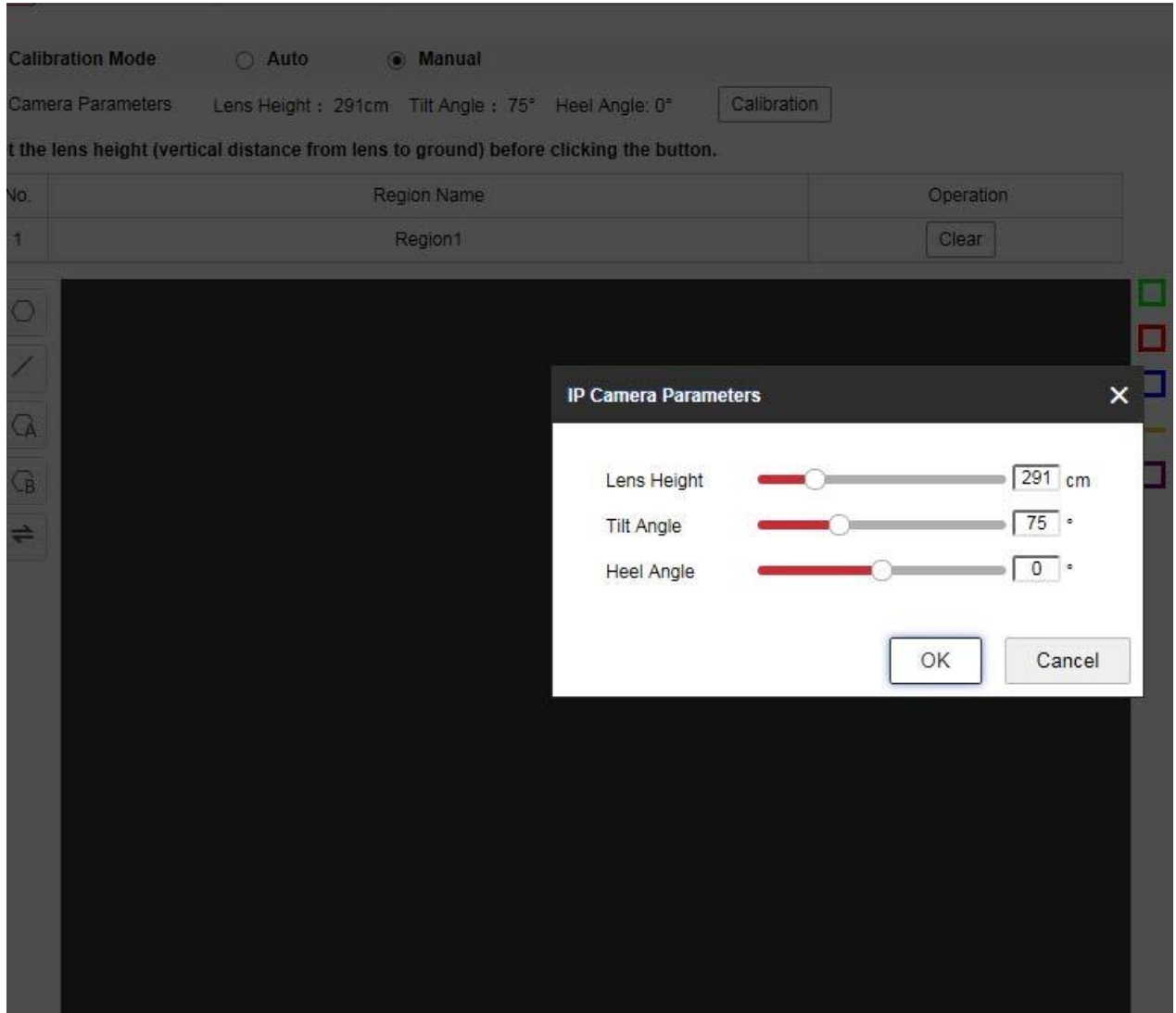
Step 1: Enter **【VCA】 - 【People Counting】**, check “Enable People Counting”



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Step 2: Select the calibration mode: Manual and Auto are selectable.

Manual Calibration Mode: Input the Lens height (the height from Entry/Exit area to the camera), Tilt Angle and Heel Angle manually, then click “Calibrate”, A red detection area will automatically appear in the image. The red area is for counting. To increase the success rate of the manual calibration, make sure the lens height is the true value in vertical direction between the lens and the ground.



Auto Calibration Mode: It will generate the lens height and a green calibration area automatically. The calibration area is used for calibrating the height from the ground to lens. So we strongly recommend to select the totally ground part as calibration area.

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Calibration Mode Auto Manual

IP Camera Parameters Lens Height : 292cm Tilt Angle : 76° Heel Angle: 2°

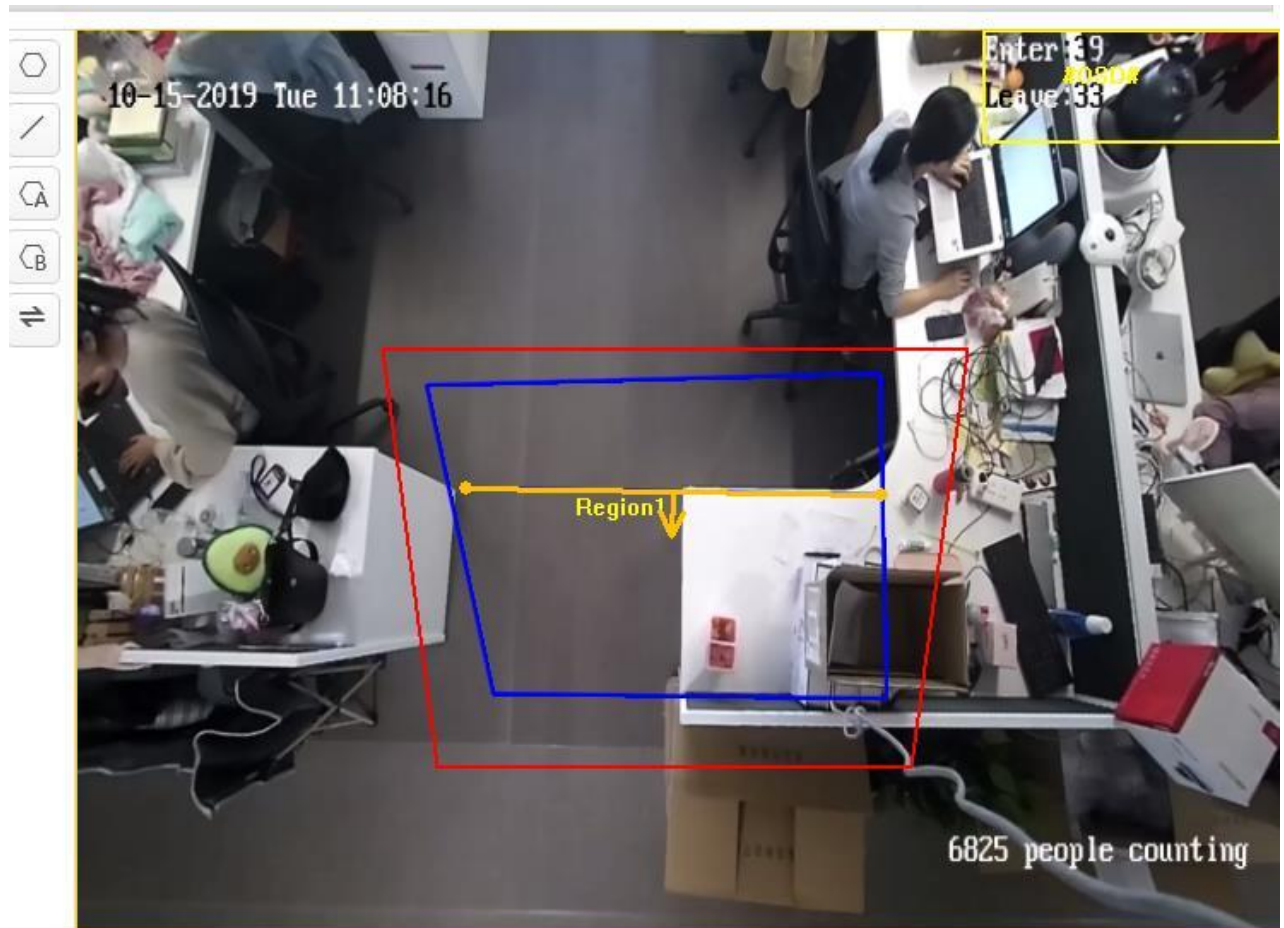
Make sure that the green calibration area is level ground before clicking the button.

No.	Region Name	Operation
1	Region1	<input type="button" value="Clear"/>

Step 3: Draw the region (shown as the blue frame in the below picture)

NOTE: The rule frame should be within red counting frame.

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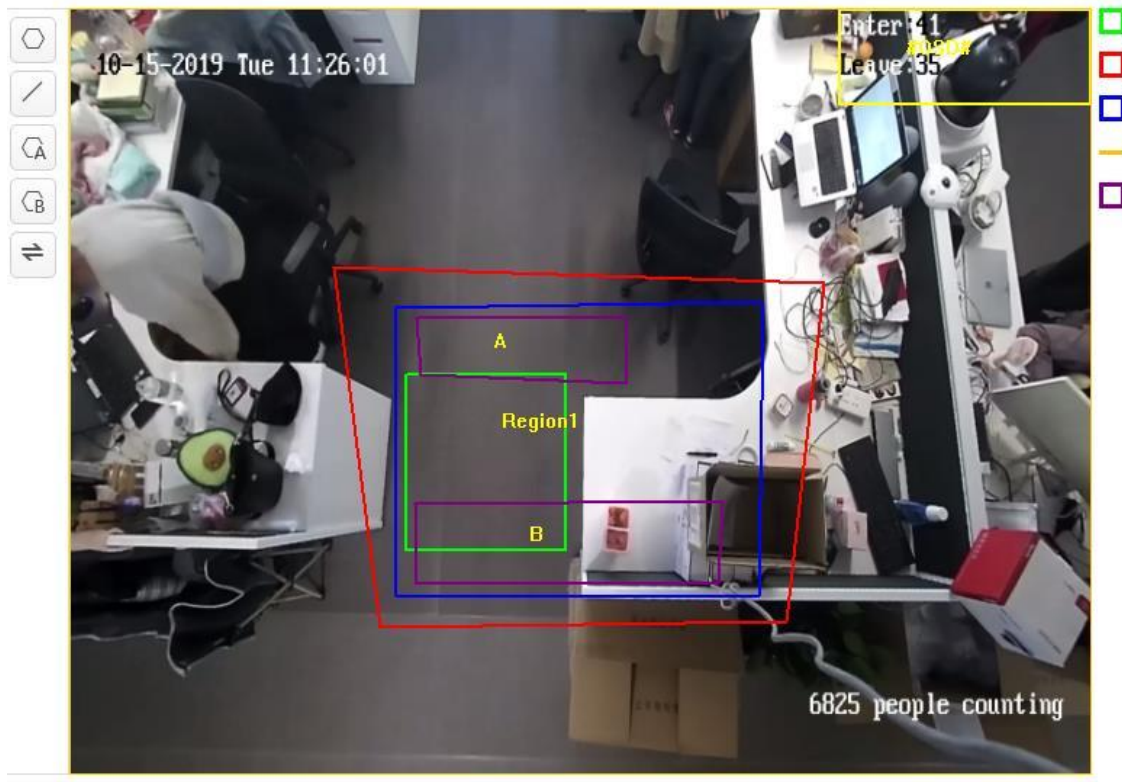
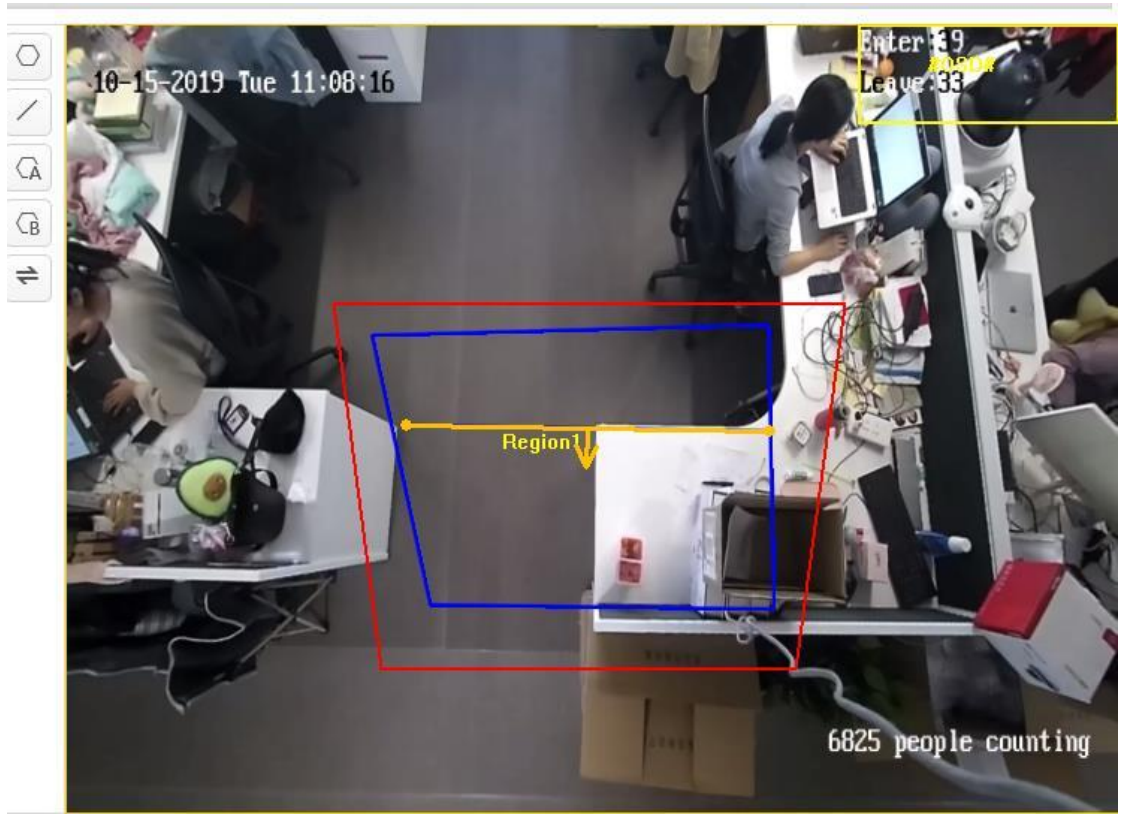


Step 4: Draw detection line (the yellow line as shown in the below picture) or detection region.

Detection Line: the yellow line should be within the blue detection region.

Detection Region: Draw A and B region. Make sure the two areas don't overlap. If the target enters from A region to B region, then it is counted as the entering number; If the target enters from B region to A region, then it is counted as the exiting number.

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Step 5: Save it after finishing the configuration. Set the Arming schedule and linkage method.

The screenshot shows a configuration interface with three tabs: 'Rule', 'Arming Schedule', and 'Linkage Method'. The 'Arming Schedule' tab is active, displaying a weekly schedule grid. The grid has columns for hours from 0 to 24 in increments of 2, and rows for days of the week (Mon-Sun). All cells in the grid are filled with a solid blue color, indicating that the arming schedule is set to be active 24 hours a day, every day. Below the grid are two buttons: 'Delete' (with a red 'X' icon) and 'Delete All' (with a trash can icon). Below the grid is another set of tabs: 'Rule', 'Arming Schedule', and 'Linkage Method'. The 'Linkage Method' tab is active, showing two checked options: 'Normal Linkage' and 'Notify Surveillance Center'.

3.1.3 Reverse Counting Alarm

Set reverse counting alarm (optional). Check Enable Reverse Entering Alarm to enable the function. An alarm is enabled when the target leaves the region. Set the arming schedule and linkage method.

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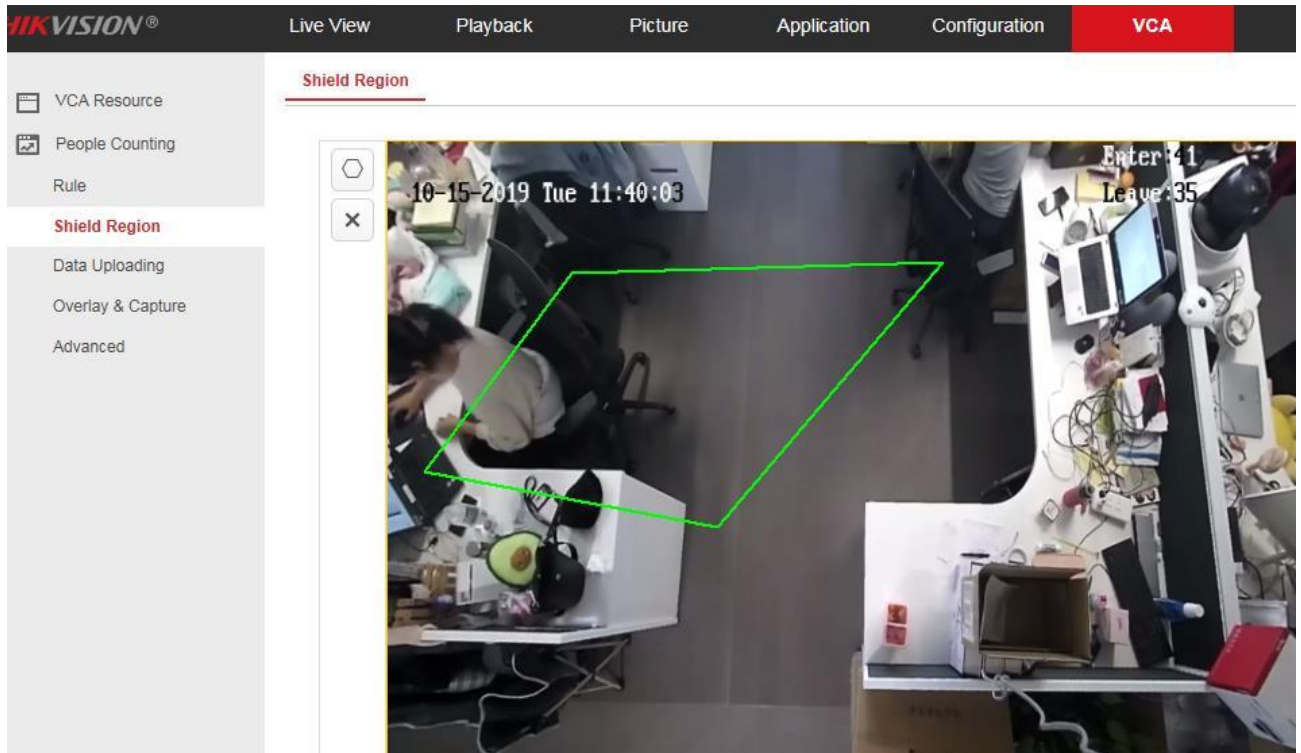
The screenshot displays the configuration page for a 'Reverse Counting Alarm' rule. The interface includes a navigation menu on the left with options like 'VCA Resource', 'People Counting', 'Shield Region', 'Data Uploading', 'Overlay & Capture', and 'Advanced'. The main content area shows the rule configuration with the following elements:

- Rule Name:** Reverse Counting Alarm
- Enable Reverse Entering Alarm:**
- Arming Schedule:** A 24-hour schedule grid where all hours (0-24) are marked as active for every day of the week (Mon-Sun).
- Linkage Method:**
 - Normal Linkage
 - Trigger Alarm Output
 - Notify Surveillance Center
 - A->1

3.1.4 Shield Region

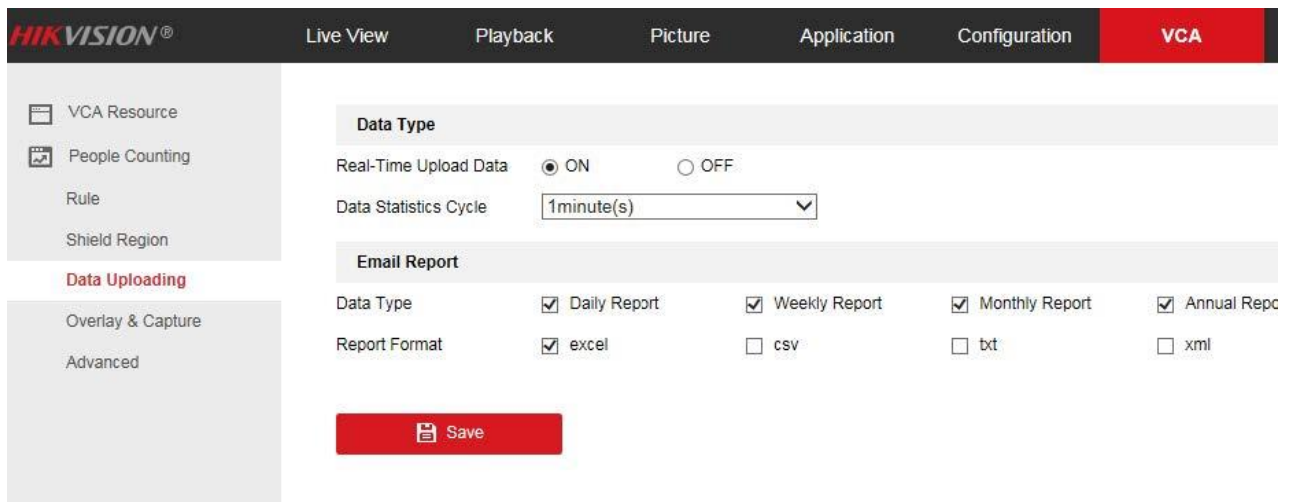
If you don't want to count people of the specific area, you can draw the area as shield region.

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3.1.5 Data Uploading

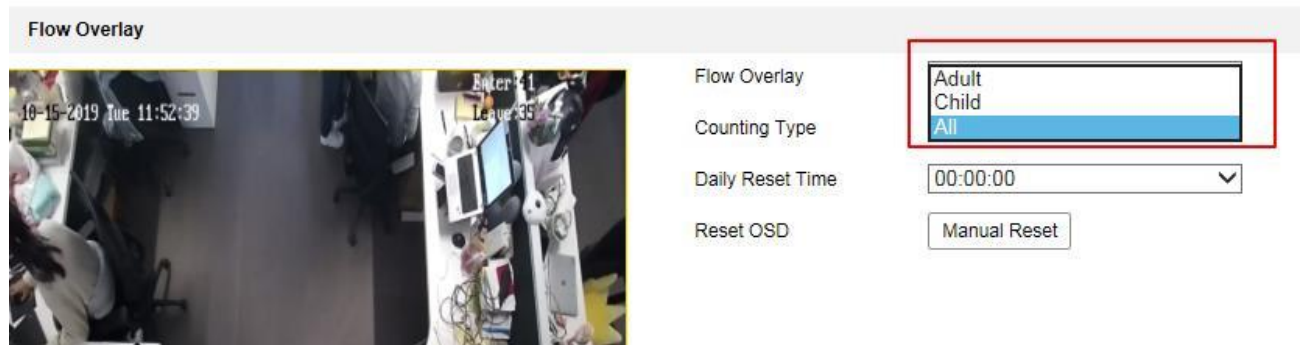
- 1) Enter **【VCA】 - 【People Counting】 - 【Data Uploading】**
- 2) If you want to upload the real-time data to the platform, select real-time Upload Data as “ON”.
- 3) If you want to adjust the statistic cycle manually, set data statistics data as required.
1/5/10/15/20/30/60 minutes are optional.
- 4) We can send the report via email, the data type includes Daily/Weekly/Monthly/Annual report.
The report format includes excel/csv/txt/xml.



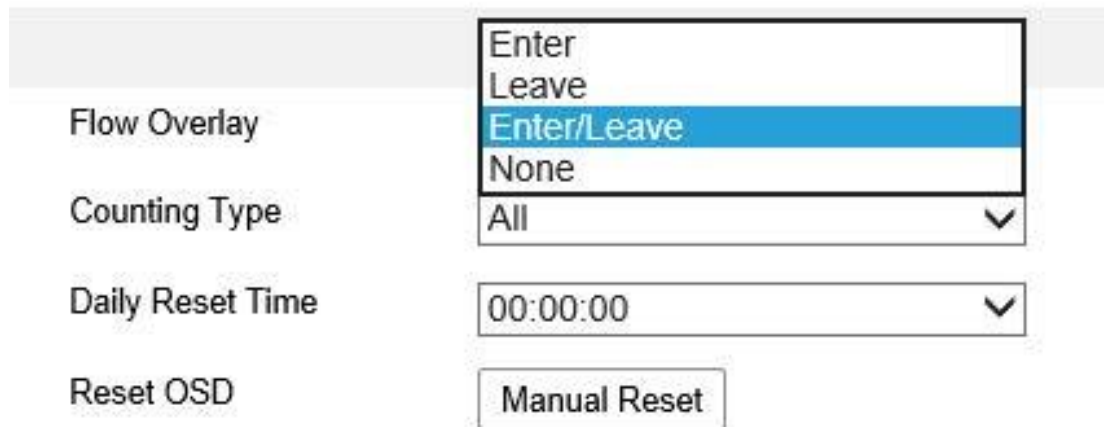
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3.1.6 Overlay & Capture

- 1) **OSD Overlay:** It supports display the real-time counting information in the live view image. Enter, Leave, Enter/Leave and None are optional.
- 2) **Counting Type:** Adult, Child and All are optional.



- 3) **Daily Reset Time/Rest OSD:** To reset the counter, you can set up a daily reset time. Or you can reset the OSD counter manually by click Manual Reset.



- 4) **Display VCA Info. on Stream:** It will display the ID number and height information of tracking people on stream after enabling it. The recording file will overlay these information and it can be checked via VS Player. It should enable the function of Display POS Information in the below path: **【configuration】** - **【Local】** if we want to see these information in the live view image.

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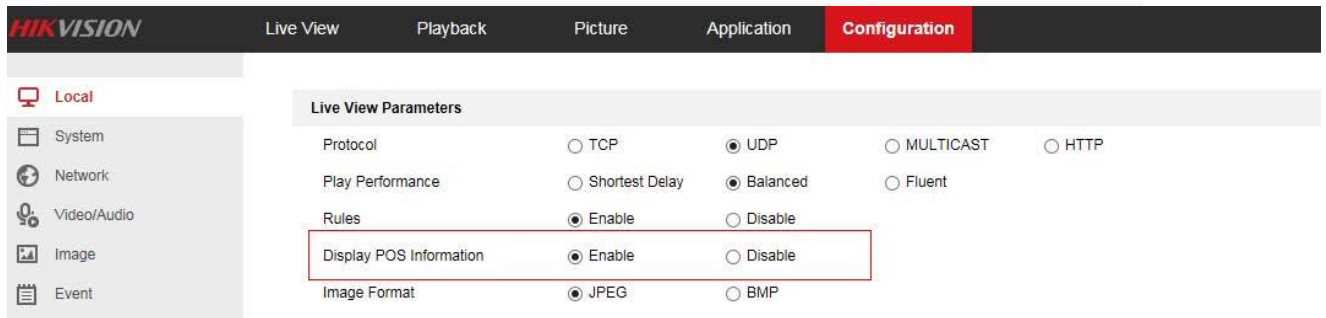
Display on Stream

Display VCA Info. on Stream

Display on Picture

Display Target Info. on Alarm Picture

Display Rule Info. on Alarm Picture



3.1.7 Advanced Parameter

- 1) **Height Filter:** Enable the function and set a height value. Persons and objects shorter than the set value are not counted as a valid target. Also this camera support counting Children.

Enable Height Filter

Height  120 cm

Enable Counting Children

Height  140 cm

- 2) **Target Detection Type/Algorithm Validity:**

There are four type of target detection: Detect based on the tracking algorithm only; Depth map only; Tracking algorithm mainly and depth map secondarily; and depth map mainly and tracking algorithm secondarily. It is recommended to use default type.

Algorithm Validity: The bigger the numerical value, the stricter the object detection requirements are. It is recommended to use default values.

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Target Detection Type

Algorithm Validity

- 3) **Pattern Counting Filtering:** Targets less than the set value of motion displacement and residence time are not counted. It is recommended to use default values.

Enable Pattern Counting Filtering

Motion Displacement cm

Dwell Time s

- 4) **Counting Status:** It displays the current status of the camera. There are three types optional: Counting, Stopped, Pause counting. You can click Refresh button to refresh the status.

Counting: Count normally.

Stopped: Disable people counting function.

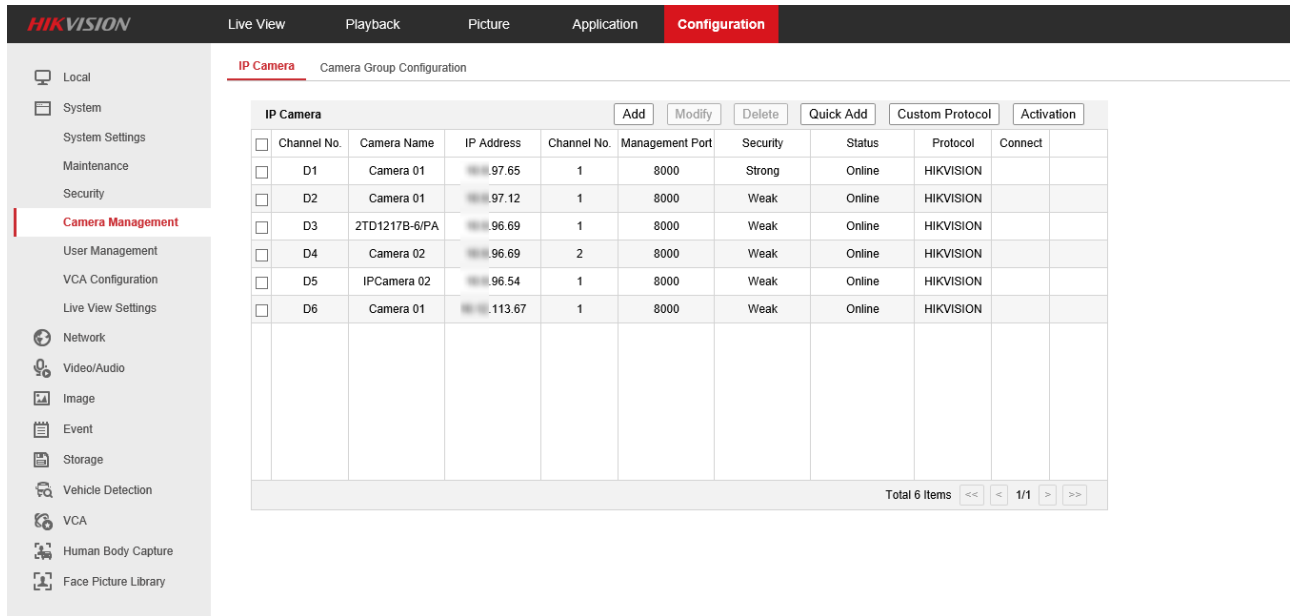
Pause counting: The scene is too dark.

- 5) **Clear Storage Data:** To clear stored data on camera, you can click the Clear button. Always do the operation with caution. Deleted data cannot be restored.
- 6) **One-touch Export:** Export the device hardware settings, installation settings, people counting settings, rule settings and advanced settings.
- 7) **Maintenance Mode:** If the function is enabled, certain camera settings will be changed, such as the resolution, frame rate and bit rate. When we need collect the video clip for the issue analyse, it is necessary to enable the maintenance mode.

Counting Status	Stopped(2019-10-15 14:11:21)	<input type="button" value="Refresh"/>
Clear Storage Data	<input type="button" value="Clear"/>	Note: This action clears all counting data stored in the camera.
One-touch Export	<input type="button" value="Export"/>	Export the device hardware settings, installation settings, people counting settings, rule settings and advanced settings.
Maintenance Mode	<input type="button" value="Enable"/>	Certain video settings has already been changed. To restore the settings, disable Maintenance Mode.

3.1.8 Complete the camera configuration, add camera to NVR.

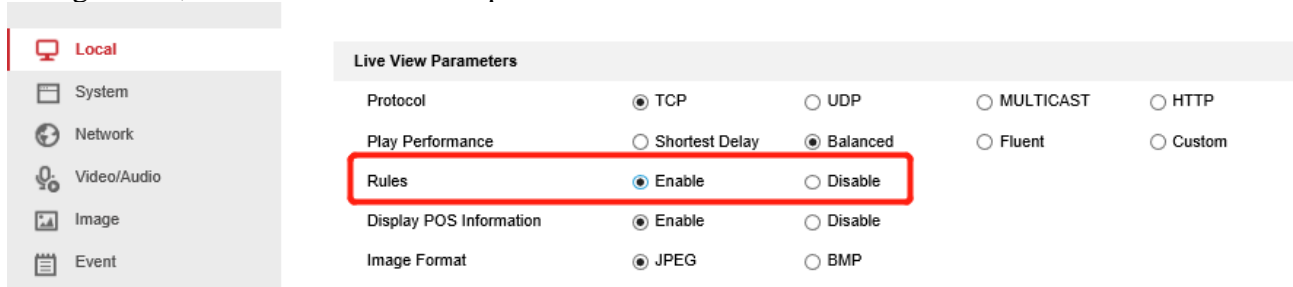
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3.2. People counting rule configuration (iDS 7series Face Counting Camera)

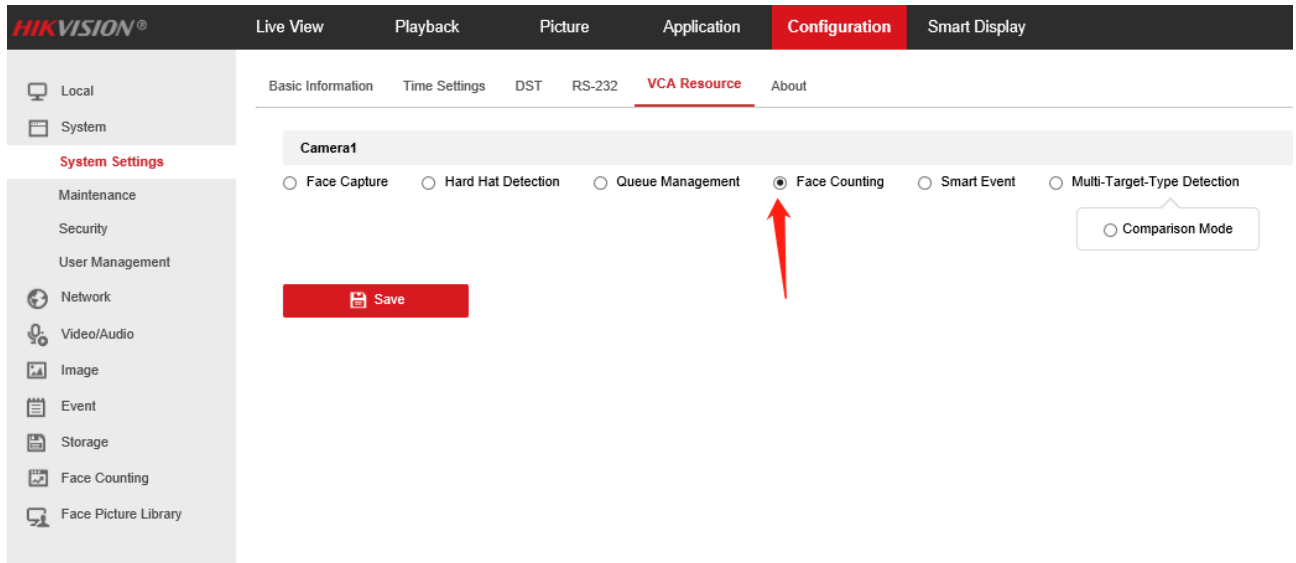
3.2.1 Configure the parameter via IE browser

Step 1: Enter [configuration]-[local], Enable [Rules]. Then Click “Save” when finishing the configuration, as shown in the below picture

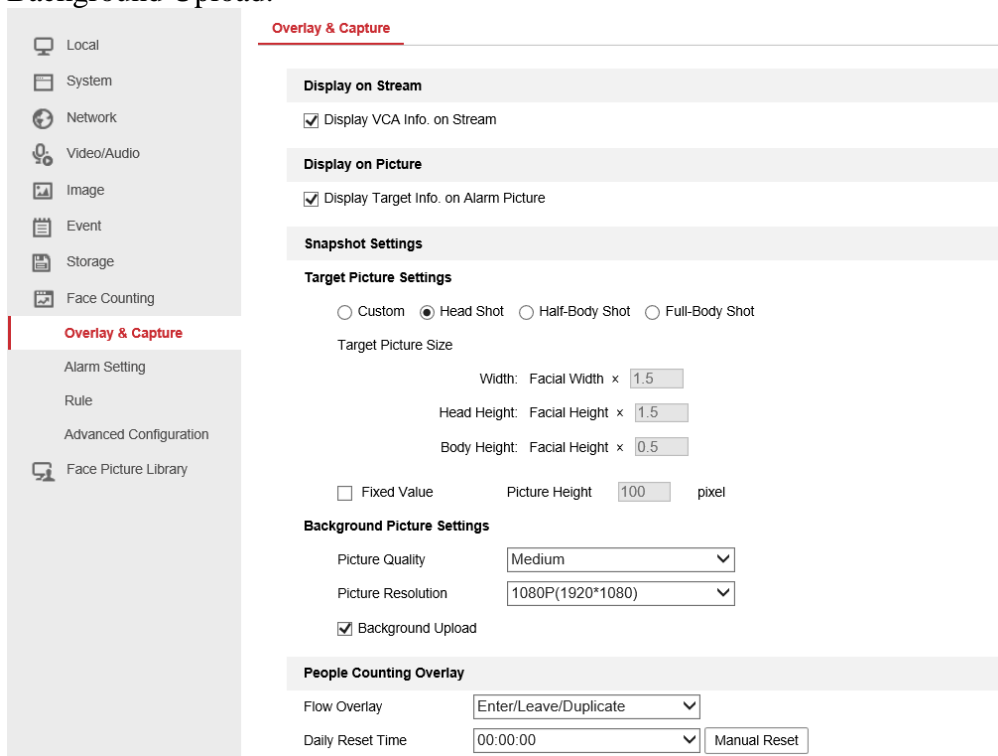


Step 2: Go to [System]-[System Settings]-[VCA Resource]. If the VCA resource is not Face Counting mode, switch to Face Counting mode. Switch VCA resource will take effect after reboot.

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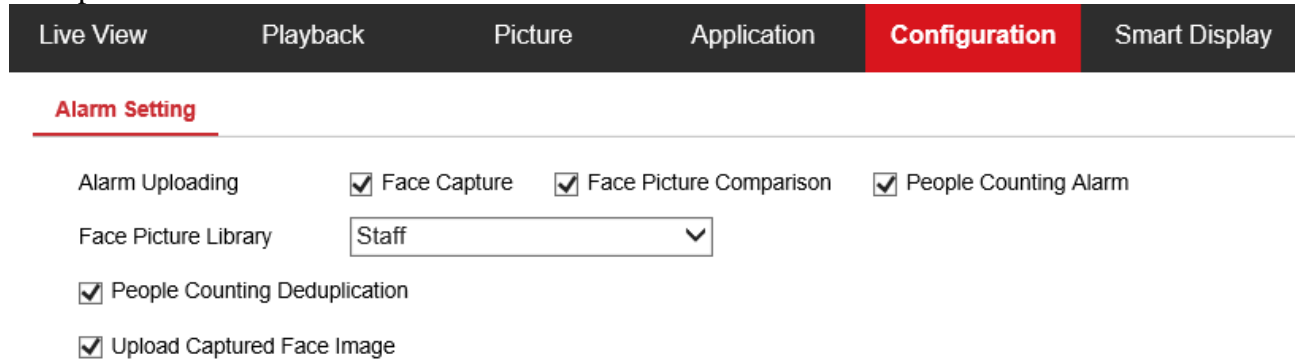
Step 3: Go to [Face Counting]-[Overlay & Capture] – [Background Picture Settings]. Enable Background Upload.



Step 4: Go to [Face Counting]-[Alarm Setting]-[Alarm Uploading]. Enable the People Counting Alarm. Enable the other alarms if you want.

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Step 5: Go to [Face Counting]-[Alarm Setting]-[Face Picture Library]. Select the target face picture library that you want to remove directly from face counting. Then enable the People Counting Deduplication.



Live View Playback Picture Application **Configuration** Smart Display

Alarm Setting

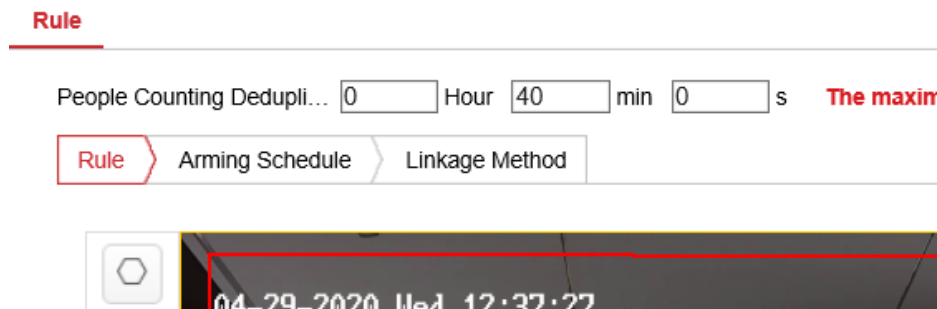
Alarm Uploading Face Capture Face Picture Comparison People Counting Alarm

Face Picture Library

People Counting Deduplication

Upload Captured Face Image

Step 6: Go to [Face Counting] – [Rule]. Adjust People Counting Deduplication time as the scenario needs.



Rule

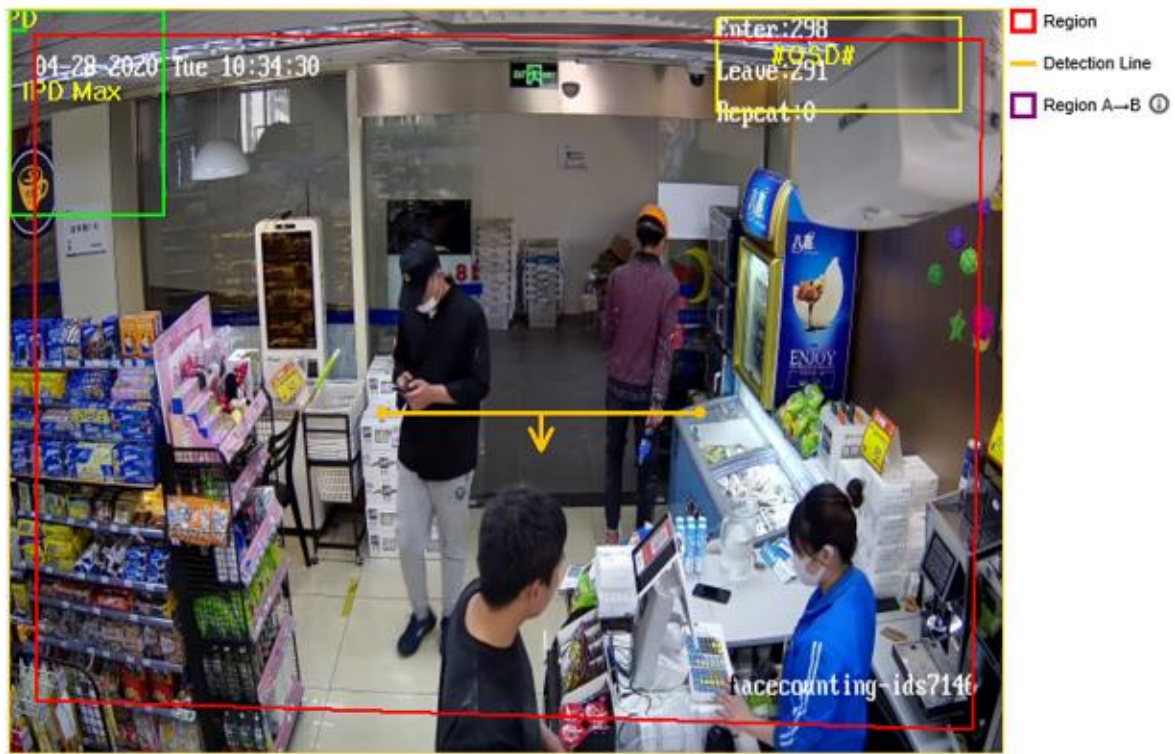
People Counting Dedupli... Hour min s **The maxim**

Rule Arming Schedule Linkage Method

04-29-2020 Wed 12:37:27

Step 7: Draw the rules and read the descriptions below.

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 Save

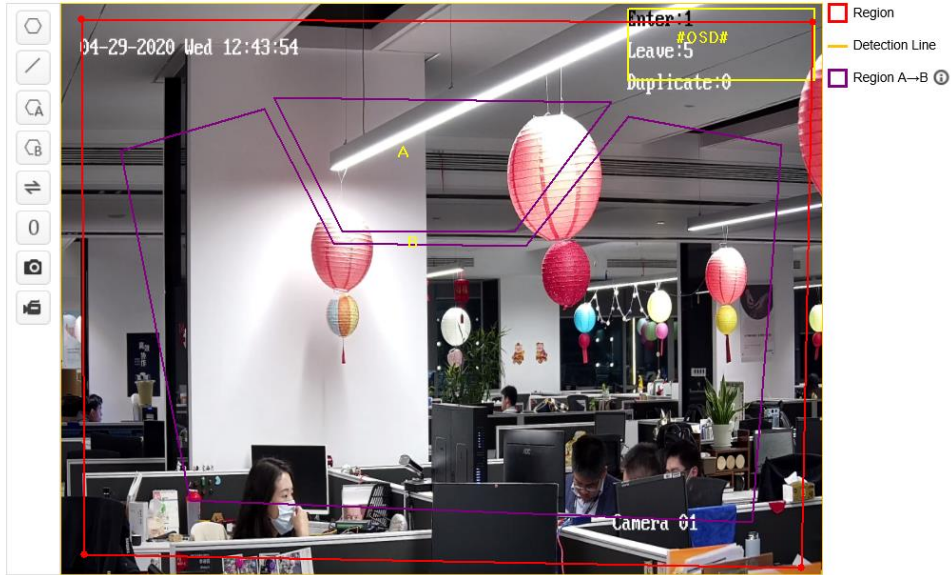
In the detection scene, there may be situations where the target side enters the scene without passing through the trigger line. The detection method of area A and B can solve this problem.

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Rule

People Counting Dedupli... Hour min s The maximum people counting deduplication time can be set to 23h59min59s.

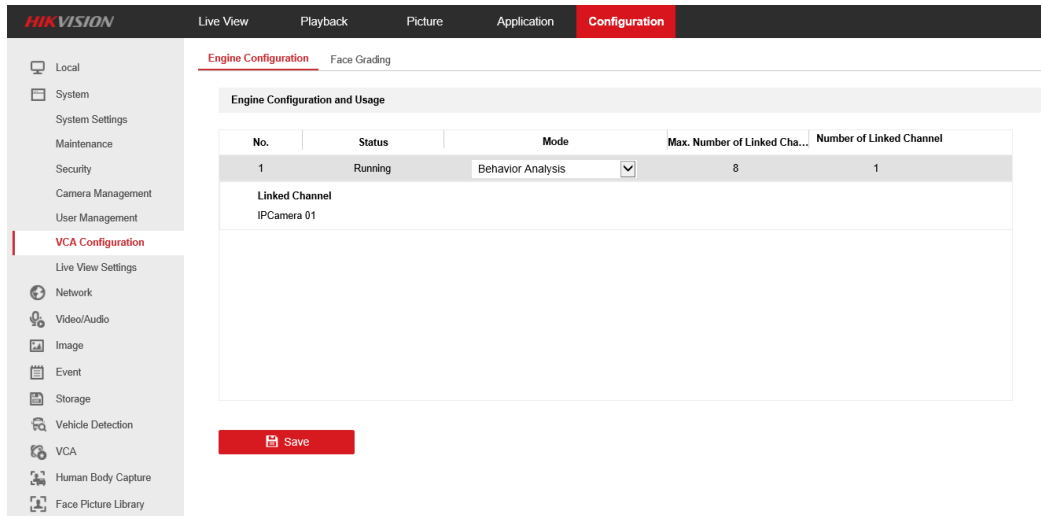
Rule > Arming Schedule > Linkage Method



3.3. Conventional camera people counting rule configuration

3.3.1 Select VCA engine mode

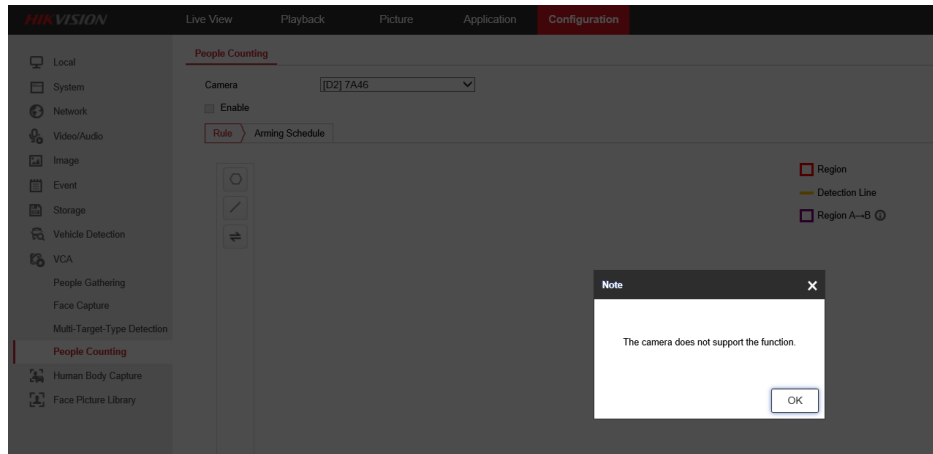
Select “Behavior Analysis” engine mode in **【VCA configuration】** → **【Engine Configuration】**



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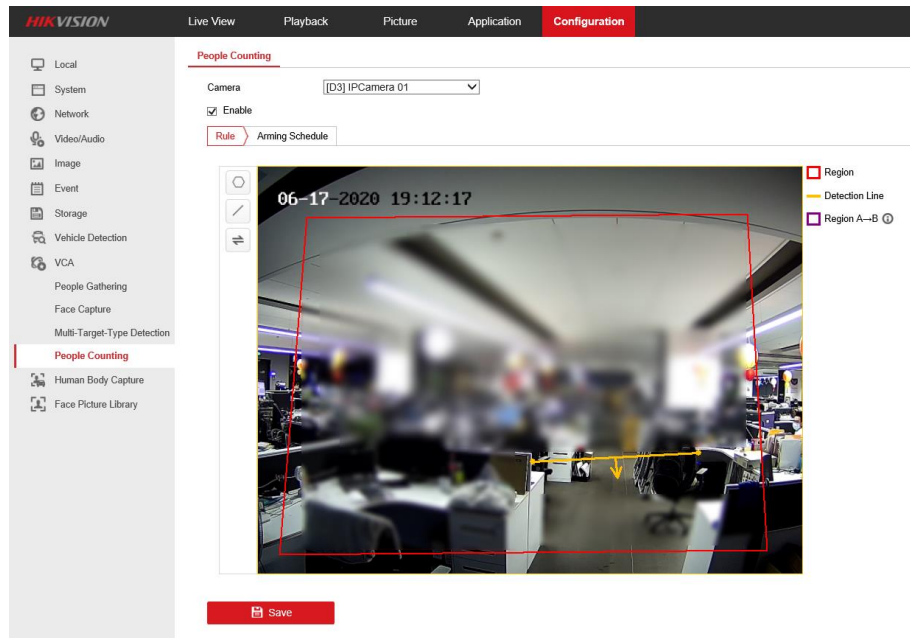
3.3.2 Enable people counting ability

Some models of camera which support counting ability **cannot** enable people counting by DeepinMind NVR.



3.3.3 People counting rule configuration

Step 1 :Draw the region (shown as the red frame in the below picture)



Step 2: Draw detection line (the yellow line as shown in the above picture)

Detection Line: the yellow line should be within the red detection region.

Detection Region: Cannot enable in this solution

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Step 3: Save it after finishing the configuration. Set the Arming schedule.

The screenshot shows the 'People Counting' configuration page in the Hikvision NVR GUI. The 'Configuration' tab is selected. The 'Camera' dropdown is set to '[D3] IPCamera 01'. The 'Enable' checkbox is checked. The 'Rule' is set to 'Arming Schedule'. Below this, there are 'Delete' and 'Delete All' buttons. The main area displays a weekly arming schedule grid. The grid has days of the week (Mon-Sun) on the y-axis and hours (0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24) on the x-axis. Blue bars indicate the arming schedule for each day. A 'Save' button is located at the bottom of the configuration area.

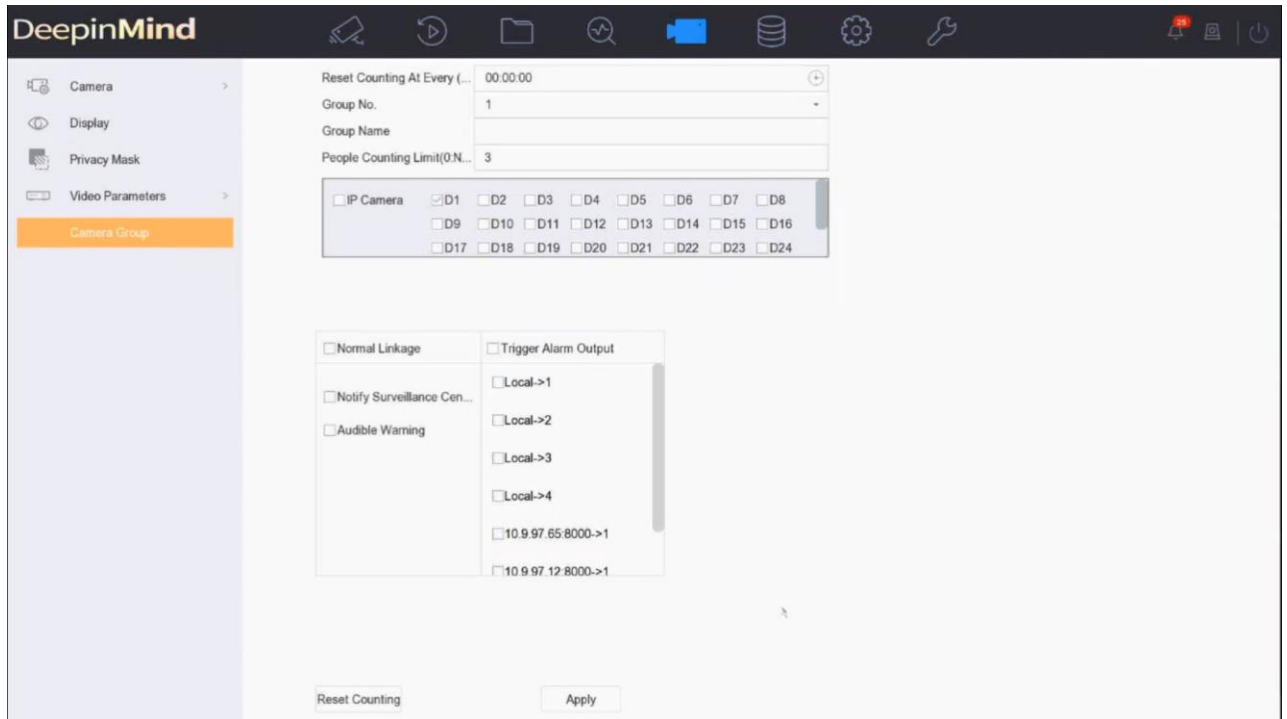
3.4. People Flow Control Configuration

Go to NVR's local GUI, Camera → Camera Group, select the people counting camera you want to control people flow.

People Counting Limit is set for maximum number of people entering the area.

If you select more than one camera in a camera group, the people counting limit will be the sum of all cameras you selected.


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Click “Apply” to make the configuration effective.

4. GUI application

4.1. People flow control

Click  button on left bottom of live view, go to “ATTENTION” interface. It shows how many people already inside and how many can still enter.

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If the number of people in the area exceeds the set “People Counting Limit”, the interface will turn red and trigger an alarm.



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5. AI People Gathering Alarm Configuration Guide

5.1. Introduction

With the combination of DeepinMind NVR and camera, it can realize people gathering alarm .

If you want density control solution via people counting camera alone, please refer to FTP /Product File(Overseas)/01 All Materials of Temperature Screening Solution/07 People Flow Control/04 How to/People Flow Control

5.2. Configuration Steps

5.2.1 Select VCA engine mode

Select “Behavior Analysis” engine mode in **【VCA configuration】** → **【Engine Configuration】**

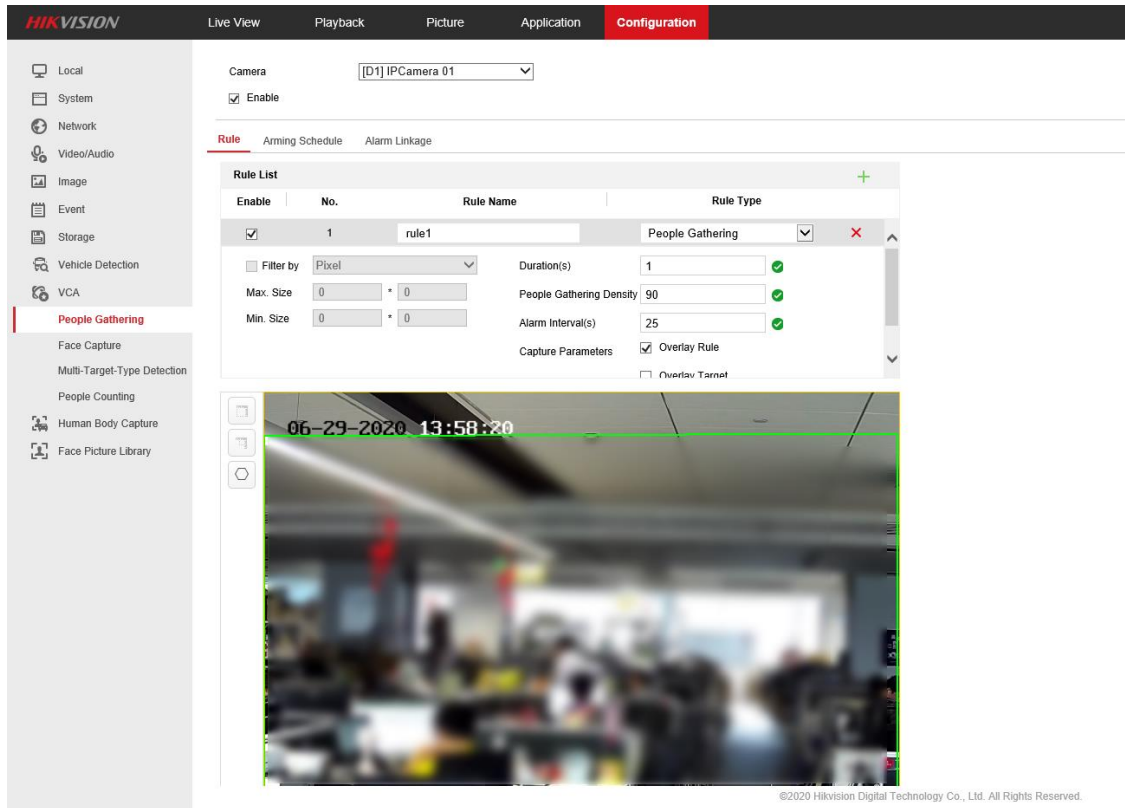
The screenshot shows the Hikvision web interface with the 'Configuration' menu selected. The 'VCA Configuration' section is active, displaying the 'Engine Configuration and Usage' table. The table has the following data:

No.	Status	Mode	Max. Number of Linked Cha...	Number of Linked Channel
1	Running	Behavior Analysis	8	1

Below the table, the 'Linked Channel' is listed as 'IPCamera 01'. A red 'Save' button is located at the bottom of the configuration area.

5.2.2 Enable people gathering ability

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5.2.3 People gathering alarm configuration

Step 1 : Click “+” button ,you can add a rule. Only one rule can be added.

Step 2 : Draw the region (shown as the green frame in the below picture).

Step 3 : Set the parameters

Duration(seconds): People gathering duration.

People Gathering Density: Algorithm sensitivity.The larger this parameter is, the easier it is to trigger an alarm .We recommend setting it as default 90.

Alarm Interval: Alarm Interval time

Number of People Threshold:if the number of people in the detection area exceeds the threshold ,it will trigger an alarm.

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The screenshot displays the Hikvision configuration interface for 'People Gathering' detection. The interface is divided into a sidebar and a main configuration area. The sidebar on the left contains navigation options: Local, System, Network, Video/Audio, Image, Event, Storage, Vehicle Detection, and VCA. The 'People Gathering' section is highlighted in red. Below this, there are sub-options: Face Capture, Multi-Target-Type Detection, People Counting, Human Body Capture, and Face Picture Library. The main configuration area shows the camera selected as 'IPCamera 01' and the 'Enable' checkbox checked. Below this, there are tabs for 'Rule', 'Arming Schedule', and 'Alarm Linkage'. The 'Rule List' table shows a single rule with the following parameters:

Enable	No.	Rule Name	Rule Type
<input checked="" type="checkbox"/>	0	People Gathering Density	90
<input checked="" type="checkbox"/>	0	Alarm Interval(s)	25
		Capture Parameters	<input checked="" type="checkbox"/> Overlay Rule <input type="checkbox"/> Overlay Target
		Number of People Thre...	2

At the bottom of the configuration area, there is a video preview window showing a blurred crowd of people. A green bounding box is overlaid on the crowd, and a timestamp '06-30-2020 10:11:04' is displayed in the top left corner of the video. The copyright notice '©2020 Hikvision Digital Technology Co., Ltd.' is visible at the bottom right of the video preview.

5.2.4 Arming schedule configuration

Setting the arming schedule.

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Camera: [D1] IPCamera 01

Enable

Rule: **Arming Schedule** Alarm Linkage

No.	Rule Name	Rule Type
1	rule1	People Gathering

× Delete 🗑️ Delete All

Mon: 0 2 4 6 8 10 12 14 16 18 20 22 24

Tue: 0 2 4 6 8 10 12 14 16 18 20 22 24

Wed: 0 2 4 6 8 10 12 14 16 18 20 22 24

Thu: 0 2 4 6 8 10 12 14 16 18 20 22 24

Fri: 0 2 4 6 8 10 12 14 16 18 20 22 24

Sat: 0 2 4 6 8 10 12 14 16 18 20 22 24

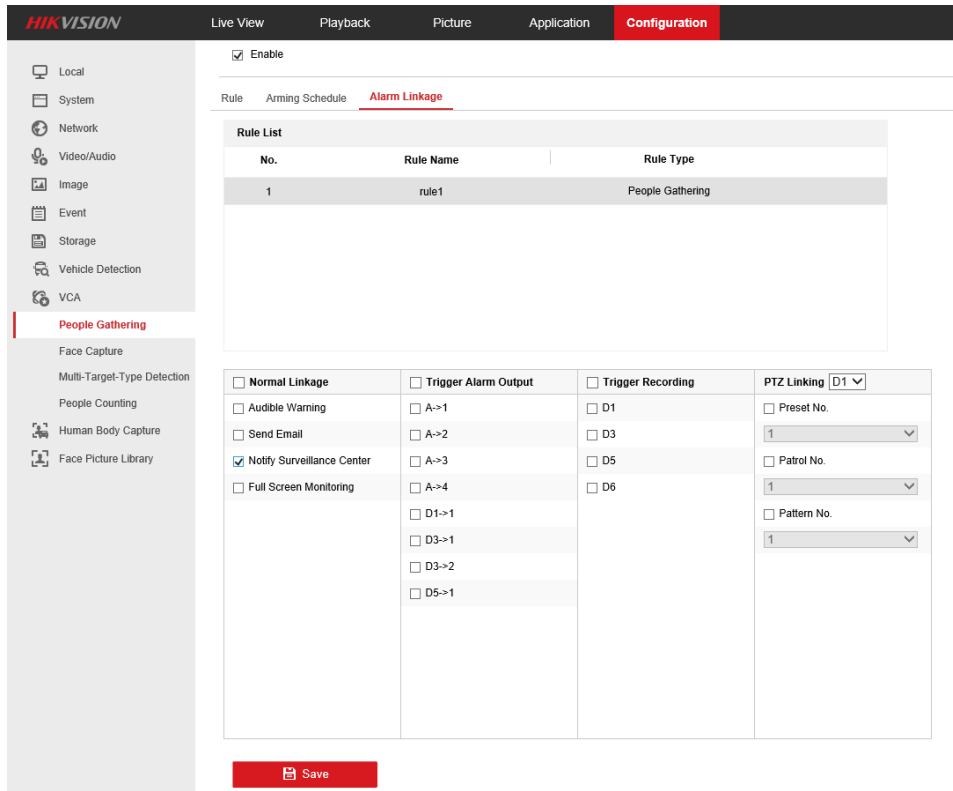
Sun: 0 2 4 6 8 10 12 14 16 18 20 22 24

Save

5.2.5 Alarm linkage configuration

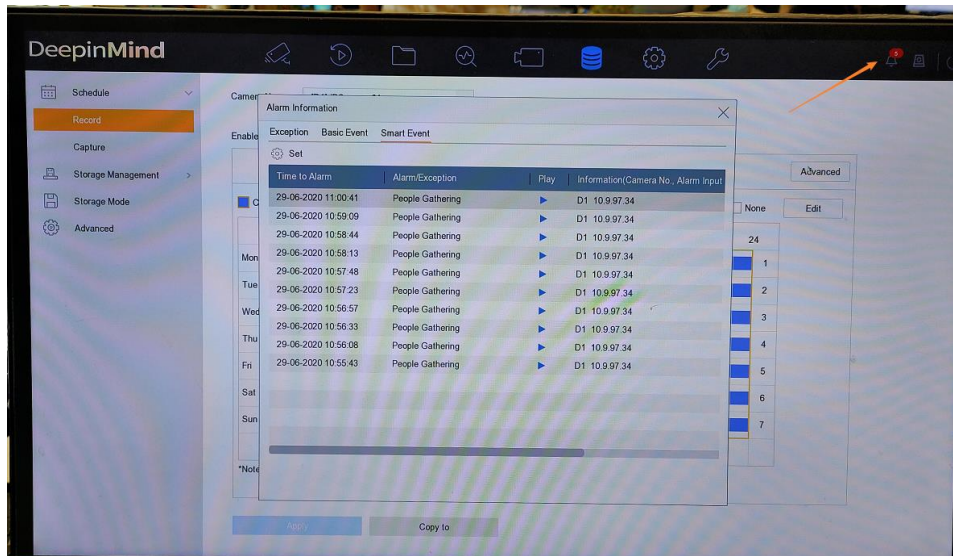
Set alarm linkage. “Notify Surveillance Center” is recommend.

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5.3. Alarm search

When there comes an people gathering alarm ,we can find the alarm details in the alarm center by GUI.





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See Far, Go Further
HIKVISION Technical Support