



Milesight Troubleshooting

VCA Solution

Camera Version	4x.7.0.74	Update	2020.5.8
NVR Version	7x.9.0.8	Update	2020.5.8
CMS Version	V2.4.0.7	Update	2020.5.8
Camera Version	4x.8.0.1	Update	2022.4.20

Contents

I . Introduction	1
II . What is Video Content Analysis?	1
III. Milesight Video Content Analysis	1
IV. How to set VCA function with Milesight Network Cameras	2
· Region Entrance	2
· Region Exiting	6
Advanced Motion Detection	7
· Tamper Detection	9
· Line Crossing	10
· Loitering	11



· Human Detection	错误！未定义书签。
· People Counting	错误！未定义书签。
· Object Left	13
· Object Removed	14
· Settings	错误！未定义书签。
V. How to set VCA function with Milesight NVR	16
· Region Entrance	16
· Region Exiting	22
· Advanced Motion Detection	22
· Tamper Detection	23
· Line Crossing	24
· Loitering	26
· Human Detection	26
· People Counting	错误！未定义书签。
· Object Left	27
· Object Removed	28
· Settings	错误！未定义书签。
VI. How to set VCA function with Milesight CMS	31
· VCA	31
VII. Advantages of Milesight Video Content Analysis	32
VIII. Conclusion	32



I . Introduction

The rapid development of security industry calls for the need of a more intelligent video monitoring. For the reason that a massive amount of video is being recorded, but hardly ever being reviewed, it is ordinary to miss suspicious behaviors. To avoid such events and activities being missed, Milesight propounds intelligent Milesight Video Content Analysis(VCA). Embedded in network cameras, Milesight now has a complete VCA Solution, realizing 8 VCA functions via Network Cameras, NVR and CMS.

II . What is Video Content Analysis?

Video Content Analysis(VCA), also referred to Intelligent Video Analysis (IVA), is the capability of automatically analyzing video to detect and determine temporal and spatial events. The algorithms can be implemented as software on general purpose machines or as hardware in specialized video processing units. It automatically performs an analysis of captured video, and automatically uses the resultant data. This technical capability is used in a wide range of fields including entertainment, health-care, retail, automotive, transport, home automation, safety and security.

III. Milesight Video Content Analysis

Milesight VCA provides advanced video analysis for Milesight network cameras, NVR and CMS. It enhances the performance of network cameras through 10 detection modes, enabling the comprehensive surveillance function and quicker response of the whole VCA solution to different monitoring scenes. In addition, Milesight Network Cameras, NVR and CMS all support independent function settings for convenient user experience. The Milesight VCA solution ensures that video surveillance is more accurate and cost-effective.



Figure 3-1 Milesight Video Content Analysis

IV. How to set VCA function with Milesight Network Cameras

· Region Entrance

1. What is Region Entrance

Region entrance helps to protect a special area from potential threat of suspicious person's or object's entrance. An alarm will be triggered when objects enter the selected regions by enabling region entrance.

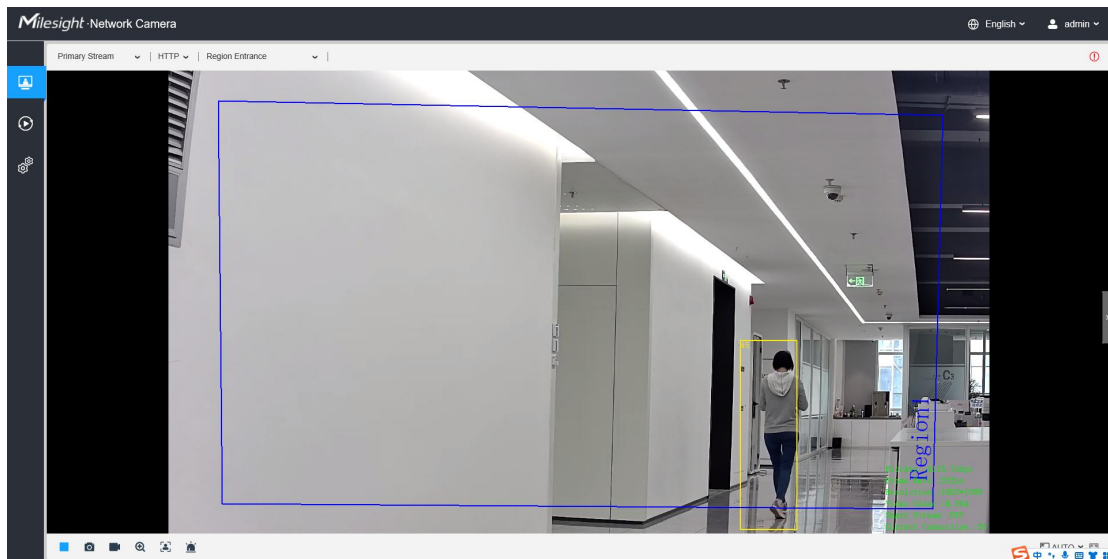


Figure 4-1 Region Entrance

If you enable Detection Object(Human/Vehicle), the selected regions will display in“red”when the alarm is triggered.

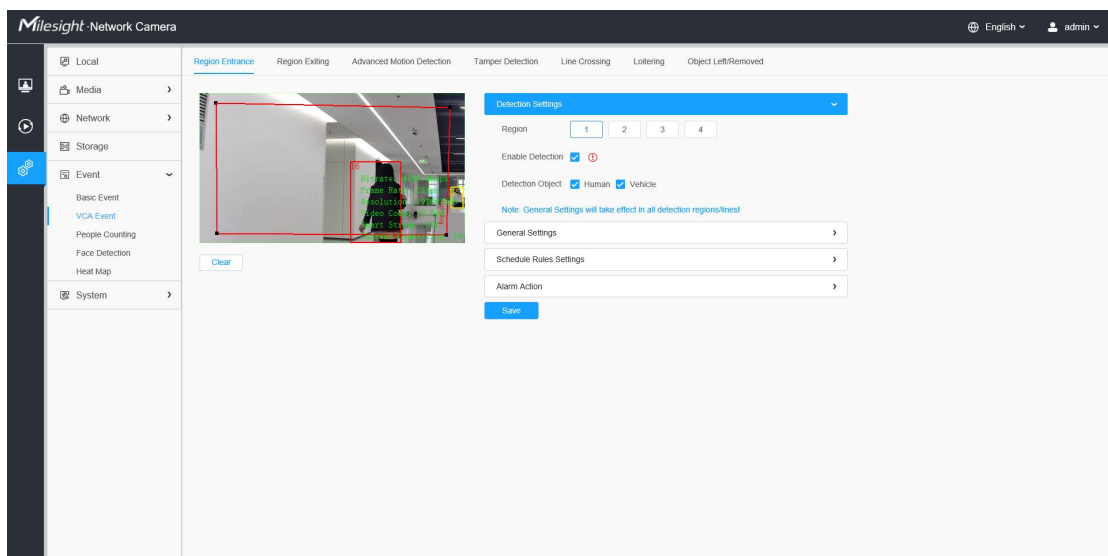


Figure 4-2 Region Entrance Trigger

2. How to set Region Entrance with Milesight Network Cameras

Step 1: Enable region entrance detection and draw a region by clicking the mouse. Any object entering into the region will trigger an alarm. (You can set the maximum 4 pieces of

regions.)

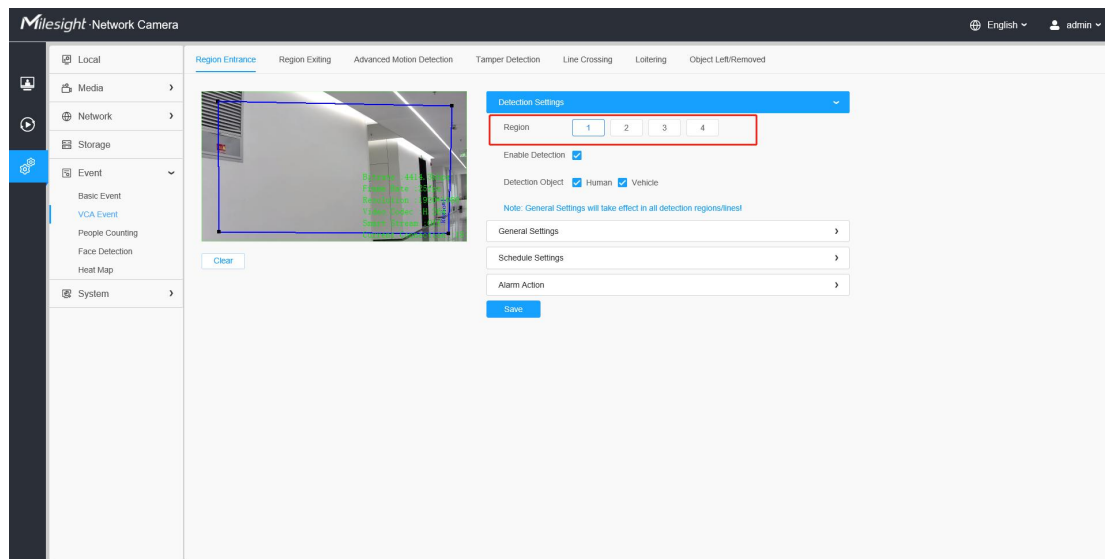


Figure 4-3 Region Entrance

Step 2: Set detecting sensitivity and object size limits. The “Object Size” can be set to define whether an object is big enough for triggering the alarm when enter into the selected region.

Step 3: Set entrance detection region;

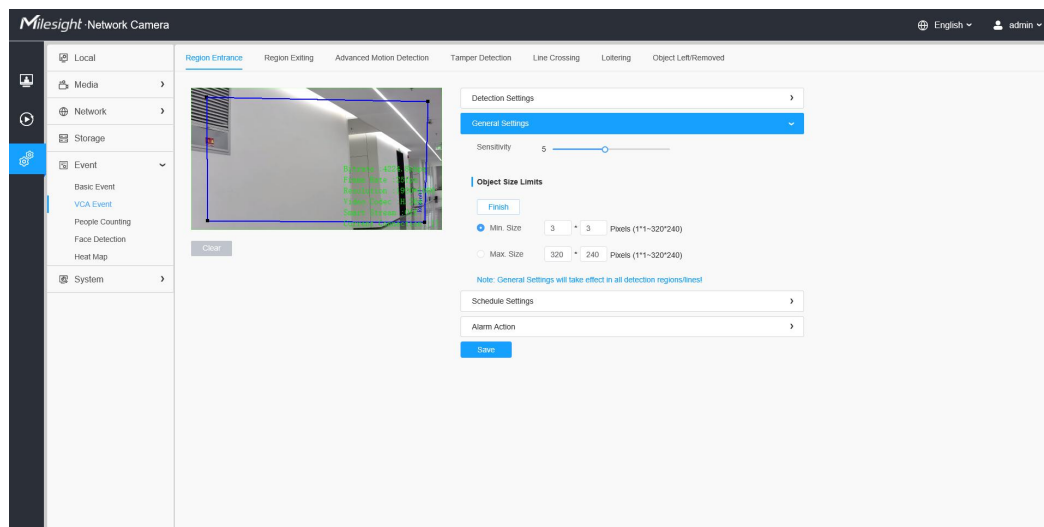


Figure 4-4 Region Entrance General settings

Step 4: Set detection schedule, you can set the schedule in the “Schedule Settings”. And then click **[Save]** or **[Reset]** after all done. You can also copy the settings to other channels.

Figure 4-5 Schedule Settings

Step 5: Set alarm action;

Figure 4-6 Alarm Action

Table 1 Description of the buttons

Parameters	Function Introduction
Save to Storage	Save alarm recording files into SD Card or NAS
Upload Via FTP	Upload the recording files via FTP
Send Email	Upload the files via Email
External Output	If the camera equips with External Output, you can enable the action after configuring the trigger duration
Play Audio	If the camera equips with Speaker, you can enable the action after configuring the audio speaker

Alarm to SIP Phone	Support to call the SIP phone after enable the SIP function.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL.

Step 6: Set alarm settings.

The screenshot displays the 'Alarm Action' configuration page. It features four main sections, each with a toggle switch and a dropdown arrow:

- Record:** Includes a 'Duration' dropdown set to '10 s' and a 'Linkage' section with options 'Save to storage' (disabled, with a red note '(Please mount storage device.)') and 'Upload Via FTP'.
- Snapshot:** Includes a 'Number' dropdown set to '3', an 'Interval' dropdown set to '1' with a unit dropdown set to 'second', and a 'Linkage' section with options 'Save to storage' (disabled, with a red note '(Please mount storage device.)'), 'Upload Via FTP', and 'Send Email'. An 'Email Triggered Interval' dropdown is set to 'Auto'.
- External Output:** Includes an 'Action Time' dropdown set to '30 s'.
- Play Audio:** Includes an 'Alarm Action' icon and an 'Interval' dropdown set to 'Auto'.

Figure 4-7 Alarm Settings

Table 2 Description of the buttons

Parameters	Function Introduction
Record Video Sections	Six different periods are available(5, 10, 15, 20, 25, 30 sec)
Snapshot	The number of snapshot, 1~5
Snapshot Interval	It cannot be edited unless you choose more than 1 to Snapshot
External Output Action Time	Length of time an alarm lasts. It cannot be edited unless you enable the External Output on the Alarm Action firstly.

Audio Action Settings	Set the audio schedule to trigger different audio files and action times in different time, which is corresponded to alarm action.
Play Audio Interval	Auto/ 10 seconds/ 30 seconds/ 1 minute/ 5 minutes/ 10 minutes are available.

· Region Exiting

1. What is Region Exiting

Region exiting is to make sure that any person or object won't exit the area that is being monitored. Any exiting of people or objects will trigger an alarm.

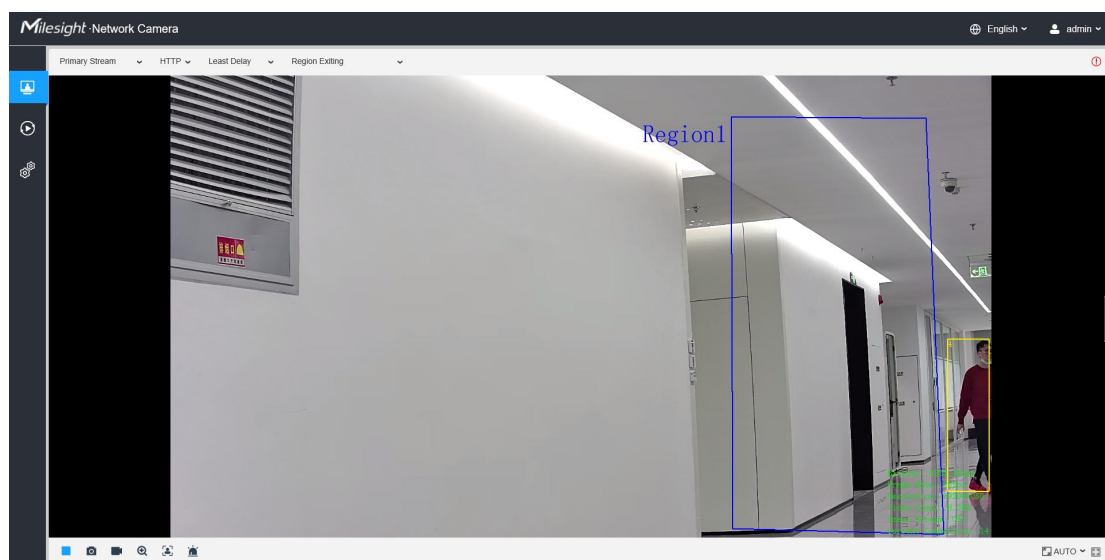


Figure 4-8 Region Exiting

If you enable Detection Object(Human/Vehicle), the selected regions will display in "red" when the alarm is triggered.

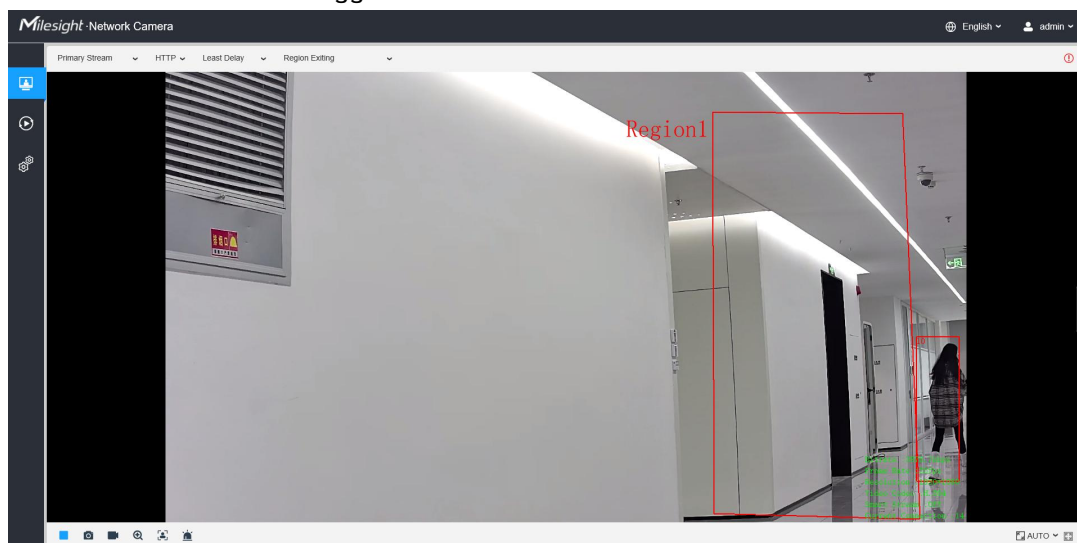


Figure 4-9 Region Entrance Trigger

2. How to set Region Exiting

Enable region entrance detection and draw a region by clicking the mouse. Any object entering into the region will trigger an alarm. (You can set the maximum 4 pieces of regions.)

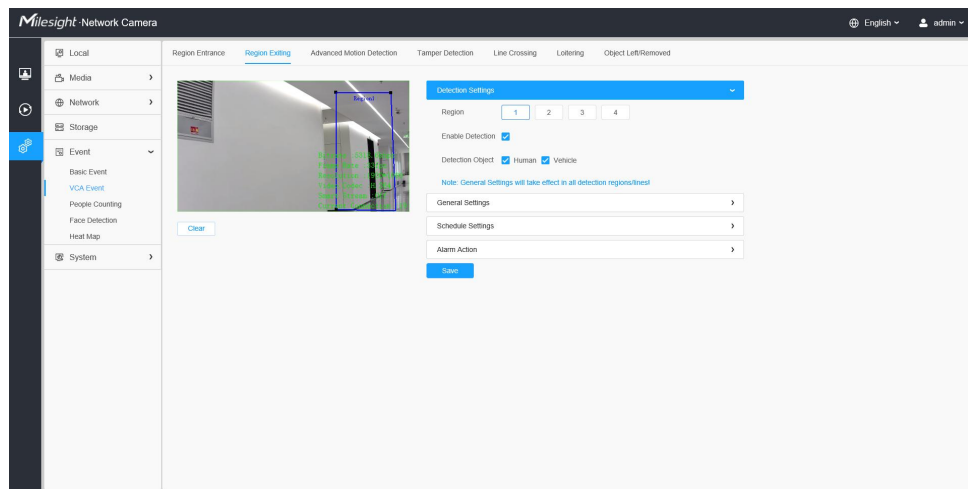


Figure 4-10 Region Exiting settings page



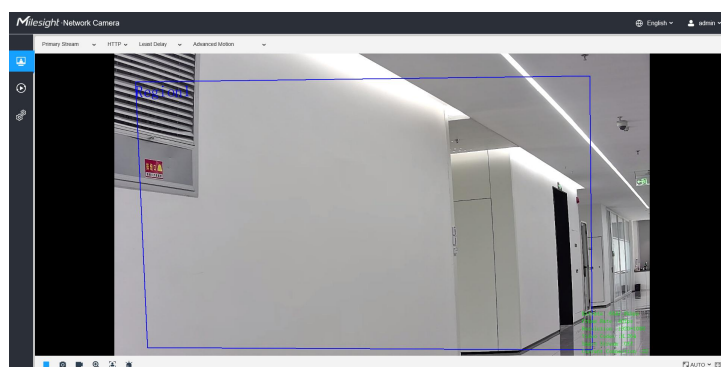
Kindly Note

Please refer to the Region Entrance section for the Detection Object and specific setting.

Advanced Motion Detection

1. What is Advanced Motion Detection

Different from traditional motion detection, Milesight advanced motion detection is a really intelligent one which can filter out “noise” such as lighting changes, natural tree movements, etc. When an object moves in the selected area, it will trigger an alarm.



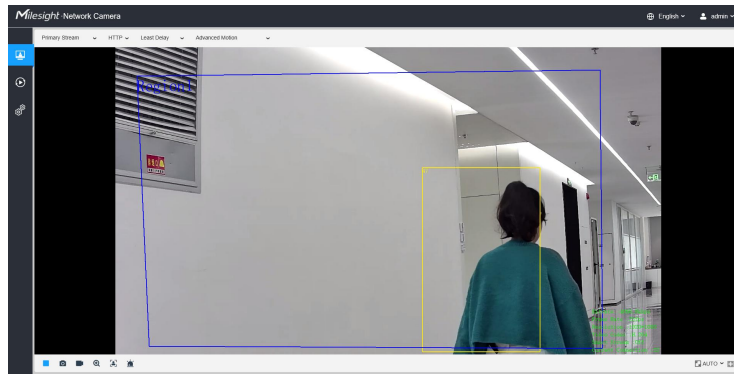
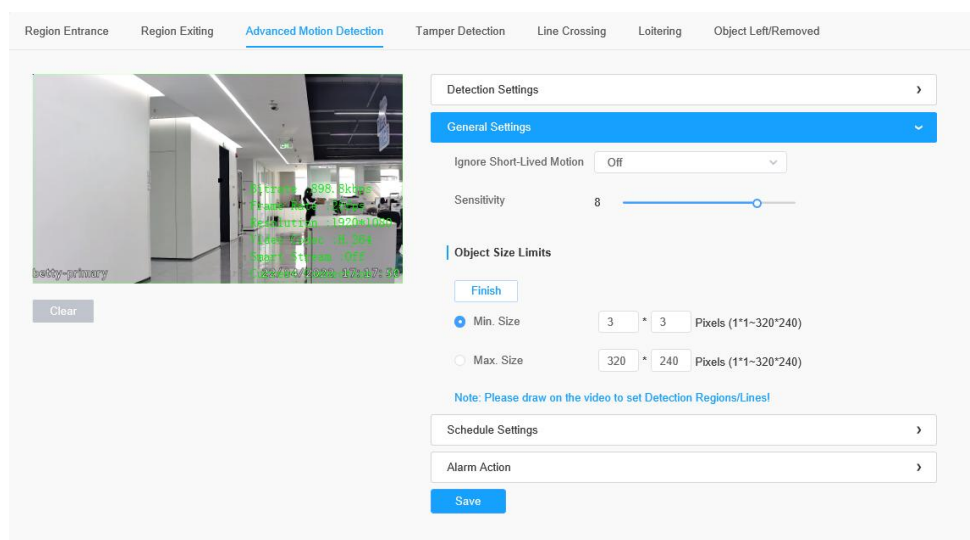
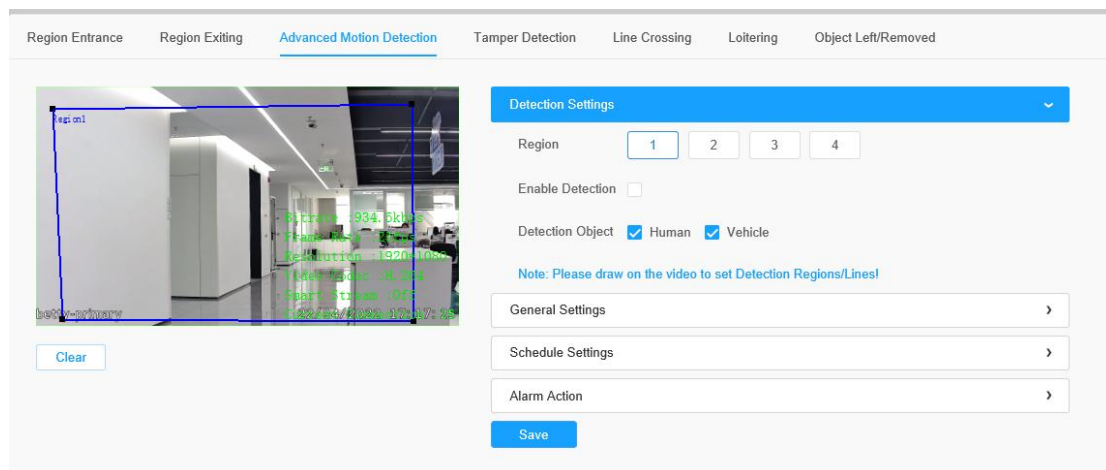


Figure 4-11 Advanced Motion Detection

2. How to set Advanced Motion Detection

Enable advanced motion detection and draw a region by clicking the mouse. (You can set the maximum 4 pieces of regions.) The sensitivity can be configured to detect various movements according to different requirements. When the level of sensitivity is low, slight movement won't trigger the alarm. You can also set the "Ignore Short-Lived Motion", its range is 1s-5s.



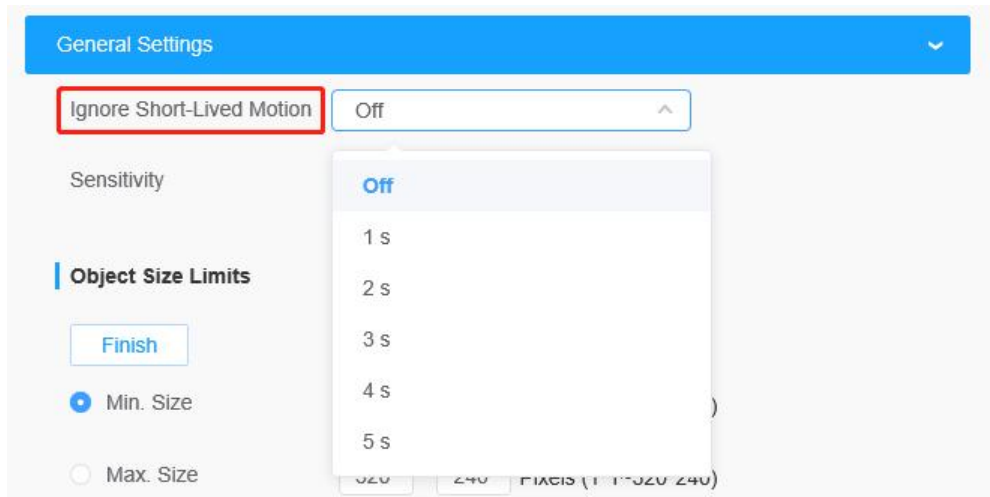


Figure 4-12 Advanced Motion Detection Settings page

**Kindly Note**

Please refer to the [Region Entrance](#) section for the Detection Object and specific setting.

· Tamper Detection

1. What is Tamper Detection

Tamper Detection is used to detect possible tampering like the camera being obstructed or moved or defocused. This functionality alerts security staff immediately when any above-mentioned actions occur.

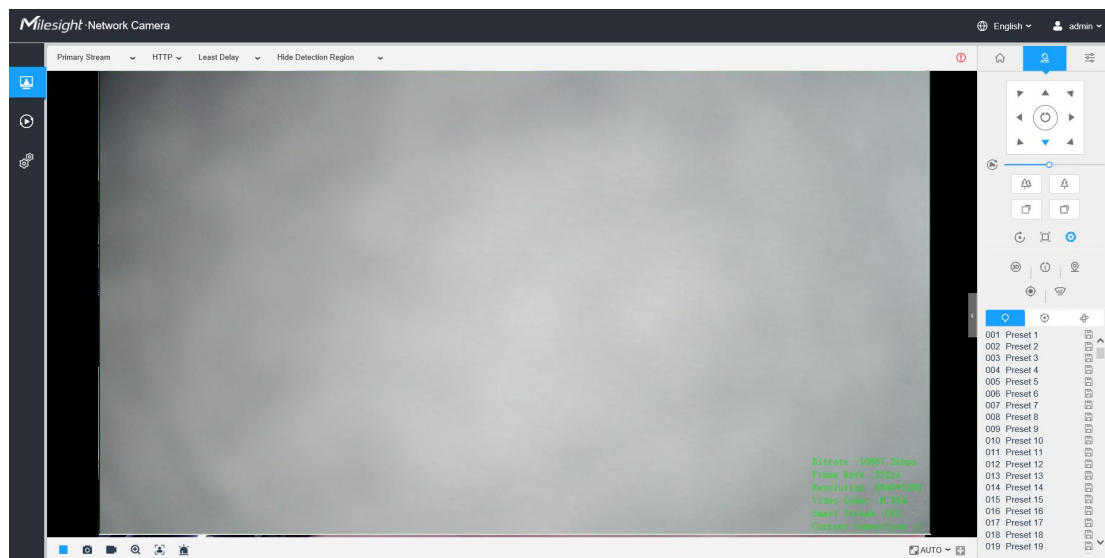


Figure 4-13 Tamper Detection

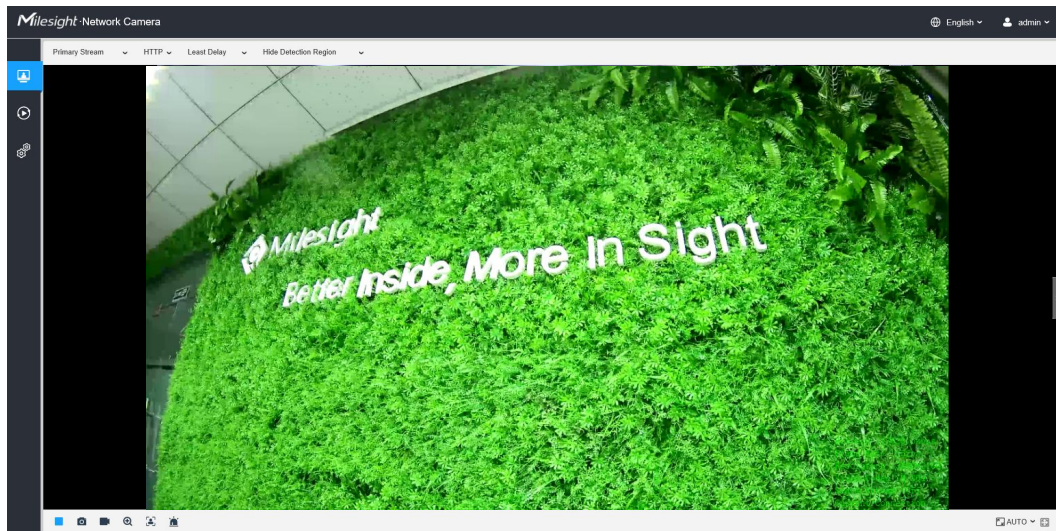


Figure 4-14 Tamper Detection

2. How to set Tamper Detection

Enable tamper detection. According to the sensitivity, alarm will be triggered when disrupted camera operations happen.

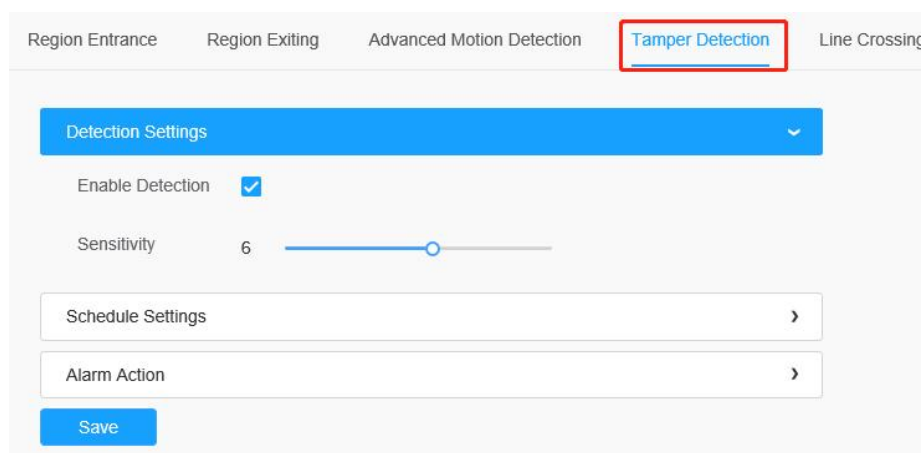


Figure 4-15 Tamper Detection Settings page

! Kindly Note

Please refer to the [Region Entrance](#) section for the specific setting.

· Line Crossing

1. What is Line Crossing

Milesight line crossing detection is designed to work in most indoor and outdoor environment. An event will be triggered every time when the camera detects objects crossing a defined virtual line. It is especially suitable for general monitoring of entrance and exit points in low-traffic areas, detecting objects such as people and vehicles that cross the defined virtual line.

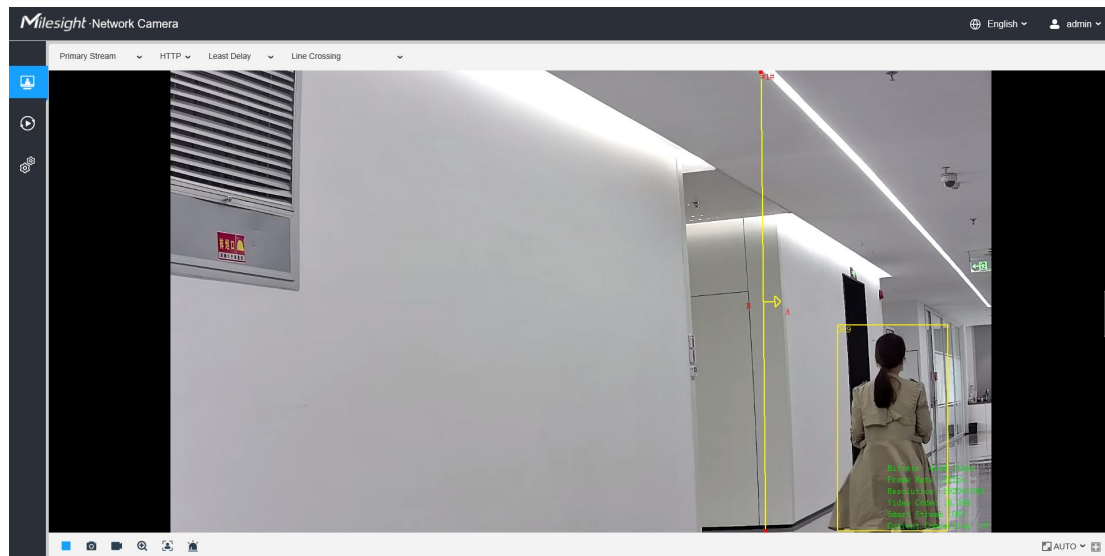


Figure 4-16 Line Crossing

2. How to set Line Crossing

Enable line crossing detection. Click the mouse to draw a line in the monitoring view. . (You can set the maximum 4 lines.) Milesight allows to set up to four lines at a time. There are three direction modes to choose for triggering alarm. “A→B” means when there is any object crossing the line from the “A” side to the “B” side, the alarm will be triggered. “B→A” vice versa. “A↔B” means that the alarm will be triggered when objects cross line from either side.

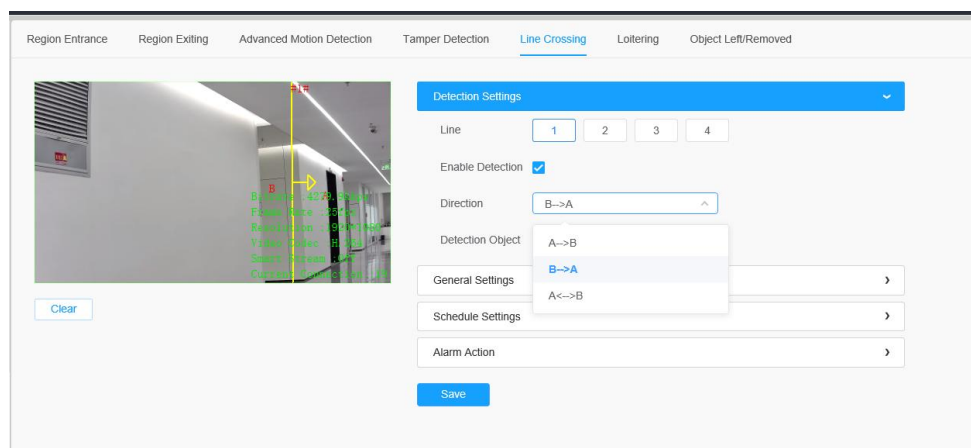


Figure 4-17 Line Crossing Settings page

! Kindly Note

Please refer to the **Region Entrance** section for the Detection Object and specific setting.

• Loitering

1. What is Loitering

When objects are loitering in a defined area for a specific period of time, it would trigger an alarm. Illegal activities towards the places like retail stores and banks would be nipped in the bud thanks to this function.

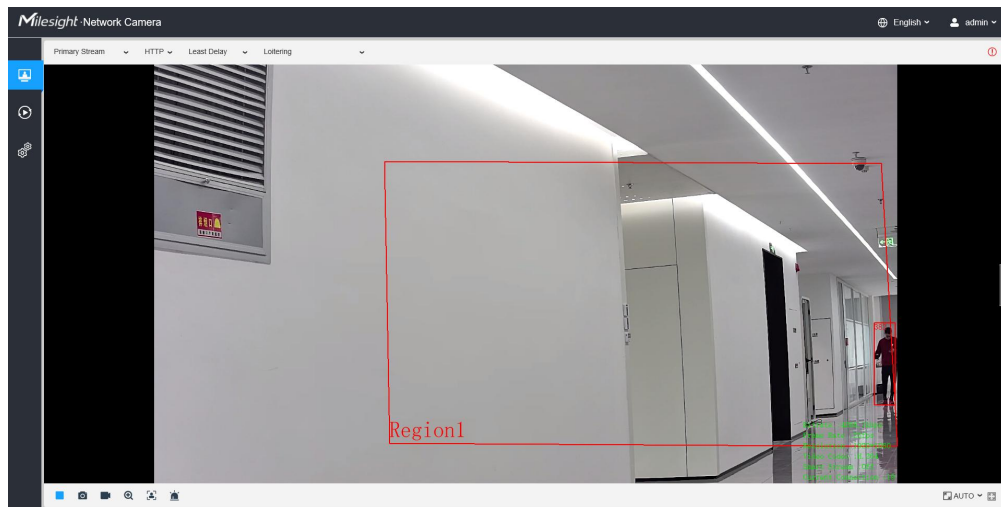


Figure 4-18 Loitering

2. How to set Loitering

Enable loitering detection and draw an area in the view. (You can set the maximum 4 pieces of loitering regions.) After setting minimum loitering time from 3s to 1800s, any object loiters in the selected area over the minimum loitering time will trigger the alarm. Also Milesight loitering allows to set "Object Size". Only the object bigger than the set size will trigger the alarm.

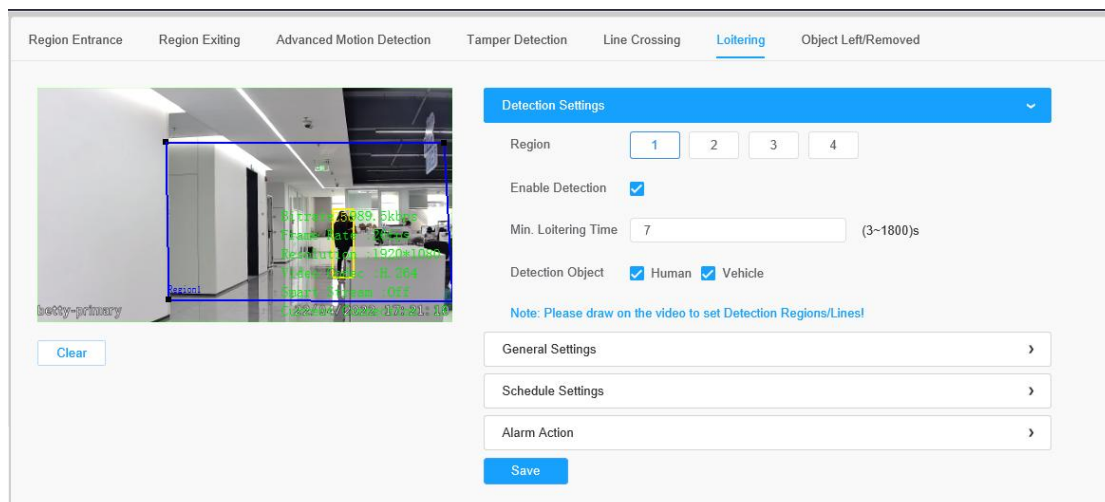


Figure 4-19 Loitering Settings page

! Kindly Note

Please refer to the **Region Entrance** section for the Detection Object and specific setting.

• Object Left

1. What is Object Left

Object Left is used for checking whether there is something left in the selected area. If there is object left in the pre-defined area, an alarm will trigger.

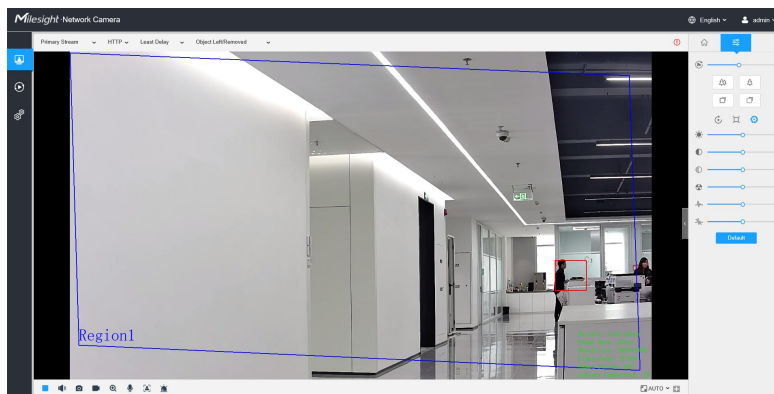


Figure 4-20 Object Left

2. How to set Object Left

Enable object left detection and set minimum time, then draw a region by clicking the mouse. Any object left in the region over the minimum time will trigger an alarm. You can set the maximum 4 object left regions, the sensitivity and object size limits can be set in the “General Settings”.

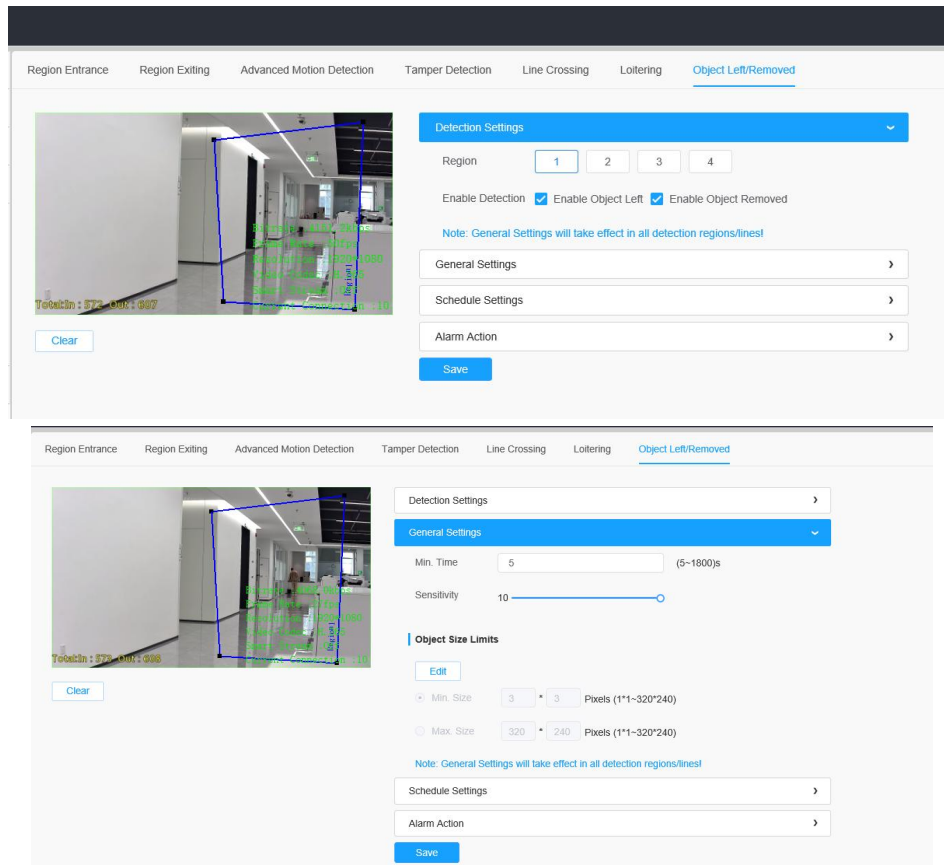


Figure 4-21 Object Left Settings page

**Kindly Note**

Please refer to the **Region Entrance** section for the specific setting.

- **Object Removed**

1. **What is Object Removed**

Object Removed is used to secure objects' safety. When there is an object removed from a pre-defined region, it will detect and prompt an alarm. You can set the maximum 4 object left regions, the sensitivity and object size limits can be set in the "General Settings".

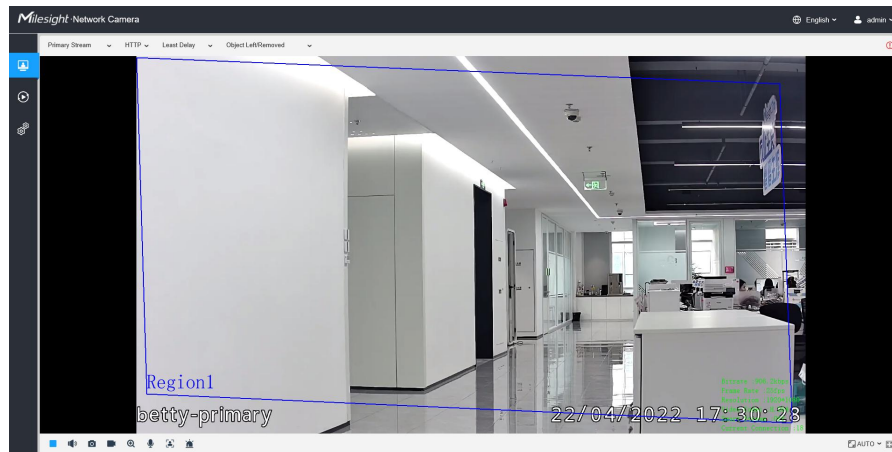


Figure 4-22 Object Removed

2. How to set Object Removed

Enable object removed detection and set minimum time, then draw a region by clicking the mouse. Any object removed in the region over the minimum time will trigger an alarm.

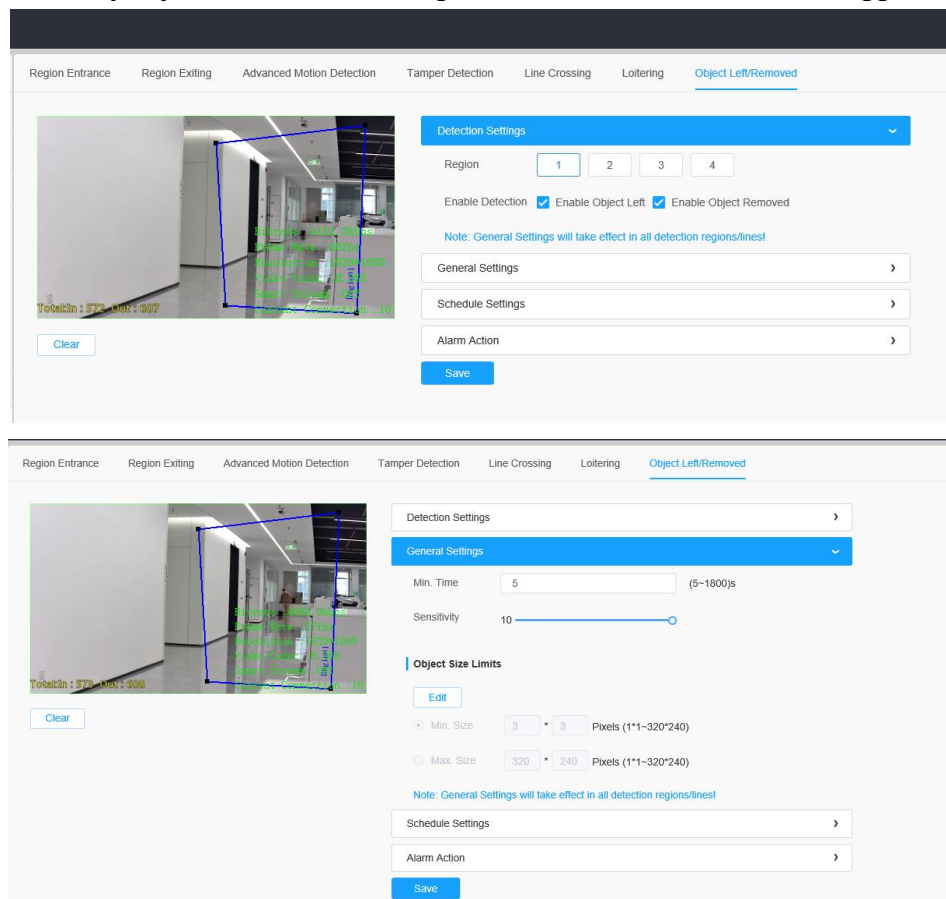


Figure 4-23 Object Removed Settings page



Kindly Note

Please refer to the **Region Entrance** section for the specific setting.



Kindly Note

- Viewing angle is significant for better Milesight VCA performance. Also, the suitable installation position guarantees best application of these smart detection such as People Counting.

V. How to set VCA function with Milesight NVR

Smart Event uses Milesight Video Content Analysis technology which is applied in a wide range of domains including entertainment, health-care, retail, automotive, transport, home automation, safety and security. Milesight VCA provides advanced, accurate smart video analysis for Milesight network cameras. It enhances the performance of network cameras through 8 detection modes which are divided into basic function and advanced function, enabling the comprehensive surveillance function and quicker response of cameras to different monitoring scenes.

· Region Entrance

Region entrance helps to protect a specific area from potential threat of suspicious person's or object's entrance. An alarm will be triggered when objects enter the selected regions by enabling region entrance.

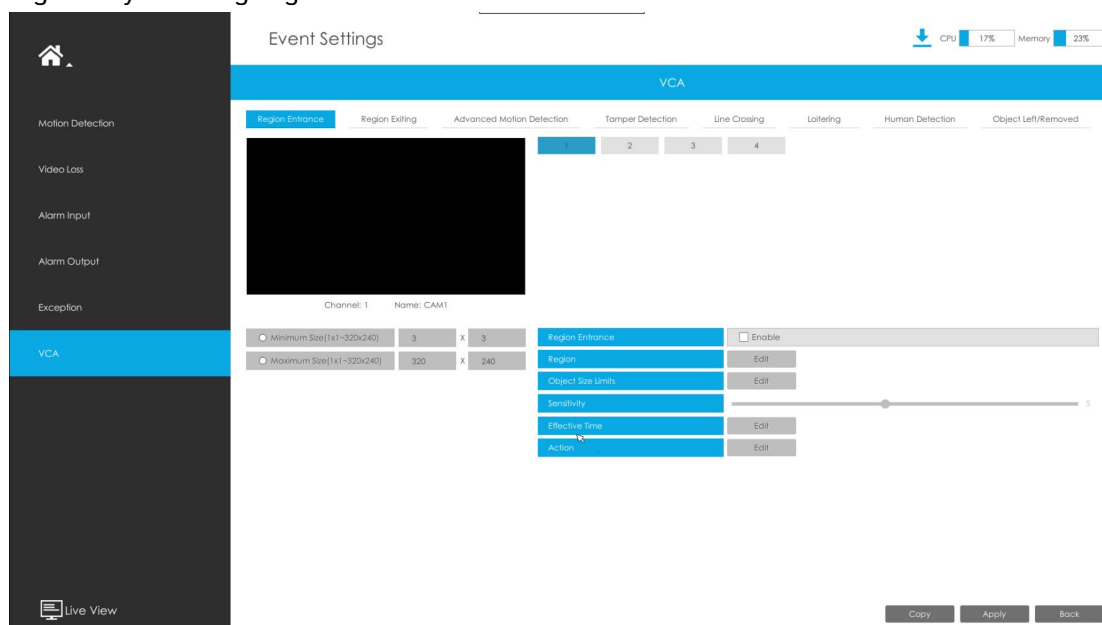


Figure 5-1 Region Entrance Settings page

Step 1: Select channel and enable Region Entrance.



Figure 5-2 Region Entrance

Step 2: Set entrance detection region and size.

You can select an area by dragging the mouse to set the trigger area, and this area will be synchronized to camera. Also, you can set or clear all set regions by directly clicking

and .

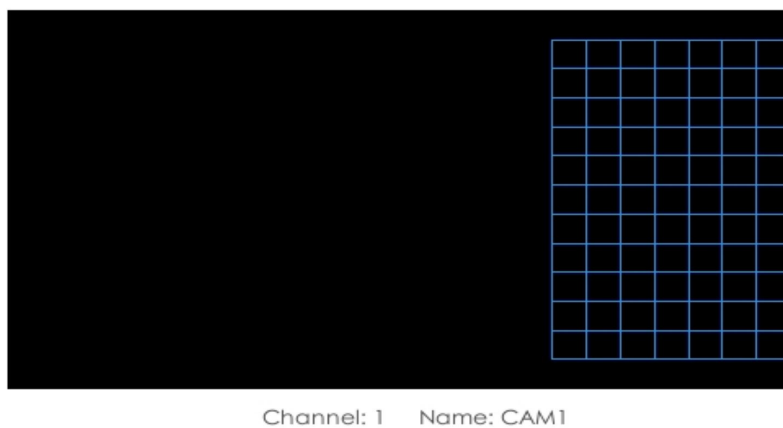


Figure 5-3 Set Entrance Detection region

Milesight VCA provides the primary setting for the whole VCA functions.

Minimum Size: Is the setting to decide whether an object is big enough to trigger other settings. The frame you draw on the screen means that only if the object size is bigger than the frame, the settings for other VCA functions will take effect.

Maximum Size: Is opposite to “Minimum Size”, only if the object size is smaller than the frame, the settings for other VCA functions will take effect.

Step 3: Set Effective Time of region entrance by clicking .



NVR receives the alarm when effective time has been set. It will be more convenient by clicking or to set or clear all time settings.




Figure 5-4 Effective Time

Step 4: Set Action for region entrance alarm by clicking .

[**Audible Warning**]: NVR will trigger an audible beep when region entrance is detected. The user can set effective schedule in two ways as below:

①: Select the operation type: Audible or Erase. Then drag a square on the time table for time setting. It will be more convenient by clicking  or  to set or clear all time settings.

②: Click  to edit record effective time manually.

[**Triggered Interval**]: The effective interval between two actions when events are triggered.

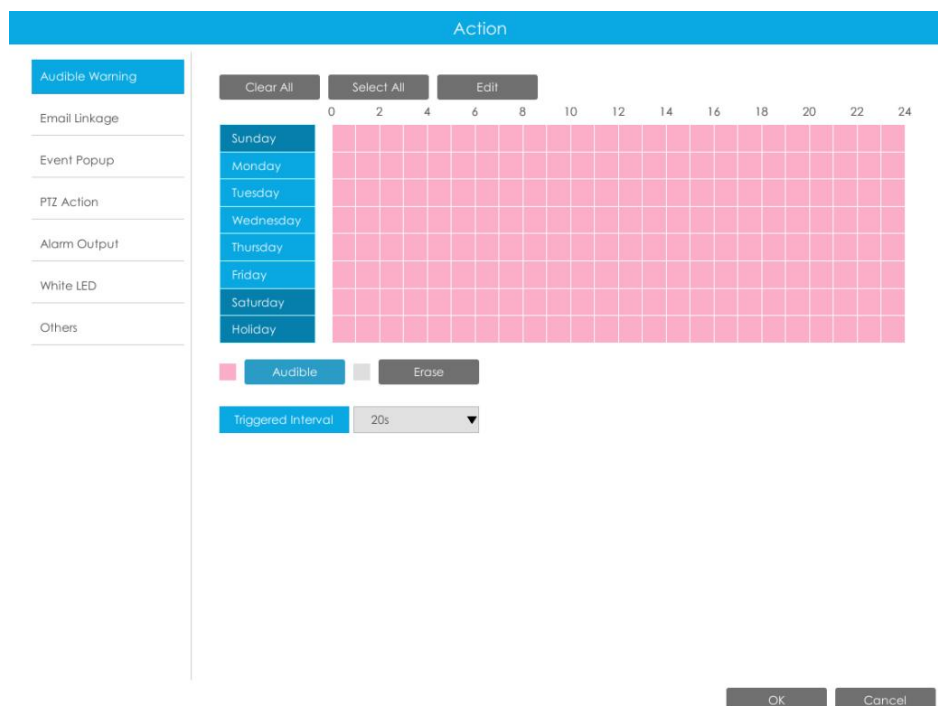



Figure 5-5 Audible Warning

[**Email Linkage**]: NVR will send an email to the address you set before.

The user can set effective schedule in two ways as below:

①: Select the operation type, Email or Erase. Then drag a square on the time table for time setting.

It will be more convenient by clicking  or  to set or clear all time settings.

②: Click  to edit effective time manually.

[**Triggered Interval**]: The effective interval between two actions when events are triggered.

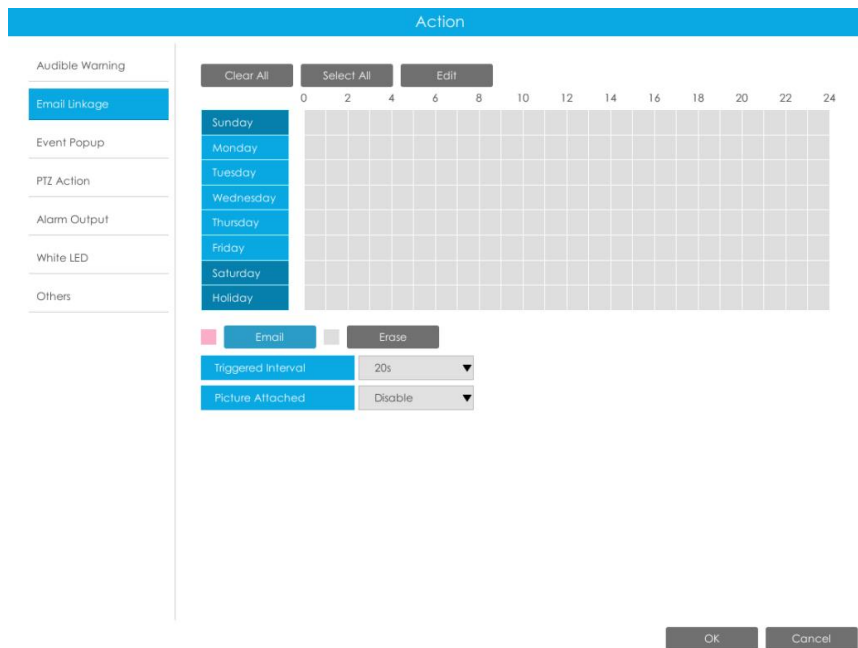


Figure 5-6 Email Linkage

[**Event Popup**]: Trigger alarm screen pop up to full screen when alarm is triggered. You can set display duration time of all triggered channel in '**Settings**'->'General'->'Event Popup Duration Time'. Then triggered channel will be shown one by one as duration time.

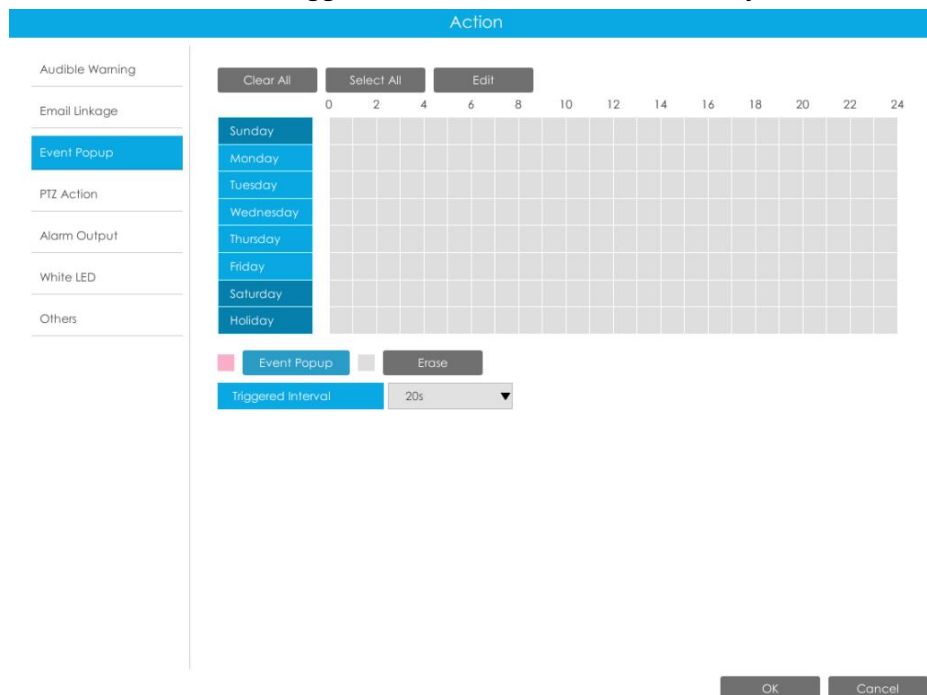


Figure 5-7 Event Popup

[**PTZ Action**]: Trigger PTZ action when alarm is triggered. PTZ action includes **Preset** and **Patrol**.

The user can set effective schedule in two ways as below:

①: Select the operation type: PTZ or Erase. Then drag a square on the time table for time

setting. It will be more convenient by clicking **Select All** or **Clear All** to set or clear to set or clear all time settings.

②: Click **Edit** to edit record effective time manually.

Figure 5-8 PTZ Action

[**Alarm Output**]: Trigger alarm output when alarm is triggered.

Figure 5-9 Alarm Output

[**White LED**]: Triggered White LED when alarm is triggered.

The user can set effective schedule in two ways as below:

①: Select the operation type: White LED or Erase. Then drag a square on the time table for time setting.

It will be more convenient by clicking **Select All** or **Clear All** to set or clear to set or clear all time settings.

②: Click **Edit** to edit record effective time manually.

The screenshot shows the 'White LED' configuration page. On the left sidebar, 'White LED' is selected. The main area has a header 'Action' with buttons 'Clear All', 'Select All', and 'Edit'. Below these is a time table with days of the week (Sunday to Holiday) and a 24-hour grid. A legend shows 'White LED' (pink) and 'Erase' (grey). A 'Triggered Interval' dropdown is set to '20s'. Below the time table is a table for 'White LED' records with columns: Channel, Flash Mode, Flash Time, Edit, and Delete. The table has one row with a plus icon in the Channel column and dashes in the others. At the bottom right are 'OK' and 'Cancel' buttons.

Figure 5-10 White LED

[**Others**]: Trigger other channels record when alarm is triggered.

The screenshot shows the 'Others' configuration page. On the left sidebar, 'Others' is selected. The main area has a header 'Action' and a section 'Trigger Channels Record' with checkboxes for 'All', '1', '2', '3', and '4'. A note below states: 'Note: This page's configuration will not be copied into other channels.' At the bottom right are 'OK' and 'Cancel' buttons.

Figure 5-11 Others

· Region Exiting

Region exiting is to make sure that any person or object won't exit the area that is being monitored. Any exit of people or objects will trigger an alarm.

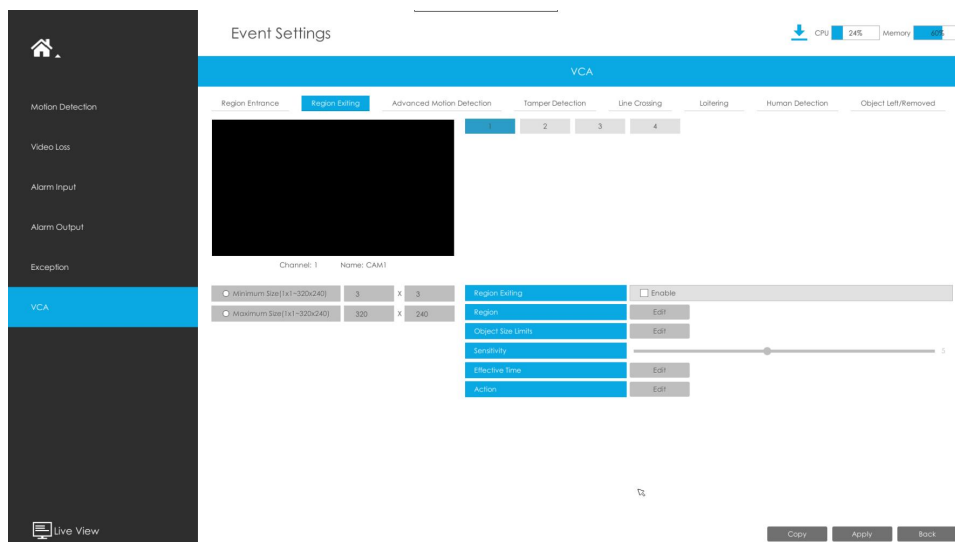


Figure 5-12 Region Exiting Settings page

Select channel and enable **Region Exiting**.



Figure 5-13 Region Exiting



Kindly Note

Please refer to the [Region Entrance](#) section for the specific setting in this chapter.

· Advanced Motion Detection

Different from traditional motion detection, Milesight advanced motion detection can filter out “noise” such as lighting changes, natural tree movements, etc. When an object moves to the selected area, it will trigger alarm.

Step 1: Select channel and enable Advanced Motion Detection.

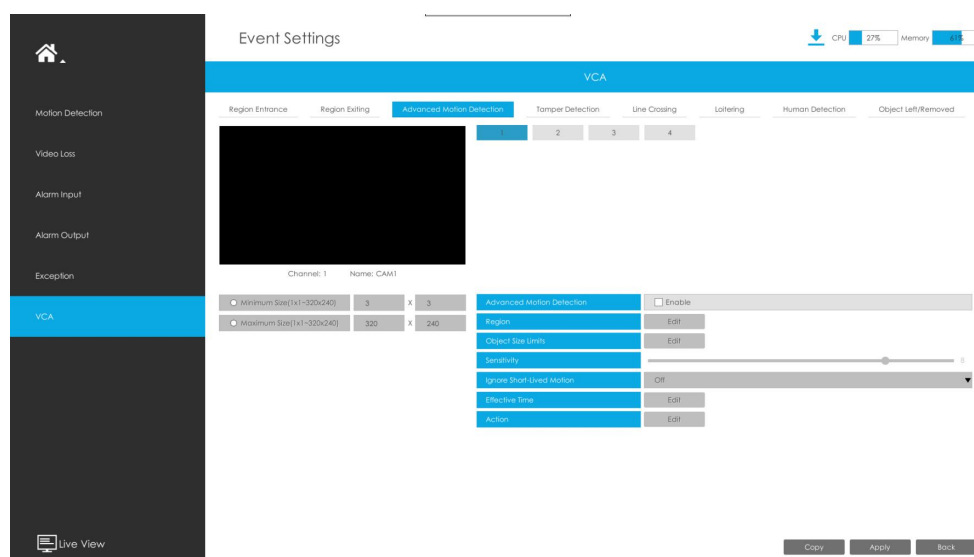


Figure 5-14 Advanced Motion Detection Settings page

Step 2: Set Sensitivity.

The sensitivity can be configured to detect various movements according to different requirements. When the level of sensitivity is low, slight movement won't trigger the alarm.



Figure 5-15 Sensitivity

**Kindly Note**

Please refer to the **Region Entrance** section for the specific setting in this chapter.

• Tamper Detection

Tamper Detection is used to detect possible tampering like the camera being unfocused, obstructed or moved. This functionality alerts security staff immediately when any above-mentioned actions occur.

Step 1: Select channel and enable Tamper Detection.

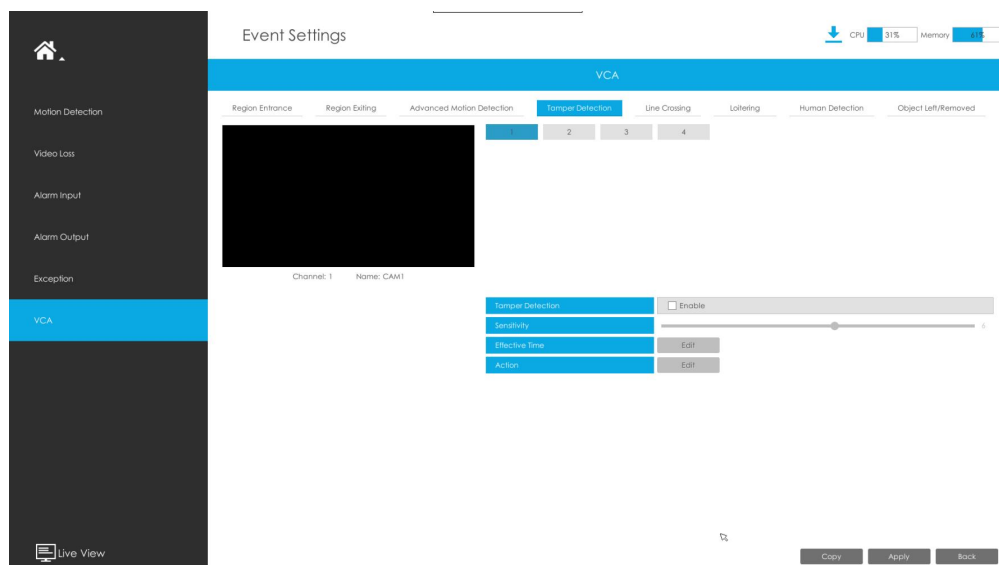


Figure 5-16 Tamper Detection Settings page

Step 2: Set Sensitivity.

The sensitivity can be configured to detect various movements according to different requirements. When the level of sensitivity is low, slight movement won't trigger the alarm.



Figure 5-17 Sensitivity

**Kindly Note**

Please refer to the **Region Entrance** section for the specific setting in this chapter.

- **Line Crossing**

Line Crossing detection is designed to work in most indoor and outdoor environment. An event will be triggered every time when the camera detects objects crossing a defined virtual line.

Settings steps are shown as follows:

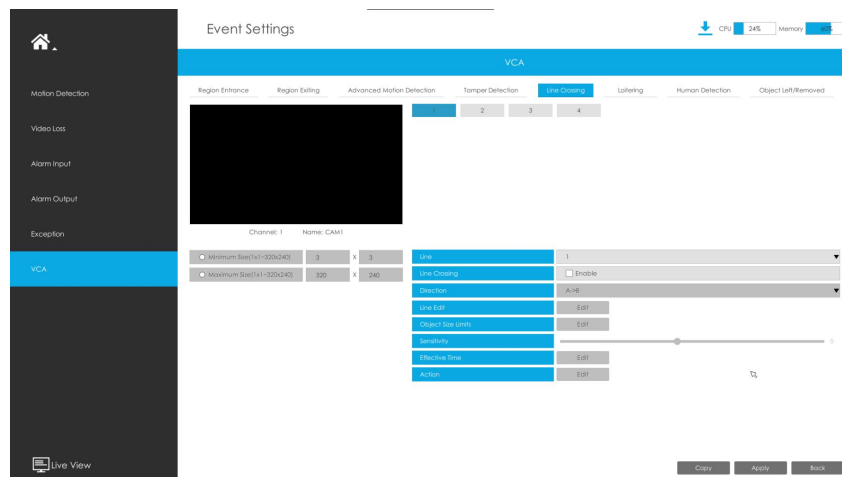


Figure 5-18 Line Crossing Settings page

Step 1: Select channel and enable Line Crossing.

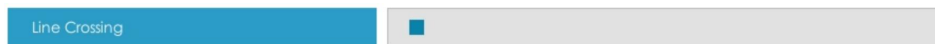


Figure 5-19 Line Crossing

Step 2: Choose detection line number and set its direction.

It allows to set up to four lines at a time. There are three direction modes to choose for triggering alarm. “A→B” means when there is any object crossing the line from the “A” side to the “B” side, the alarm will be triggered. “B→A” vice versa. “A ↔ B” means that the alarm will be triggered when objects cross line from either side.

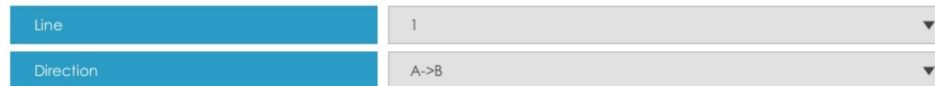
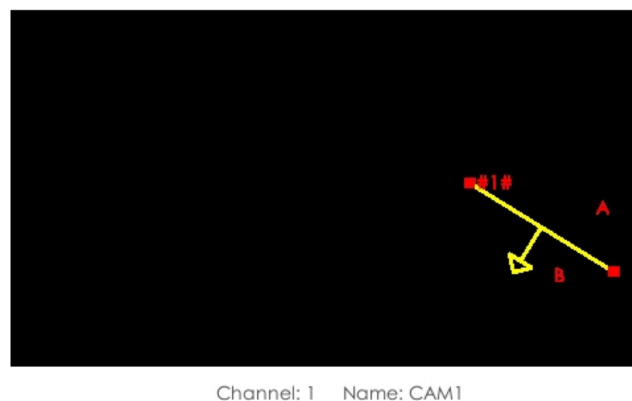


Figure 5-20 Line Crossing

Step 3: Draw detection lines.



Channel: 1 Name: CAM1

Figure 5-21 Draw Detection Lines



Kindly Note

Please refer to the **Region Entrance** section for the specific setting in this chapter.

• Loitering

When objects are loitering in a defined area for a specific period of time, it would trigger an alarm.

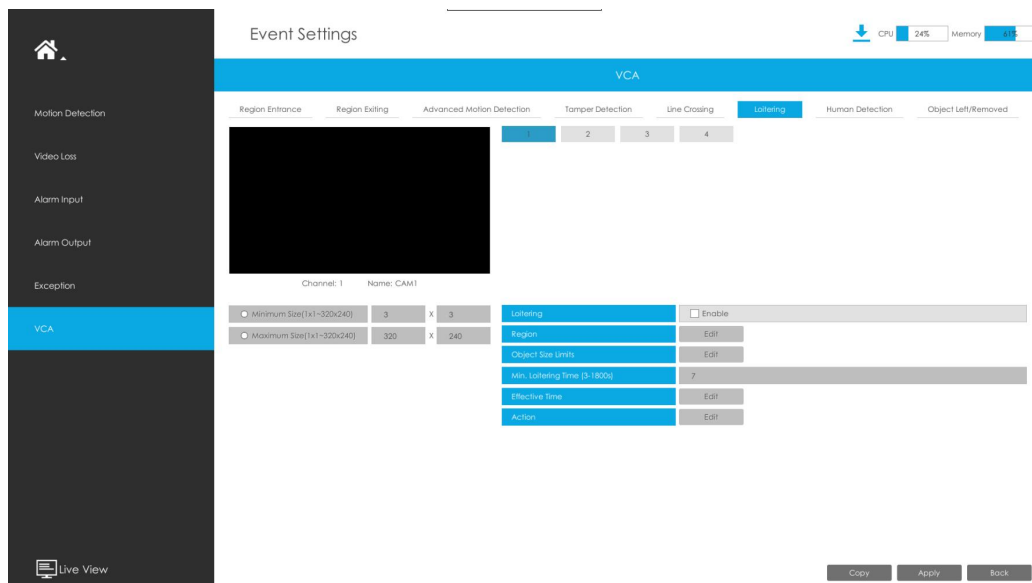


Figure 5-22 Loitering Settings page

Step 1: Select channel and enable Loitering.



Figure 5-23 Loitering

Step 2: Set Min. Loitering Time and Object Size.

After setting minimum loitering time from 3s to 1800s, any objects loitering in the selected area over the minimum loitering time will trigger the alarm. Also Milesight loitering allows to set “Object Size”. Only the object bigger than the set size will trigger the alarm.



Figure 5-24 Loitering

! Kindly Note

Please refer to the [Region Entrance](#) section for the specific setting in this chapter.

• Human Detection

Human detection is used for figuring out whether an object is a human or not.

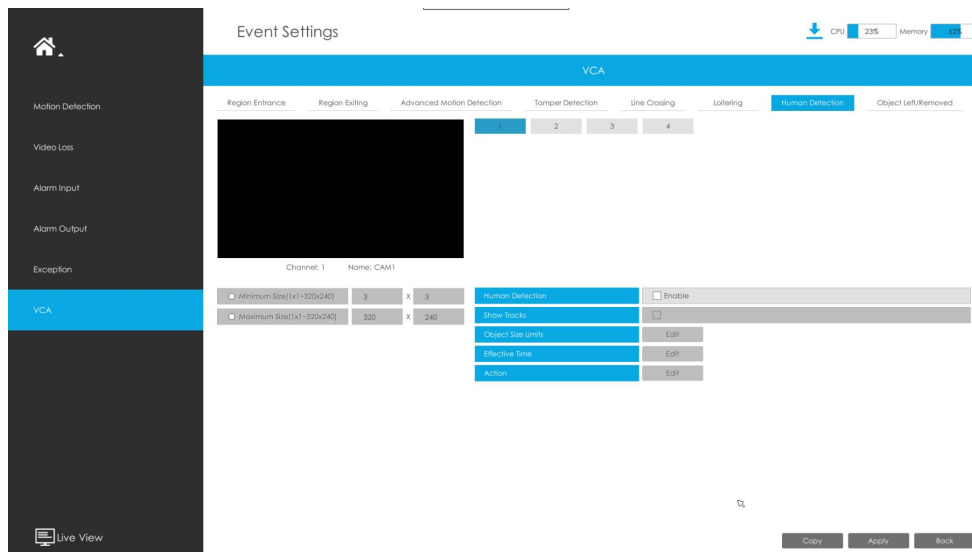


Figure 5-25 Human Detection Settings page

Step 1: Select channel and enable Human Detection.



Figure 5-26 Human Detection

Step 2: Enable Show Tracks or not.

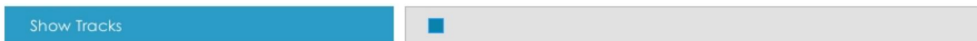


Figure 5-27 Show Tracks

! Kindly Note

Please refer to the **Region Entrance** section for the specific setting in this chapter.

• Object Left

Object Left is used for checking whether there is something left in the selected area. If there is object left in the pre-defined area, an alarm will trigger.

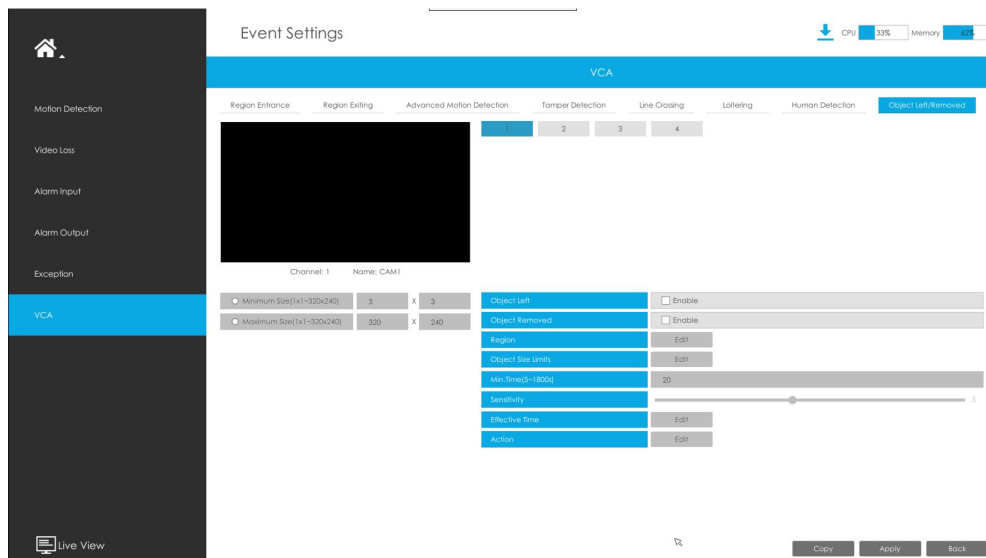


Figure 5-32 Object Left Settings page

Step 1: Select channel and enable Object Left.



Figure 5-33 Object Left

Step 2: Set Min. Time.

After setting minimum time from 3s to 1800s, any objects are left in the selected area over the minimum time will trigger the alarm.



Figure 5-34 Object Left



Kindly Note

Please refer to the **Region Entrance** section for the specific setting in this chapter.

• Object Removed

Object Removed is used to secure objects' safety. When there is an object removed from a pre-defined region, it will detect and prompt an alarm.

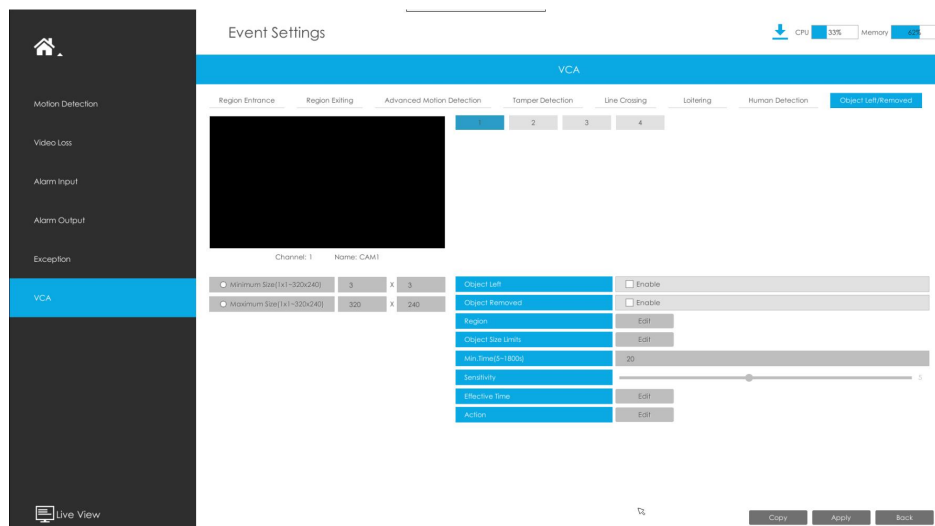


Figure 5-35 Object Removed Settings page

Step 1: Select channel and enable Object Removed.

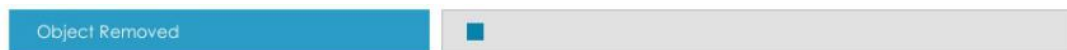


Figure 5-36 Object Removed

Step 2: Set Min. Time.

After setting minimum time to 1800s, any objects are removed from the selected area over the minimum time will trigger the alarm.



Figure 5-37 Object Removed

! Kindly Note

Please refer to the **Region Entrance** section for the specific setting in this chapter.

! Kindly Note

In order to facilitate to receive the alarm information directly. We also provide the pop up function with M-Sight Pro App in mobile phone.

Step 1: Check the checkbox to enable the “**Push Message Enable**”(Figure 5-39).

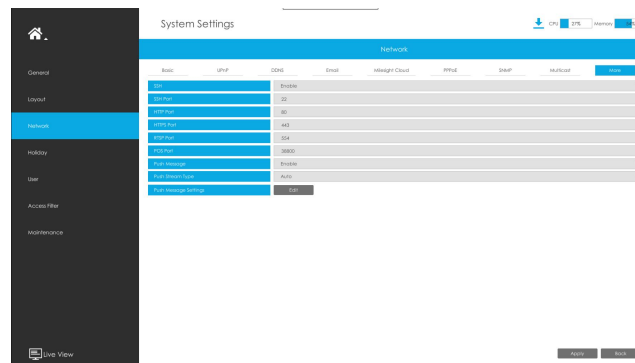


Figure 5-39

Step 2: Check the “Edit ”button to select the **Push Type**. And then click **[OK]** after all done.(Figure 5-40).

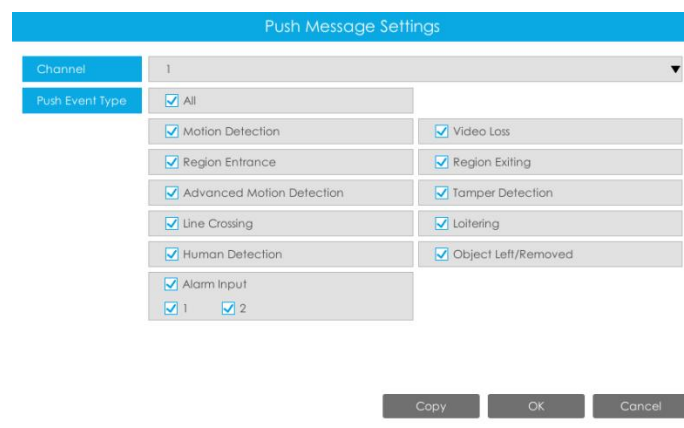


Figure 5-40

Step 3: Enable the Alarm Push of the device in the Alarm Message page with M-sight Pro after finishing general settings in NVR side as shown below(Figure 5-41):

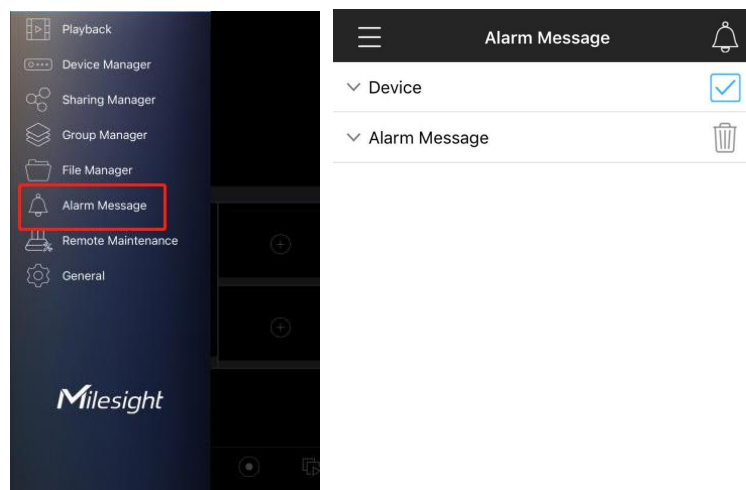


Figure 5-41

Step 4: When all settings done, the device will automatically push alarms to mobile phones when the corresponding events trigger alarms.

Please refer to specific documentation for the way of adding devices to M-sight Pro App.

VI. How to set VCA function with Milesight CMS

· VCA

The VCA page is as below:

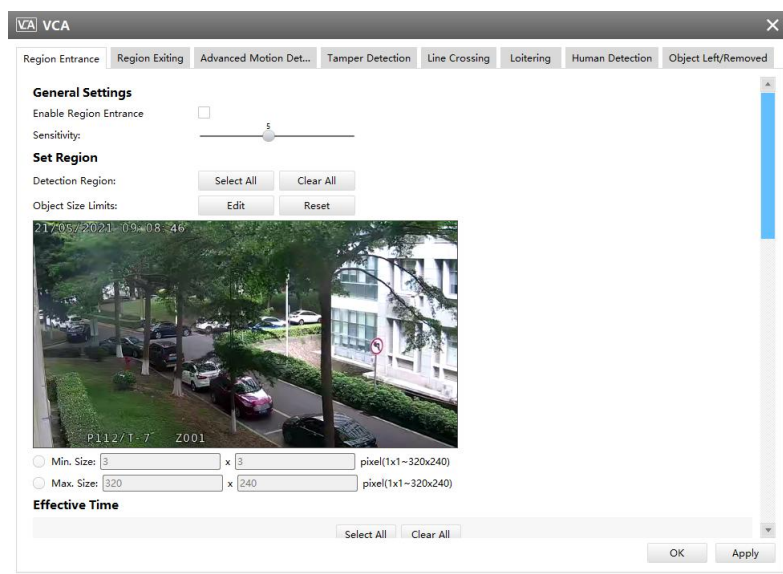



Figure 6-1 VCA page

Here are nine options for VCA-General Settings page [Region Entrance] [Region Exiting] [Advanced Motion Detection] [Tamper Detection] [Line Crossing] [Loitering] [Human Detection] [People Counting] [Object Left/Removed] that you can select. Besides, you can choose the [Settings] to do some basic setup.

Step1: Check the checkbox to enable the VCA that you choose, you can draw the interested area or click the Select All button  to select all areas interested.

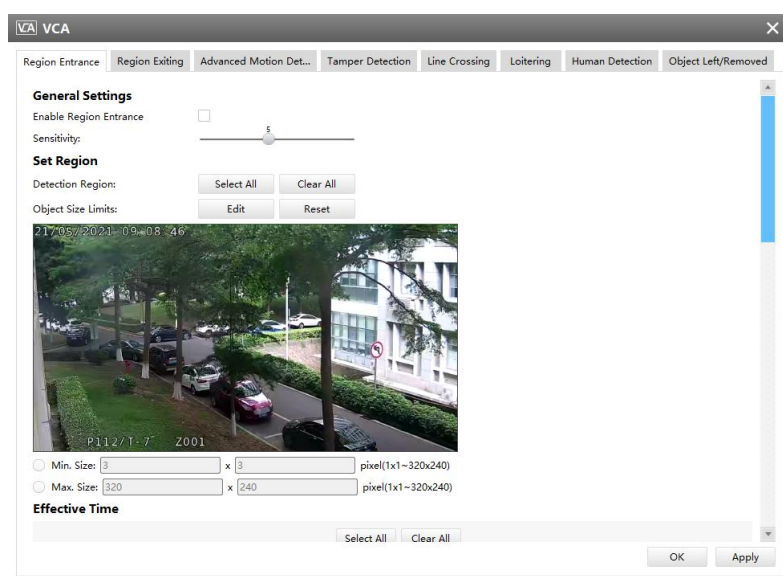


Figure 6-2 General Settings

Step2: After finishing general settings you can draw the schedule in the **Action Settings**

page. And then click **[OK]** or **[Apply]** after all done.



Kindly Note

For the firmware of Network Camera, V4x.7.0.74 or above, supporting the VCA function by default. For the firmware which below V4x.7.0.74, please upgrade the Network Camera to V4x.7.0.74 or above.

VII. Advantages of Milesight Video Content Analysis

Detect suspicious activities immediately

Provide pro-active operation

Reduce workload for the staff

Automatically analyze surveillance video in real-time

Independent function settings in Network Cameras, NVR and CMS

VCA solution ensures that video surveillance more accurate and cost-effective

VIII. Conclusion

With Milesight VCA solution the operator can pre-define situation detection which reduce a lot of workload. And the intelligent monitoring application is general as well as specialized for different industries, creating new end user benefits and opening up new business possibilities.

—————END—————