



The Intelligent Surveillance Solution

Intelligent Video Surveillance User Manual

Ver. 4.0.0.120910.00

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1. Introduction

The **Advanced Intelligent Video Surveillance** is a program powered by cutting-edge image processing algorithms to deliver advanced and instant video analysis by tracking both moving objects and static targets while factoring the environmental nuances such as changing lighting, leaves, water waves, and so on. The **Advanced Intelligent Video Surveillance** features easy-to-configure UI to define detection rules to trigger alerts in real time. Alerts are supported by any formats supported by the hardware.


For better grasp, the **Advanced Intelligent Video Surveillance** is simply addressed as IVS hereinafter in this manual. This manual will guide users to configure each application and walk through every advanced features provided by IVS.

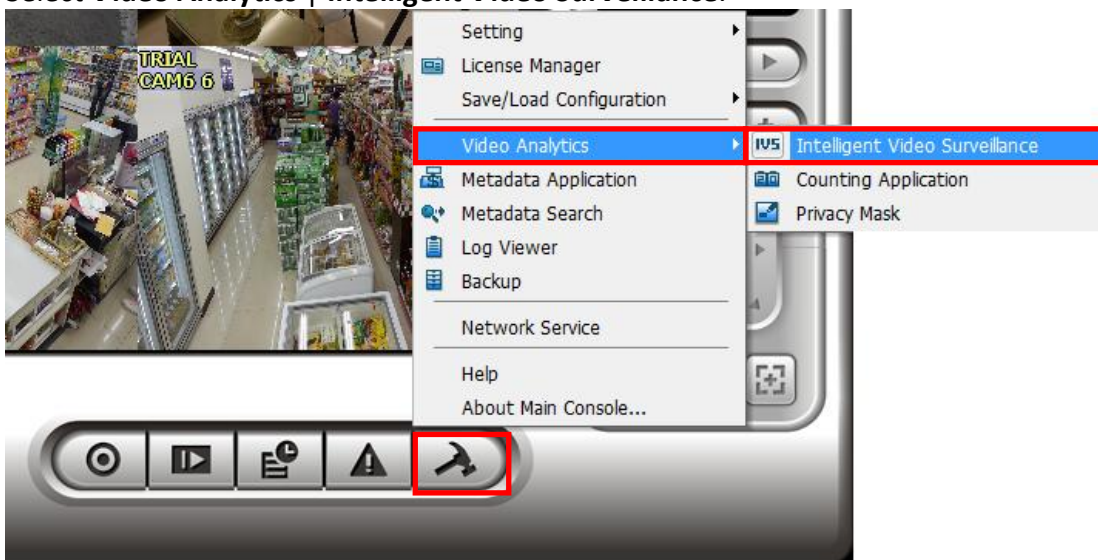
2. Access IVS Configuration

Configure IVS to define the detection rules and detection zones.

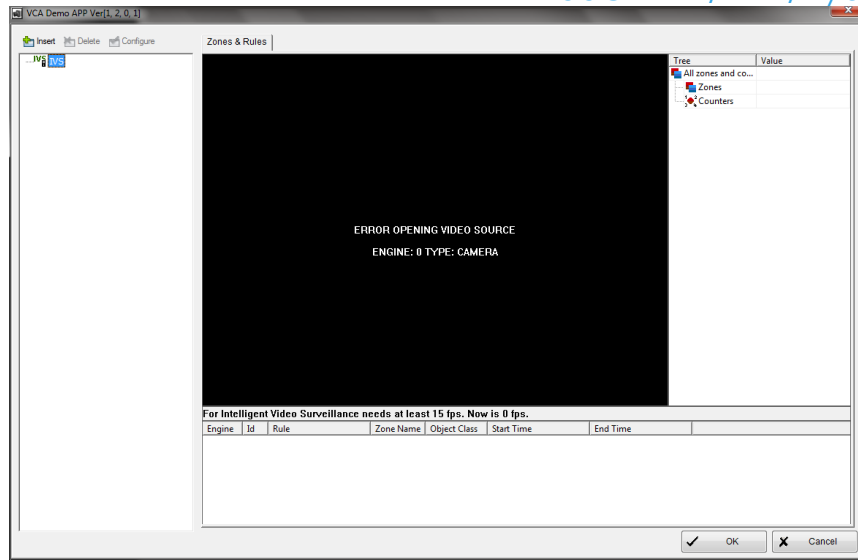
To access IVS configuration, there are two approaches.

Approach 1:

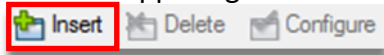
1. On **Main Console** screen, click  button.
A menu opens.
2. Select **Video Analytics | Intelligent Video Surveillance**.



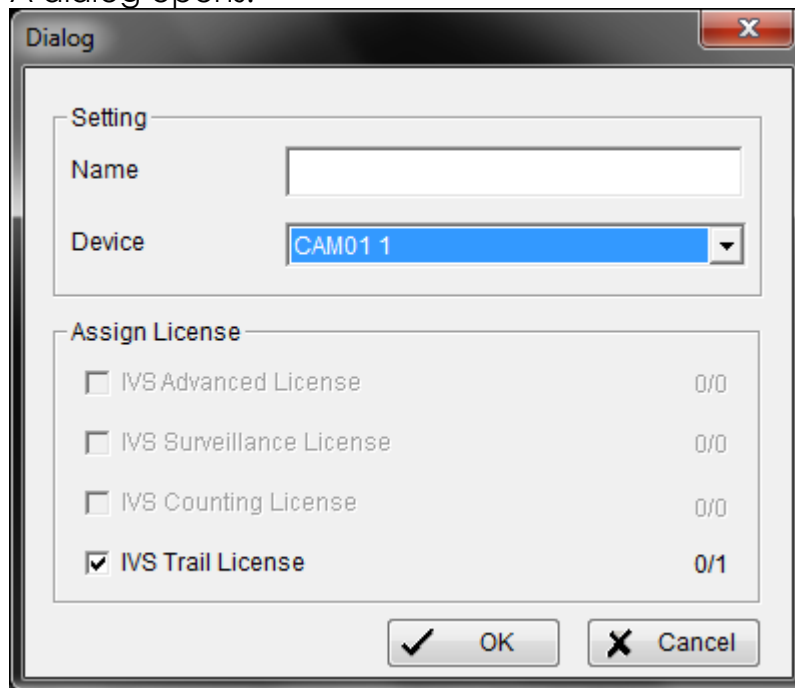
IVS opens.



- From the upper right of IVS screen, click **insert**.



A dialog opens.

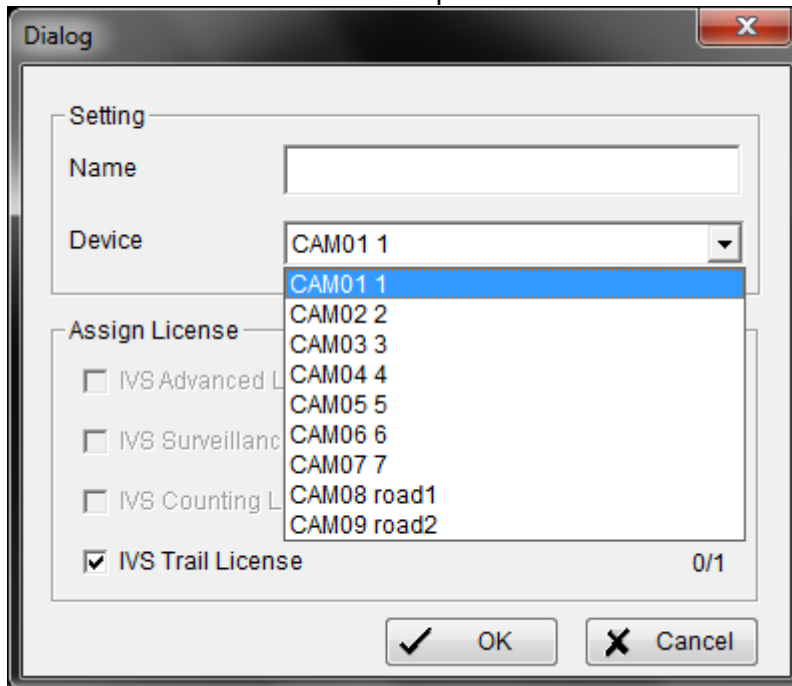


Note: IVS Trail license duration is 45 days.

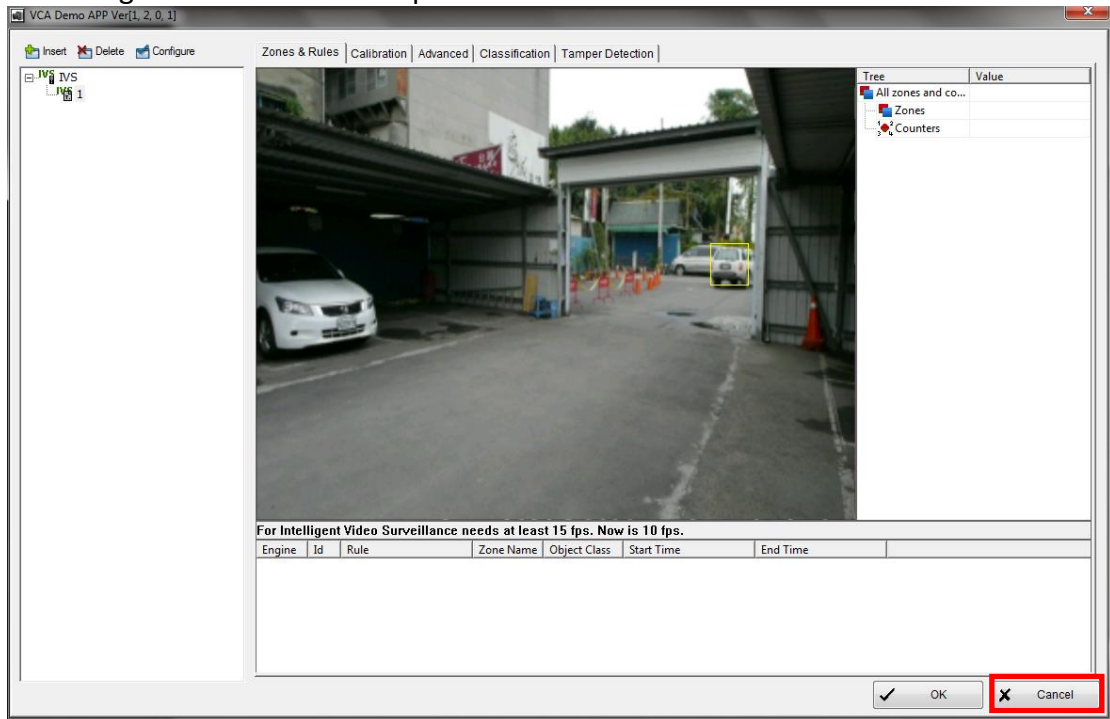
IVS license function table:

Function	Counting license	Surveillance license	Advanced license
People counting	√		√
Vehicle counting	√		√
Stabilizer	√		√
Tamper Detection	√	√	√
Presence		√	√
Appear and disappear		√	√
Enter and exit		√	√
Dwell		√	√
Stopping		√	√
Tailgating		√	√
People counting		√	√
Vehicle counting		√	√

4. Select a camera from the **Device** pull-down box. Click **OK** button.



5. IVS configuration screen then opens.

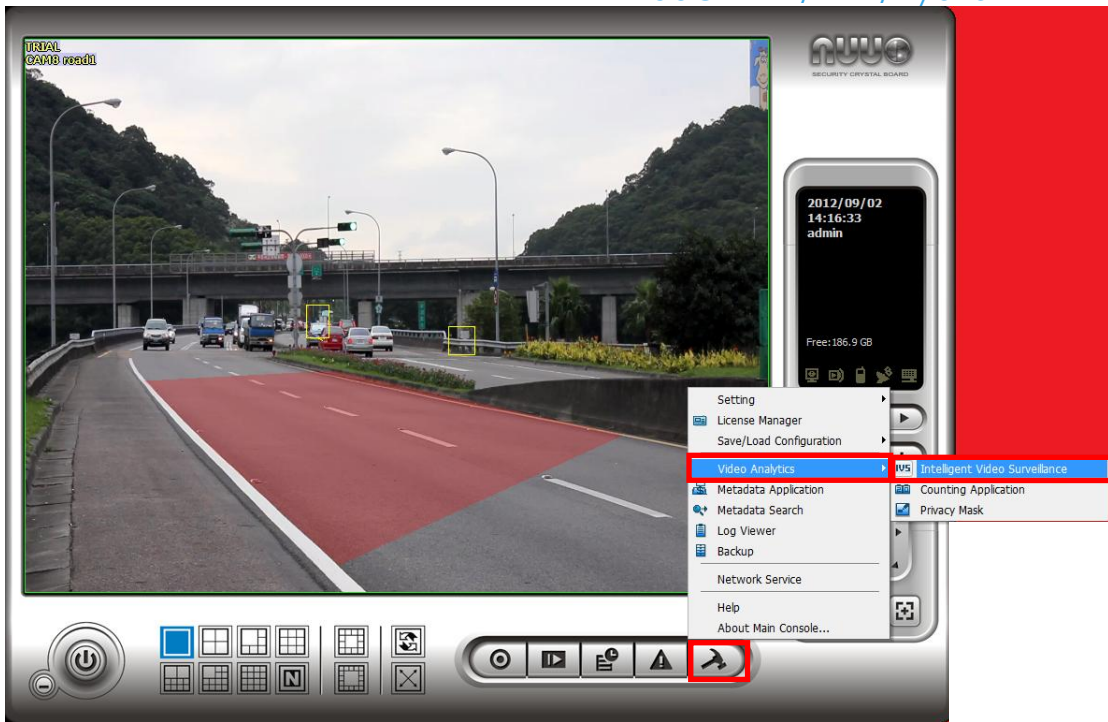



Approach 2

1. On **Main Console** screen, double-click the camera to analyze videos for.

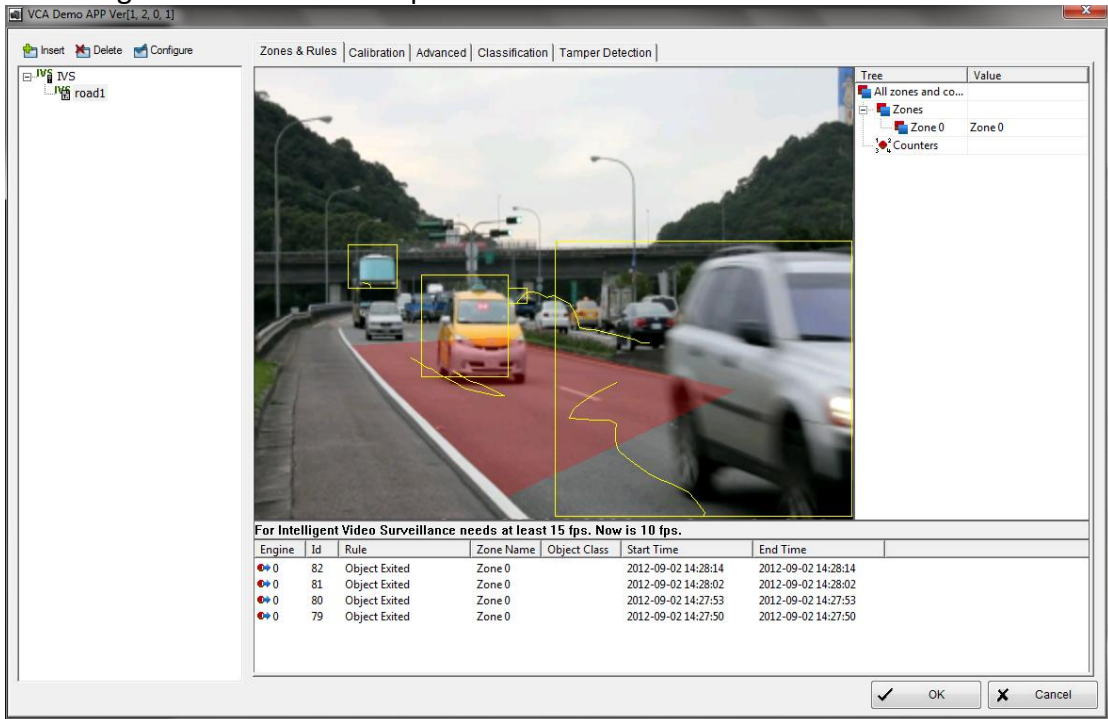


The selected camera's video image then opens full-scale in IVS window.



- From the menu bar, click  button. Select **Video Analytics | Intelligent Video Surveillance**.

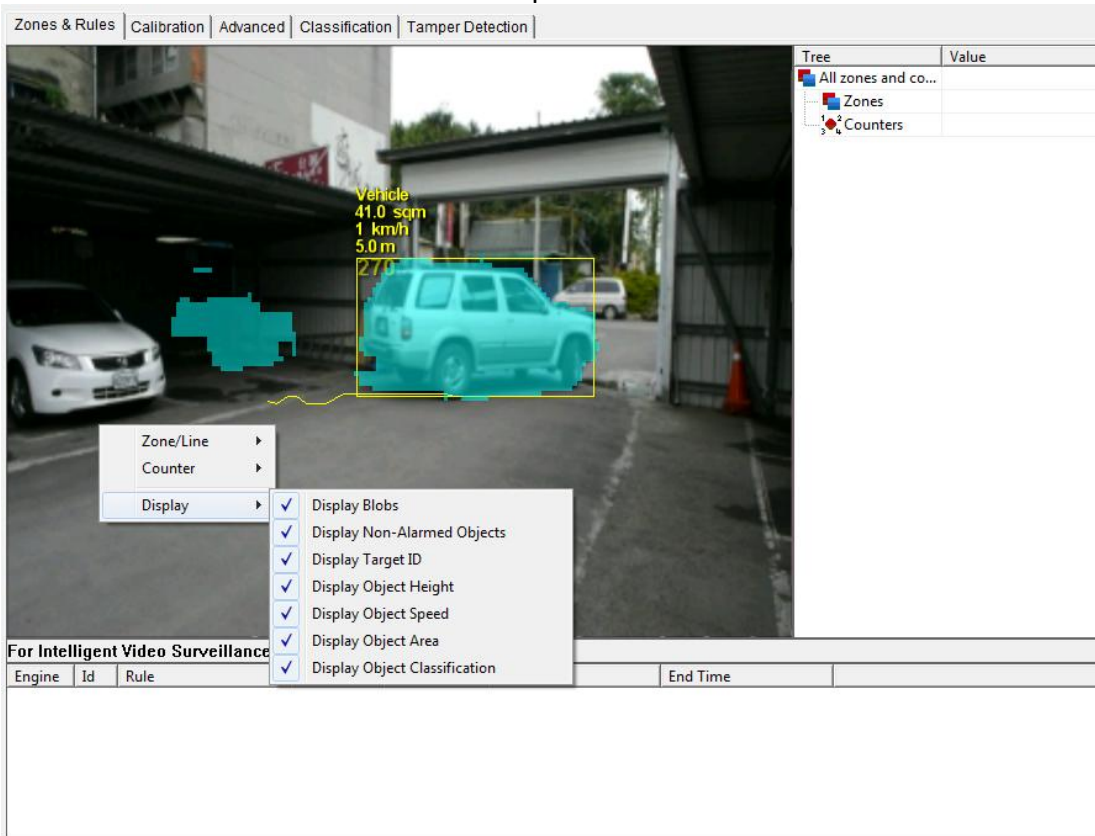
IVS configuration screen then opens.



3. Customize Tracking Display

Customize the tracking display window to show various tracking data. To customize the tracking display:

1. Right-click on the tracking display window.
A menu opens.
2. Select **Display**.
A submenu opens.
3. Make selection from the submenu that opens.



Featured settings are:

Setting	Description	Default
Display Blobs	Shows the algorithm coverage with blob. Blobs are displayed in turquoise.	Deselected (Disabled)
Display Non-Alarmed Objects	Displays all objects, including alarmed and non-alarmed, to show how the detection zones and object trails intersect, so as to make optimal settings. <ul style="list-style-type: none"> ▶ Alarmed objects are marked in red. ▶ Non-alarmed objects are marked in yellow. 	Selected (Enabled)
Display Object Height	Displays object height. <ul style="list-style-type: none"> ▶ This option is only available when the camera is calibrated. See also Calibrate Camera. 	Deselected (Disabled)
Display Object Speed	Displays object speed. <ul style="list-style-type: none"> ▶ This option is only available when the camera is calibrated. See also Calibrate Camera. 	Deselected (Disabled)
Display Object Area	Displays object area. <ul style="list-style-type: none"> ▶ This option is only available when the camera is calibrated. See also Calibrate Camera. 	Deselected (Disabled)
Display Object Classification	Displays object classification. <ul style="list-style-type: none"> ▶ This option is only available when the camera is calibrated. See also Calibrate Camera and Classification. 	Deselected (Disabled)

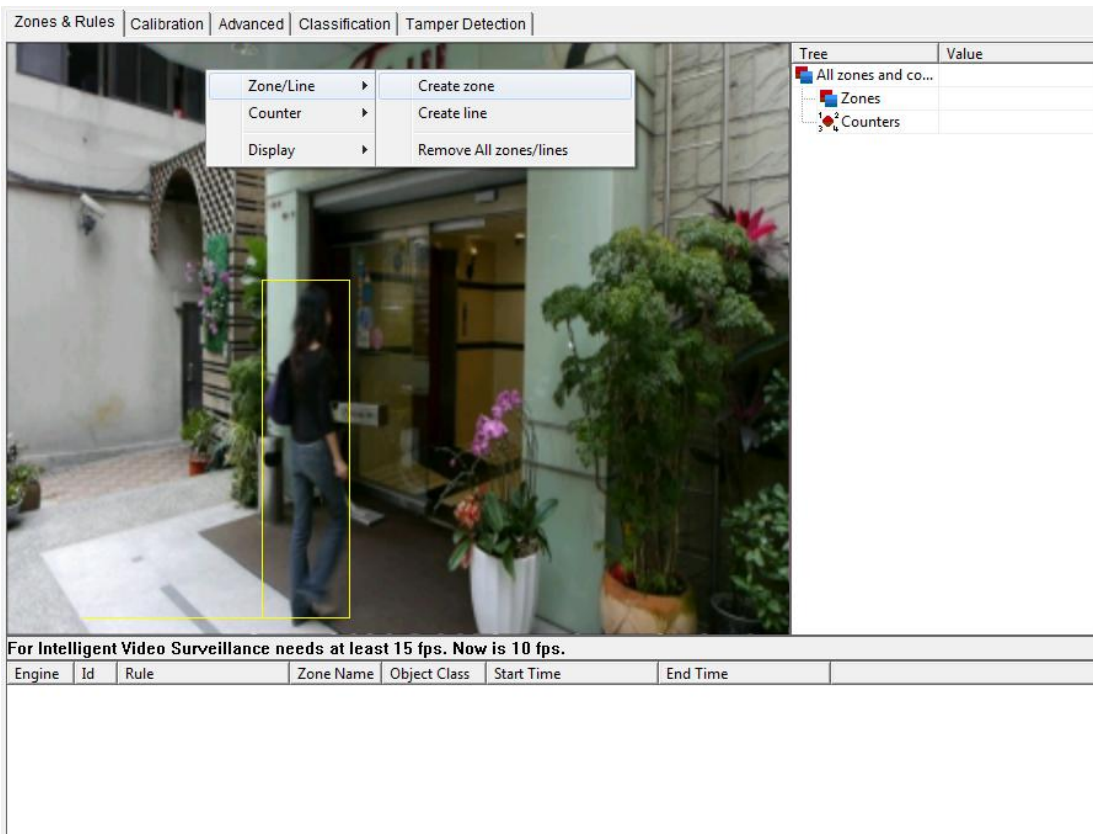
4. Press **OK** button to save the change and quit setting.

4. Create Detection Zones and Lines

Define detection zones and lines to be able to detect the events of interest.

4.1. Create a Zone or Line

1. Right-click on the video image.
A menu opens.
2. Select **Zone/Line**.
A submenu opens.
3. Select **Create zone** or **Create line**.



4. See [4.2. Edit Zones and Lines](#) for the follow-up.

4.2. Edit Zones and Lines

The shape or size of the defined detection zones and lines are editable by manipulating the "nodes" that represent the zone/line vertices. Simply click and drag a node to the desired position to change the shape of a zone or line.

In order to define a complex shape, adding or removing a node may be necessary. See [Add and Remove Nodes](#) for the follow-up.

node

Click and drag

Define zone

Select zone color.

Select zone type.

Tree

Tree	Value
Zone 0	Zone 0
Name	Zone 0
Color	Red
Detect/non-dete... Detection	
<input checked="" type="checkbox"/> Presence	Zone 0-Presence
<input type="checkbox"/> Enter	
<input type="checkbox"/> Exit	
<input type="checkbox"/> Appear	
<input type="checkbox"/> Disappear	
<input type="checkbox"/> Stopped	
<input type="checkbox"/> Dwell	
<input type="checkbox"/> Direction ...	
<input type="checkbox"/> Tailgating	

For Intelligent Video Surveillance needs at least 15 fps. Now is 10 fps.

Engine	Id	Rule	Zone Name	Object Class	Start Time	End Time
0	0	Object Presence	Zone 0		2012-09-01 21:29:39	2012-09-01 21:29:48

4.3. Add and Remove Nodes

Add one or more nodes to re-define the shape of the detection zones and lines to meet any scenario.

To add a node:

1. Double-click on the zone or line at the point where the new node should be added.
Or right-click on the zone or line at the point where the new node should be added.
And select **Node | Insert node** from the menu that opens.
2. Press **OK** button to save the change and quit setting.

To delete a node:

1. Right-click on the node and select **Node... | Remove node** from the menu that opens.

For Intelligent Video Surveillance needs at least 15 fps. Now is 10 fps.

Engine	Id	Rule	Zone Name	Object Class	Start Time	End Time
0	20	Object Presence	Zone 0		2012-09-01 22:08:53	2012-09-01 22:08:53
0	19	Object Presence	Zone 0		2012-09-01 22:08:51	2012-09-01 22:08:55
0	17	Object Presence	Zone 0		2012-09-01 22:08:27	2012-09-01 22:08:54
0	18	Object Presence	Zone 0		2012-09-01 22:08:27	2012-09-01 22:08:31
0	15	Object Presence	Zone 0		2012-09-01 22:08:09	2012-09-01 22:08:22

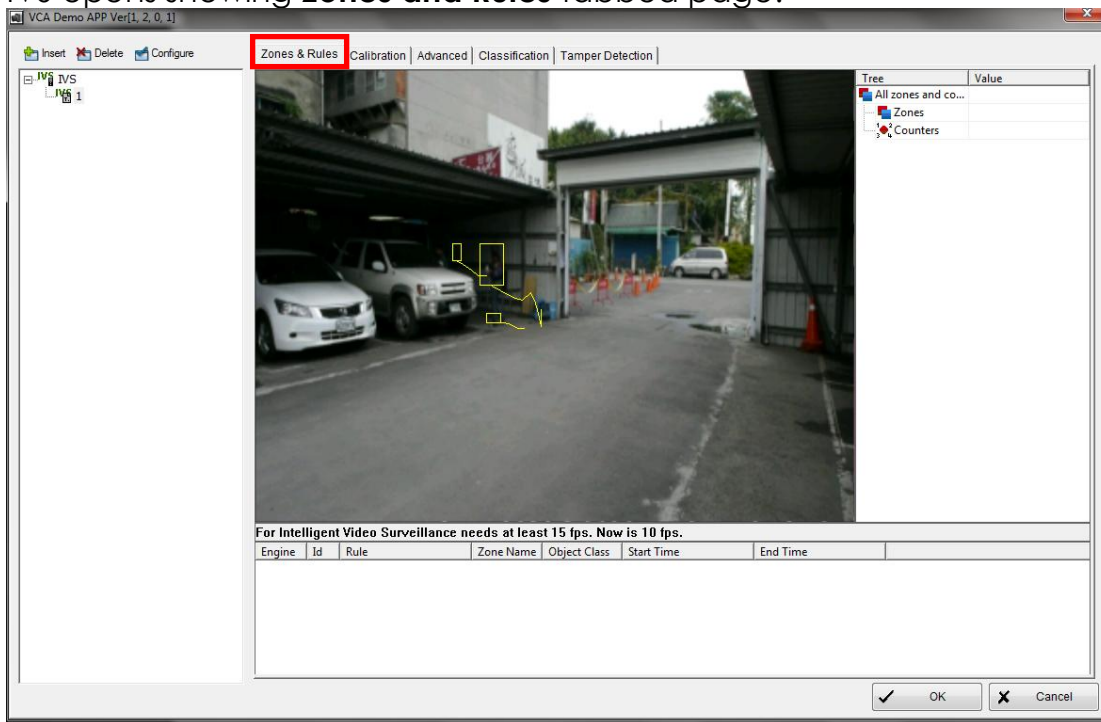
2. Press **OK** button to save the change and quit setting.

5. Configure Zones & Rules

To create useful outputs, it is essential to define the zones and rules to monitor. IVS features **Zones and Rules** settings to tune the detection zones and detection rules. This chapter will guide users to make the settings.

To access **Zones & Rules** settings:

1. Access IVS configuration as described in [Access IVS Configuration](#).
IVS opens showing **Zones and Rules** tabbed page.



Zones and Rules tabbed page features the following elements:

5.1. Tracking Display

The tracking display shows all moving and static targets that are currently being tracked by IVS. Alarmed objects are marked in red and non-alarmed objects are marked in yellow.

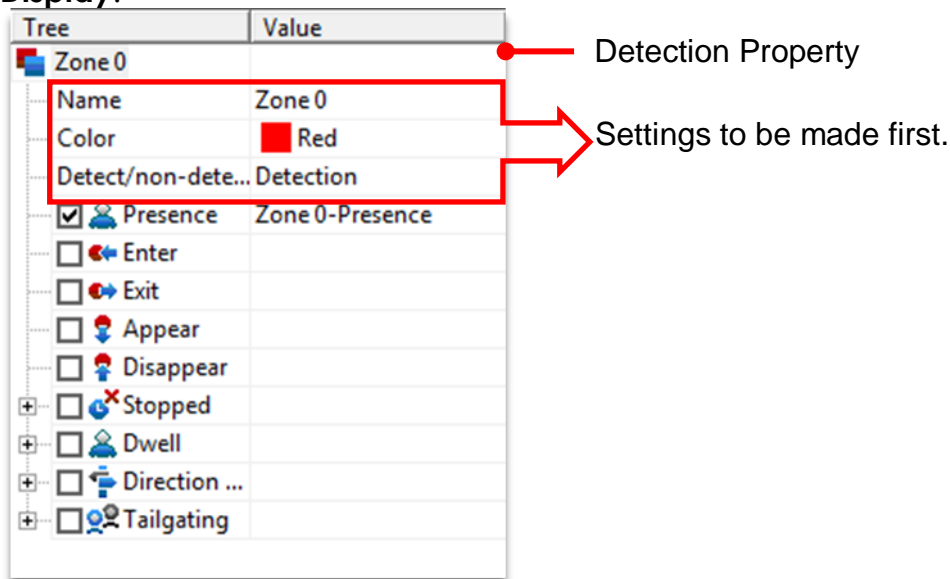
Engine	Id	Rule	Zone Name	Object Class	Start Time	End Time
0	9	Object Entered	Zone 2		2012-09-02 00:16:40	2012-09-02 00:16:40
0	8	Object Entered	Zone 2		2012-09-02 00:15:41	2012-09-02 00:15:41

This screenshot shows two detection zones in red and a detection line in green.

The tracking display shows how the trails of the objects intersect the detection zones and lines.

5.2. Detection Property

Once a detection zone or line is created, the detection property, a series of settings to define the rules for the selected zone/line, will show up on the right side of the **Tracking Display**.



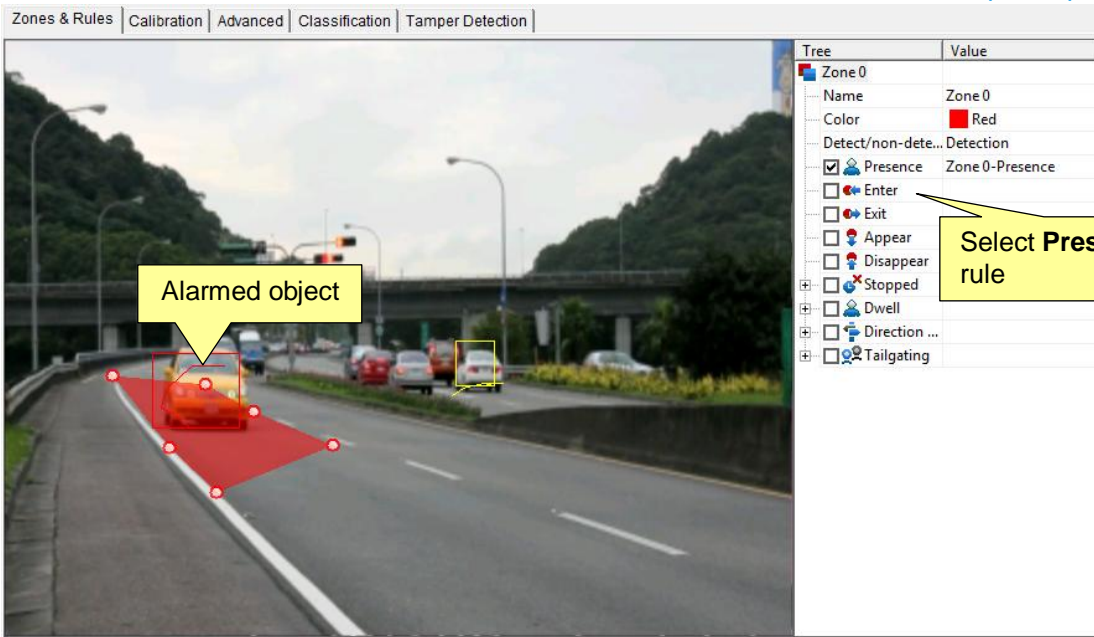
Before proceeding to set detection property, make the following settings first:

Setting	Description	Default
Name	Dubs the created zone or line with a name.	Zone ID No.
Color	Hatches the created zone or line with a color to make it obvious.	Red
Detect/ non-detect	Enables the created zone/line for detection, or disables it from detection. ▶ See also Non-Detection Zone .	Detection

Depending on available features and applied settings, the available rules may include the following:

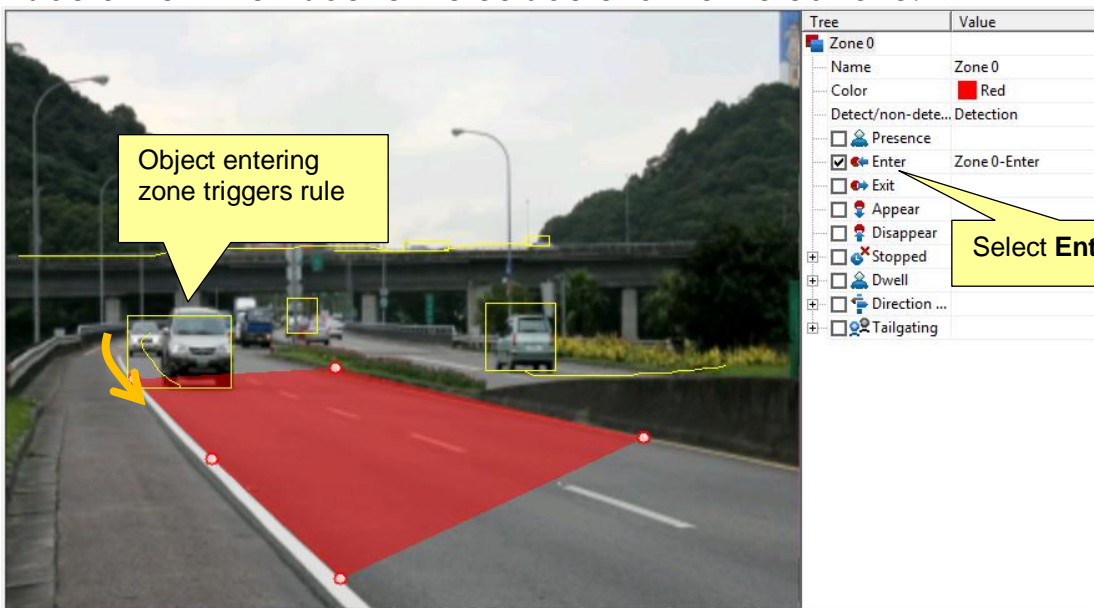
5.2.1. Presence

Select **Presence** to trigger the alarm when an object becomes present inside a zone or passes through a line.



5.2.2. Enter & Exit

Select **Enter** or **Exit** to trigger the alarm when an object crosses from the outside to the inside or from the inside to the outside of a monitored zone.



Object exiting zone triggers rule

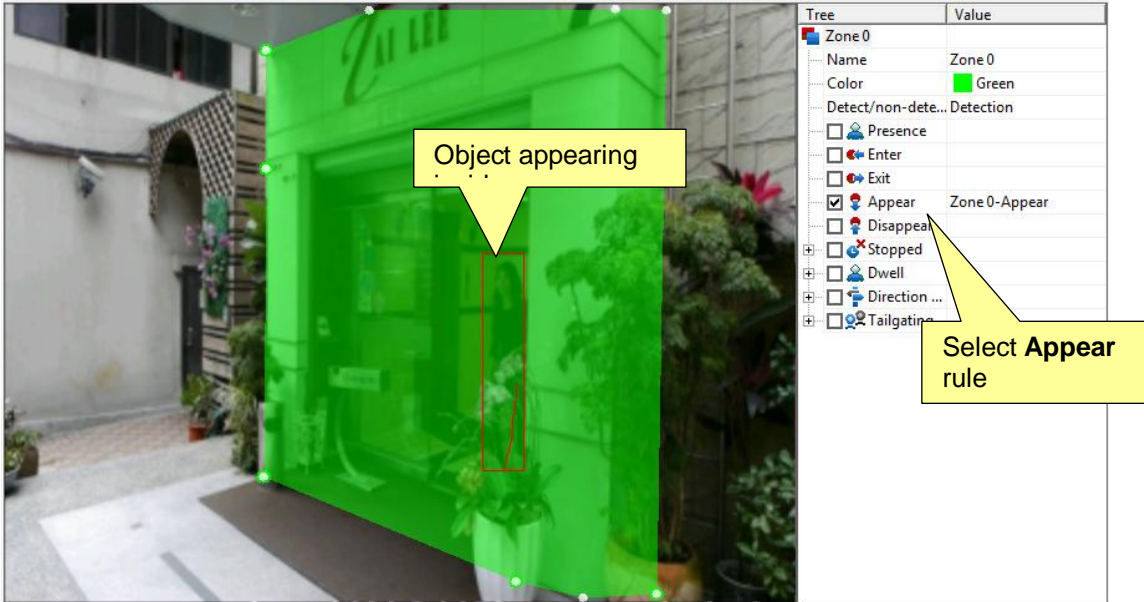
Select Exit rule

Tree	Value
Zone 0	Zone 0
Name	Zone 0
Color	Red
Detect/non-dete...	Detection
<input type="checkbox"/> Presence	
<input type="checkbox"/> Enter	
<input checked="" type="checkbox"/> Exit	Zone 0-Exit
<input type="checkbox"/> Appeal	
<input type="checkbox"/> Disappear	
<input type="checkbox"/> Stopped	
<input type="checkbox"/> Dwell	
<input type="checkbox"/> Direction ...	
<input type="checkbox"/> Tailgating	

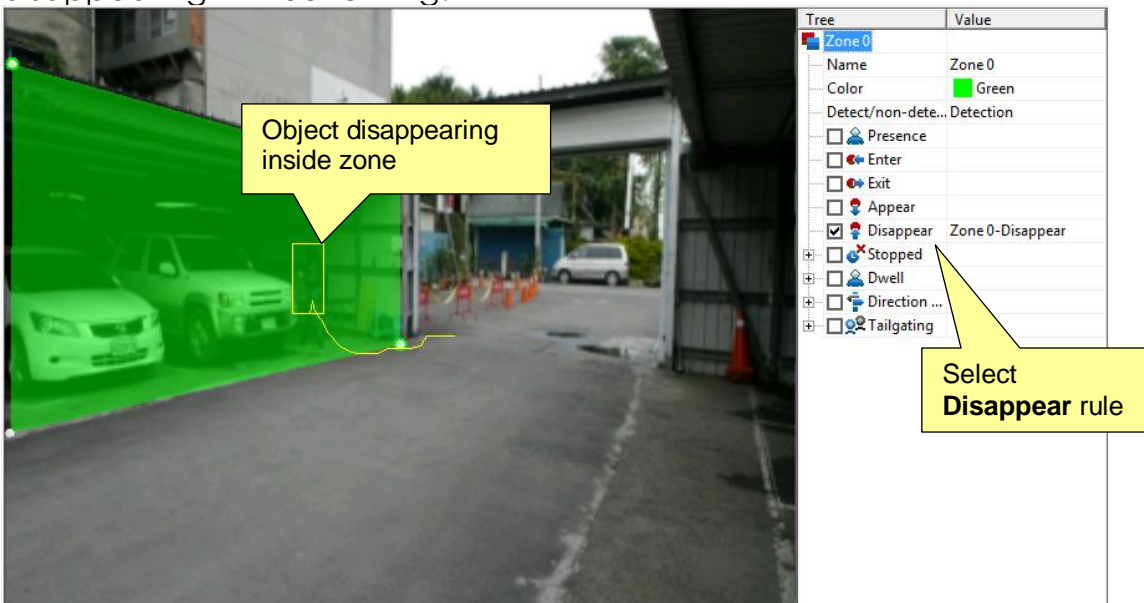
5.2.3. Appear & Disappear

Select **Appear** or **Disappear** to trigger the alarm when an object appears in or disappears from the monitored zone.

Different from **Enter**, **Appear** deals with an initially detected object inside the monitored zone without entering, e.g. people appearing in a doorway, or cars appearing from an underground carpark.



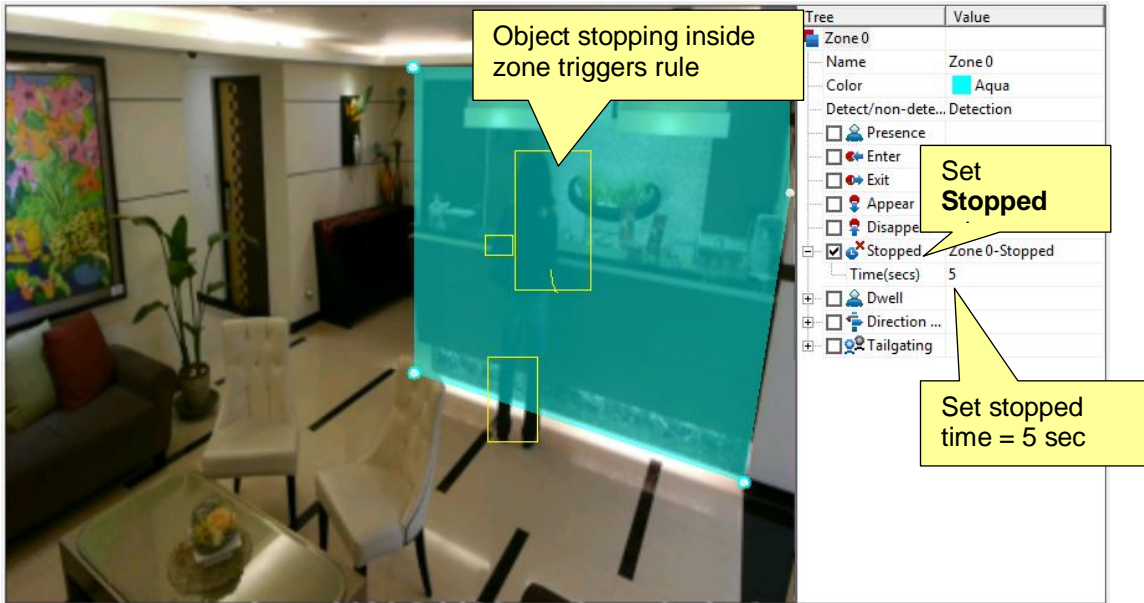
Different from **Exit**, **Disappear** deals with an object tracked into the monitored zone and disappearing without exiting.



5.2.4. Stopped

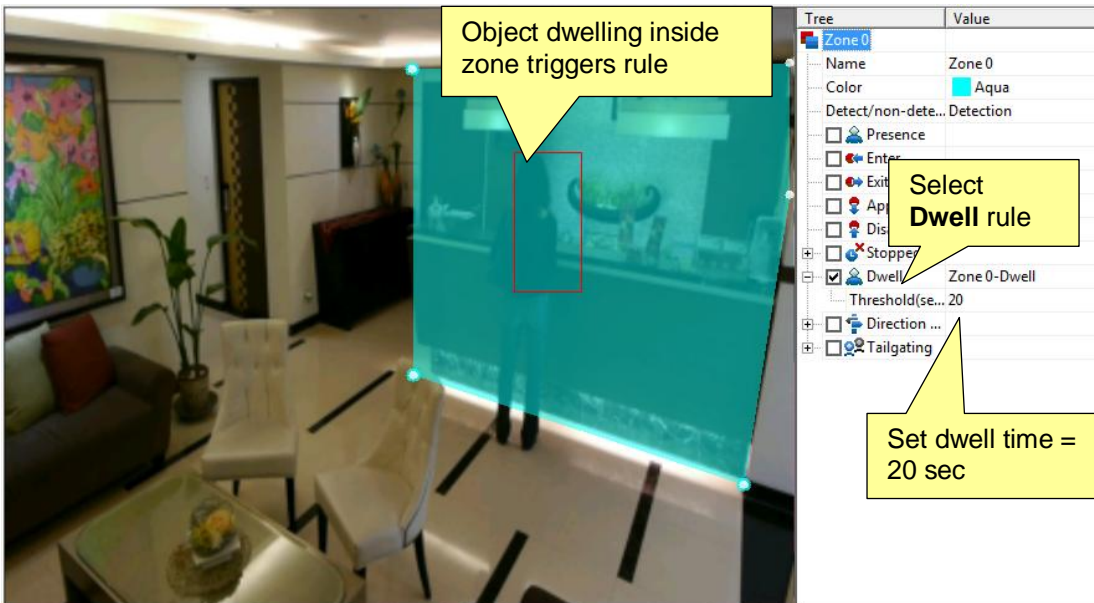
Select **Stopped** to trigger the alarm when an object stops inside the monitored zone for longer than the defined amount of time.

The stopped time is configurable in **Time (secs)** box.



5.2.5. Dwell

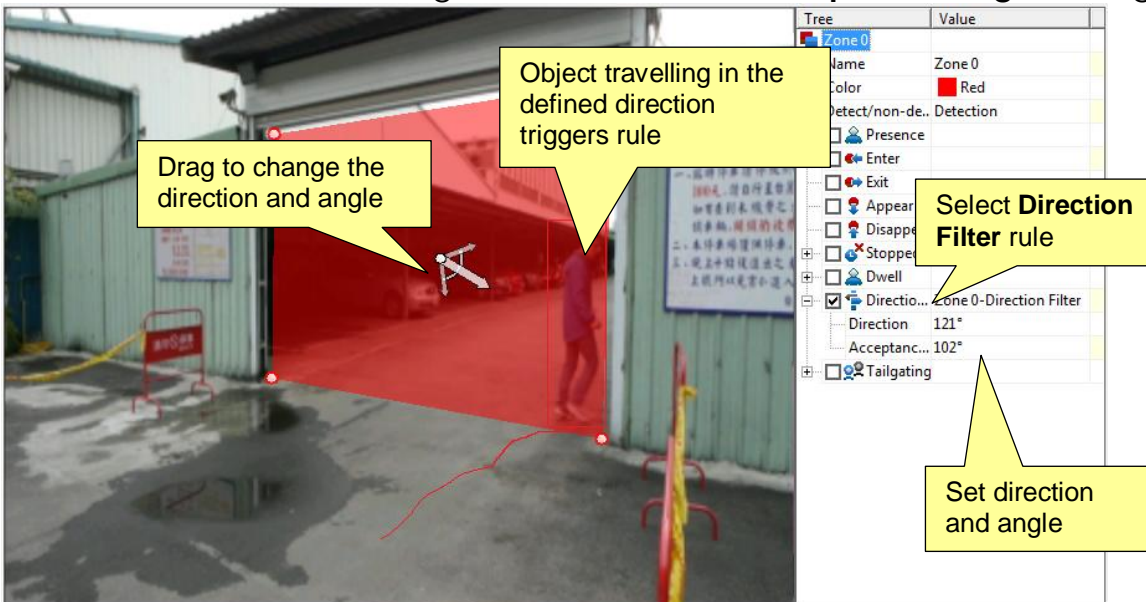
Select **Dwell** to trigger the alarm when an object dwells inside a zone for longer than the defined amount of time.



5.2.6. Direction Filter

Select **Direction Filter** to trigger the alarm when an object travels in the defined direction (within an accepted angle) through the monitored zone or over a line.

Define the direction and angle in **Direction** and **Acceptance Angle** settings.



5.2.7. Tailgating

Select **Tailgating** in the detection property to trigger the alarm when an object crosses a line or a monitored zone within a certain time after a previous object crossed the line or a monitored zone.

Define the minimum allowable time between two successive objects by **Threshold** settings.

Object 2 follows and enters detection

Object 1 enters detection zone

Select Tailgating rule

Threshold set to 5 sec

Tree	Value
Zone 0	
Name	Zone 0
Color	Red
Detect/non-dete...	Detection
<input type="checkbox"/> Presence	
<input type="checkbox"/> Enter	
<input type="checkbox"/> Exit	
<input type="checkbox"/> Appear	
<input type="checkbox"/> Disappear	
<input type="checkbox"/> Stopped	
<input type="checkbox"/> Dwell	
<input type="checkbox"/> Direction ...	
<input checked="" type="checkbox"/> Tailgating	Zone 0-Tailgating
Threshold (s...)	5


5.3. Non-Detection Zone

In some busy scenes, many objects can interfere with the detection. For example, on a windy day, moving foliage can cause false alarms. In order to mitigate such issues, create "non-detection" zones, where nothing is detected or tracked.

Tree	Value
Zone 0	
Name	Zone 0
Color	Red
Detect/non-dete...	Detection
<input checked="" type="checkbox"/> Presence	Detection
<input type="checkbox"/> Enter	Non-Detection
<input type="checkbox"/> Exit	
<input type="checkbox"/> Appear	
<input type="checkbox"/> Disappear	
<input type="checkbox"/> Stopped	
<input type="checkbox"/> Dwell	
<input type="checkbox"/> Direction ...	
<input type="checkbox"/> Tailgating	

Select Non-Detection

Zones & Rules | Calibration | Advanced | Classification | Tamper Detection



Non-Detection Zone

Tree	Value
Zone 0	
Name	Zone 0
Color	Blue
Detect/non-dete...	Non-Detection

Select Non-Detection

6. Counters

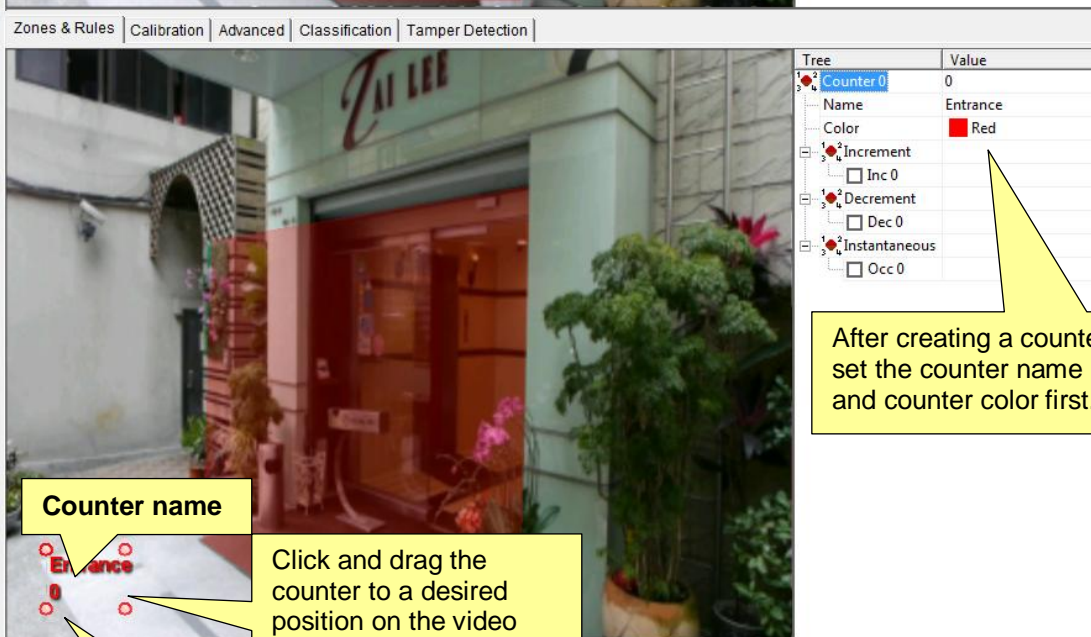
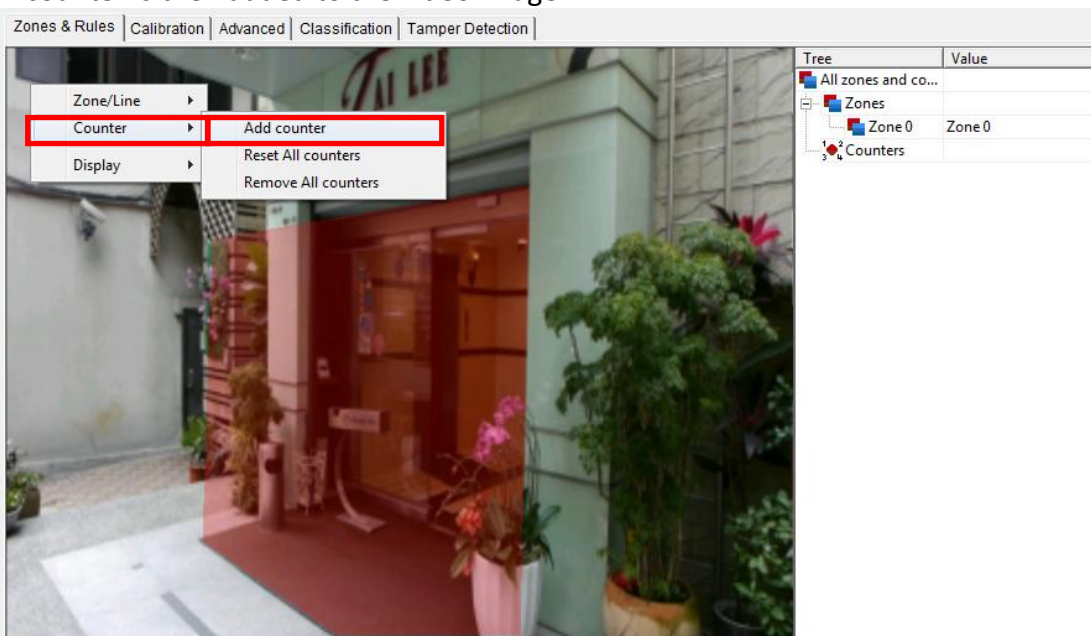
IVS is able to count how many objects have triggered the alarms. The program features capable counting by assigning a group of detection zones or lines to a counter. IVS's counter supports incremental, decremental and instantaneous counting. Configure the counter(s) by [Counter Property](#) that is similar to the previously mentioned [Detection Property](#).

6.1. Create Counters

To create a counter:

1. Access IVS configuration as described in [Access IVS Configuration](#).
IVS opens showing **Zones and Rules** tabbed page.
2. Right-click on the video image.
A menu opens.
3. Select **Counter | Add Counter**.

A counter is then added to the video image.



Counter name

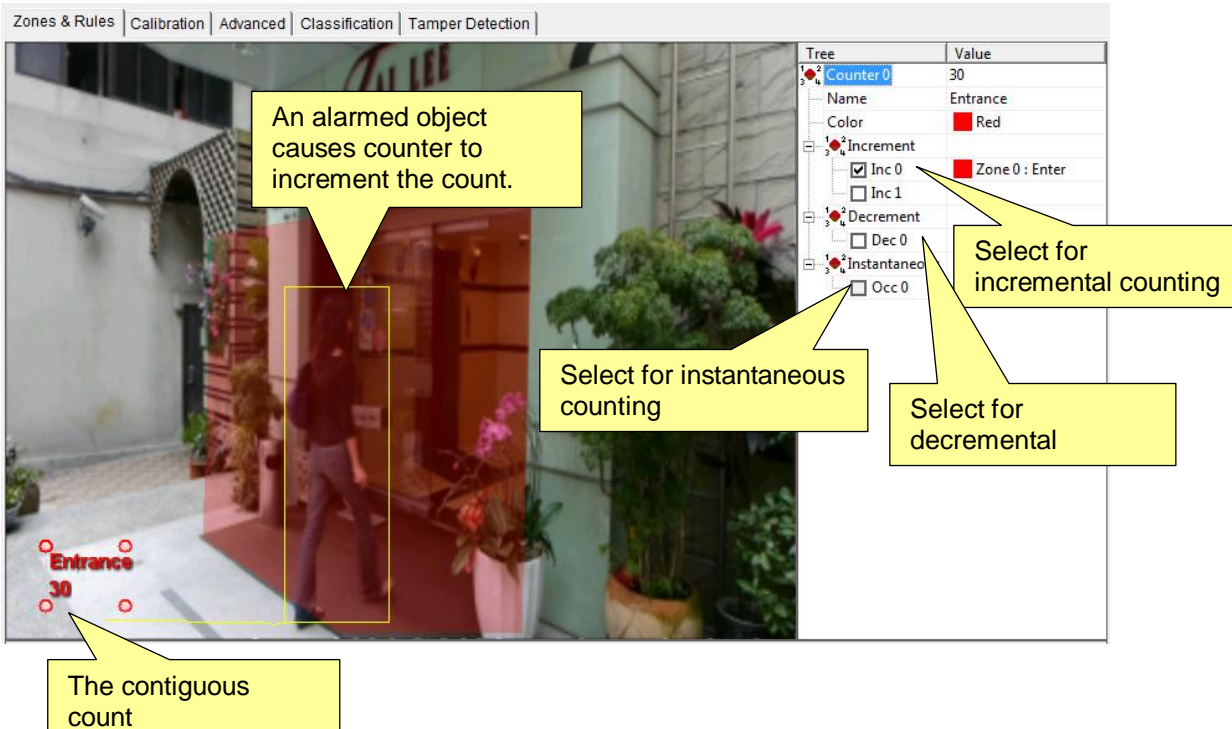
Click and drag the counter to a desired position on the video

The

4. Set the counter name and color.
5. Press **OK** button to save the change and quit setting.

6.2. Counter Property

For IVS counter, a count is provoked by an alarm triggered by an object. Hence, to count how many objects have been detected (triggering the alarm), a detection zone or line needs to be created and set to detect the corresponding rule. After assigning the zone to a counter, the counter is able to count the objects detected, in the way of increment, decrement or instantaneous count.



In this example the detection zone is set to trigger the alarm when an object enters it. And the counter is set to increment the count whenever the detection zone is entered. 30 objects have been counted.

Setting	Description	Default
Increment	Sets the count to increment each time the detection zone triggers an alarm.	Deselected (Disabled)
Decrement	Sets the count to decrement each time the detection zone triggers an alarm.	Deselected (Disabled)
Instantaneous	Sets the counter to display the number of one or more objects that simultaneously triggers the alarm.	Deselected (Disabled)

7. Calibrate Camera

Calibrate the camera to rectify its parameters such as height, tilt angle, and vertical field of view, which is required for IVS to classify objects to different classes to be able to calculate detected object properties such as speed, height and area.

7.1. Access

IVS features a **Calibration** tabbed page to calibrate the camera, to access this page:

1. Access IVS configuration as described in [Access IVS Configuration](#).
IVS configuration opens in **Zones & Rules** tabbed page.
2. Click **Calibration** tab.

Calibration tabbed page opens.

The screenshot displays the 'Calibration' tab within the IVS configuration software. The interface is divided into several sections:

- Navigation Tabs:** 'Zones & Rules', 'Calibration' (highlighted), 'Advanced', 'Classification', and 'Tamper Detection'.
- Video Feed:** A live camera view of a store aisle with a green perspective grid overlaid. Two 3D human figures (one red, one blue) are positioned on the grid. A yellow bounding box is visible around a person in the video.
- Diagram:** A schematic of a camera showing 'Height', 'Tilt Angle', and 'Field of View' relative to the 'Ground plane'.
- Camera Setup:**
 - Height: 10.00 meters
 - Tilt Angle: 30.00 deg
- Camera Intrinsic Parameters:**
 - Vertical FOV: 40.00 deg
- Calibration Status:** UNCALIBRATED
- Measurement Units:** Metric (m)

At the bottom of the configuration panel, there are buttons for 'Restore Defaults', 'Pause video', 'OK', and 'Cancel'.

7.2. Onscreen Elements

Use the onscreen elements on **Calibration** tabbed to adjust camera parameters. This section will detail these onscreen elements.

7.2.1. 3D Graphics Overlay

The 3D graphics overlay is a green grid representing the ground plane featured on the video image. During calibration, the features on the video image need to match with such 3D graphics overlay.

On the ground plane are a few 3D mimics to simulate the dimensions of persons. Use these mimics to verify the size of a person in the scene.

Note: each grid square is 2*2 metric.

Zones & Rules | Calibration | Advanced | Classification | Tamper Detection

Camera Setup

Height 10.00 meters

Tilt Angle 30.00 deg

Camera Intrinsic Parameters

Vertical FOV 40.00 deg

Calibration Status

UNCALIBRATED

Measurement Units

Metric (m)

Restore Defaults

Pause video

OK Cancel

Camera height and tilt angle

Vertical Field of View setting

Calibration

Unit setting

Restores

Pauses/plays video

Calibration mimic

7.2.2. Mouse controls

Use your mouse to adjust the calibration parameters:

- Click and drag the ground plane to change camera tilt angle.
- Scroll mouse wheel to adjust the camera height.
- Drag **Camera Intrinsic Parameters** slider to change camera's vertical field of view.

7.3. Calibrate Camera

Calibrate a camera to be able to estimate object parameters such as height, area, speed and classification.

In some cases when you know the camera's height, tilt angle and vertical field of view in question, simply enter the parameters to the corresponding settings and apply the changes.

In case the camera parameters are unknown, calibrate the camera. This section will guide you through calibration.

Step 1: Find some people in the scene

1. Find some people, or some people-sized objects in the scene. Try to find a person near the camera, and another person further away from the camera.
2. Click **Pause Video** button to pause the video to accurately place the mimics. Place the mimics on top of or near the people.
3. Enter in the height or estimated height of the camera if it is known.

The screenshot displays a video feed of a street scene with a green grid overlay. A red figure is placed on the ground, and a blue figure is placed further away. A yellow callout box points to the red figure with the text "Place one mimic next to a". Another yellow callout box points to the blue figure with the text "Place another mimic next to another person". To the right, a control panel is visible, featuring a diagram of a camera with labels for "Height", "Tilt Angle", and "Field of View". Below the diagram, the "Camera Setup" section shows "Height" set to 2.43 meters and "Tilt Angle" set to 9.20 deg. A yellow callout box points to the "Height" input field with the text "Actual height entered". The "Camera Intrinsic Parameters" section shows "Vertical FOV" set to 61.00 deg. The "Calibration Status" section shows "CALIBRATED". The "Measurement Units" section shows "Metric (m)". At the bottom, there are buttons for "Restore Defaults" and "Play video".

Step 2: Adjust tilt angle and camera height

Adjust the camera tilt angle and vertical field of view until both mimics are approximately the size of the real persons in the scene.

- Adjust camera the tilt angle by clicking and dragging the ground plane.
- Adjust camera height by scrolling mouse wheel.
- Adjust camera vertical field of view by dragging **Vertical Field of View** slider.

The 3 calibration parameters will be reflected in the corresponding setting fields.

Calibration Status box will reflect if the calibration is successful

The screenshot displays the camera calibration interface. On the left is a live video feed of a street scene with a green grid overlay. On the right is a settings panel with the following sections:

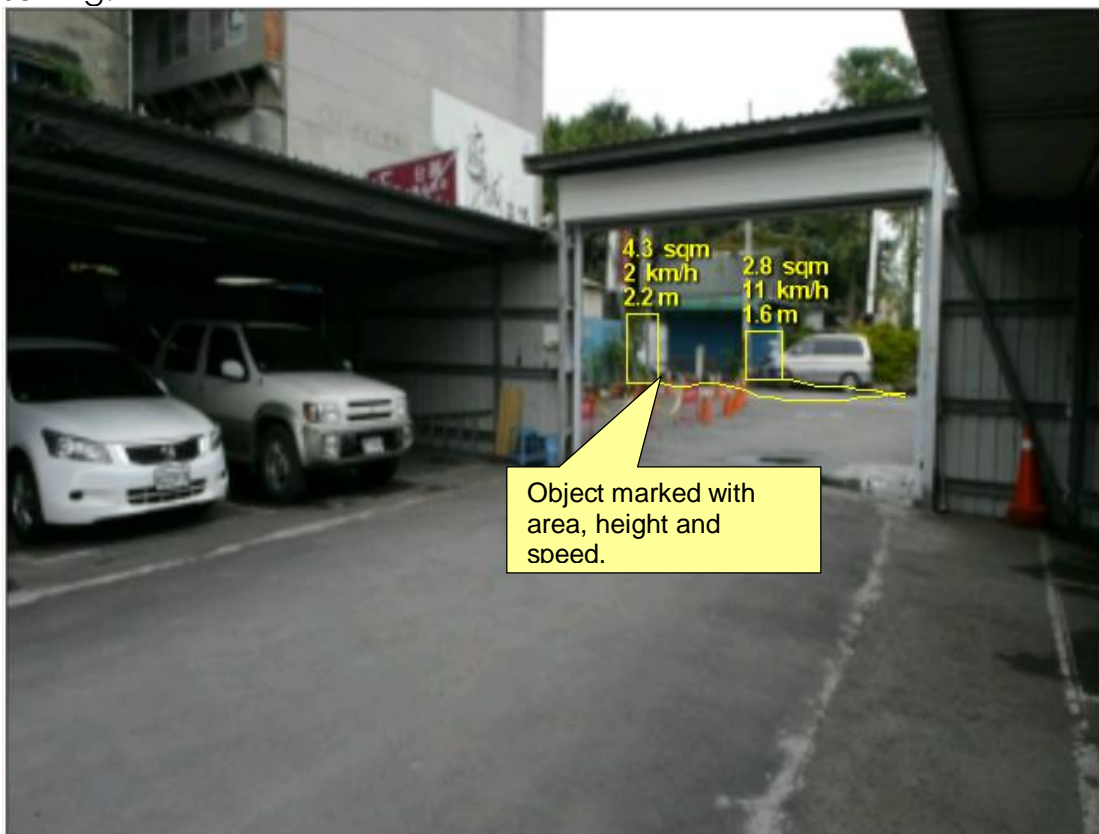
- Diagram:** A schematic showing a camera at a certain height above a ground plane, with labels for 'Height', 'Tilt Angle', and 'Field of View'.
- Camera Setup:** Height: 2.43 meters; Tilt Angle: 9.20 deg.
- Camera Intrinsic Parameters:** Vertical FOV: 61.00 deg.
- Calibration Status:** CALIBRATED. A yellow callout box with the text "Calibration succeeds" points to this section.
- Measurement Units:** Metric (m).
- Buttons:** Restore Defaults, Play video.

Step 3: Verify the setup

The more objects in the scene which the calibration is based on, the more accurate the calibration will be.

Once the camera is calibrated, objects in the video image are marked with height, area, speed and classification.

To adjust the measurement units between Metric and Imperial, use **Measurement Units** setting.



Note if the calibration goes wrong:

If the mimics get lost or disappear due to an odd calibration configuration, restart the calibration by clicking **Restore Defaults** button.

Step 4: Press **OK** button to save the change and quit setting.

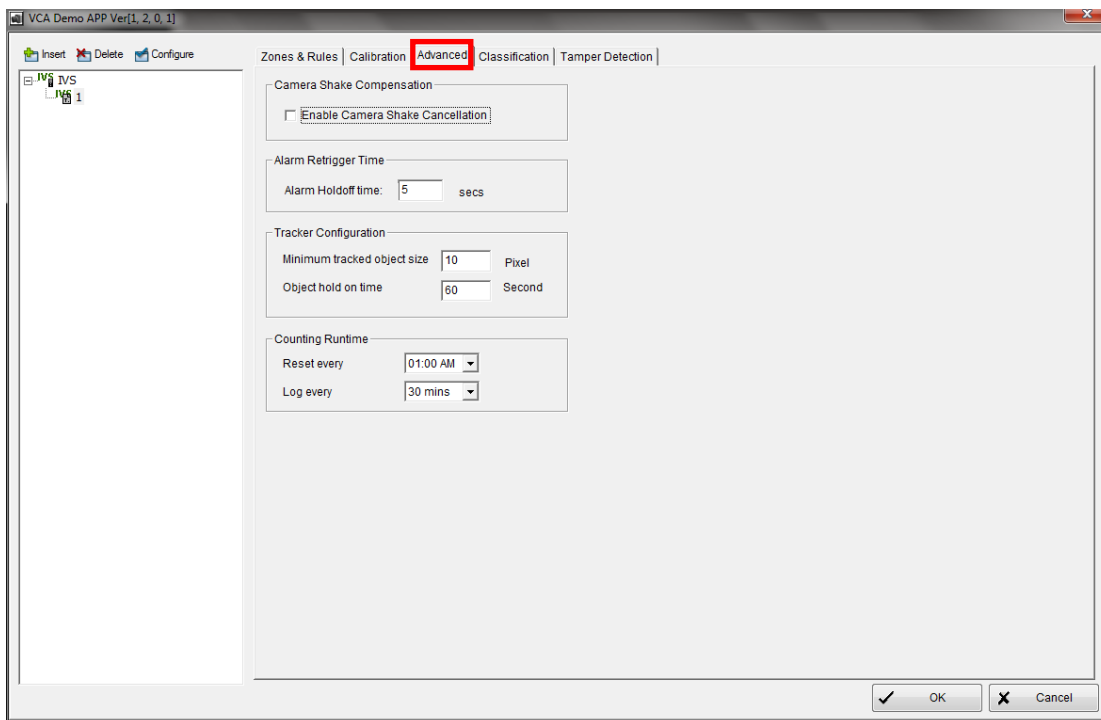
8. Advanced IVS Configuration

In most installations, the default IVS configuration will suffice. However, in some cases, users need some advanced IVS settings to optimize IVS performance. IVS features the advanced settings on **Advanced** tabbed page.

8.1. Access

To access advanced IVS configuration:

1. Access IVS configuration as described in [Access IVS Configuration](#). IVS configuration opens in **Zones & Rules** tabbed page.
 2. Click **Advanced** tab.
- Advanced** tabbed page opens.



8.2. Advanced Settings

Zones & Rules | Calibration | **Advanced** | Classification | Tamper Detection

Camera Shake Compensation

Enable Camera Shake Cancellation

Alarm Retrigger Time

Alarm Holdoff time: secs

Tracker Configuration

Minimum tracked object size Pixel

Object hold on time Second

Counting Runtime

Reset every

Log every

Featured settings on **Advanced** tabbed page are:

Setting	Description	Default									
Camera Shake Cancellation	Select Enable Camera Shake Cancellation to improve IVS performance if the cameras are installed in vibration-oriented locations and thus suffer from shake problems. <ul style="list-style-type: none"> ▶ If camera shake is not a concern in your installation, disable this setting to have the best IVS performance. 	Deselected (Disabled)									
Alarm Retrigger Time	Alarm Holdoff Time sets the delay between two successive alarms triggered by a rule defined for an object.	5 seconds									
Tracker Configuration	Sets what to track and the time to track. Featured settings are:										
	<table border="1"> <thead> <tr> <th>Setting</th> <th>Description</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>Minimum tracked object size</td> <td>Defines the least size of object to track. <ul style="list-style-type: none"> ▶ Normally there is no need to modify this parameter. ▶ Lower the value to track smaller objects sacrificing noise immunity. </td> <td>10 pixel</td> </tr> <tr> <td>Object Holdon Time</td> <td>Defines the time to track an object before it becomes stationary. <ul style="list-style-type: none"> ▶ IVS will forget the objects that become stationary after the defined Object Holdon Time. </td> <td>60 sec</td> </tr> </tbody> </table>	Setting	Description	Default	Minimum tracked object size	Defines the least size of object to track. <ul style="list-style-type: none"> ▶ Normally there is no need to modify this parameter. ▶ Lower the value to track smaller objects sacrificing noise immunity. 	10 pixel	Object Holdon Time	Defines the time to track an object before it becomes stationary. <ul style="list-style-type: none"> ▶ IVS will forget the objects that become stationary after the defined Object Holdon Time. 	60 sec	
Setting	Description	Default									
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Object Holdon Time	Defines the time to track an object before it becomes stationary. <ul style="list-style-type: none"> ▶ IVS will forget the objects that become stationary after the defined Object Holdon Time. 	60 sec									
Counting Runtime	Featured settings are:										
	<table border="1"> <thead> <tr> <th>Setting</th> <th>Description</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>Reset every</td> <td>Sets the daily time to reset every counter</td> <td>01:00 AM</td> </tr> <tr> <td>Log every</td> <td>Sets how often to write the counts into the log file.</td> <td>Every 30 minutes</td> </tr> </tbody> </table>	Setting	Description	Default	Reset every	Sets the daily time to reset every counter	01:00 AM	Log every	Sets how often to write the counts into the log file.	Every 30 minutes	
Setting	Description	Default									
Reset every	Sets the daily time to reset every counter	01:00 AM									
Log every	Sets how often to write the counts into the log file.	Every 30 minutes									

9. Classification

Once the camera is calibrated, IVS is capable of object classification and shows it on the video image. Classification relies on an object's properties such as object area and speed.

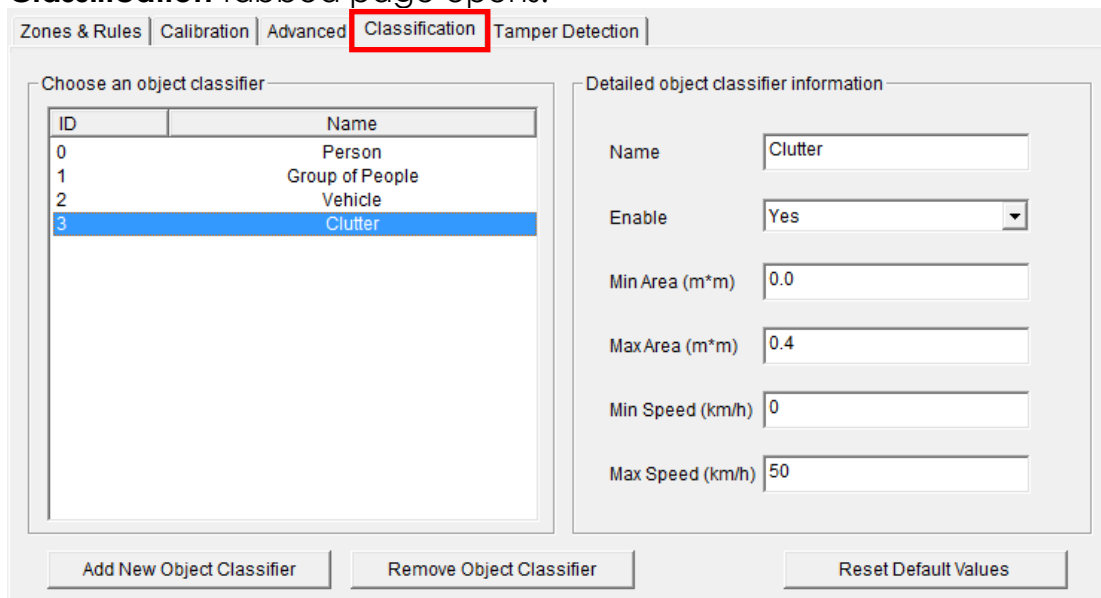
IVS configuration is pre-loaded with some most common object classes, which need not to change in most cases. In case the classification parameters need to change, IVS features classification settings on **Classification** tabbed page to add new object classes and change the pre-loaded classification parameters. This chapter will guide you to change the classification settings.

9.1. Access

To access classification settings:

1. Access IVS configuration as described in [Access IVS Configuration](#). IVS configuration opens in **Zones & Rules** tabbed page.
2. Click **Classification** tab.

Classification tabbed page opens.



The screenshot displays the 'Classification' configuration page. At the top, there are navigation tabs: 'Zones & Rules', 'Calibration', 'Advanced', 'Classification' (highlighted with a red box), and 'Tamper Detection'. Below the tabs, the page is divided into two main sections:

- Choose an object classifier:** A table with two columns: 'ID' and 'Name'. The rows are:

ID	Name
0	Person
1	Group of People
2	Vehicle
3	Clutter

The row with ID 3 and Name 'Clutter' is selected and highlighted in blue.
- Detailed object classifier information:** A panel for configuring the selected classifier. It includes:
 - Name: Text input field containing 'Clutter'.
 - Enable: Dropdown menu set to 'Yes'.
 - Min Area (m*m): Text input field containing '0.0'.
 - Max Area (m*m): Text input field containing '0.4'.
 - Min Speed (km/h): Text input field containing '0'.
 - Max Speed (km/h): Text input field containing '50'.

At the bottom of the page, there are three buttons: 'Add New Object Classifier', 'Remove Object Classifier', and 'Reset Default Values'.

9.2. Classification Settings

Featured settings on **Classification** tabbed page are:

Setting	Description	Default
Add New Object Classifier	Adds a new object class.	--
Remove Object Classifier	Removes the selected object class.	--
Reset Default Values	Restore classification settings to default state.	--
Name	Dubs the class with a name.	Object ID. No
Enable	Puts the class to work.	Yes
Min Area (m*m)	Sets the lower bound of object area.	0.0
Max Area (m*m)	Sets the upper bound of object area.	200.0
Min Speed (km/h)	Sets the lower bound of object speed.	0
Max Speed (km/h)	Sets the upper bound of object speed.	200

Note that objects not fitting to any class are labeled as "Unclassified" on video images.

10. Tamper Detection

IVS features **Tamper Detection** to detect camera the tampering events such as blockage, de-focusing, redirecting, spray-painting and so on. **Tamper Detection** relies on detecting large persistent changes in the video image.

10.1. Access

To access temper detection settings:

1. Access IVS configuration as described in [Access IVS Configuration](#). IVS configuration opens in **Zones & Rules** tabbed page.
2. Click **Tamper Detection** tab.

Tamper Detection tabbed page opens.

Zones & Rules | Calibration | Advanced | Classification | **Tamper Detection**

Enable Tamper Detection

Tampered Duration until Alarm: secs

Tampered Screen Area: %

Suppress alarm on lights on/off

OK Cancel

10.2. Tamper Detection Settings

Featured settings on **Tamper Detection** tabbed page are:


Setting	Description	Default
Enable Tamper Detection	Enables Tamper Detection .	Deselected (Disabled)
Tampered Duration until Alarm	Sets how long does the video image persistently change to trigger tamper alarm.	20 secs
Tampered Screen Area	Sets how much does the video image change to trigger tamper alarm.	40 %
Suppress alarm on lights on/off	Rules out the scenarios of great and rapid image lighting change such as on/off indoor lighting, which often cause false tamper alarms. <ul style="list-style-type: none"> ▶ This function is performed sacrificing the sensitivity to trigger alarms and thus isn't recommended if fast lighting changes isn't much a problem in your installation. 	Deselected (Disabled)

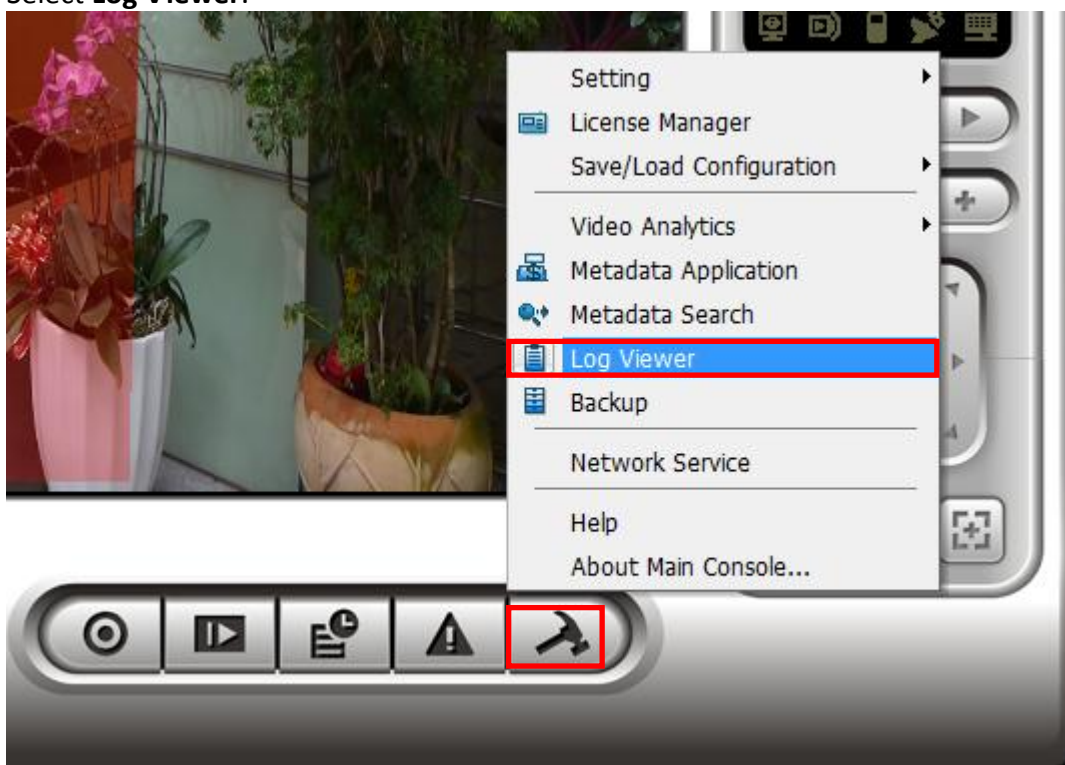
11. IVS Log Viewer

IVS was supported by **Main Console's Log Viewer** to run the history and export the reports of the unusual events detected by **(Main Console's) Smart Guard**.

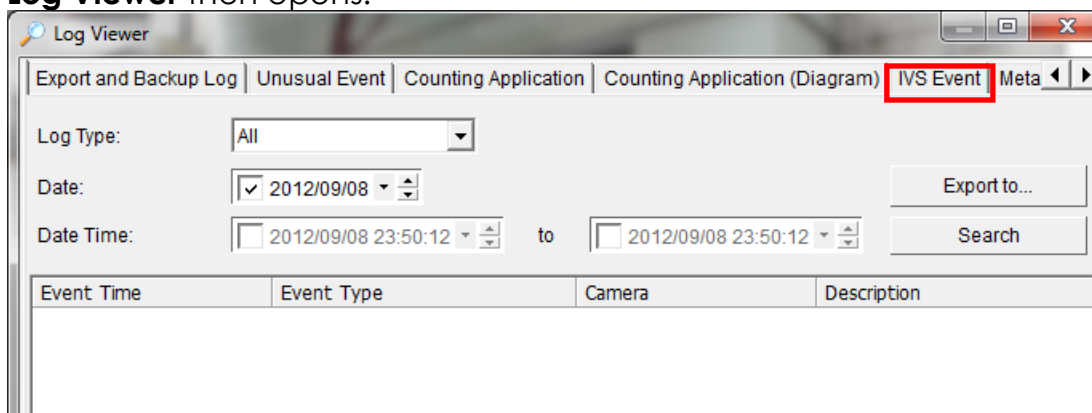
11.1 Log Viewer

To launch **Log Viewer**:

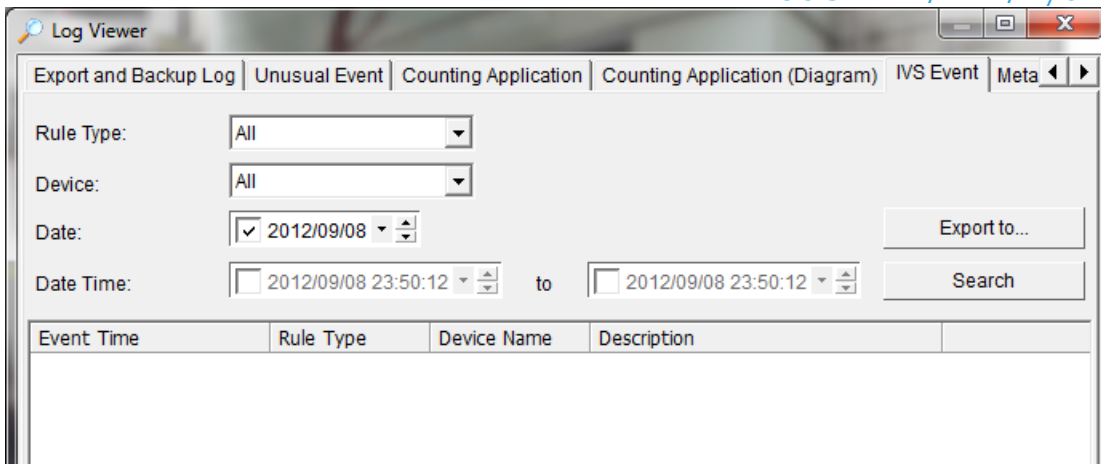
1. On **Main Console** screen, click  button.
A menu opens.
2. Select **Log Viewer**.



Log Viewer then opens.



3. Click **IVS Event** tab.
IVS Event tabbed page then opens.

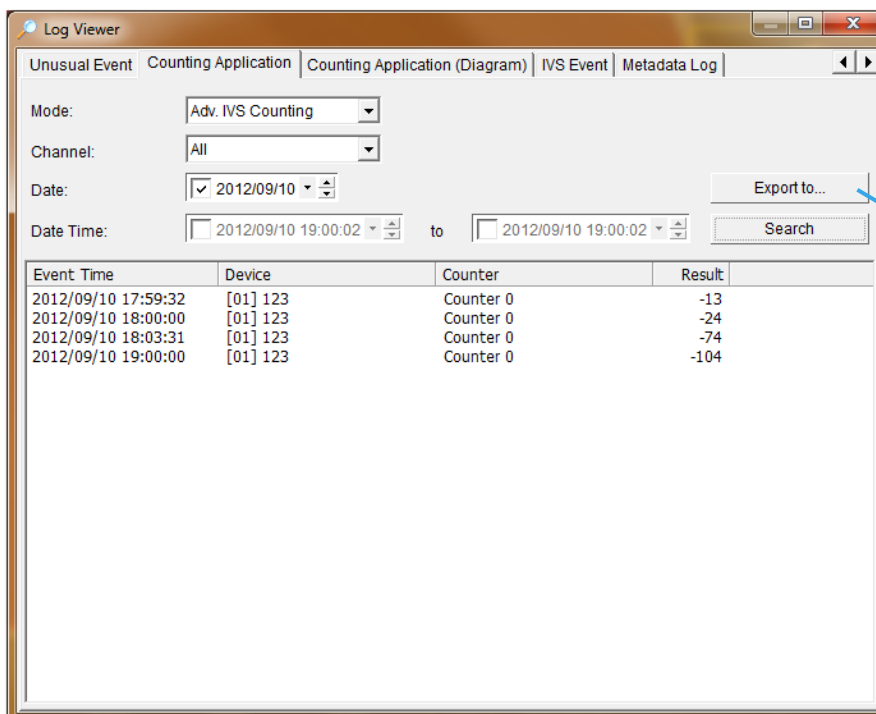


Featured settings on **IVS Event** tabbed page are:

Setting	Description	Default
Rule Type	Assigns the type of event to view. ▶ Select All to view all types of events.	All
Device	Selects the camera to view the log for.	All
Date	Selects the date to view the log for.	Present date
Date Time	Sets a specific time slot to view the log for.	Present time
Search	Runs the history of the assigned events.	--
Export to	Exports the event history to an EXCEL file.	--

11.2 Counting Application

Display the history of Counting Application during a given time period.



Step 5

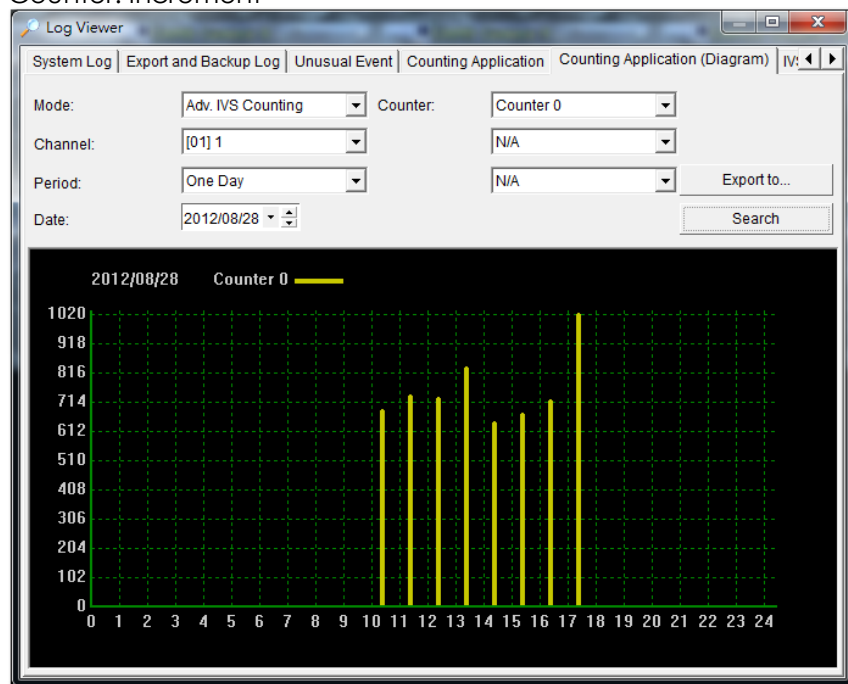
- Step 1:** Select the mode you want from the drop-down menu for basic counting or Adv. IVS counting.
- Step 2:** Select the channel you want to check or select **All** from the drop-down menu for all channels.
- Step 3:** Select search period. View the events that happened on a particular date or during a given time period by selecting search period.
 For a particular date: check the **Date** box right and indicate the date.
 For a period: check the **DateTime** and then enter the date and time.
- Step 4:** Click **Search**.
- Step 5:** Press the button **Export to**.
- Step 6:** Type the file name and choose the file format (.xls or .txt).

11.3 Counting Application (Diagram)

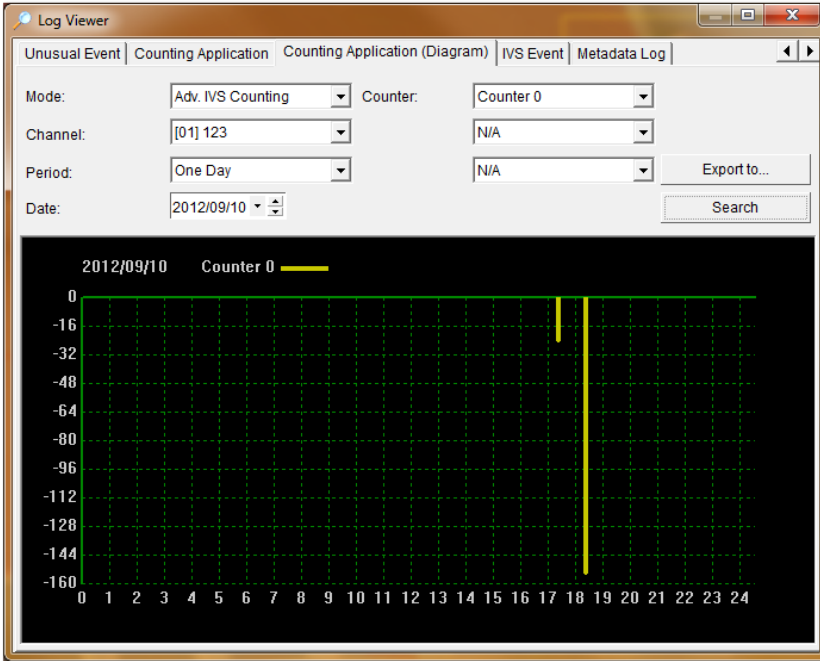
Display the Counting Application data in diagram.

Setting	Description
Increment	Sets the count to increment each time the detection zone triggers an alarm.
Decrement	Sets the count to decrement each time the detection zone triggers an alarm.
Instantaneous	Sets the counter to display the number of one or more objects that simultaneously triggers the alarm.

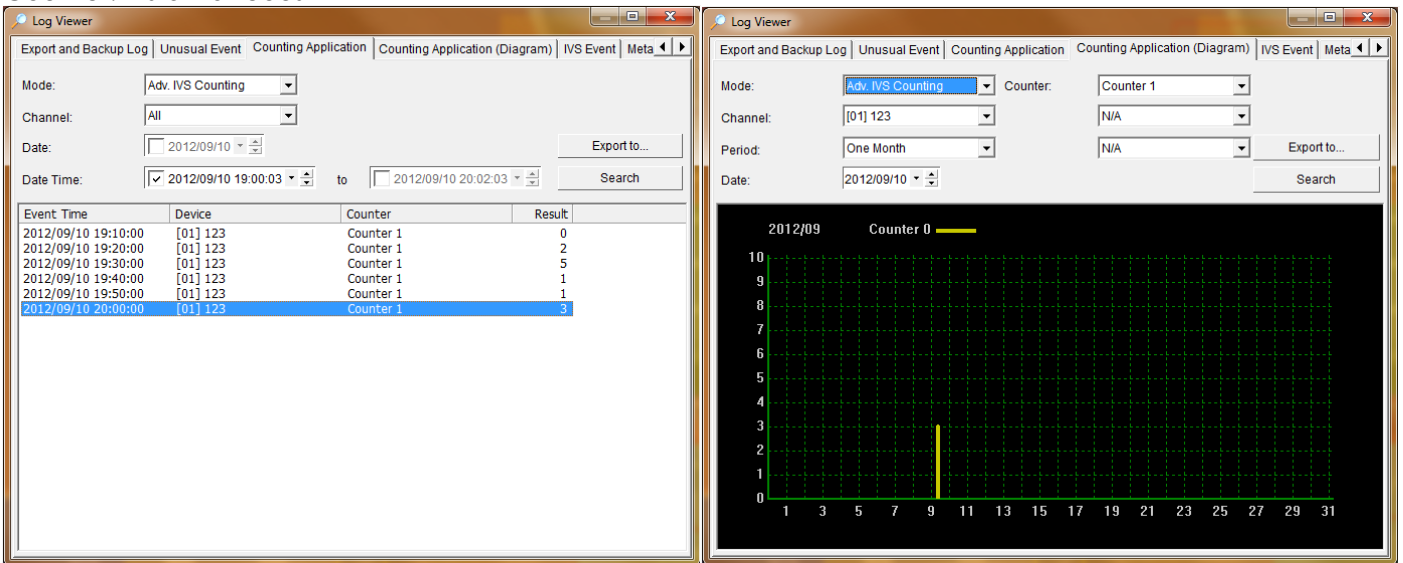
Counter: Increment



Counter: Decrement



Counter: Instantaneous



Note: Instantaneous log will count last value of the period

- Step 1:** Select the mode and channel you want to check and select **counter** (maximize 3).
- Step 2:** From the drop-down menu, set up how you would like the diagram to be displayed. You have the options of one day, one month, or one year.
- Step 3:** Select a specific date to make it the start point of the diagram.
- Step 4:** Click **Search**.
- Step 5:** Press the button **Export to**.
- Step 6:** Type the file name and the file will save as BMP files.