Hanwha Vision

Network Camera

Online help

AIA-C01TRF

Exclude area

The **[Exclude area]** feature allows you to set an area to prevent objects from being detected in the set area. If there are 2 channels or more, you can set an exclude area differently for each channel.

Exclude area

List

The **[List]** shows a list of exclude areas you set.

Setting exclude areas

- On the video, create a quadrilateral around the area you want to exclude from detection by clicking 4 times.
- Then the set exclude area is created on the video and added to the **[List]**.
- You can create up to 8 exclude areas.

Changing exclude areas

- To resize the exclude area, drag a vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex.
  - You can create polygons with up to 8 sides.
  - To delete vertices, hover over a vertex you want to delete. Then the **[-]** button appears on the point. Clicking the button deletes a vertex.
- To relocate the exclude area, drag the area to your desired position.

Deleting exclude areas

1. Hover over the row of the exclude area you want to delete in the **[List]** or click the exclude area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of exclude areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Exclude area

The metadata for the objects detected in the exclude area is not transmitted. To transmit metadata about the information and detailed properties of those objects, turn on the **[Enable object data from the excluded area]** toggle.

Object detection

The **[Object detection]** feature detects objects of the types you select.
To enable the **[Object detection]** feature, turn on the toggle at the top.
If there are 2 channels or more, you can set an object type to be detected and minimum duration (observation time) differently for each channel.

Object detection

Object

Select the types of objects to be detected (multiple selections are possible).

Detection condition

Set the **[Minimum duration]** to set conditions to trigger an event when an object is detected. An object must stay in the camera's field of view for longer than the set minimum time to trigger an object detection event and to send the relevant data.

> **Note**
>
> False detection may occur if:
> - The brightness or color of an object is similar to the background of the screen.
> - Multiple motions occur irregularly or continuously due to scene transitions, etc.
> - A stationary object is constantly moving in the same position.
> - Various objects are randomly blocking each other (50% or more).
> - Objects are moving too quickly.
> - Strong light sources, like direct light, lamps, or car headlights, generate reflections, smearing, or shadows.
> - There is heavy snow, rain, wind, etc., or there is a sunset or sunrise.
> - A moving object is in close proximity to the camera.

BestShot

The **[BestShot]** feature generates the most reliable thumbnail image (BestShot) for the selected object.
To enable the **[BestShot]** feature, turn on the toggle at the top.
You can select the object type for BestShot to be generated differently for each channel.

BestShot

Object

Under **[Object]**, select an object type per channel (multiple selections are possible).
The BestShot for the selected object is generated with the highest reliability. The BestShot then appears on the right side of the screen on the **[BestShot]** page.

Image encoding

You can encode the BestShot in a Base64 format and send metadata using Real-Time Streaming Protocol (RTSP). If you select **[Base64]**, the BestShot will be encoded in a Base64 format and sent as metadata using RTSP.

> **Note**
>
> Even if an object is detected according to certain conditions, the BestShot may not be sent.
> The BestShot may not be generated, or the **[BestShot]** feature may deliver poor performance if:
> - Only part of the object is photographed.
> - There are many objects, causing them to overlap each other.
> - Objects are moving too quickly.
> - A poor image quality or out-of-focus image makes it difficult to see.

Line crossing

The **[Line crossing]** feature detects the objects that cross the virtual line in the direction you set. You can set which object to be detected by selecting the object type.
To enable the **[Line crossing]** feature, turn on the toggle at the top.
If there are 2 channels or more, you can set a virtual line and the object type differently for each channel.

Line crossing

List

The **[List]** shows a list of virtual lines you set.

Setting virtual lines

- Click on the video screen, and then click on it again where you want. Then a virtual line with the start and end points appears.
- When the line to detect objects is created, the line is also added to the **[List]**.
- You can also set the direction of the arrow on the line. To change the direction of the virtual line, click the arrow in the center of the line. Objects are counted only when they cross in the direction of the arrow, in the opposite direction of the arrow, or in both directions based on the virtual line.

Changing virtual lines

- To resize the virtual line, drag the start or end point to your desired position.
- To add a vertex to the line, hover over the line.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex. Up to six vertices can be created.
  - To create virtual lines of different shapes, drag the vertices to your desired position.
  - To delete a start or end point, or a vertex, hover over the point you want to delete. Then the **[-]** button appears. Clicking the button deletes the point.
- To relocate the virtual line, drag the line to the desired position.

Deleting virtual lines

1. Hover over the row of the virtual line you want to delete in the **[List]** or click the line on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the line.

Changing the names of virtual lines

- Double-click the set-line name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Object

Select the types of objects to be detected.

Specifying objects

Only selected objects that cross the virtual line are detected.

1. From the **[List]** or on the video screen, select a virtual line.
2. Under the **[Object]**, select the type of the object to be detected (multiple selections are possible).

Notes

An error may occur or the function may not work if:

- The brightness or color of an object is similar to the background of the screen.
- Multiple motions are being made irregularly or continuously due to scene transitions, etc.
- A stationary object is constantly moving in the same position.
- Various objects are randomly blocking each other.
- A single object is split into many objects, or two or more objects combine into one.
- Objects are moving too quickly.
- Strong light sources, like direct sunlight, lamps, or car headlights, generate reflections, smearing, or shadows.
- There is heavy snow, rain, wind, etc., or there is a sunset or sunrise.
- A moving object is in close proximity to the camera.
- The OSD menu of the camera is adjusted.
- An object is crossing the start and end of the virtual lines.
- The brightness of the moving object is similar to that of the point where it crosses the virtual line.

IVA area

The **[IVA area]** feature detects the entry, exit, intrusion, and loitering of objects based on detection areas you virtually set. In terms of appearance and disappearance, all objects, including the selected type of object, are detected.
To enable the **[IVA area]** feature, turn on the toggle at the top.
If there are 2 channels or more, you can set an IVA area differently for each channel.

IVA area

List

The **[List]** shows a list of IVA areas you set.
The list under **[IVA area]** is automatically synchronized with that under **[Appear (Disappear)]**.

Setting detection areas

- On the video, create a quadrilateral around the area you want to detect the actions of objects by clicking 4 times.
- Then the set detection area is created on the video and added to the **[List]**.

Changing detection areas

- To resize the detection area, drag a vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex.
  - You can create polygons with up to 8 sides.
  - To delete vertices, hover over a vertex you want to delete. Then the **[-]** button appears on the point. Clicking the button deletes a vertex.
- To relocate the detection area, drag the area to your desired position.

Deleting detection areas

1. Hover over the row of the detection area you want to delete in the **[List]** or click the detection area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of detection areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Object

Select the types of objects to be detected.

Specifying objects

From the **[List]** or on the video screen, select a virtual line, and then under **[Object]**, select an object to be detected. You can select multiple object types.

Detection condition

Select any of the following actions (multiple selections are possible) if you want an object to be detected: Only when the selected type of object performs the selected action is the object detected.

- **Enter**: Triggers an event when an object of the selected type enters the detection area from the outside.
- **Exit**: Triggers an event when an object of the selected type exits from the detection area.
- **Intrusion**: Triggers an event when an object of the selected type appears in the detection area and stays there for more than the time set in **[Minimum duration]** (up to 5 seconds).
- **Loitering**: Triggers an event when an object of the selected type loiters in the detection area for more than the time set in **[Minimum duration]** (up to 10 minutes).

Appear (Disappear)

List

The detection areas you set under **[IVA area]** are added to the **[List]**.
The list of the **[Appear (Disappear)]** is automatically synchronized with that of the **[IVA area]**.

Detection condition

To detect the appearance (disappearance) of objects, turn on the **[Appear (Disappear)]** toggle.
An event occurs either when an object that was not in the detection area appears and remains static for more than the time set in **[Minimum duration]** (up to 1 minute) or when an object that was static in the area disappears and does not appear until the set time has elapsed.
You can set the minimum observation time for each detection area either by clicking the detection-area row in the **[List]** or by clicking the detection area on the screen.

Note

False detection may occur if:

- The brightness or color of an object is similar to the background of the screen.
- Multiple motions are being made irregularly or continuously due to scene transitions, etc.
- A stationary object is constantly moving in the same position.
- Various objects are randomly blocking each other (50% or more).
- A single object is split into many objects, or two or more objects combine into one.
- Objects are moving too quickly.
- Strong light sources, like direct sunlight, lamps, or car headlights, generate reflections, smearing, or shadows.
- There is heavy snow, rain, wind, etc., or there is a sunset or sunrise.
- A moving object is in close proximity to the camera.
- The OSD menu of the camera is adjusted.

Traffic jam detection

The **[Traffic jam detection]** feature detects whether a traffic jam occurs in an area you set. A traffic-jam detection event occurs when the cumulative average speed of the vehicles passing through the set area falls below the set threshold speed during the set minimum duration.
To enable the **[Traffic jam detection]** feature, turn on the toggle at the top.
You can set whether to detect whether a traffic jam occurs and can configure the detailed settings differently for each channel.

Traffic jam detection

Setting detection areas

- On the video, create a quadrilateral around the area you want to detect the vehicles standing or stopping by clicking 4 times.
- Then the set detection area is created on the video and added to the **[List]**.
- The line drawn first will be the start line, and the line drawn last will be the end line. And the arrow pointing from the start line to the end line appears in the area.
- You can create up to 4 detection areas.

Changing detection areas

- To resize the detection area, drag a vertex to your desired position.
- To relocate the detection area, drag the area to your desired position.
- To change the direction of the arrow from up to down or from left to right, click the arrow.

Deleting detection areas

1. Hover over the row of the detection area you want to delete in the **[List]** or click the detection area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of detection areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Distance

Enter distance values. Distance A is the length of the start line, and Distance B is the distance (in length) from the start line to the end line.
The meter value you can type ranges from 10 to 100, and the feet value ranges from 30 to 300. You can also type up to a decimal point.

Speed/Time

- Speed: Enter the speed value that will be used as a criterion for triggering an event. An event occurs only when a vehicle is traveling below this speed during the duration you set in **[Time]**.

- Time: Enter the minimum duration that will be used as a criterion for measuring the cumulative average speed of vehicles. An event occurs only when a vehicle is traveling below the speed you set in **[Speed]**.

Unit change

Convert the units of distance from meters to feet, or vice versa, by switching the toggle. The speed value in **[Speed]** then changes accordingly.

> **Note**
>
> The speed measurement interval is 1 minute. Therefore, you should wait up to 1 minute to see if an event has occurred.

Stopped vehicle detection

The **[Stopped vehicle detection]** feature detects vehicles that have been stopped for more than a set amount of time within the area you set.
To enable the **[Stopped vehicle detection]** feature, turn on the toggle at the top.
You can set whether to detect the stopped vehicles and configure the detailed settings differently for each channel.

Stopped vehicle detection

List

Setting detection areas

- On the video, create a quadrilateral around the area you want to detect the stopped vehicles by clicking 4 times.
- Then the set detection area is created on the video and added to the **[List]**.
- You can create up to 8 detection areas.

Changing detection areas

- To resize the detection area, drag a vertex to your desired position.
- To relocate the detection area, drag the area to your desired position.

Deleting detection areas

1. Hover over the row of the detection area you want to delete in the **[List]** or click the detection area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of detection areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Type

Select a type of the vehicle to be detected (multiple selections are possible).
Set the minimum duration that will be used as a condition for triggering a stopped-vehicle detection event. An event occurs only when a vehicle has stopped for at least the set minimum duration.

Schedule

List

You can view the list of ROIs set under the **[Stopped vehicle detection]** tab and set an alarm output schedule for each ROI. The list cannot be edited or deleted.

Schedule

After turning on the **[Enable]** toggle, you can set an alarm output schedule. Then the alarm is triggered only during the scheduled times when an event occurs. The default schedule and any user-added schedules will be displayed together as follows:

- **[Always]**: Always triggers an alarm when an event occurs.
- **[Weekend]**: Triggers an alarm only between Saturday 00:00 and Sunday 23:59 when an event occurs.
- **[Weekday]**: Triggers an alarm only between Monday 00:00 and Friday 23:59 when an event occurs.

When clicking **[Edit]**, you can add a new alarm schedule in **[Settings]** > **[Schedule]**.

Pedestrian detection

The **[Pedestrian detection]** feature detects pedestrians who stay in the set area on the video screen for longer than the specified time.
This feature provides the unique ID information of the detected object when a pedestrian detection event occurs. The name of the area where the event occurs will be displayed in the event log.
To enable the **[Pedestrian detection]** feature, turn on the toggle at the top.

Pedestrian detection

List

The **[List]** shows a list of detection areas you to detect pedestrians staying longer than the set time.
You can set minimum durations differently for each detection area.

Setting detection areas

- On the video, create a quadrilateral around the area you want to detect the motions of objects by clicking 4 times.
- Then the set detection area is created on the video and added to the **[List]**.
- You can create up to 3 detection areas.

Changing detection areas

- To resize the detection area, drag the vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex.
  - You can create polygons with up to 8 sides.
  - To delete a vertex, hover over the vertex you want to delete. Then the **[-]** button appears on the point. Clicking the button deletes the vertex.
- To relocate the detection area, drag the area to your desired position.

Deleting detection areas

1. Hover over the row of the detection area you want to delete in the **[List]** or click the detection area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of detection areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Object

Select an object to detect.
You can select an object differently per detection area.

Detection condition

Set the minimum duration that will be used as a condition for detecting a pedestrian in the set area and triggering a pedestrian-detection event. The event occurs only when a pedestrian stays at least for the set minimum duration.

> **Note**
>
> - The pedestrian-detection alarm may occur if:
>   - People are detected that cross overpasses or highways that overlap with the set areas in the video.
>   - People are only detected who ride motorcycles or vehicles without detecting their motorcycles or vehicles.
> - The pedestrian-detection alarm may not occur if:
>   - Motorcycles or vehicles cover more than 50% of a person.

Wrong-way detection

The **[Wrong-way detection]** feature detects vehicles that pass through the specified start line and end line in order to detect their wrong-way driving.
To enable the **[Wrong-way detection]** feature, turn on the toggle at the top.

Wrong-way detection

List

The **[List]** shows a list of sets of virtual lines you set to detect wrong-way driving.
A set of virtual lines is made up of three lines: the start line, the finish line, and the line that connects the two. Vehicles are detected only when they pass through the end line in the direction of the connecting line after passing through the start line.
You can select multiple objects to detect differently for each virtual line.

Setting virtual lines

- On the video screen, first click the starting point and end point of the start line. Afterward, click the starting point and end point of the end line. Then a set of virtual areas that includes the start line, end line, and the connecting line will appear.
- You can set up to 3 sets of virtual lines and set objects to detect differently for each virtual line.
- When a set of virtual lines is created, it is added to the **[List]**.

Changing virtual lines

- To change the size or direction of the start line or end line, drag the start or end point of the line to your desired position.
- To change the size or shape of the connecting line, drag the start or end point of the line to your desired position.
  - To add a vertex, hover over the line and click the **[+]** button that appears on the line. Up to 5 vertexes can be added.
  - To delete a vertex, hover over the vertex and click the **[-]** button that appears on the point.
- To move the set of the virtual line, drag the set to your desired position.

Deleting virtual lines

1. Hover over the row of the virtual line you want to delete in the **[List]** or click the line on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the line.

You cannot delete all virtual lines you set at once.

Changing the names of virtual lines

- Double-click the set-line name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Object

Choose the type of objects to detect their wrong-way driving.
You can select multiple objects differently for each virtual line.

Note

- The wrong-way-detection alarm may not occur if:
  - The start line and end line are too close together (it is recommended that the length of a line connecting the two lines is at least the size of a vehicle.)
  - A vehicle when passing the start line or end line is obscured and not detected (Vehicles are detected only when they pass both the start line and the end line).
  - Two or more vehicles are passing in close proximity.

Vehicle speed detection

The **[Vehicle speed detection]** feature shows the speed of vehicles detected within the set start line and end line. This feature also triggers an event when a vehicle is detected exceeding the set speed limit.
To enable the **[Vehicle speed detection]** feature, turn on the toggle at the top.

Vehicle speed detection

List

The **[List]** shows a list of sets of virtual lines you set to detect the speed of vehicles.
A set of virtual lines is made up of three lines: the start line, the end line, and the line that connects the two. The **[Vehicle speed detection]** feature detects the speed of the vehicle after it passes through the start line in the direction of the connecting line and before it passes through the end line.
You can set objects for detection, reference speed, and actual measured distance between the start and end lines of the virtual line, differently for each virtual line.

Setting virtual lines

- On the video screen, first click the starting point and end point of the start line. Afterward, click the starting point and end point of the end line. Then a set of virtual areas that includes the start line, end line, and the connecting line will appear.
- You can set up to 3 sets of virtual lines and set objects to detect differently for each virtual line.
- When a set of virtual lines is created, it is added to the **[List]**.

Changing virtual lines

- To change the size or direction of the start line or end line, drag the start or end point of the line to your desired position.
- To change the size or shape of the connecting line, drag the start or end point of the line to your desired position.
  - To add a vertex, hover over the line and click the **[+]** button that appears on the line. Up to 5 vertexes can be added
  - To delete a vertex, hover over the vertex and click the **[-]** button that appears on the point.
- To move the set of the virtual lines, drag it to your desired position.

Deleting virtual lines

1. Hover over the row of the virtual line you want to delete in the **[List]** or click the line on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the line.

You cannot delete all virtual lines you set at once.

Changing the names of virtual lines

- Double-click the set-line name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Object

Choose the types of objects you want to detect their speed.

You can select multiple objects differently for each virtual line.

Distance

Enter the actual measured distance between the start and end lines of the virtual line.
Then the value appears in accordance with the unit you set under **[Unit change]**.

Speed

Enter the speed that will serve as the criteria for triggering a speed-detection event. If a vehicle is detected driving faster than the set speed, an event will occur.
Then the value you set appears in accordance with the unit you set under **[Unit change]**.

Unit change

Convert the units of distance from meters to feet, or vice versa, by switching the toggle. The value of **[Speed]** and **[Distance]** then changes accordingly.

> **Note**
>
> - The speed may not be displayed if:
>   - The start line and end line are too close together (it is recommended that the length of a line connecting the two lines is at least the size of a vehicle.)
>   - A vehicle when passing the start line is obscured and not detected.
>   - A vehicle passig in the middle of the start line and end line is obscured and not detected.
>   - Two or more vehicles are passing in close proximity.
>   - The shape of roads on the video is different from the virtual connecting line you set (e.g., in case you set the virtual line as a straight line for a curved road.)
> - If a vehicle is detected at the start line but not detected when passing the end line due to being obstructed, the vehicle speed may be continuously displayed since it is assumed that the vehicle did not pass through the end line.

Commercial vehicle detection

The **[Commercial vehicle detection]** feature generates an EventShot image when the selected vehicle type out of the vehicles detected satisfies the conditions that you set. You can view the image in the EventShot panel on the right side of the web viewer, along with the object information.
To enable the **[Commercial vehicle detection]** feature, turn on the toggle at the top.

Commercial vehicle detection

EventShot

The **[EventShot]** panel displays a cropped image of the vehicle type specified in **[Object]** when it passes through a predefined virtual line. The number of the rule applied to detect the event is also displayed.
When you click **[EventShot]**, the **[EventShot]** panel appears on the right side of the web viewer.

> **Note**
>
> - If a vehicle is not detected when passing through the virtual line due to being obscured, an EventShot image won't be generated.
> - If multiple vehicles pass through the virtual line simultaneously, the generation of an EventShot may be delayed.

List

The **[List]** shows a list of virtual lines you set to detect vehicles passing.
You can set objects to detect differently for each virtual line.

Setting virtual lines

- Click on the video screen, and then click on it again where you want. Then a virtual line with the start and end points appears.
- You can also set the direction of the arrow on the line. To change the direction of the virtual line, click the arrow in the center of the line. Objects are counted only when they pass in the direction of the arrow, in the opposite direction of the arrow, or in both directions based on the virtual line.
- When the line to detect objects is created, the line is also added to the **[List]**.
- You can create up to 3 virtual lines.

Changing virtual lines

- To resize a virtual line, drag the start or end point to your desired position.
- To move the virtual line, drag the line to the desired position.

Deleting virtual lines

1. Hover over the row of the virtual line you want to delete in the **[List]** or click the line on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the line.

You cannot delete all virtual lines you set at once.

Changing the names of virtual lines

- Double-click the set-line name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Object

Choose the types of objects you want to detect.
You can select multiple objects differently for each virtual line.

Fallen object detection

The **[Fallen object detection]** feature detects objects that were fallen within the set area. An alarm is triggered when an object is located within a set area and the time the object has been in the area exceeds the set time (minimum duration).
To enable the **[Fallen object detection]** feature, turn on the toggle at the top.

Fallen object detection

List

The **[List]** shows a list of detection areas you set.

Setting detection areas

- On the video, create a quadrilateral around the area you want to detect the motions of objects by clicking 4 times.
- Then the set detection area is created on the video and added to the **[List]**.
- You can create up to 3 detection areas.

Changing detection areas

- To resize the detection area, drag the vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex.
  - You can create polygons with up to 8 sides.
  - To delete a vertex, hover over the vertex you want to delete. Then the **[-]** button appears on the point. Clicking the button deletes the vertex.
- To relocate the detection area, drag the area to your desired position.

Deleting detection areas

1. Hover over the row of the detection area you want to delete in the **[List]** or click the detection area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of detection areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Detection condition

Minimum duration

Set the minimum duration that will be used as a condition for detecting a fallen object in the set area and triggering a fallen-object-detection event. The event occurs only when a fallen object stays at least for the set minimum duration.

Sensitivity

Set the sensitivity level of detection per area. Higher sensitivity values detect objects with lower confidence, resulting in higher detection rates and error rates. Conversely, lower sensitivity values may result in fewer false alarms for fallen-object-detection events, but they are more likely to fail to detect whether there are fallen objects.

Note

The fallen-object-detection function will only work if there are no objects blocking the road when the function is activated.
Ensure that there are no fallen objects on the road when you set the detection area (Objects present on the road while the area is being setup will be excluded from detection).
Fallen-object-detection performance may decrease, or the event may not trigger if:

- The object is smaller than the size reference box that shows minimum detection size appearing on the video screen (Clicking [Display size reference box] will display a size reference box on the video screen.).
- A vehicle or other moving object continuously passes over the fallen object.
- The lights are low (recommended for 300 lux or more)
- The camera is obstructed, or its position is changed.
- The object's color is similar to the color of the road.
- Strong light sources, like direct sunlight, or lamps generate reflections, smearing, or shadows.
- The environment is like tunnels where the lighting repeatedly turns on and off.
- The object's frame is narrow, transparent, or mesh-like, making it difficult to distinguish from the road.
- Objects like balloons or plastic bags that have fallen on the road move slightly after falling.

Vehicle counting

The **[Vehicle counting]** feature counts the number of vehicles crossing the virtual line in the direction you set. A vehicle is counted crossing the set line only when the center of the vehicle is the body length away from the line before and after the vehicle crosses the line.
To enable the **[Vehicle counting]** feature, turn on the toggle on the top.
If there are 2 channels or more, you can set whether to count vehicles and configure the detailed settings differently for each channel.

Counting

You can view analytics data about the vehicles crossing the virtual line from 00:00:00 on the day to the current time. You can also check the number and total of vehicles that have crossed the virtual line by direction.
The counting data is refreshed every 3 seconds.

List

The **[List]** shows a list of virtual lines you set.

Setting virtual lines

- Click on the video screen, and then click on it again where you want. Then a virtual line with the start and end points appears.
- When the line to count the number of vehicles is created, the line is also added to the **[List]**.
- You can create up to 2 virtual lines.
- You can also set the direction of the arrow on the line. To change the direction of the virtual line, click the arrow in the center of the line. Vehicles are counted only when they cross in the direction of the arrow or in the opposite direction of the arrow.

Changing virtual lines

- To resize a virtual line, drag the start or end point to your desired position.
- To relocate the virtual line, drag the line to the desired position.

Deleting virtual lines

1. Hover over the row of the virtual line you want to delete in the **[List]** or click the line on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the line.

Changing the names of virtual lines

- Double-click the set-line name you want to change in the **[List]**.
- You can type the name up to 45 characters long, including English letters or numbers only (you cannot have a name that only contains numbers).

Setting counting methods

When you hover over the row of the virtual line to set the counting method in the **[List]** or click the line on the video screen, then the virtual line becomes thicker. To change the direction, click the arrow. There are two ways to count the

number of vehicles: IN counting and OUT counting.

- IN: Counts how many vehicles moved in the direction of the arrow.
- OUT: Counts how many vehicles moved in the opposite direction of the arrow.

Exclude area

You can set the area you want to exclude from vehicle counting.

List

The **[List]** shows a list of exclude areas you set.

Setting exclude areas

- On the video, create a quadrilateral around the area you want to exclude from detection by clicking 4 times.
- Then the set exclude area is created on the video and added to the **[List]**.
- You can create up to 4 exclude areas.

Changing exclude areas

- To resize an exclude area, drag a vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex.
  - You can create polygons with up to 8 sides.
  - To delete vertices, hover over a vertex you want to delete. Then the **[-]** button appears on the point. Clicking the button deletes a vertex.
- To relocate the exclude area, drag the area to your desired position.

Deleting exclude areas

1. Hover over the row of the exclude area you want to delete in the **[List]** or click the exclude area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of exclude areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Report

You can receive reports of vehicle-counting statistics.
To receive vehicle-counting data through e-mail or FTP, turn on the **[Report]** toggle.

Schedule

Select **[Daily]** and time to receive vehicle-counting data at the same time every day.
Select **[Weekly]** and time and days to receive vehicle-counting data on the same day and time every week.

File name

Type a name and select the format of the file to send it via FTP and e-mail. The file name can contain up to 45 characters, including English alphabet letters, numbers, and hyphens (-). You can choose the file format between .xlsx and .txt.

Export

Click **[FTP/E-mail]** to type the details for FTP and e-mail.

Delete all data

Click **[Delete all data]** to reset all the vehicle-counting data.
Data is not deleted after a factory reset but deleted only when you click **[Delete all data]**.

> **Note**
>
> An error may occur, or the function may not work if:
> - The camera lens is mounted without lens facing the ground.
> - A vehicle is parked near the virtual line or moving back and forth.
> - A vehicle is repeatedly entering or exiting the line from the edge of the line.
> - Lighting changes occur gradually or abruptly (such as sunrise or sunset, vehicle lights beaming from the outside, and changes in color or brightness of surrounding lighting fixtures).
> - There are five or more vehicles around the virtual line at the same time.
> - A moving vehicle is obscured by the background or other objects near the line.
> - Two or more vehicles are passing in close proximity.
> - The density is very high (e.g., more than 70% in the video is moving objects).
> - Traffic is congested.
> - The IR is turned off even at night, making it difficult to recognize vehicles.
> - Environmental variables, such as snow, rain, fog, and so on make it difficult to detect vehicles.
> - The camera is trembling.

Vehicle queue management

The **[Vehicle queue management]** feature allows you to check the number of the vehicles staying in the detection area you set and their occupancy.
To enable the **[Vehicle queue management]** feature, turn on the toggle at the top.
You can set whether to manage queues and detailed conditions differently for each channel.

Queue

List

The **[List]** shows the number of vehicles staying in the detection area you set and their occupancy.
The database is refreshed every 15 minutes.

Setting detection areas

- On the video, create a quadrilateral around the area you want to manage the queue by clicking 4 times.
- Then the detection area is created on the video and added to the **[List]**.
- You can create up to 3 detection areas.

Changing detection areas

- To resize the detection area, drag the vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex.
  - You can create polygons with up to 8 sides.
  - To delete a vertex, hover over the vertex you want to delete. Then the **[-]** button appears on the point. Clicking the button deletes the vertex.
- To relocate the detection area, drag the area to your desired position.

Deleting detection areas

1. Hover over the row of the detection area you want to delete in the **[List]** or click the detection area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of detection areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Queue events

Set the conditions for triggering a queue event for each detection area.
The **[Vehicle queue management]** feature analyzes how many vehicles there are and how long they stay in queue in the set area and triggers a [High queue] or [Medium queue] event.
For example, if you set the [Maximum] value to 20 and the [High] value to 18 in **[Level of detection]** (then the [Medium] value is automatically set to 9) and set [High] and [Medium] to 10 each in **[Minimum**

duration], a [High queue] event will occur when 18 to 20 vehicles stay in queue in the area for 10 seconds or more, and a [Medium queue] event will occur when 9 to 17 vehicles stay in queue for 10 seconds or more.

Level of detection

Set the threshold that determines when to trigger a [High queue] or [Medium queue] event. If you set the [Maximum] value and the [High] value, the [Medium] value will be automatically set.
An alarm occurs when the number of vehicles in the area is equal to or higher than the level of detection you set.

Minimum duration

Set the minimum duration that will be used as a condition for triggering a [High queue] or [Medium queue] event.
If you turn on the **[High]** or **[Medium]** toggle and set the minimum duration for each, an event will occur when the number of vehicles you set stays in queue longer than the minimum duration you set.

Report

Report

You can receive reports of queue statistics.
To receive vehicle-queue data through e-mail or FTP, turn on the **[Report]** toggle.

Schedule

Select **[Daily]** and time to receive queue data at the same time every day.
Select **[Weekly]** and time and days to receive queue data on the same day and time every week.

File name

Type a name and select the format of the file to send it via FTP and e-mail. The file name can contain up to 45 characters, including English alphabet letters, numbers, and hyphens (-). You can choose the file format between .xlsx and .txt.

Export

Click **[FTP/E-mail]** to type the details for FTP and e-mail.

Delete all data

Click **[Delete all data]** to reset all the queue data.
Data is not deleted after a factory reset but deleted only when you click **[Delete all data]**.

> **Note**
>
> If you use the **[Vehicle queue management]** feature in case of short wait times, an excessive number of events may occur.
> An error may occur or the function may not work if:

- Vehicles are not detected according to the settings for minimum size, maximum size, or sensitivity that you configure in **[Setup]**>**[Common setup]**.
- A vehicle is being moved near the virtual line.
- A vehicle is being repeatedly entered into or exited from the edge of the line.
- The maximum value you set under **[Level of detection]**>**[Maximum]** is greater or less than the actual value.

Multilane vehicle counting

The **[Multilane vehicle counting]** feature counts and gathers statistical data on vehicles that pass through designated start and end lines. A vehicle is counted passing the set line only when the center of the vehicle is body length away from the line before and after the vehicle passes the line.
You can configure virtual lines to detect vehicles not only moving straight but also making left turns, right turns, or U-turns.
To enable the **[Multilane vehicle counting]** feature, turn on the toggle at the top.

Rule

You can set detection rules by setting a virtual line for vehicles to pass and by setting the objects to be detected.

List

The **[List]** shows a list of sets of virtual lines you set.
A set of virtual lines is made up of three lines: the start line, the end line, and the line that connects the two. Vehicles are counted only when they pass through the end line in the direction of the connecting line after passing through the start line.
You can also set, change, or delete virtual lines under **[Counting]**.

Setting virtual lines

- If you click the desired position on the video screen, a set of virtual lines consisting of a start line, end line, and connecting line will appear.
- You can set up to 20 sets of virtual lines and set objects to detect differently for each set.
- When a set of virtual lines is created, it is added to the **[List]**.

Changing virtual lines

- To change the size or direction of the start line or end line, drag the start or end point of the line to your desired position.
- To change the size or shape of the connecting line, drag the start or end point of the line to your desired position.
  - To add a vertex, hover over the line and click the **[+]** button that appears on the line. Up to 5 vertexes can be added.
  - To delete a vertex, hover over the vertex and click the **[-]** button that appears on the point.
- To move the set of the virtual lines, drag it to your desired position.

Deleting virtual lines

1. Hover over the row of the virtual line you want to delete in the **[List]** or click the line on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the line.

You cannot delete all virtual lines you set at once.

Changing the names of virtual lines

- Double-click the set-line name you want to change in the **[List]**.
- You can type the name up to 45 characters long, including English letters or numbers only.

Object

Choose the types of objects you want to detect.
You can select multiple objects differently for each virtual line.

Counting

According to the **[Rule]** you set, you can view statistical data about the vehicles passing the virtual line from 00:00:00 on the day to the current time. You can also check the number of vehicles that have passed the virtual line by vehicle type. The counting data is refreshed every 3 seconds.

List

The **[List]** shows a list of virtual lines you set.
Refer to the description of **[Rule]** to set, change, or delete virtual lines.

Exclude area

You can set the area you want to exclude from vehicle counting.

List

The **[List]** shows a list of exclude areas you set.

Setting exclude areas

- On the video, create a quadrilateral around the area you want to exclude from detection by clicking 4 times.
- Then the set exclude area is created on the video and added to the **[List]**.
- You can create up to 4 exclude areas.

Changing exclude areas

- To resize an exclude area, drag a vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - To add a vertex, hover over the line and click the **[+]** button that appears on the line. Up to 5 vertexes can be added.
  - To delete a vertex, hover over the vertex and click the **[-]** button that appears on the point.
- To relocate the exclude area, drag the area to your desired position.

Deleting exclude areas

1. Hover over the row of the exclude area you want to delete in the **[List]** or click the exclude area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of exclude areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Report

You can receive reports of multilane-vehicle-counting statistics.

Report

You can configure detailed settings to receive statistical reports.
To receive multilane-vehicle-counting data through e-mail or FTP, turn on the **[Report]** toggle.

Schedule

Select **[Daily]** and time to receive multilane-vehicle-counting data at the same time every day.
Select **[Weekly]** and time and days to receive multilane-vehicle-counting data on the same day and time every week.

File name

Type a name and select the format of the file to send it via FTP and e-mail. The file name can contain up to 45 characters, including English alphabet letters, numbers, and hyphens (-). You can choose the file format between .xlsx and .txt.

Export

Click **[FTP/E-mail]** to go to the **[FTP/E-mail]** page in the web viewer to type the details for FTP and e-mail.

Delete all data

Click **[Delete all data]** to reset all the multilane-vehicle-counting data.
Data is not deleted after a factory reset but deleted only when you click **[Delete all data]**.

Note

- An error may occur, or the function may not work if:
  - The camera lens is mounted without lens facing the ground.
  - Less than 30% of the vehicle is only within the designated area.
  - There is a shadow accompanying the vehicle.
  - A vehicle is repeatedly entering or exiting near the line.
  - A vehicle is repeatedly entering or exiting the line from its edge.
  - A moving vehicle is obscured by the background or other objects near the line.
  - Vehicles are not detected according to the settings for minimum size, maximum size, or sensitivity that you configure in **[Setup]**>**[Common setup]**
  - Lighting changes occur gradually or abruptly (such as sunrise or sunset, vehicle lights beaming from the outside, and changes in color or brightness of surrounding lighting fixtures).
  - There are five or more vehicles around the virtual line at the same time.
  - Two or more vehicles are passing in close proximity.
  - The density is very high (e.g., more than 70% in the video is moving objects).
  - The camera is trembling.

Vehicle heatmap

The **[Vehicle heatmap]** feature allows you to view the frequency of movements and stays of the vehicles in color.
To enable the **[Vehicle heatmap]** feature, turn on the toggle on the top.
You can set whether to use the heatmap feature and configure the detailed settings differently for each channel.

Heatmap

Background color

You can select the color of the background image that shows the heatmap data. Select **[Color]** to view the background image in color; select **[B/W]** to view the image in black and white.

Exclude area

You can set the area you want to disable the heatmap feature.

List

The **[List]** shows a list of exclude areas you set.

Setting exclude areas

- On the video, create a quadrilateral around the area you want to disable the heatmap feature by clicking 4 times.
- Then the set exclude area is created on the video and added to the **[List]**.
- You can create up to 4 exclude areas.

Changing exclude areas

- To resize an exclude area, drag a vertex to your desired position.
- To create a polygon with 5 or more sides, hover over any lines of the created quadrilateral.
  - The **[+]** button then appears on the line. Clicking the button adds a vertex.
  - You can create polygons with up to 8 sides.
  - To delete vertices, hover over a vertex you want to delete. Then the **[-]** button appears on the point. Clicking the button deletes a vertex.
- To relocate the exclude area, drag the area to your desired position.

Deleting exclude areas

1. Hover over the row of the exclude area you want to delete in the **[List]** or click the exclude area on the video screen.
2. Then the Delete button appears in the **[List]**. Clicking the button deletes the area.

Changing the names of exclude areas

- Double-click the set-area name you want to change in the **[List]**.
- You can type the name up to 63 characters long, including English letters or numbers only.

Report

Report

You can receive reports of heatmap data.
To receive heatmap data through e-mail or FTP, turn on the **[Report]** toggle.

Schedule

Select **[Daily]** and time to receive heatmap data at the same time every day.
Select **[Weekly]** and time and days to receive heatmap data on the same day and time every week.

File name

Type a name and select the format of the file to send it via FTP and e-mail. The file name can contain up to 45 characters, including English alphabet letters, numbers, and hyphens (-). The file type is automatically selected as .png.

Export

Click **[FTP/E-mail]** to type the details for FTP and e-mail.

Delete all data

Click **[Delete all data]** to reset all the heatmap data.
Data is not deleted after a factory reset but deleted only when you click **[Delete all data]**.

Backup & Restore

You can save the current settings of the system as a file on your PC (backup) and restore the system from the backup file.

Backup & Restore

Backup & Restore

You can back up the settings of the WiseAI application or restore the application from the backup file.
Click **[Backup]** to create a backup file of the current settings of the WiseAI application.
Click **[Restore]** and select a backup file to restore the application from the backup file.

Factory default

Click **[Reset]** to return the application to its factory settings.

Version information

The version information shows you the information on WiseAI application and AI information. Depending on the camera model, the AI learning models may or may not be displayed.

Open source license

We provide open source licenses used by this product. Click **[View]** to see the information of the open source licenses used by this product and full license texts.

Common setup

You can set conditions of object detection that are applied globally. You can set the sensitivity as well as the minimum and maximum size of an object to be detected.

Common setup

The object-detection settings configured in **[Common setup]** are applied to all features under **[Analytics]** and **[Statistics]**.

Minimum

Set the minimum size of an object to be detected. Objects smaller than the set minimum size are not detected.

Maximum

Set the maximum size of an object to be detected. Objects larger than the set maximum size are not detected.

Sensitivity

Set the detection sensitivity. When you set the sensitivity value higher, even objects with low reliability are detected.

> **Note**
> Detecting objects with low reliability in detection may result in a high false-detection rate.

Log

The important event logs are recorded while the camera is in operation. You can view the accumulated log history.

System log

You can view the dates, times, and details about changes to system settings and to the operation of the features of the system.

Log type

You can view the dates, times, and details of system changes. Select **[All]** to view the date, time, and details of all the events that occurred on the selected system.

Backup

You can back up the selected log and export the backup log to a text file. To back up the system logs, click **[Backup]**.

Event log

You can view the dates, times, and details about events that occurred on the camera.

Log type

You can view the date and time of the event's occurrence and the details. Select **[All]** to view the dates, times, and details of all the events that occurred on the selected camera (channel).

Backup

You can back up the selected log and export the backup log to a text file. Click **[Backup]** to back up the event logs.

> **Note**
>
> All the log messages are provided in English, regardless of the language you set in the WebViewer.
> Up to five minutes of event log history may be lost when the camera is powered off.
> A maximum of 1,000 logs are stored per log. After the 1,001st log, the oldest log is deleted.

License

You can activate an application online and offline. You can use all of the application's features only when the application is activated.

Online activation

Activate the application online. If you have an internet connection, type your license key.

Activating online

Type the license key under **[License key]** and click **[Activate]**. When the application is activated, a message [Activated] appears.

Offline activation

Activate the application offline. If you type the license key, you can check the activation code in the web browser. Typing the activation code activates the application.

Activating offline

1. In the application, type the license key in **[License key]** and click **[Get activation code]**. The request code then is automatically entered in **[Request code]**.
2. When the **[Get activation code]** dialog box pops up, scan the QR code using the camera on your mobile device.
3. Check the activation code in the web browser on the QR code-scanned device. Type the activation code in **[Activation code]** in the application and then click **[Activate]**.
4. To receive the activation-code file by e-mail, type your e-mail in your device's web browser. In the application, click **[Import]** and select the activation code file. Then the activation code is automatically entered in **[Activation code]**. Click **[Activate]** to activate the application.

Schedule

You can set an alarm output schedule. Then the alarm is triggered only during the scheduled times when an event occurs. The alarm output schedule configured here will be applied consistently to all events.

Schedule

Set an alarm output schedule (Up to 29 schedules can be set).

Setting alarm output schedules

1. Click the **[+]** button in the list on the left side of the timetable.
2. Enter a schedule name in the **[Name]** box. Up to 15 characters can be entered.
3. Set the time by clicking or dragging on the timetable with the mouse. You can change the time view unit by clicking the **[1 min]**, **[30 min]**, or **[1 h]** button.
4. To delete all set times, click **[Reset]**.

Deleting alarm output schedules

1. Select the schedule to delete from the list on the left side of the timetable.
2. Click the Delete button next to **[Name]**.


Hanwha
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