

# AiDANT Aware User Guide



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## 1. Overview

The AiDANT Aware application developed by [AiDANT.ai](#) is an AXIS ACAP application that can be used to monitor an area and notify the user if: a. Any person/object stays in an area of interest for too long. b. The occupancy at a location exceeds a certain threshold. This application can be installed into any AXIS camera with a DLPU processor with ARTPEC-7 or ARTPEC-8 architectures.

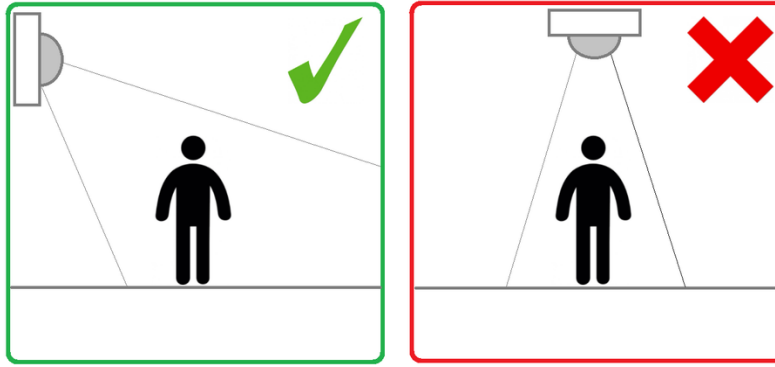
## 2. Glossary

Area of Interest	Aware functionality module that detects presence of humans in a determined area. The Area of Interest module allows for three individual detection areas and three exclusion areas.
Occupancy	Aware functionality module that monitors entrances and counts the number of people entering and exiting the entrance.
Follow	Aware functionality that allows a group of cameras to work together. One camera is designated as the "Leader" while other cameras can be "Followers".
Total Occupancy	When a following group is created, Total Occupancy is the aggregated occupancy count .  If no group is created, Total Occupancy equals the Occupancy of this camera.
Data Panel	A web page displaying the data gathered by the camera or the group of cameras. The web page can be accessed from any device that has access to the camera.
Report	A csv file containing historical information gathered by the camera.
Occupancy Location	Location in which we want to count occupants. It can be an indoor occupancy location, like a store or a warehouse. It can be an outdoor occupancy location like a park or a neighborhood.
Locator (white cross)	The <i>Locator</i> is the point that determines the location of the person/object. It is represented by a white cross in the user interface. If the locator is inside an area, the person/object is considered inside the area.

## 3. Requirements

In order to run the AiDANT Aware application, you will need:

1. An AXIS camera with a DLPU chip and a non-fisheye lens. eg: the Q1615 Mark3 and P3255.
2. Update the AXIS camera firmware to the latest version.
3. Purchase a license from AiDANT.
4. Download and extract (unzip) the eap application file through the link <https://downloads.aidant.online/>.
5. **Important!** Camera positioning: The camera needs to be positioned in such a way that it can see as much of the human body/object as possible. The software is **not intended to be used in top-view** (ceiling mounted, facing straight down).



## 4. Effective Ranges

Artificial intelligence applications demand a lot of hardware processing power. This application analyses an optimized internal video stream which is separate from the stream selected by the user for viewing or recording.

As a result, selecting a higher resolution viewing stream (more megapixels) will not affect the detection results nor range. This means that using the PPF (pixel per foot) unit of measure can be misleading.

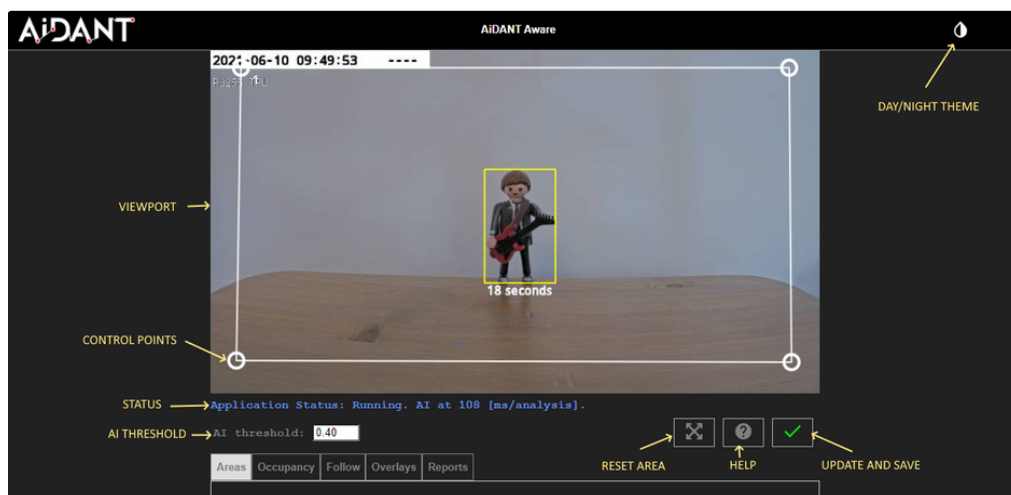
The effective detection range for **moving or stationary persons** will be, accordingly: 10 meters\* (~33 feet) for no optical zoom, and a multiple of the optical zoom factor for zoomed streams. eg: 20 meters (~65 feet) for zoom x2.

## 5. Installation

Once all the requirements are satisfied, please do the following:

1. Access the camera through any web browser.
2. Go to *Settings->Apps* .
3. Click on *Add* and install the .eap application file.
4. Click on *AiDANT Aware* and install the license key file provided to you.

## 6. Main Controls



- The '*AI Threshold*' field can be modified to indicate how selective we want to be in identifying a person/object (i.e. the higher the number, the more discriminate it becomes to determine if an object on the screen is the desired object and the less positives that we will have). A value of 0.40 is the default as it minimizes false positives and increases true positives for detection.
- Press the '*Reset Area*' button to restore all areas and entrances to their default positions.
- Press the '*Help*' button to open the user guide.
- Press the '*Update and Save*' button to save your configuration changes.

## 7. Area of Interest

- To configure the '*Area of Interest*' functionality, select an area to monitor by dragging the control points until the polygon shape covers the area of interest. You may add up to three separate areas of interest, and up to three exclusion areas. The exclusion areas are denoted by a dashed (-----) line in the user interface. The Areas of Interest can have 4, 6 or 8 control points.
- Indicate the minimum number of persons/objects in the area of interest needed to trigger the alarm by using the '*Notify only when count is*' field. The user can also indicate the minimum amount of time needed for someone/object to linger in an area of interest by using the '*Alert Time*' field.
- Remember to save your changes by pressing the '*Update and Save*' button (the green checkmark).

When a target is detected, a bounding box will be shown on the stream in the application. The default color for the markers is green. If a target enters the area of interest, then the marker color changes from green to yellow and a timer displays just below the marker. If the timer surpasses the time set in the '*Alert Time*' field, then the marker changes to red.

When the breach has lasted more than the set time and the number of persons/objects lingering in the areas of interest is greater than the minimum number of persons/objects, then a notification will be sent.

## 8. Occupancy

- To configure the '*Occupancy*' functionality, we need to decide where is the **occupancy location** in which we want to count occupants. It can be an indoor occupancy location, like a store or a warehouse. It can be an outdoor occupancy location like a park or a neighborhood.
- We will position one or more cameras (leader plus up to ten followers) to monitor the **entrances**. The **entrances** can be doors in the case of an indoor occupancy location, or they can be pathways leading to the occupancy location if that location is not a physical building.
- The **entrances** can be monitored from inside the **occupancy location** or from outside the **occupancy location**. In other words: if the occupancy location is a store, the camera can be inside the store or outside the store.
- If the if the occupancy location is a building, and the camera is **inside**, appearing in the entrance **increases** occupancy count. Set the checkbox '*Appearing in entrance increases count*' to **true**.
- If the if the occupancy location is a building, and the camera is **outside**, appearing in the entrance **decreases** occupancy count. Set the checkbox '*Appearing in entrance increases count*' to **false**.
- Check the '*Entrance1*', and if needed, '*Entrance 2*' and '*Entrance 3*' checkboxes, then drag the entrance control points of the orange polygon around the entrances. Leave a generous gap around the entrance.
- The entrances can have 4, 6 or 8 control points.
- Set the desired value for '*Notify when total occupancy count is*'. In a '*Following*' (group) scenario this will be the aggregate occupancy count of all following cameras. For the leader camera, set the desired number and configure an *Axis Event Notification*. For the follower cameras, do not set up an *Axis Event Notification*.
- Use the '*Reset Occupancy*' to reset the occupancy count to zero. If this camera is a **leader** camera, all followers will reset their occupancy count as well. It resets the **Total Occupancy**.
- Use the '*Auto Reset Occupancy*' functionality to select a daily time for a reset of the occupants for this camera only.
- **Important:** In case of a group (Following) environment, each camera has it's own Auto Reset time. It does **not** reset the **Total Occupancy**.
- Remember to save your changes by pressing the '*Update and Save*' button (the green checkmark).

Please see the diagrams in Appendix **'Examples of Occupancy Configuration'** below for some visual examples of configuring the occupancy.

## 9. Follow

- The *'Follow'* functionality allows for the creation of groups where one camera is the leader and the other cameras (up to ten) are followers. They need to be accessible to each other, either by being on the same network or by port forwarding.
- Check the box of any camera you wish to add to the group. Enter credentials and IP address.
- The *'Name'* field of the leader camera and all followers is **for convenience only**. You do **NOT** have to set the name of the follower cameras inside each follower separately. It's enough to set the names in the leader only(!)
- Remember to save your changes by pressing the *'Update and Save'* button (the green checkmark).

## 10. Overlays

- You can chose to display the bounding boxes as an overlay in a camera video stream by clicking *"Include detection overlays in this video stream"* and selecting the desired stream.
- You can chose to anonymize the bounding boxes as an overlay in a camera video stream by clicking *"Include anonymization overlays in this video stream"* and selecting the desired stream.

## 11. Reports

AreasOccupancyFollowOverlaysReports

Total Occupancy: 39

Camera Name	AOI Count	Status
p3255	1	Area event active
p3245	0	Running

Report interval time [m]60

Get ReportData Panel

- Total Occupancy: When a following group is created, Total Occupancy **in the leader camera** is the aggregated occupancy count . Total Occupancy **in a follower camera** is the occupancy count of that camera only. If no group is created, Total Occupancy equals Occupancy count of this camera.
- The table shows the Area of Interest count for each camera in the group, and its status.
- The leader camera will verify the status of the follower cameras every one minute.
- The *'Report Interval'* value represents how often an entry (row) is added into the Summary Report file, in minutes. Default is sixty minutes.
- The *'Get Report'* button will allow for the download of a Summary Report file in .csv (comma separated values) format. The Summary Report data is organized in a familiar tabular format - one row for each recorded time specified by the Report Interval. Each row will have multiple columns; the specific columns presented in the Summary Report will depend on the active Areas of Interest defined, the active Entrances defined and the active Object Classes defined.
- Recall that Areas of Interest are defined in the Areas tab of the Aware application:

Areas	Occupancy	Follow	Overlays	Reports	Objects
<input checked="" type="checkbox"/>	Area of interest 1	Alert [m:s]	0	:	10
<input type="checkbox"/>	Area of interest 2	Alert [m:s]	0	:	0
<input type="checkbox"/>	Area of interest 3	Alert [m:s]	0	:	10

- The Entrances are defined in the Occupancy tab of the Aware application:

Areas	Occupancy	Follow	Overlays	Reports	Objects
Notify when total occupancy count is 10					
<input checked="" type="checkbox"/>	Entrance 1				
<input type="checkbox"/>	Entrance 2				
<input type="checkbox"/>	Entrance 3				

- The Object Classes are defined in the Objects tab of the Aware application:

Areas	Occupancy	Follow	Overlays	Reports	Objects
Triggering Objects:					
<input checked="" type="checkbox"/>	Persons	<input type="checkbox"/>	Motorcycles	<input type="checkbox"/>	Bicycles
		<input type="checkbox"/>	Cars	<input type="checkbox"/>	Trains
		<input type="checkbox"/>	Trucks	<input type="checkbox"/>	Boats
		<input type="checkbox"/>	Buses	<input type="checkbox"/>	Airplanes

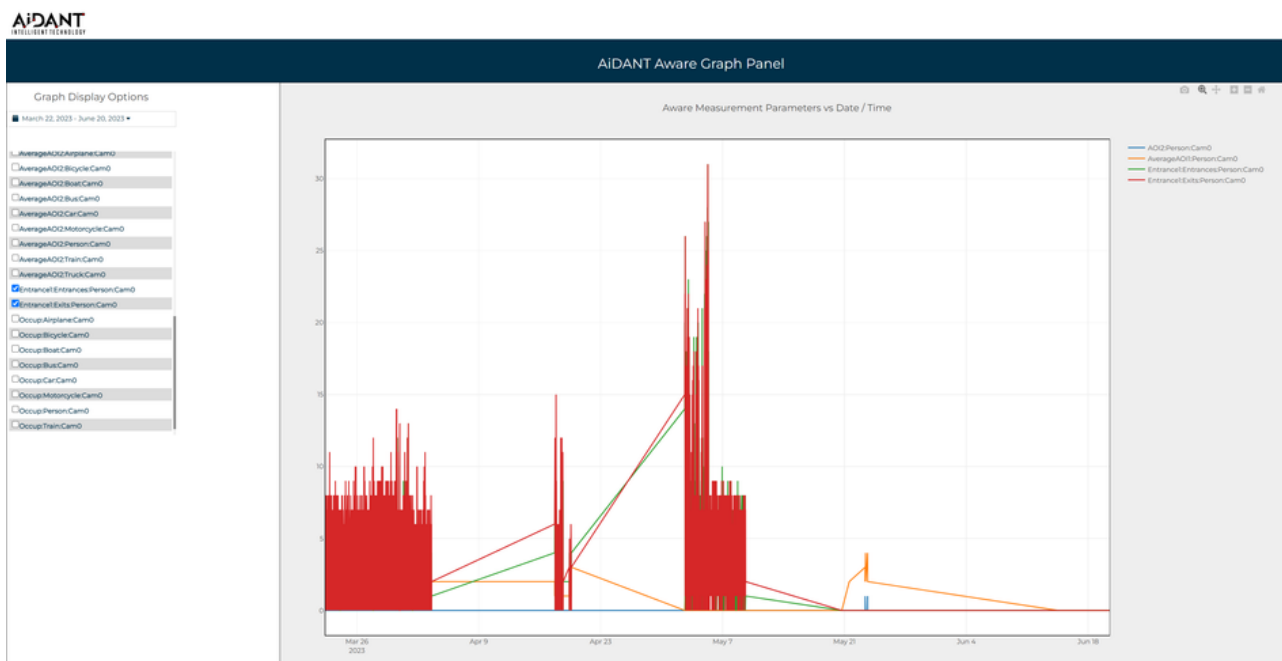
- Each row in the Summary Report will contain the following columns:
  - Date: A timestamp in the format YYYY-MM-DD HH:MM:SS
  - For each active Area of Interest and each active Object class and each Camera a column that contains the number of Objects in the Area of Interest for the specified Camera at the row's timestamp. These columns will be named according to the pattern <Area of Interest>\_<Object Class>\_<Camera Name>. So for example AOI1\_Person\_Cam0 would be a typical column name of this type.
  - For each active Area of Interest and each active Object class and each Camera a column that contains the average number of Objects in the Area of Interest for the specified Camera over the Report Interval. These columns will be named according to the pattern Average<Area of Interest>\_<Object Class>\_<Camera Name>. So for example AverageAOI1\_Person\_Cam0 would be a typical column name of this type.
  - For each active Entrance and each active Object Class and each Camera a column that contains the number of Objects that entered the Entrance observed by the Camera over the Reporting Interval. These columns will be named according to the pattern <EntranceID>\_Entrances\_<Object Class>\_<Camera Name>. So for example, Entrance1\_Entrances\_Person\_Cam0 would be a typical column name of this type.
  - For each active Entrance and each active Object Class and each Camera a column that contains the number of Objects that exited the Entrance observed by the Camera over the Reporting Interval. These columns will be named according to the pattern <EntranceID>\_Exits\_<Object Class>\_<Camera Name>. So for example, Entrance1\_Exits\_Person\_Cam0 would be a typical column name of this type.
  - For each active Object Class and each active Camera a column that contains the Object occupancy measured on the specified Camera at the specified timestamp. These columns will be named according to the pattern Occup\_<Object Class>\_<Camera Name>. So for example, Occup\_Person\_Cam0 would be a typical column name of this type.
- Open the csv report file in you software of choice such as Excel or MS Power BI to create graphs and analysis from the raw data.
- The data of each camera can be accessed programmatically by using Axis Vapix commands. Please refer to Appendix '**Vapix**' for more details.

**Important:** Make sure to download your report periodically, as data prior to two years ago will not be kept.

**Important:** If analyzing the data using Excel graphs, deleting rows might cause the horizontal (category) axis to **not use the date column**. To solve this, **save the file** after deleting rows, then proceed to create graphs.

## 12. Graph Panel


The downloadable report data feature provides the most flexible means of analyzing the archived data from the Aware application. However in some cases a user may just want to see a quick graph of the historical data, to observe changes over time. For these workflows AiDANT Aware provides a simple way to create powerful interactive graphs directly in the browser. Simply navigate to the “Reports” tab of the Aware application page and click the “Graph Panel” button. A new tab will open in the user’s browser showing a graph of the currently archived data.



For the initial display of the Graph Panel all of the available archive data is displayed: all of the defined variables (see the Reports section above for further description of variables available) and for all of the time periods. In order to select a different starting time and ending time for the graphed data, click on the calendar drop down in the Graph Display Options panel and choose an appropriate range of dates.

In order to show or hide particular variables from the graph check or uncheck the variable selection boxes in the Graph Display Options panel as appropriate.

## Graph Display Options

 March 22, 2023 - June 20, 2023 ▼

☐ AverageAOI2:Airplane:Cam0  
☐ AverageAOI2:Bicycle:Cam0  
☐ AverageAOI2:Boat:Cam0  
☐ AverageAOI2:Bus:Cam0  
☐ AverageAOI2:Car:Cam0  
☐ AverageAOI2:Motorcycle:Cam0  
☐ AverageAOI2:Person:Cam0  
☐ AverageAOI2:Train:Cam0  
☐ AverageAOI2:Truck:Cam0  
☒ Entrance1:Entrances:Person:Cam0  
☒ Entrance1:Exits:Person:Cam0  
☐ Occup:Airplane:Cam0  
☐ Occup:Bicycle:Cam0  
☐ Occup:Boat:Cam0  
☐ Occup:Bus:Cam0  
☐ Occup:Car:Cam0  
☐ Occup:Motorcycle:Cam0  
☐ Occup:Person:Cam0  
☐ Occup:Train:Cam0

Double-clicking on a variable name will select that variable for display and unselect all other variables.

Note that in the top right hand corner of the Graph panel is a tool bar to support interactive manipulation of the graph:

The meaning of the respective tool bar icons :

- Download a snapshot image of the current graph to the user's computer.
- Interactively zoom into a user-specified section of the horizontal axis (date range) of the current graph.
- Interactively pan of the current graph.
- Zoom in the display of the entire current graph.
- Zoom out the display of the entire current graph.
- Reset the display of the current graph.

## 13. Objects

The application can detect the following objects:

Persons, Motorcycles, Cars, Trucks, Buses, Bicycles, Trains, Boats, Airplanes.



## 14. Advanced

- The '*Maximum seconds a lost person/object is still tracked*' value enables the user to configure what happens to the tracking mechanism once a person/object is not detected anymore. For example, if a person/object goes behind a pillar in the field of view.

**Warning:** If the value of '*Maximum seconds a lost person/object is still tracked*' is too high, then a person/object exiting the camera field of view might 'transfer' the tracker to a different person/object entering the field of view within a few seconds, affecting accuracy. It is recommended to keep this value below three seconds.

- Locator (white cross) at bounding-box bottom. Selecting this option will move the locator to the bottom of the bounding box.
- Verbose Log, for troubleshooting only.

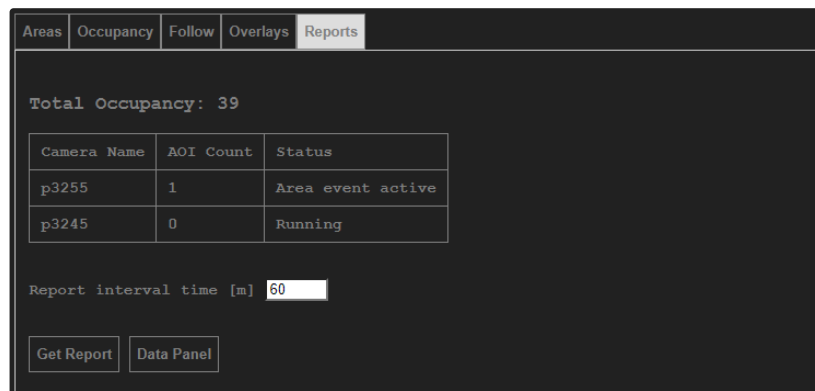
## 15. Event Triggering

To setup event triggering:

1. Go to *System->Events*.
2. Click on + under *Rules* and give your new rule a name.
3. Select the correct condition under the *Condition* field.
4. If you want to receive events from "Any Area" use the "*AiDANT Aware Breached*", condition. If you prefer separate events for separate areas , then do not use "*AiDANT Aware Breached*", use the event with the area name. For an event for occupancy, select the condition "*AiDANT Aware Occupancy Alert*".
5. If for some unexpected reason the Aware application ceases to perform correctly (eg. if a user changes the orientation of the camera from landscape to portrait mode without restarting Aware) then Aware will send an alert to the user. If you want to respond to this event then select the condition "*AiDANT Aware Video Stream Inaccessible*". (Generally when this event is triggered the appropriate response is to restart the Aware application.)
6. In the *Action* field, select an action accordingly.

## 16. MQTT Publishing

Aware supports the publishing of its current data counts using the MQTT messaging protocol. The application will publish a 'Data Event' every <Report Interval> minutes, where <Report Interval> is the value of the *Report interval time* setting (in minutes) in the Reports tab of the Aware application user interface:



The screenshot shows the 'Reports' tab of the Aware application interface. At the top, there are five tabs: 'Areas', 'Occupancy', 'Follow', 'Overlays', and 'Reports', with 'Reports' being the active tab. Below the tabs, the text 'Total Occupancy: 39' is displayed. Underneath this, there is a table with three columns: 'Camera Name', 'AOI Count', and 'Status'. The table contains two rows of data. Below the table, there is a label 'Report interval time [m]' followed by a text input field containing the value '60'. At the bottom of the interface, there are two buttons: 'Get Report' and 'Data Panel'.

Camera Name	AOI Count	Status
p3255	1	Area event active
p3245	0	Running

Aware allows publishing the current data counts using JSON formatting or XML formatting for the payload.

### JSON Formatting

To subscribe to the Aware MQTT data events using JSON formatting:

- In camera user interface, open System/MQTT.
- Click “Connect” to connect to MQTT, set Host IP address.
- In Tab MQTT Publication, add a new Condition: “AiDANT Aware JSON Data”. Click save or update as needed.

Now any MQTT subscriber can subscribe to the topic:

“axis/[MAC]/event/tns:axis/CameraApplicationPlatform/AiDANTAwareApplication/AiDANTAwareJSONData”

The Aware MQTT JSON data event will have the following format:

```
[MAC]/event
{
  "topic":"axis:CameraApplicationPlatform/AiDANTAwareApplication/AiDANTAwareJSONData",
  "timestamp":1689106396376,
  "message":
  {
    "source":{},
    "key":{},
    "data":
    {
      "Entrance3_Exits_Motorcycle":"",
      "Entrance2_Entrances_Train":"",
      "AOI3_Motorcycle":"",
      "AverageAOI1_Person":"3",
      "Occupancy_Boat":"",
      "AOI1_Person":"4",
      "Entrance1_Entrances_Person":"0",
      ... <lines omitted>
      "Entrance3_Exits_Airplane":""
    }
  }
}
```

In particular the data member is a sequence of key-value pairs where the keys are the names of the various items that Aware has tabulated for this reporting interval (following the same convention for variable names as used in the Reporting and Graph Panel sections above), and the values are the corresponding counts (represented as strings). For example, in the sample event above the data contains the key-value pair

"AverageAOI1\_Person":"3"

This key-value pair represents that during the current reporting period the average number of persons in Area of Interest 1 (AOI1) was three.

If a value is the empty string (""), then this is to be interpreted that the corresponding item (key) was not monitored during this report interval. For example, in the sample event above the data contains the key-value pair

"Occupancy\_Boat": ""

This key-value pair represents that during the current reporting period Aware was not configured to monitor the occupancy of boats in the input video stream. Note that a value of "" has a different meaning than a value of "0". For example, the key-value pair

"Occupancy\_Boat": "0"

means that the input video stream was monitored for the occupancy of boats, but that the occupancy of boats was computed as 0.

## XML Formatting

To subscribe to the Aware MQTT data events using XML formatting:

- In camera user interface, open System/MQTT.
- Click "Connect" to connect to MQTT, set Host IP address.
- In Tab MQTT Publication, add a new Condition: "AiDANT Aware XML Data". Click save or update as needed.

Now any MQTT subscriber can subscribe to the topic:

"axis/[MAC]/event/tns:axis/CameraApplicationPlatform/AiDANTAwareApplication/AiDANTAwareXMLData"

The Aware MQTT XML data event will have the following format:

```
[MAC]/event
{
  "topic": "axis:CameraApplicationPlatform/AiDANTAwareApplication/AiDANTAwareXMLData",
  "timestamp": 1689106396381,
  "message": {
    "source": {},
    "key": {},
    "data":
      {
        "payload": "<analyticdata>
          <AOI1_Person>3</AOI1_Person>
          <AverageAOI1_Person>3</AverageAOI1_Person>
          <Entrance1_Entrances_Person>0</Entrance1_Entrances_Person>
          <Entrance1_Exits_Person>0</Entrance1_Exits_Person>
          <Entrance2_Entrances_Person>3</Entrance2_Entrances_Person>
          <Entrance2_Exits_Person>1</Entrance2_Exits_Person>
          <Occupancy_Person>5</Occupancy_Person>
        </analyticdata>"
      }
  }
}
```

In particular the data member is a single key-value pair with key name "payload" and value a string representation of the various items that Aware has tabulated for this reporting interval (following the same convention for variable names as used in the Reporting and Graph Panel sections above). Only variables that are monitored for the current report interval are included in the data payload.

## 17. Axis Camera Station Integration

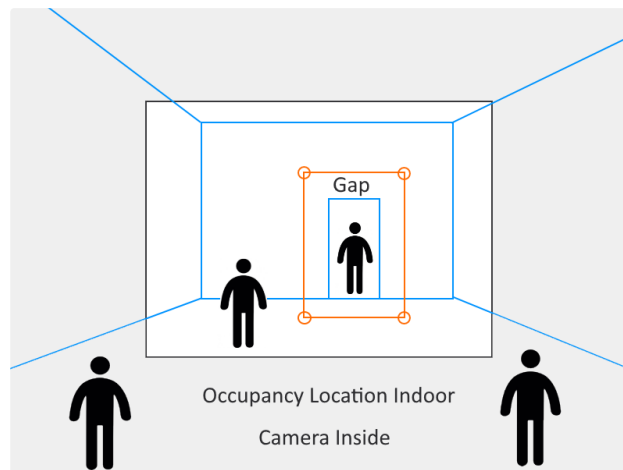
How to configure notifications into Axis Camera Station?

1. Make sure this application is started inside the camera.
2. Launch Axis Camera Station.
3. Open "Recording and Events", then "Action Rules".
4. Press "New" to create a new action rule.
5. In "Triggers" dialog, press "Add" for a new trigger.
6. Select "Device Event", and press "OK".
7. Select camera and choose the desired trigger event.
8. In the "Actions" dialog, select your desired action.

## 18. Appendix

### Examples of Occupancy Configuration

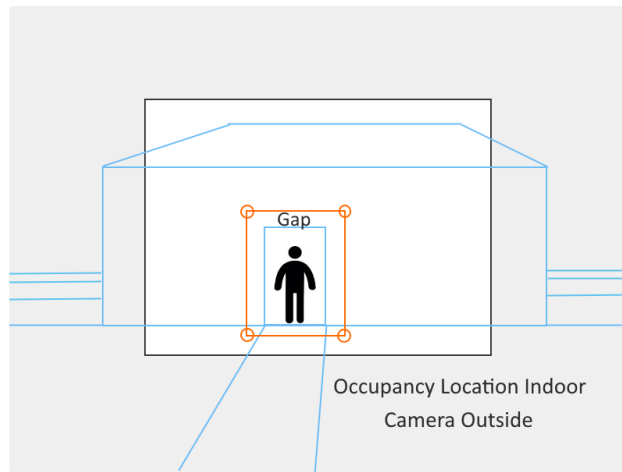
In all examples, the viewport of the camera has a white background, while off-viewport areas have a gray background.



Example 1

**Example 1:** Occupancy Location: **Indoor**. Camera: **Inside**. Draw polygon around door. Leave generous gap around door. Set 'Appearing in entrance increases count' to **true**.

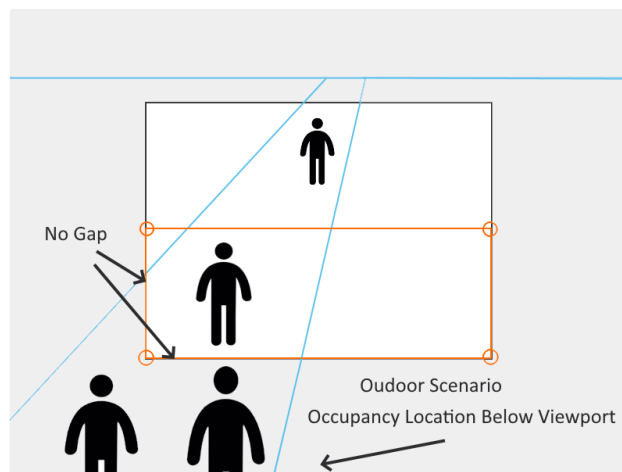
---



Example 2

**Example 2:** Occupancy Location: **Indoor**. Camera: **Outside**. Draw polygon around door. Leave generous gap around door. Set '*Appearing in entrance increases count*' to **false**.

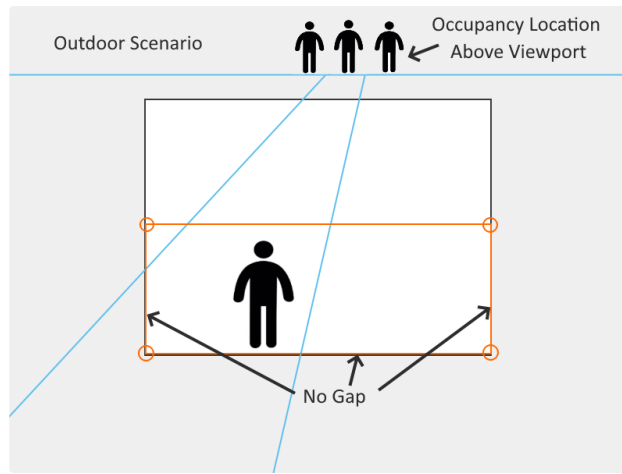
---



Example 3

**Example 3:** Outdoor Scenario. Occupancy Location: **Below Viewport**. Draw polygon in lower half of viewport. Leave no gap between polygon and edges of viewport. Set '*Appearing in entrance increases count*' to **false**.

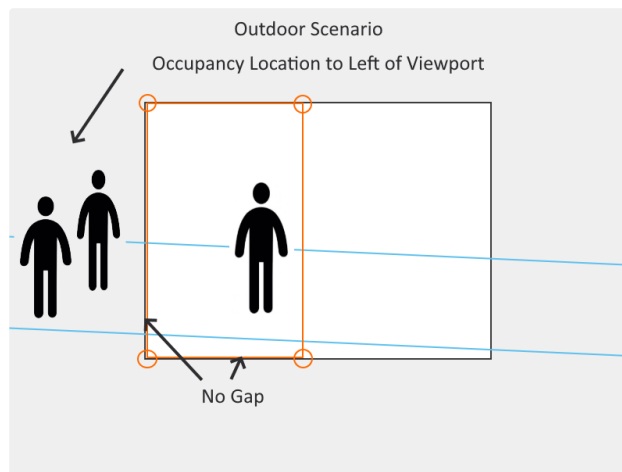
---



Example 4

**Example 4:** Outdoor Scenario. Occupancy Location: **Above Viewport**. Draw polygon in lower half of viewport. Leave no gap between polygon and edges of viewport. Set '*Appearing in entrance increases count*' to **true**.

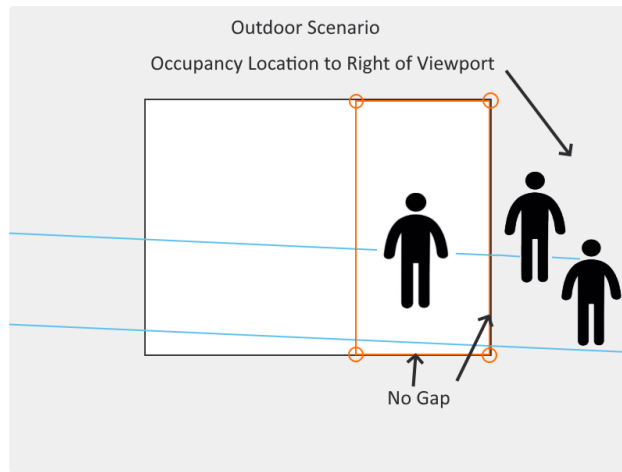
---



Example 5

**Example 5:** Outdoor Scenario. Occupancy Location: **Left of Viewport**. Draw polygon in left half of viewport. Leave no gap between polygon and edges of viewport. Set '*Appearing in entrance increases count*' to **false**.

---



Example 6

**Example 6:** Outdoor Scenario. Occupancy Location: **Right of Viewport**. Draw polygon in right half of viewport. Leave no gap between polygon and edges of viewport. Set '*Appearing in entrance increases count*' to **false**.

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## Troubleshooting

- The application log can be accessed through the Apps/AiDANT Aware TPU page.
- Please contact [AiDANT Technical Support](#) if you have any questions or comments.

## VAPIX

If needed, the occupancy, total occupancy, area of interest count, status code and status string can be polled through Axis VAPIX commands as follows:

### Total Occupancy (leader camera)

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_total\\_occupancy](http://[IP]/local/aidant_aware/webservices.cgi?action=get_total_occupancy)

Result: Occupancy count for group of cameras.

### Occupancy

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_occupancy\\_count](http://[IP]/local/aidant_aware/webservices.cgi?action=get_occupancy_count)

Result: Occupancy count for this camera.

### Reset Total Occupancy

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=reset\\_total\\_occupancy](http://[IP]/local/aidant_aware/webservices.cgi?action=reset_total_occupancy)

### Total Area of interest

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_total\\_crowd](http://[IP]/local/aidant_aware/webservices.cgi?action=get_total_crowd)

Result: Sum of people in all areas of interest. If a group is formed, total of all cameras.

### Area of interest 1, 2, 3 count

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_crowd\\_1](http://[IP]/local/aidant_aware/webservices.cgi?action=get_crowd_1)

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_crowd\\_2](http://[IP]/local/aidant_aware/webservices.cgi?action=get_crowd_2)

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_crowd\\_3](http://[IP]/local/aidant_aware/webservices.cgi?action=get_crowd_3)

Result: Number of people in area of interest.

### Status String

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_status\\_string](http://[IP]/local/aidant_aware/webservices.cgi?action=get_status_string)

Result: Status string

### Status Code

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_status\\_code](http://[IP]/local/aidant_aware/webservices.cgi?action=get_status_code)

Result: Status code

### Status Codes Table

50	STATUS_UNKNOWN	Unknown status
100	STATUS_STARTING	Starting
200	STATUS_RUNNING	Running
300	STATUS_STOPPED	Stopped
400	STATUS_ERR_DATA	Data error
401	STATUS_ERR_AI	AI error
402	STATUS_ERR_LOCATIONS	Locations error
403	STATUS_ERR_AOI	AOI error
404	STATUS_ERR_LICENSE	No license
405	STATUS_ERR_FINDINGS	Findings error
406	STATUS_ERR_EVENTS	Events error
500	STATUS_EVENT_SENT_AOI	Area event active
501	STATUS_EVENT_SENT_OCC	Occupancy event active
600	STATUS_WARN_SLOW	Slow
700	STATUS_NO_CONNECTION	No connection error

### Summary Report CSV (Comma Separated Values) Format

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_occupancy\\_csv](http://[IP]/local/aidant_aware/webservices.cgi?action=get_occupancy_csv)

Result: Summary Report CSV File downloaded to client computer

### Summary Report HTML Format

[http://\[IP\]/local/aidant\\_aware/webservices.cgi?action=get\\_occupancy\\_html](http://[IP]/local/aidant_aware/webservices.cgi?action=get_occupancy_html)

Result: Summary Report in HTML Format



## Data Variable Names

Through downloadable reports, the graph panel and the MQTT data events Aware exposes a large number of data items to interested clients. All of these mechanisms use the same schema for naming variables that are exposed to the user.

### Area of Interest Count

For each active Area of Interest and each active Object class the (instantaneous) number of Objects in the Area of Interest are recorded in variables named according to the pattern <Area of Interest>\_<Object Class>.

- AOI1\_Bicycle
- AOI1\_Car
- AOI1\_Motorcycle
- AOI1\_Airplane
- AOI1\_Bus
- AOI1\_Train
- AOI1\_Truck
- AOI1\_Boat
- AOI2\_Person
- AOI2\_Bicycle
- AOI2\_Car
- AOI2\_Motorcycle
- AOI2\_Airplane
- AOI2\_Bus
- AOI2\_Train
- AOI2\_Truck
- AOI2\_Boat
- AOI3\_Person
- AOI3\_Bicycle
- AOI3\_Car
- AOI3\_Motorcycle
- AOI3\_Airplane
- AOI3\_Bus
- AOI3\_Train
- AOI3\_Truck
- AOI3\_Boat

### Average Area of Interest Count

For each active Area of Interest and each active Object class the average number of Objects in the Area of Interest (averaged over the Report Interval) are recorded in variables named according to the pattern Average<Area of Interest>\_<Object Class>.

- AverageAOI1\_Person
- AverageAOI1\_Bicycle
- AverageAOI1\_Car
- AverageAOI1\_Motorcycle
- AverageAOI1\_Airplane
- AverageAOI1\_Bus
- AverageAOI1\_Train
- AverageAOI1\_Truck

- AverageAOI1\_Boat
- AverageAOI2\_Person
- AverageAOI2\_Bicycle
- AverageAOI2\_Car
- AverageAOI2\_Motorcycle
- AverageAOI2\_Airplane
- AverageAOI2\_Bus
- AverageAOI2\_Train
- AverageAOI2\_Truck
- AverageAOI2\_Boat
- AverageAOI3\_Person
- AverageAOI3\_Bicycle
- AverageAOI3\_Car
- AverageAOI3\_Motorcycle
- AverageAOI3\_Airplane
- AverageAOI3\_Bus
- AverageAOI3\_Train
- AverageAOI3\_Truck
- AverageAOI3\_Boat

#### **Entrance Count**

For each active Entrance and each active Object Class the number of Objects that entered the Entrance observed by the Camera over the Reporting Interval are recorded in variables named according to the pattern <EntranceID>\_Entrances\_<Object Class>.

- Entrance1\_Entrances\_Person
- Entrance1\_Entrances\_Bicycle
- Entrance1\_Entrances\_Car
- Entrance1\_Entrances\_Motorcycle
- Entrance1\_Entrances\_Airplane
- Entrance1\_Entrances\_Bus
- Entrance1\_Entrances\_Train
- Entrance1\_Entrances\_Truck
- Entrance1\_Entrances\_Boat
- Entrance2\_Entrances\_Person
- Entrance2\_Entrances\_Bicycle
- Entrance2\_Entrances\_Car
- Entrance2\_Entrances\_Motorcycle
- Entrance2\_Entrances\_Airplane
- Entrance2\_Entrances\_Bus
- Entrance2\_Entrances\_Train
- Entrance2\_Entrances\_Truck
- Entrance2\_Entrances\_Boat
- Entrance3\_Entrances\_Person
- Entrance3\_Entrances\_Bicycle
- Entrance3\_Entrances\_Car
- Entrance3\_Entrances\_Motorcycle

- Entrance3\_Entrances\_Airplane
- Entrance3\_Entrances\_Bus
- Entrance3\_Entrances\_Train
- Entrance3\_Entrances\_Truck
- Entrance3\_Entrances\_Boat

### **Exit Count**

For each active Entrance and each active Object Class the number of Objects that exited the Entrance observed by the Camera over the Reporting Interval are recorded in variables named according to the pattern <EntranceID>\_Exits\_<Object Class>.

- Entrance1\_Exits\_Person
- Entrance1\_Exits\_Bicycle
- Entrance1\_Exits\_Car
- Entrance1\_Exits\_Motorcycle
- Entrance1\_Exits\_Airplane
- Entrance1\_Exits\_Bus
- Entrance1\_Exits\_Train
- Entrance1\_Exits\_Truck
- Entrance1\_Exits\_Boat
- Entrance2\_Exits\_Person
- Entrance2\_Exits\_Bicycle
- Entrance2\_Exits\_Car
- Entrance2\_Exits\_Motorcycle
- Entrance2\_Exits\_Airplane
- Entrance2\_Exits\_Bus
- Entrance2\_Exits\_Train
- Entrance2\_Exits\_Truck
- Entrance2\_Exits\_Boat
- Entrance3\_Exits\_Person
- Entrance3\_Exits\_Bicycle
- Entrance3\_Exits\_Car
- Entrance3\_Exits\_Motorcycle
- Entrance3\_Exits\_Airplane
- Entrance3\_Exits\_Bus
- Entrance3\_Exits\_Train
- Entrance3\_Exits\_Truck
- Entrance3\_Exits\_Boat

### **Occupancy**

For each active Object Class the Object occupancy measured on the specified Camera are recorded in variables named according to the pattern Occup\_<Object Class>.

- Occupancy\_Person
- Occupancy\_Bicycle
- Occupancy\_Car
- Occupancy\_Motorcycle
- Occupancy\_Airplane

- Occupancy\_Bus
- Occupancy\_Train
- Occupancy\_Truck
- Occupancy\_Boat

In addition, all of these variables may have a Camera Name appended to them in workflows where it is warranted. (i.e in the downloadable reports and Graph Panel when Aware is configured to use Leader and Follower cameras. MQTT data events are specific to each individual camera and do not aggregate or provide data from other cameras, so no camera name is appended to any variable in MQTT data events.)

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