

AiDANT Aware 2 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/s 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 (a.k.a TPU) processor, eg: the Q1615 Mark3 and P3255.

2. Glossary

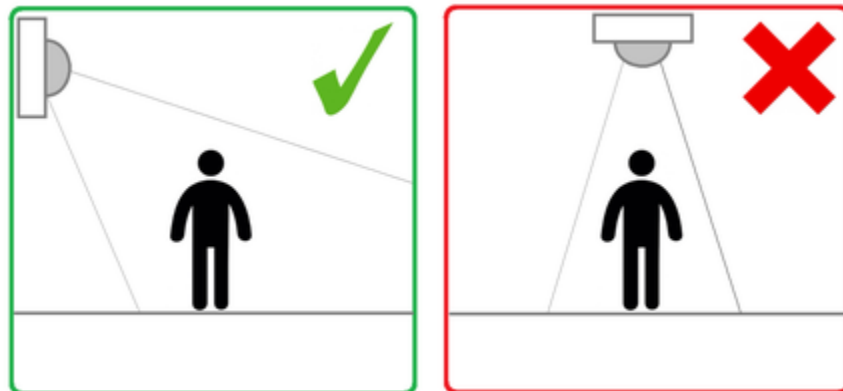
Area of Interest	Aware functionality module that detects presence of humans in a determined area. The Area of Interest module allows for three individual detection areas and three exclusion areas.
Occupancy	Aware functionality module that monitors entrances and counts the number of people entering and 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.

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. The minimum Pixel Per Foot requirements are: 20 PPF.
6. **Important!** Camera positioning: The camera needs to be positioned in such a way that it can see as much of the human body as possible. The software is **not intended to be used in top-view** (ceiling mounted, facing straight down).

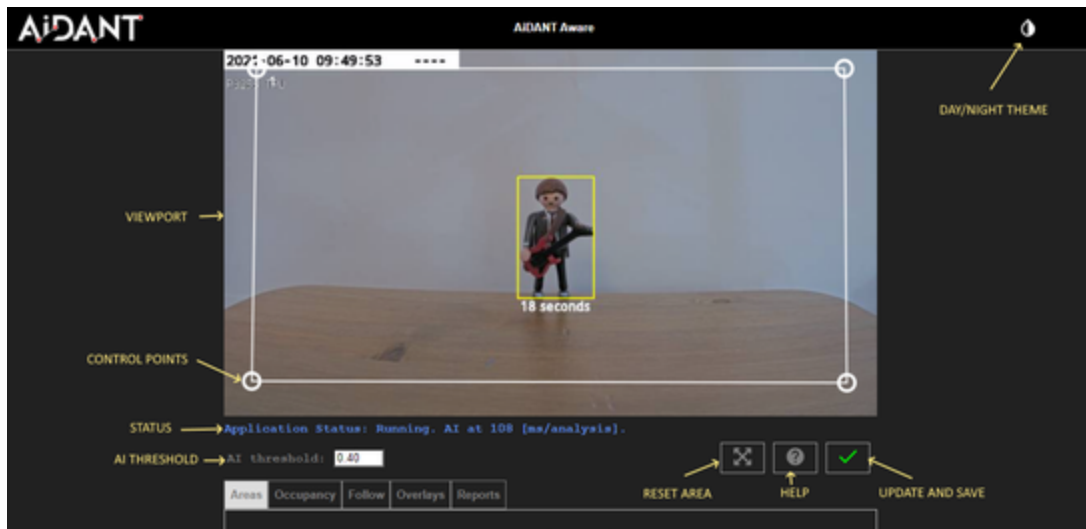


4. Installation

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 provided to you.

5. Main Controls



- The 'AI Threshold' field can be modified to indicate how selective we want to be in identifying a human (i.e. the higher the number, the more discriminate it becomes to determine if an object on the screen is human 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 human detection.
- Press the 'Reset Area' button to restore all areas and entrances to their default positions.
- Press the 'Update and Save' button to save your configuration changes.

6. 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 in the area of interest needed to trigger the alarm by using the 'Notify only when persons count is' field. The user can also indicate the minimum amount of time needed for someone to linger in an area of interest by using the 'Alert Time' field.
- The 'Maximum seconds a lost person is still tracked' value enables the user to configure what happens to the tracking mechanism once a person is not detected anymore. For example, if a person goes behind a pillar in the field of view.
- Remember to save your changes by pressing the 'Update and Save' button (the green checkmark).

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

When a human is detected, a bounding box will be shown on the stream in the application. The default color for the markers is green. If a human 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 then the set time and the number of persons lingering in the areas of interest is greater than the minimum number of persons, then a notification will be sent.

7. 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 'Entrance 1', 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.

- 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 its 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.

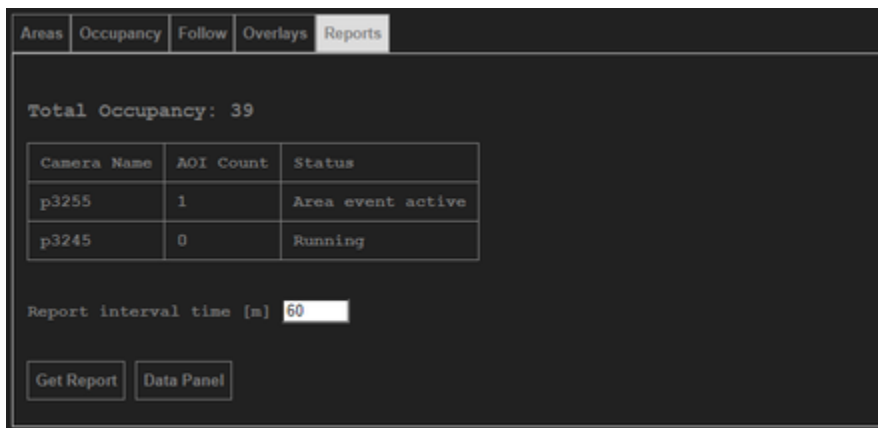
8. Follow

- 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).

9. Overlays

- You can choose 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 choose 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.

10. Reports



- 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 camera every one minute.
- The 'Report Interval' value represents how often an entry (row) is added into the report file, in minutes. Default is sixty minutes.
- The 'Get Report' button will allow for the download of a report file in csv format. The data will include record for the past three months. The report file will contain the **Total Occupancy** count, **Total Area of Interest** count and the three Area of interest counts of this camera.
- Open the csv report file in your 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.

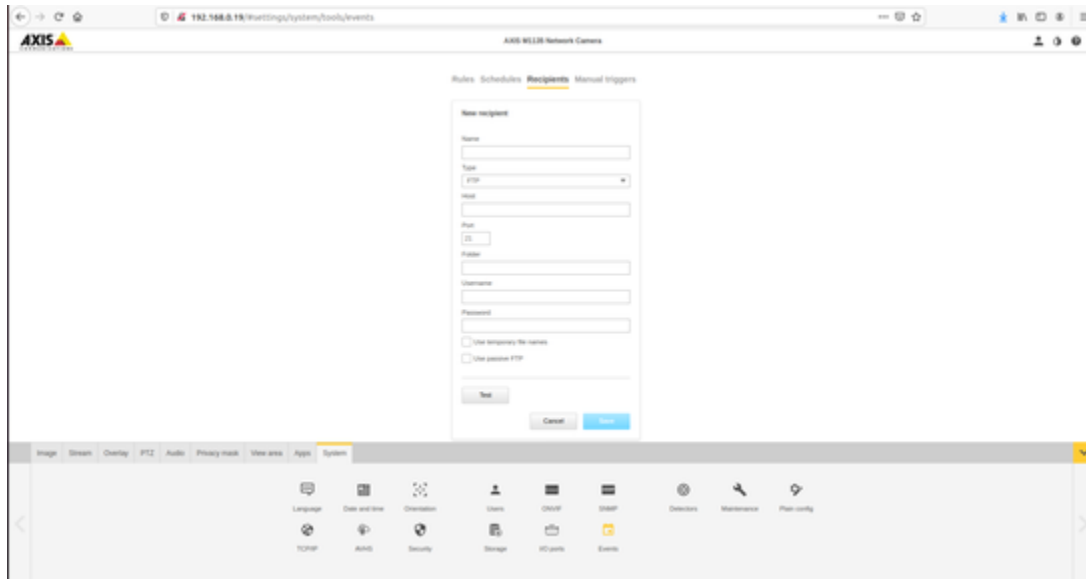
Important: Make sure to download your report periodically, as data prior to three months ago will not be kept.

11. Event Triggering

To setup event triggering:

1. Go to *System->Events*.
2. Click on + under *Rules* and select *AiDANT Aware Condition Breached* under the *Condition* field.
3. Fill in the *Name* field and select an *Action*.

If you wish to set up email notification, click on the *Recipients* tab. Press the + button and fill in the fields.

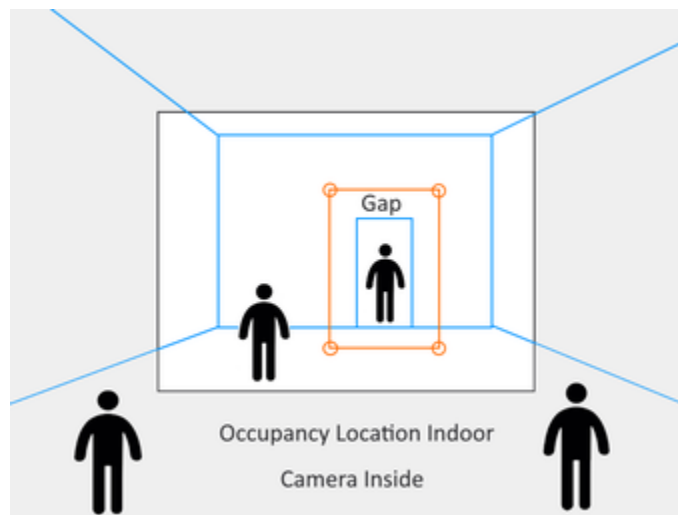


Once done, you can go back to *Actions* under the *Rules* tab and select the appropriate action you want that requires a recipient.

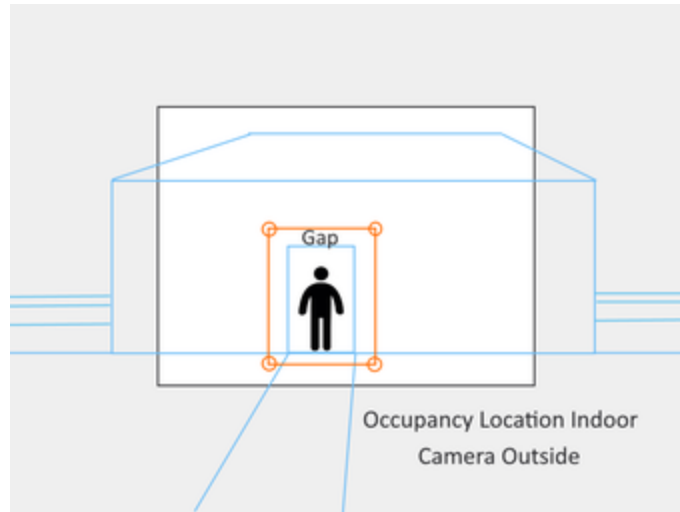
12. Appendix

Examples of Occupancy Configuration

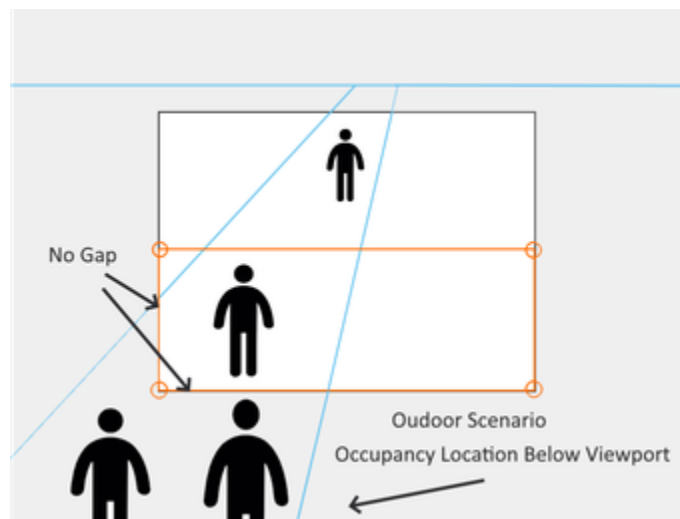
In all examples, the viewport of the camera has a white background, while off-viewport areas have a gray background.



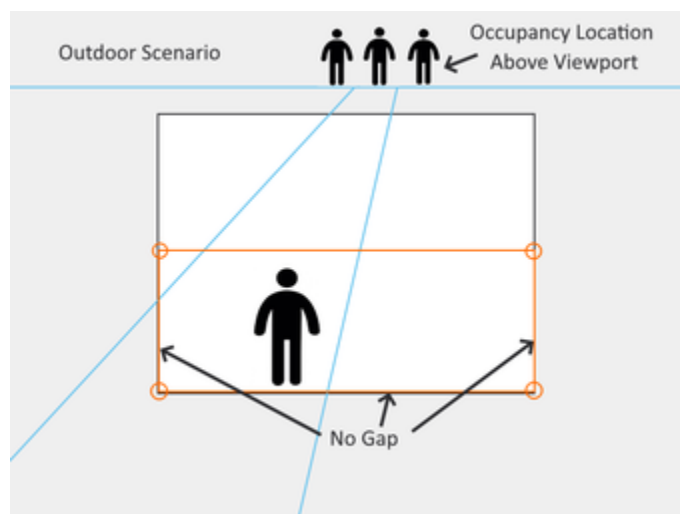
Example 1: Occupancy Location: **Indoor**. Camera: **Inside**. Draw polygon around door. Leave generous gap around door. Set 'Appearing in entrance increases count' to **true**.



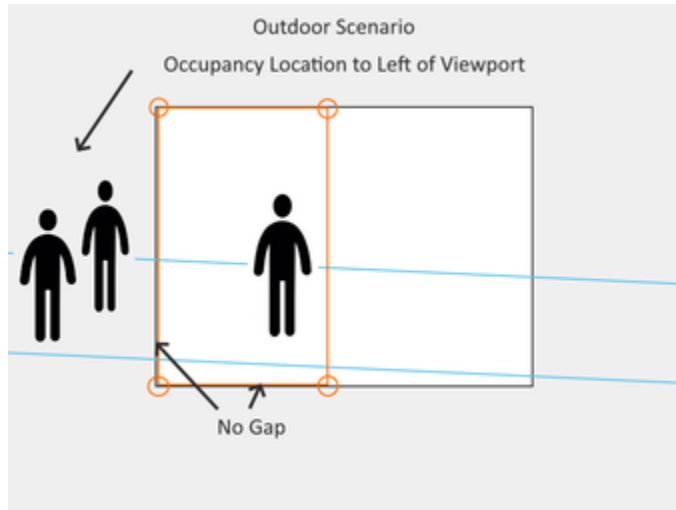
Example 2: Occupancy Location: **Indoor**. Camera: **Outside**. Draw polygon around door. Leave generous gap around door. Set '*Appearing in entrance increases count*' to **false**.



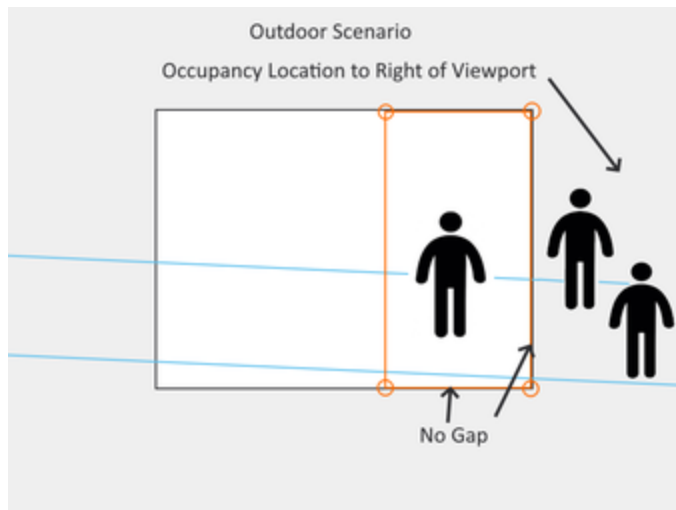
Example 3: Outdoor Scenario. Occupancy Location: **Below Viewport**. Draw polygon in lower half of viewport. Leave no gap between polygon and edges of viewport. Set '*Appearing in entrance increases count*' to **false**.



Example 4: 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: 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: 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**.

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]/axis-cgi/param.cgi?action=list&group=aidant_aware.TotalOccupancy`

Result: aidant_aware.TotalOccupancy=39

Occupancy

[http://\[IP\]/axis-cgi/param.cgi?action=list&group=aidant_aware.OccupancyCount](http://[IP]/axis-cgi/param.cgi?action=list&group=aidant_aware.OccupancyCount)

Result: aidant_aware.OccupancyCount=12

Total Area of interest

[http://\[IP\]/axis-cgi/param.cgi?action=list&group=aidant_aware.TotalCrowdCount](http://[IP]/axis-cgi/param.cgi?action=list&group=aidant_aware.TotalCrowdCount)

Result: aidant_aware.TotalCrowdCount=4

Area of interest 1, 2, 3 count

[http://\[IP\]/axis-cgi/param.cgi?action=list&group=aidant_aware.CrowdCount1](http://[IP]/axis-cgi/param.cgi?action=list&group=aidant_aware.CrowdCount1)

[http://\[IP\]/axis-cgi/param.cgi?action=list&group=aidant_aware.CrowdCount2](http://[IP]/axis-cgi/param.cgi?action=list&group=aidant_aware.CrowdCount2)

[http://\[IP\]/axis-cgi/param.cgi?action=list&group=aidant_aware.CrowdCount3](http://[IP]/axis-cgi/param.cgi?action=list&group=aidant_aware.CrowdCount3)

Result: aidant_aware.CrowdCount1=1

Status String

[http://\[IP\]/local/aidant_aware/cgi/work.cgi?action=get_status_string](http://[IP]/local/aidant_aware/cgi/work.cgi?action=get_status_string)

Result: Running

Status Code

[http://\[IP\]/local/aidant_aware/cgi/work.cgi?action=get_status_code](http://[IP]/local/aidant_aware/cgi/work.cgi?action=get_status_code)

Result: 500

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

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