

# FREQUENTLY ASKED QUESTIONS

AXIS Object Analytics



## Frequently asked questions

### Q: What is the main purpose of AXIS Object Analytics

**A:** AXIS Object Analytics is an edge-based video analytics application designed to detect and classify humans and vehicles in a camera's field of view. Because it can classify objects detected, you can select if you want to detect humans, vehicles, or both within the specified scenario that has been configured.

### Q: Who is AXIS Object Analytics for?

**A:** AXIS Object Analytics is a multi-featured analytics that detects and classifies humans, vehicles, and types of vehicles. It is suitable for a wide range of use cases where users want to classify, track, and count selected objects. Designed to enable proactive monitoring you can quickly verify detected events or set up automatic responses and collect data to access actionable insights.

### Q: How do I activate the license for AXIS Object Analytics?

**A:** When running AXIS Object Analytics for the first time, you won't be needing a license since it's value-added analytics. AXIS Object Analytics is free of charge and preinstalled in firmware on compatible cameras. Once the firmware has been upgraded, the analytics will be available to use. Cameras with a machine learning processing unit (MLPU) must have firmware 10.2 (or higher) and cameras with a deep learning processing unit (DLPU) must have firmware 10.3 (or higher).

### Q: How do I get the latest version of AXIS Object Analytics?

**A:** To ensure that you have access to all the latest features and updates, we recommend you always have the latest firmware version installed on your camera. If your camera does not have the latest firmware, see [how to upgrade](#) the firmware, and then find the latest firmware for your camera [here](#).

### Q: What is the difference between AXIS Object Analytics machine learning and deep learning?

**A:** Depending on if AXIS Object Analytics is running on a camera with a *machine learning* processing unit (MLPU) or a camera with a *deep learning* processing unit (DLPU), its detection and classification capabilities vary.

AXIS Object Analytics running on a camera with a *machine learning* processing unit (MLPU):

- Classifies humans and vehicles
- Considerations: Humans and vehicles should look like humans and vehicles

AXIS Object Analytics running on a camera with a *deep learning* processing unit (DLPU):

- Classifies humans, vehicles as well as different types of vehicles including cars, trucks, buses, and bikes (motorcycle/bicycle)
- Manages more challenging scenes (more crowded and busy scenes, objects in more challenging positions)

[Click here](#) to watch a short video

---

**Q: Is it possible to run AXIS Object Analytics simultaneously with other applications on a camera?**

**A:** Running multiple ACAPs simultaneously on a camera may affect performance. We, therefore, recommend only running AXIS Object Analytics and disabling all other applications.

**Q: What is the difference between AXIS Guard Suite and AXIS Object Analytics**

**A:** The AXIS Guard Suite applications (AXIS Fence Guard, AXIS Motion Guard, and AXIS Loitering Guard) are all motion-based, so they react to most movement of pixels within the designated area.

AXIS Object Analytics is the AI-based successor that can classify motion which means that the analytics can determine if the moving object is a human or a vehicle. It's a multi-featured application offering the same features and more. Whenever a camera also supports AXIS Guard Suite, we always recommend using AXIS Object Analytics instead.

**Q: How long does it take for the detection to initialize?**

**A:** The object must initially be moving within the camera's field of view (the scene) for the analytics to be able to detect and classify it. Depending on the scene, its conditions, and object visibility, the amount of time it takes for detection to initialize can vary. Although detection could initialize sooner, our general recommendation is that an object needs to be fully visible and moving for at least 2 seconds for more reliable detection.

**Q: Does Axis Object Analytics support older Axis products?**

**A:** No, it relies on a specific hardware component that is built into certain cameras.

**Q: Will I see the metadata overlay in the recorded and live screen of the analytics when there is a trigger?**

**A:** Yes, you will see the burnt-in metadata overlay provided that the following steps have been taken:

- Burnt-in metadata overlay on the desired resolution has been selected/enabled.
- The correct streaming profile has been selected, as per the above resolution.
- You have selected that the recording takes place based on the trigger and the correct resolution profile.

When the Metadata overlay has been selected on desired resolution, a rectangle around triggering objects becomes visible. Their trajectories can also be manually enabled. If you are running the Crossline counting (Beta) feature, a counting table is also visible. The metadata overlays are only visible in live views and recordings of the selected resolution. This feature applies red boxes for people and blue boxes for vehicles when they have triggered an event. Enabling Time in area (beta) applies yellow boxes along with a timer to the objects prior to triggering an event. Once they have triggered an event, this feature applies red dotted boxes for people and blue dotted boxes for vehicles. In general, metadata overlay is only applied once selected objects have triggered an event. When running the Time in area (beta) feature, the metadata overlay is applied as soon as a yellow box along with a timer has been applied. In other words, prior to an event being triggered. When running AXIS Object Analytics on DLPU cameras, this feature also applies resemblance icons for each type of classified object.

---

**Q: Why can't I see the metadata overlay in the recorded and live video?**

**A:** To see the burnt-in metadata overlay, please check that:

- The metadata overlay feature hasn't been enabled within the application
- The resolution in the video you are viewing doesn't match the selected resolution in the metadata overlay. Ensure that the correct streaming profile has been selected, as per the above resolution, and that the adaptive stream resolution (or any other dynamic streaming profiles used) is turned off
- You are not using view areas as metadata overlay is not supported then

**Q: Do I have to choose between a video with or without metadata overlay using the same resolution?**

**A:** No, you can run two streams with the same resolution on cameras that support view areas by creating a view area (since view areas don't support metadata overlay).

**Q: Can I change the colors of objects and the alarming area?**

**A:** No, today we have red for humans and blue for vehicles and the alarming area is outlined in red. Enabling Time in area (beta) will display dwelling objects with yellow boxes along with a timer until the condition has been fulfilled.

**Q: Why do I see double bounding boxes within the analytics?**

**A:** When the metadata overlay is enabled and you enter a scenario's configuration page, you will also notice visual confirmation being displayed. Please note that only one of the bounding boxes will be visible in the burnt-in metadata overlay.

**Q: How do I configure different scenarios?**

**A:** Please read the [user manual](#) on how to configure different scenarios.

**Q: Why does AXIS Object Analytics trigger on unwanted small objects and can I minimize it?**

**A:** If there are triggers on unrealistically small objects such as small animals, we recommend that you configure the perspective calibration within the application's settings.

**Q: Can AXIS Object Analytics run on PTZ cameras, and does it support pre-sets?**

**A:** Yes. If the PTZ cameras start to move, AXIS Object Analytics will suspend itself until the final position is reached and then wait 5 seconds until further detections take place. When using guard tour with AXIS Object Analytics, it is recommended that the timer between each position is extended to ensure enough time for everything to initialize and start detecting.

**Q: Can AXIS Object Analytics run on multi-sensor cameras?**

**A:** The number of channels AXIS Object Analytics can run on is camera dependent. For an up-to-date list of compatible cameras, please visit the [product page](#).

---

**Q: Does AXIS Object Analytics work on fisheye cameras, and can I change the view?**

**A:** Yes, AXIS Object Analytics works on supported fisheye cameras. There are some limitations with regard to blind spots directly underneath (top-down), installation height, and around the edges. For more information, please visit the specific camera's product manual.

**Q: Can I train AXIS Object Analytics, or does it learn on its own?**

**A:** No, AXIS Object Analytics is trained and maintained by Axis. This is done through firmware upgrades to cameras that are compatible with the analytics.

**Q: How well will AXIS Object Analytics work in low light and dark scenes?**

**A:** Each scene will require its own considerations as each has its own environmental or climatic challenges. Having a good contrast of the object and having the object look like a human and vehicle in low light scenes will allow the analytics to be more accurate.

**Q: Does AXIS Object Analytics count objects?**

**A:** Yes, AXIS Object Analytics can be configured to count both humans and vehicles or just one specific object class using the Crossline counting (BETA) scenario. However, it is not intended to address the same use cases as AXIS People Counter or AXIS P8815-2 3D People Counter which are dedicated people counting solutions that have been optimized for indoor use and traditionally deployed in a retail scenario.

There are a wide variety of use cases and applications for the object counting data produced by AXIS Object Analytics since there is additional flexibility regarding the mounting position of the camera as well as the applicable scenarios where objects can be counted.

**Q: Can I create events based on the counting data?**

**A:** Yes, it is possible to trigger actions based on the counting events generated by AXIS Object Analytics. A trigger condition is added to the action rule menu by default when creating a Crossline counting (BETA) scenario within AXIS Object Analytics. This condition is triggered each time an object is counted by AXIS Object Analytics and can be used to trigger actions such as playing an audio clip on a network audio speaker.

In addition, a second trigger condition can be configured by enabling the Passthrough Threshold feature within the Crossline counting (BETA) scenario. This condition is triggered each time X number of objects have passed the line according to the number that has been specified within the Passthrough Threshold field.

**Q: Can AXIS Object Analytics measure occupancy?**

**A:** AXIS Object Analytics does not measure occupancy levels using the Crossline counting (BETA) scenario. This scenario will count objects that have crossed the virtual line configured within the application and generate events containing metadata about the type of object that was counted, as well as aggregated data of the objects that have been counted. This information can be ingested by a third-party system that can further process the data according to the specific needs of the customer or use case.

---

## Q: What metadata does AXIS Object Analytics produce from the counting?

**A:** Each object that is counted by AXIS Object Analytics will generate a stateless event which can be used as part of the action rule engine on the camera to trigger actions when events are detected. For instance, the camera can trigger a network audio speaker to play an audio clip when the camera counts an object.

In addition, each generated event contains metadata about the type of object that was counted as well as aggregated counts for each of the selected object classes since the time of the last reset. This information can be used to visualize the object counting data produced by AXIS Object Analytics on third-party systems.

An example payload produced by AXIS Object Analytics Crossline counting (BETA) scenario can be seen below.

```
{
  "topic": "axis:CameraApplicationPlatform/ObjectAnalytics/Device1Scenario1",
  "timestamp": 1670518346712,
  "serial": "ACCC8EF1E944",
  "message": {
    "source": {},
    "key": {},
    "data": {
      "startTime": "2022-12-06T22:01:25Z",
      "totalBus": "0",
      "total": "20960",
      "totalTruck": "2857",
      "totalCar": "18103",
      "totalUnknown": "0",
      "reason": "car",
      "totalMotorcycle/bicycle": "0",
      "totalHuman": "0"
    }
  }
}
```

## Q: Can AXIS Object Analytics produce live and historic data from counting (can I get counting data at any given time without an event)?

**A:** There are currently two methods of obtaining the object counting data produced by AXIS Object Analytics:

**1)** The counting data can be observed in real-time by accessing the Crossline counting (BETA) scenario that has been configured within AXIS Object Analytics, where it is presented in a table format displaying the accumulated counts for each of the selected object class types.

In addition, the counting data table can be burnt into the video stream as part of the metadata overlay to enable visualization of the data in a VMS.

**2)** Each object that is counted by AXIS Object Analytics contains metadata about the type of object that was counted as well as aggregated counts for each of the selected object classes since the time of the last reset. This information can be used to visualize the object counting data produced by AXIS Object Analytics on third-party systems.

---

## **Q: Can I use 3<sup>rd</sup> party tools to access the counting data and how does it work?**

**A:** Yes, it is possible to integrate the counting data produced by AXIS Object Analytics with third-party systems to visualize the statistics in a variety of formats. This can be accomplished by subscribing to the event stream of the Axis camera running AXIS Object Analytics which will generate an event containing metadata each time an object has been counted.

We have created an integration guide that provides important information such as suggested architecture, development examples, and recommended considerations when designing a solution that uses the counting data provided by AXIS Object Analytics. [Click here to visit the integration guide.](#)

## **Q: Do I need a VMS to run AXIS Object Analytics or does it work as a stand-alone application?**

**A:** It is recommended to use the application with a VMS in most use cases. It is possible to run the Crossline counting (Beta) scenario without a VMS. The application is compatible with AXIS Camera Station, Genetec, and Milestone VMS. In general, all VMS that can receive Axis events from cameras are compatible. Nevertheless, we do recommend running a test if the target VMS is not any of the three listed above. The application can be used without a VMS using the event engine function of the camera to take a snapshot, send an e-mail, etc.

## **Q: What is the minimum object size for human and vehicle detection?**

**A: For human detection:** for a standing person to be detected at the recommended maximum detection distance, the pixel height of the object should be at least 8% of the total image height. For example, if the height of the video stream is 1080 pixels, the height of a person standing at the end of the detection zone should be at least 86 pixels for human detection. In optimal circumstances, the pixel height of the object could be at least 4% (at least 43 pixels if the video stream is 1080 pixels).

**For vehicle detection:** the pixel height of the object should be at least 6% of the total image height. For example, if the height of the video stream is 1080 pixels, the height of a vehicle at the end of the detection zone should be at least 64 pixels for vehicle detection. In optimal circumstances, the pixel height of the object could be at least 3% (at least 32 pixels if the video stream is 1080 pixels).

As of firmware 10.11, a minimum object size visualization tool is built into the application to help determine if live objects are large enough to be detected.

Maximum detection distance varies depending on the camera. The numbers above are for guidance only. To see what applies to specific cameras and plan camera placement and coverage with maps, visit [AXIS Site Designer](#).

## **Q: What is the minimum amount of light/lux level for AXIS Object Analytics?**

**A:** Our minimum recommended light level is 50 lux.

## **Q: Which browsers will be supported in the configuration of Axis Object Analytics?**

**A:** Chrome, Firefox, and Edge (Chromium based).

## **Q: What cameras are compatible with AXIS Object Analytics?**

**A:** For a complete list of compatible cameras, please [click here](#).