

Eagle Eye Application Note - AN016

Optimizing Motion Tracking in the Eagle Eye Cloud VMS

2024-06-20 Revision 1.0

Target Audience

This Application Note is meant for any user of the Eagle Eye Cloud VMS that has the “Edit Motion Areas and Analytics” permission or higher and is looking to better understand the setup, capabilities, and implications of this configuration.

Introduction

The Eagle Eye Cloud VMS tracks motion in a camera feed to allow for alerts and video recording to start/stop. This application note shows how to set up motion areas and provides some simple troubleshooting steps for common issues.

Background

In the Eagle Eye Cloud VMS motion is defined as when one frame of camera video is different from the previous frame. When a bridge detects this difference, the recording begins (depending on motion settings in the Cloud VMS).

How To Set Up Motion

The default camera motion settings are below:

Camera Retention Resolution **Motion** Analytics Audio Location Metrics Maintenance

Master Motion Sensitivity: Master Motion Object Size:

13:52:16

Regions/Alerts

Order	Name	Sensitivity	Object Size	Actions
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Cancel Apply Save Changes


Master Motion Sensitivity is the default level of motion sensitivity applied to the entire image. If you add regions to the image manually, they can have their own sensitivity setting that overrides the Master Motion Sensitivity for that region. Use the slider to increase or decrease a camera's motion sensitivity.

For example, an outdoor camera might detect leaves moving in the wind triggering unwanted alerts so the sensitivity should be lowered so that each leaf movement is not detected as an event that requires full video recording. Indoor areas with less traffic can be set to a higher detection value, so that any amount of motion triggers an event.

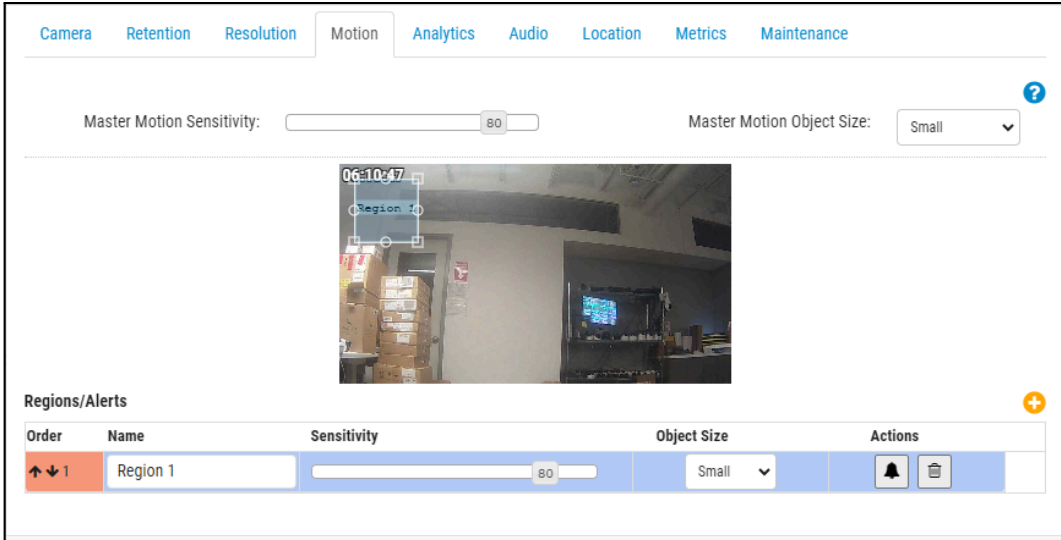
Increasing the **Master Motion Object Size** helps filter out unimportant motion. Manually created regions can have their own Motion Object Size value that overrides the master value. Small object sizes take up about 1%, medium objects take up around 5%, and large objects take up approximately 10% of the full image size.

How To Set Up Regions Of Interest

Regions of interest are configurable areas inside a video screen that allow alerts to be sent when motion is detected within the area. You can create an unlimited number of regions and alerts, and each region can generate its own alerts. A region can be used for determining when a camera records full video as well as for generating an alert based on motion.

To create a new region, press the plus button: 

A new region appears as a square with four vertices. You can move each vertex to form the desired shape for a region. Clicking on a circle between vertices creates a new, adjustable vertex. This allows you to create regions with complex shapes.



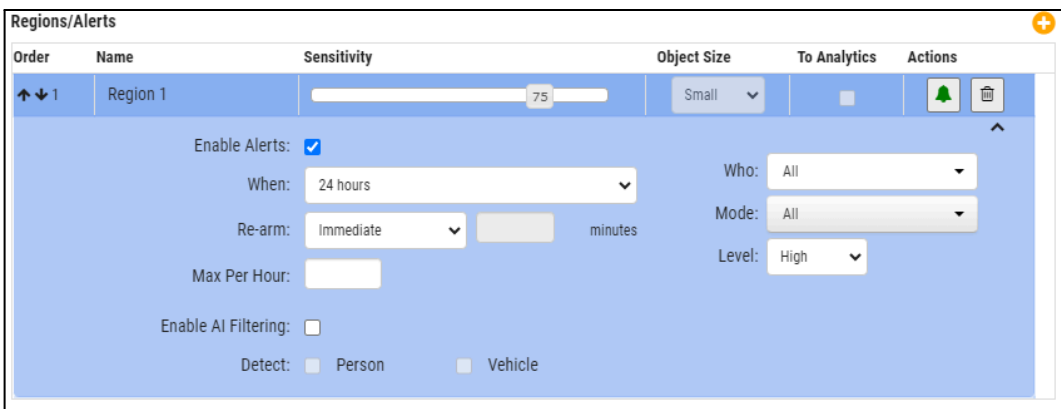
Double-click vertices to delete them.

Note: A region must have a minimum of four vertices.

When making a region of interest, you can **Name** it for tracking purposes. From there you can set **Sensitivity** and **Object Size**. You can also assign this region of interest to an analytic on this camera via the **To Analytics** checkbox.

Note: The **To Analytics** option will be accessible only if there is an active analytic on the camera, and the **Sensitivity** setting on the region will also need to be set to 0. This will create a motion exclusion zone in the analytic.

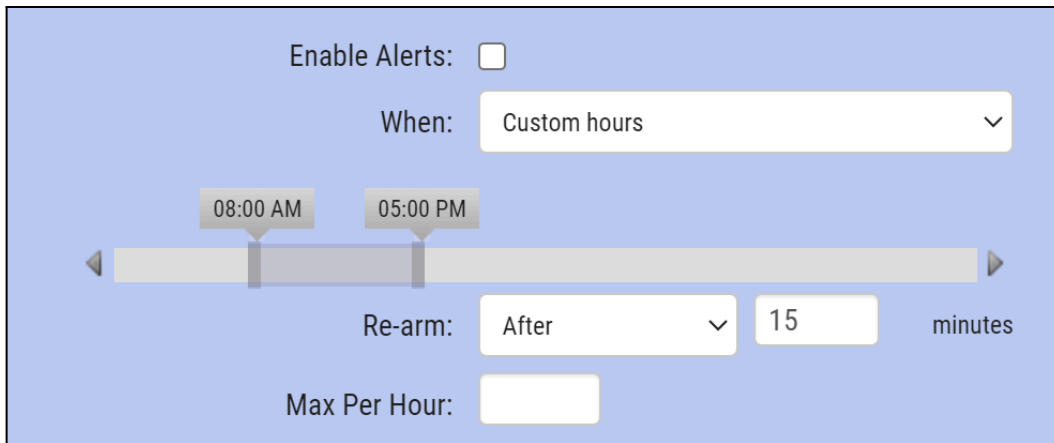
Setting Alerts for Regions of Interest



To start receiving alerts, check the box under **Enable Alerts**. From here you will configure the alert.

Under **When**, you can set specific alert times or time windows, such as during the night or when the office is closed. **Re-arm** determines how long the system waits before sending another alert. The **Immediate** option sends an alert every time motion is detected, while other settings allow for a delay. For example, setting it to "Re-arm After quiet for 5 minutes" means the system will alert you about detected motion only after a five-minute period of no motion. Other available options for **Re-Arm** are Work Hours (configured in account settings), Non-Work hours, and Custom hours.

Note: when you select Custom Hours, you will see a slider allowing you to select the active hours.



The screenshot displays a configuration panel for alerts. At the top, there is a checkbox labeled "Enable Alerts:" which is currently unchecked. Below this is a dropdown menu labeled "When:" with "Custom hours" selected. A horizontal slider below the dropdown allows for selecting active hours, with markers at "08:00 AM" and "05:00 PM". Underneath the slider, the "Re-arm:" dropdown is set to "After" with a value of "15" minutes. At the bottom, there is an input field for "Max Per Hour:".

Limit the number of alerts per hour with **Max Per Hour**; for example, if this value is set to 10, you will receive up to 10 alerts per hour. Under **Who**, you can select multiple users to receive alerts.

Mode allows you to set different alert modes based on your account settings, useful for alert hours that vary between normal business days and holidays. Choose to receive High, Low, or both levels of alerts under **Level**.

To enable AI filtering for alerts, check the box under **Enable AI Filtering** (make sure Alert Enable is also checked). Note: If you do not see AI filtering as an option, please consult your sales person. Finally, under **Detect**, select whether you want the system to detect a person, a vehicle, or both.

Note: If you select AI Filtering and a Detect mode (person and/or vehicle) a new tab appears on the Camera settings tab list.

Configuring AI Filtering

AI Filtering allows users to choose how the VMS notifies them that vehicles, people, or both have been detected.

Note: This tab only appears if **Enable AI Filtering** is checked under **Camera Settings** → **Motion**.

Alert Actions

Name the alert in the **Name of Action** field, then select the **Action Type**. You can choose to be notified of AI-filtered alerts. The available options are **Immix Alert** (used for integration with the Immix monitoring system, and available if the account has Immix Monitoring enabled), **Webhook**, and **Notification**.

Note: Any combination of the three alert actions may be selected.

Next you select the **Recipient**, as well as the **Notification** type (push, email or all). Once those are set, then you select the **Re-arm** duration as well as the **Max per hour** limits (if any).

Troubleshooting Tips

This section goes over common issues with motion detection in the Eagle Eye Cloud VMS.

- **“My camera is constantly recording, but it’s not supposed to.”**

If motion sensitivity is set too high, the Cloud VMS will constantly record motion. This leads to increased local storage usage, as well as increased traffic to the Cloud (depending on settings). The recommendation is to step down the motion sensitivity in increments of 5 until you achieve the desired recording quantity. This also applies to Regions of Interest.

- **“My camera isn’t recording all the motion it should be.”**

If motion sensitivity is set too low, the Cloud VMS will miss actual motion. The recommendation is to step up the Motion Sensitivity settings in increments of 5, until you achieve the desired amount of recording.

- **“I’m not getting the alerts I’m supposed to.”**

Please verify in **My Profile** → **Notifications** that the **High, Low, or both** options are enabled, depending on which level is set on the region of interest.

The screenshot shows a user interface with a navigation bar at the top containing five tabs: 'Login', 'Notifications', 'Time', 'Layouts', and 'Previews'. The 'Notifications' tab is currently active. Below the navigation bar, the 'Notify on Alerts:' section is visible, containing four checked checkboxes with corresponding labels: 'System All', 'System Location Specific', 'High', and 'Low'.

- **“I keep getting motion alerts for background motion such as trees and highway traffic.”**

Try setting up a motion exclusion zone. Exclusion zones are similar to regions of interest, but instead of having a region with motion sensitivity enabled, set the Sensitivity to 0. You will **not get notifications** from motion detected in an exclusion zone.

For additional help, please reach out to Eagle Eye Networks Support.