Eagle Eye Application Note - AN097

Precision Person & Vehicle Detection in the Eagle Eye Cloud VMS

2025-12-08 Revision 1.0

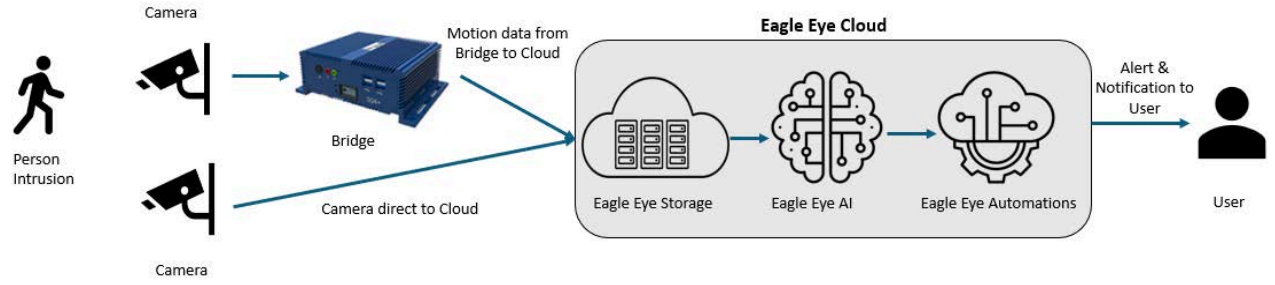
Target Audience

This Application Note is intended for resellers, end users, and tech partners who will be configuring Eagle Eye Precision Person & Vehicle Detection in the Eagle Eye Cloud VMS. It provides an overview of the application and best practices for camera specifications and other key considerations.

Introduction

Eagle Eye Precision Person & Vehicle Detection offers high-accuracy people and vehicle detection through Eagle Eye Cloud VMS. This enables users to have enhanced security with reduced false alerts in their video surveillance platform.

The cloud-based solution ensures reliable detection regardless of camera make. Scalability for these detections is eased by using the Eagle Eye Cloud, which reduces the need to replace on-site edge AI devices by eliminating the need to deploy new cameras and/or recorders.



Eagle Eye Precision Person & Vehicle Detection AI analytics process the video when there is motion and detect the person or vehicle. The enhanced analytics analyze multiple frames to ensure reliable detection and reporting of only moving objects, not parked cars. The algorithm robustly handles false alerts caused by moving trees, flickering lights, and environmental conditions such as rain. The analytics generate person and vehicle events in the Eagle Eye Cloud VMS, which can be filtered and searched in the history browser. Rules can be configured

using these analytics to enable user alerts and notifications for both person and vehicle intrusions.

Prerequisites & Camera Considerations

Bridge/CMVR	Any model
Support for camera direct	Yes
Minimum preview resolution	640 x 480 Pixels
Full resolution video resolution	Not applicable
Update rate	1 FPS
Quality	High
Minimum pixel size per person	8(H) x 16(V) pixels
Minimum pixel size per vehicle	25(H) x 20(v) pixels
Minimum illumination*	50 lux

*As a rule, the person or vehicle should be clear enough in the video for human eyes to recognize.

Application Areas

Eagle Eye Precision Person & Vehicle Detection enables organizations to strengthen safety, monitor assets, and enhance situational awareness across diverse environments. The cloud-based architecture and camera-agnostic design make it ideal for both single-site and multi-site operations without requiring specialized on-premise AI hardware.

- **Perimeter protection**
  - **Homeowners associations (HOAs) & Multi-dwelling units (MDUs)**: Detect unauthorized entry or loitering at gates, parking areas, or shared amenities.
  - **Commercial complexes and business parks**: Identify individuals or vehicles entering secured perimeters after hours and trigger alerts to monitoring centers.
  - **Utility and infrastructure sites:** Protect critical facilities such as substations, water treatment plants, or telecom towers from intrusion or vandalism.
- **Asset and equipment protection**
  - **Factories and warehouses**: Detect and alert on unauthorized movement in equipment zones, loading docks, and restricted storage areas.
  - **Construction sites**: Safeguard heavy machinery, tools, and materials against theft or after-hours access.
  - **Fleet yards, car dealerships, and parking lots:**

        - Detect suspicious movement around parked vehicles, especially after hours.
        - Prevent catalytic converter theft by alerting operators or monitoring centers when a person is detected under or near a stationary vehicle.
        - Track vehicle entries and exits for operational visibility and incident investigation.
- **Retail and showroom security**
    - **Car showrooms and dealerships:** Detect and respond to any human or vehicle movement around display cars or inventory areas during closed hours.
    - **Large retail stores or malls:** Provide early notification of perimeter breaches and monitor delivery zones for unauthorized vehicle access.

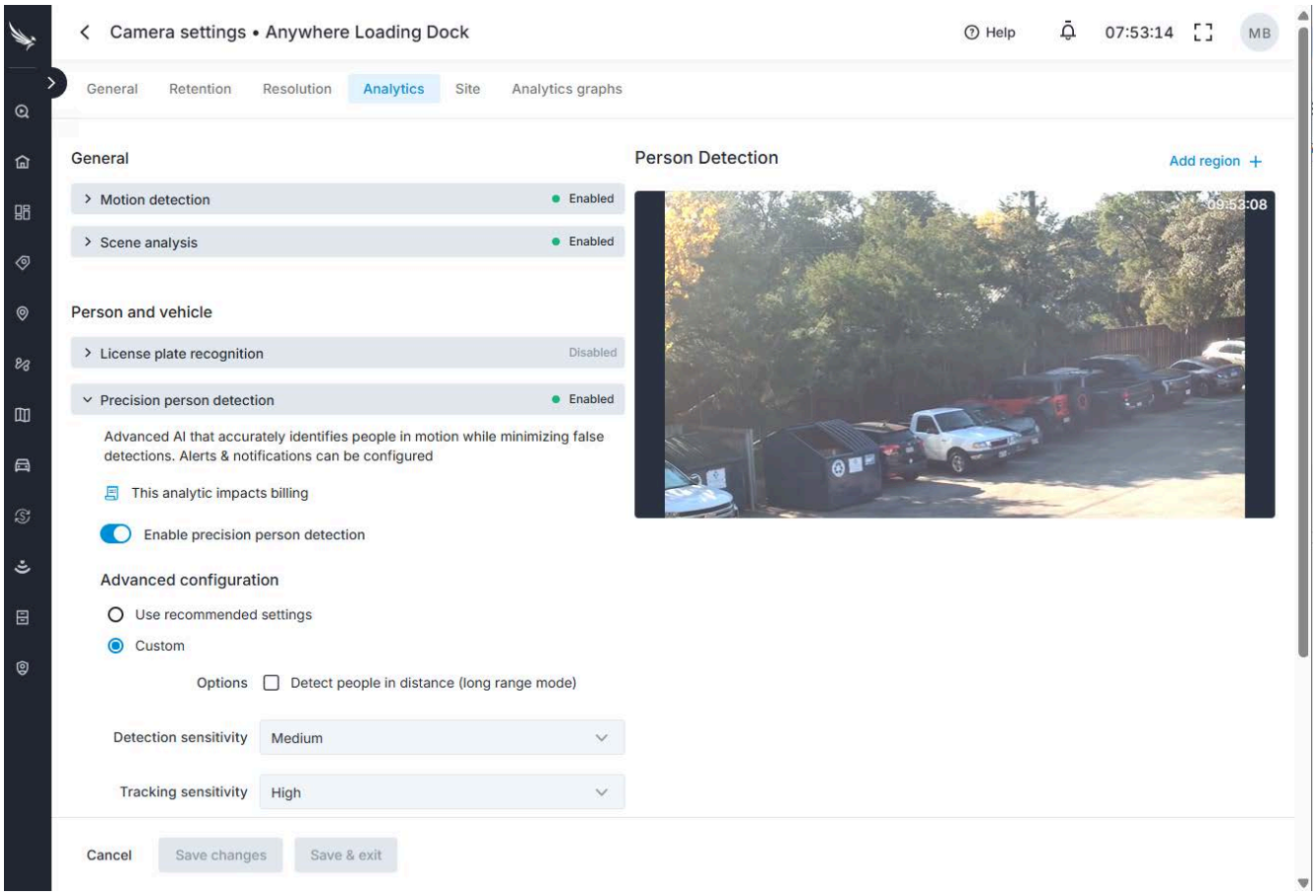
Key Considerations

Alerts: Scene Analysis also produces person and vehicle events for video search, but does not send alerts. Precision Person & Vehicle Detection supports alerts because it is designed for enhanced detection with fewer false alerts.

Navigating the User Interface

Enabling Analytics: Precision Person & Vehicle Detection is enabled under **Camera Settings > Analytics**.
Note: Precision Person & Vehicle Detection is not available in the Classic Web Interface.

Person Detection and **Vehicle Detection** are listed as separate analytics to allow configuration of specific regions for each object type and to manage different settings. Multiple regions of interest can be created for each analytic, and the user can name them. If no regions of interest are drawn, the full frame is considered the region of interest for the analytics.



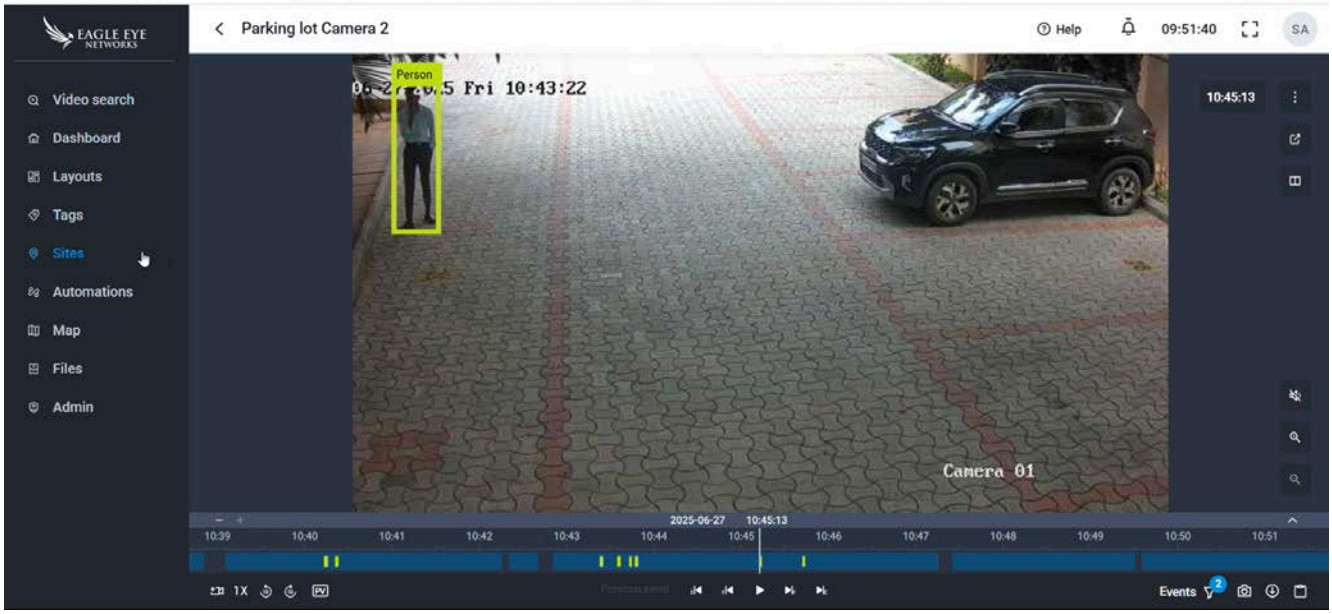
Eagle Eye Precision Person & Vehicle Detection is preconfigured with optimized default settings suitable for most environments. However, users can fine-tune the analytics behavior based on the site conditions and operational needs.

These adjustable settings allow balancing between detection range, event responsiveness, and the tolerance for stationary objects.

Setting	Type / Options	Description	Effect on Detection
Long Range Mode	Enable / Disable	Extends detection capability to cover longer distances in the scene. Recommended for wide outdoor areas such as parking lots or open perimeters.	- When **Enabled**, it increases the detection range but may reduce accuracy for smaller or partially visible objects. - When **Disabled (default)**, limits range but enhances precision in closer zones.

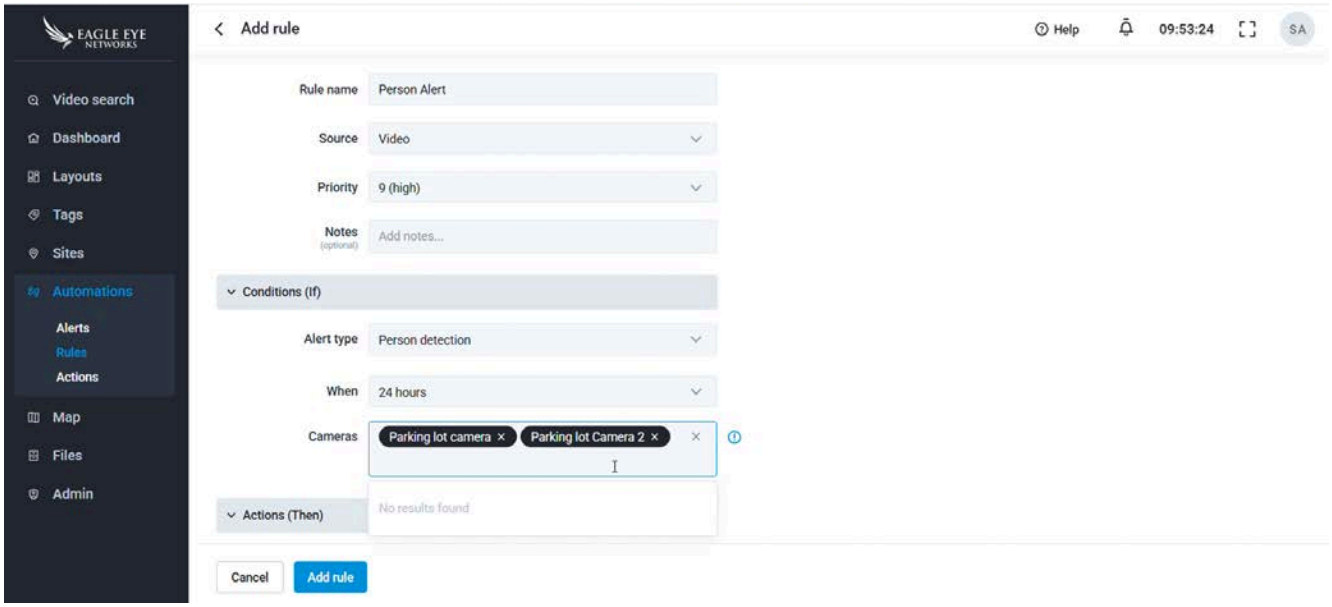
Event Sensitivity	Low / Medium / High	Adjusts the detection model's sensitivity to identifying people or vehicles. This controls how the algorithm interprets motion and visual patterns.	- **High:** Detects smaller or subtle motion; may increase false positives. - **Medium (default):** Balanced performance between accuracy and reliability. - **Low:** Reduces false alerts in noisy or dynamic environments but may miss distant or brief detections.
Tracking Sensitivity	Low / Medium / High	Defines how much motion or displacement is required for a detection to be classified as an active event. Impacts how stationary or slow-moving subjects are treated.	- **High (default):** Detects even small or slow movements; suited for close monitoring zones. - **Medium:** Reduces alert for stationary vehicles in case of crowded lots and with camera vibrations. - **Low:** further reduces alerts for partially stationary objects (e.g., parked vehicles, people standing still). Ideal for minimizing repetitive detections.

Visualizing detections in the History Browser: Detections from Precision Person & Vehicle Detection can be visualized there. Events can be filtered using event filters

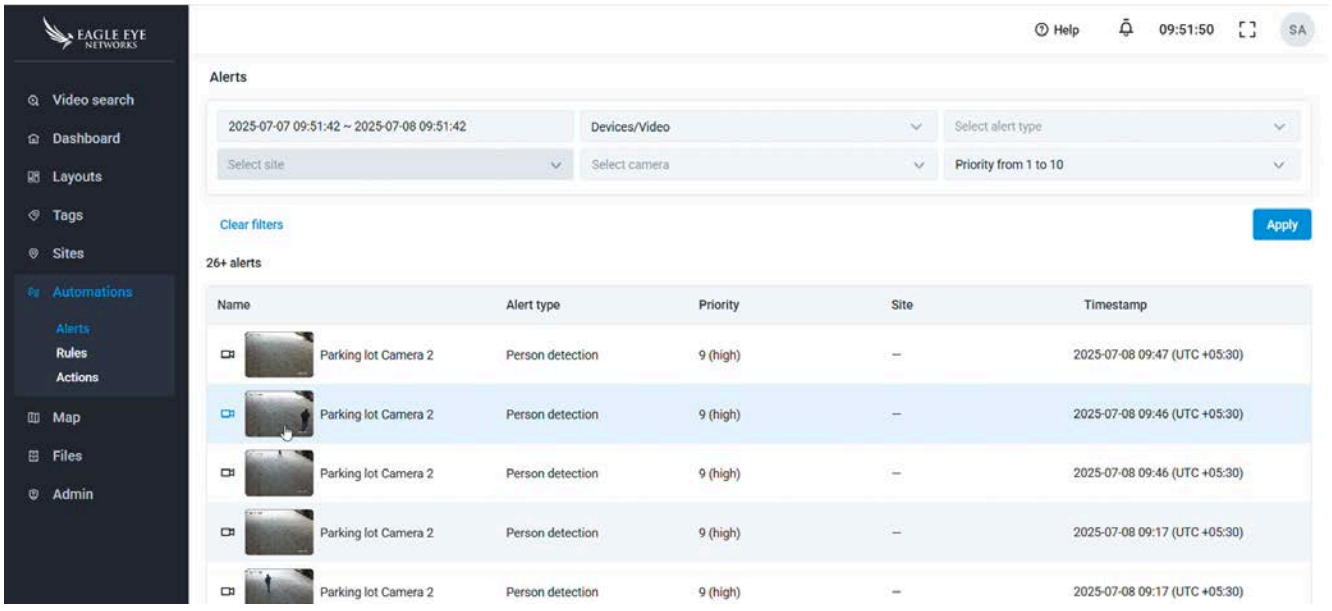


Note: Preview bounding boxes are available only under preview video playback. **Show Motion Boxes** and **Show Analytics** should be enabled on the user level under **My Profile > Preview**.

Configuring Rules: Rules can be configured to generate alerts for person and vehicle intrusion in Automations. Under **Conditions (If)**, choose an alert schedule such as working hours, non-working hours, or custom hours, to configure the rule.



Alerts & Notifications: Locate generated alerts under **Automations > Alerts**. Users can be notified of alerts via email or push notifications, or these alerts can be integrated with alarm monitoring applications via Immix, Sentinel, or another application using a Webhook integration.



Integration with Monitoring Platforms

Precision Person & Vehicle Detection alerts can be seamlessly integrated into professional monitoring centers for real-time incident response. Through integrations with platforms such as Immix, Sentinel, and Evalink, alerts can be transmitted directly to remote monitoring systems. This makes the solution ideal for customers seeking remote video monitoring capabilities and centralized event handling within existing alarm monitoring workflows.

Immix integration App Note: https://www.een.com/docs/app-notes/an088/
Sentinel integration App Note: https://www.een.com/docs/app-notes/an096/

Conclusion

Eagle Eye Precision Person & Vehicle Detection, a cloud-based solution, significantly improves security within the Eagle Eye Cloud VMS. It offers highly accurate detection of people and vehicles while minimizing false alerts through robust algorithms. Its cloud-based scalability reduces the need for on-site equipment upgrades. Users can effectively deploy this advanced detection system by understanding its prerequisites and camera considerations, and by utilizing the intuitive user interface to enable analytics, visualize detections, and configure rules. This application note serves as a comprehensive guide to maximizing the benefits of this system for enhanced surveillance and timely alerts.