

# INTRODUCING AVIGILON SELF-LEARNING VIDEO ANALYTICS

Article Courtesy of Avigilon

**AVIGILON**  
TRUSTED SECURITY SOLUTIONS™

Avigilon self-learning analytics extend the effectiveness of your security personnel by providing effective monitoring and enabling proactive, real-time response from your team. Built from the ground up to manage high-definition video, Avigilon offers analytics embedded in Avigilon cameras up to 5K (16 MP) resolution.

Through the use of advanced pattern-based analytics and teach-by-example technology, Avigilon video analytics are designed to increase the productivity of security personnel while making monitoring more affordable and efficient.



## Advanced pattern-based analytics

Avigilon advanced video pattern detection technology is able to accurately recognize the movements of people and vehicles while ignoring motion not relevant to a scene. Embedded into cameras up to 5K (16 MP), the system's ability to constantly learn reduces false positives and helps ensure alerts are meaningful, which avoids wasted time and improves efficiencies.

## Teach-by-example technology

Our teach-by-example object classifier technology enables users to provide feedback about the accuracy of alarm events generated by Avigilon devices. Rather than decreasing analytics sensitivity to reduce false alarms, the feedback trains the device, increasing the accuracy of the analytics used to determine which alarms are real and which are false to further improve a low false-positive alarm rate.

Over time, the system learns the scene and is able to prioritize important events based on user feedback. This increases sensitivity to conditions that are of concern while reducing false alarms to keep the focus on what matters.

## KEY FEATURES

- Pattern-based object classification and tracking technology.
- Continuously self-learning analytics with no manual calibration required.
- Efficient installation and setup.
- Operator input teach-by-example technology.
- Embedded in cameras for resolutions 1-16 MP.
- Analytics appliances for any IP cameras or analog system.
- Real time analytic rule-based alarm notifications.
- Fully integrated with Avigilon Control Center™ software for an end-to-end analytics solution.
- Powerful forensic video analytics accelerates forensic search times using a fully unified ACC™ client.
- Cost effective. No additional servers required.
- No additional licensing required for analytics and rules-based events.

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## Key Features and Benefits

### ***Ease of installation and ongoing accuracy***

Point-and-shoot system setup. Self-learning video analytics works out of the box with no manual calibration required.

### ***Self-learning analytics lower false alarm rates***

Analytics continuously adjust to increase detection and confidence levels.

### ***Broad variety of devices***

Avigilon devices embedded with self-learning video analytics include appliances and cameras with resolutions from 1 MP to 5K (16 MP).

### ***Pattern-based object classification and tracking technology***

Object classification and tracking using pattern-based analytics algorithms are tuned to recognize people and vehicles, while ignoring nuisance motion.

### ***Operator input teach-by-example technology***

Teach-by-example technology enables users to provide feedback to the system about accuracy, which further enhances the pattern-based analytics database.

### ***Integrated with Avigilon Control Center (ACC)***

Fully integrated with ACC client and ACC mobile so that users can respond in real time even from mobile devices. Analytic alarm notifications can be automatically sent to any authorized client based on configured rules.

### ***Analytics appliances for IP cameras or analog system***

Add self-learning video analytics to IP or analog surveillance camera with Avigilon analytics appliances.

### ***Idle scene mode***

Idle scene mode reduces bandwidth and storage, and is triggered by analytics specific objects rather than motion detection.

### ***Powerful forensics***

Forensic search capabilities of analytics events accelerate search times using a fully unified ACC client.

### ***Cost effective***

No additional servers required.

### ***No licensing required***

Fully embedded edge analytics with no additional rules-based licensing on cameras.

## The Avigilon Video Management Solution

Avigilon Control Center (ACC) video management software provides the ability for analytics events and alarms to be viewed and searched through an intuitive user interface. Real-time events and forensic capabilities detect and notify scene changes, missing objects and rules violations — all through an easy-to-use interface. Avigilon Control Center software gives you full control over playback of events, enabling you to quickly retrieve evidence to speed up response times and investigations.

### **RULES AND ALARMS**

The Avigilon Control Center rules engine enables you to selectively apply analytics-based events as alarms and rule triggers, providing local or mobile users with immediate notifications for suspicious activities.

### **INTELLIGENT SEARCH OF CLASSIFIED OBJECTS**

Avigilon Control Center software uses powerful analytics technology to intelligently search for specified events of classified objects to help you find the video you need quickly.

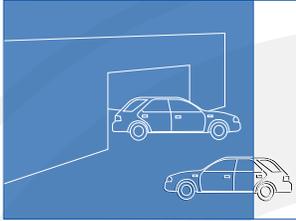
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## Avigilon Analytics Rules

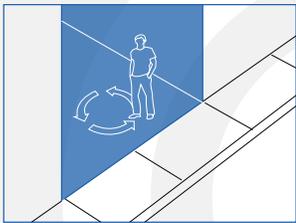
The following is a complete list of Avigilon self-learning video analytics features for object detection and classification for live or forensic events. The following images are for illustration purposes only.

### OBJECTS IN AREA



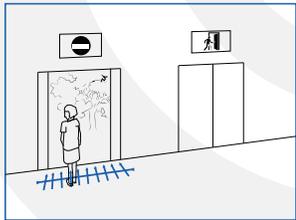
The event is triggered when the selected number of objects are present in the region of interest. The object can appear from within the region of interest or enter from outside the region of interest.

### OBJECT LOITERING



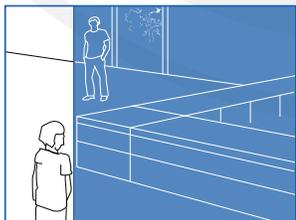
The event is triggered for each object that stays within the region of interest for an extended amount of time.

### OBJECTS CROSSING BEAM



The event is triggered when the specified number of objects have crossed the directional beam that is configured over the camera's field of view in the selected time period. The beam can be unidirectional or bidirectional.

### OBJECT APPEARS OR ENTERS AREA



The event is triggered by each object present in the region of interest. The object can appear from within the region of interest or enter from outside the region of interest.

### OBJECT NOT PRESENT IN AREA

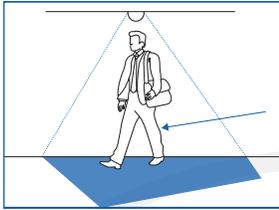


The event is triggered when no objects are present in the region of interest.

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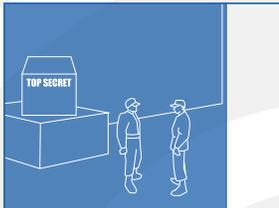


### OBJECTS ENTER AREA



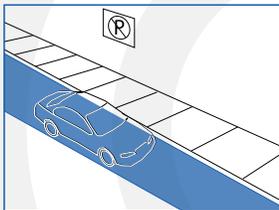
The event is triggered when the specified number of objects have entered the region of interest from outside of the region.

### OBJECTS LEAVE AREA



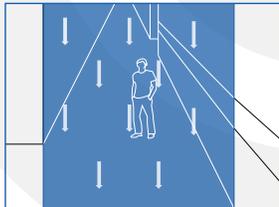
The event is triggered when the specified number of objects have left the region of interest.

### OBJECT STOPS IN AREA



The event is triggered for each object in a region of interest that stops moving for the specified threshold time.

### DIRECTION VIOLATED



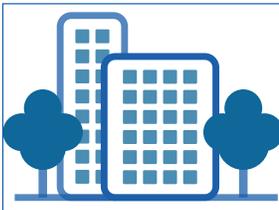
The event is triggered for each object that moves in the prohibited direction of travel.

### CAMERA TAMPERING



The event is triggered when the scene unexpectedly changes.

### IDLE SCENE MODE



Analytic capable cameras will stream at a different image rate and reduced quality while no events are detected in the scene.

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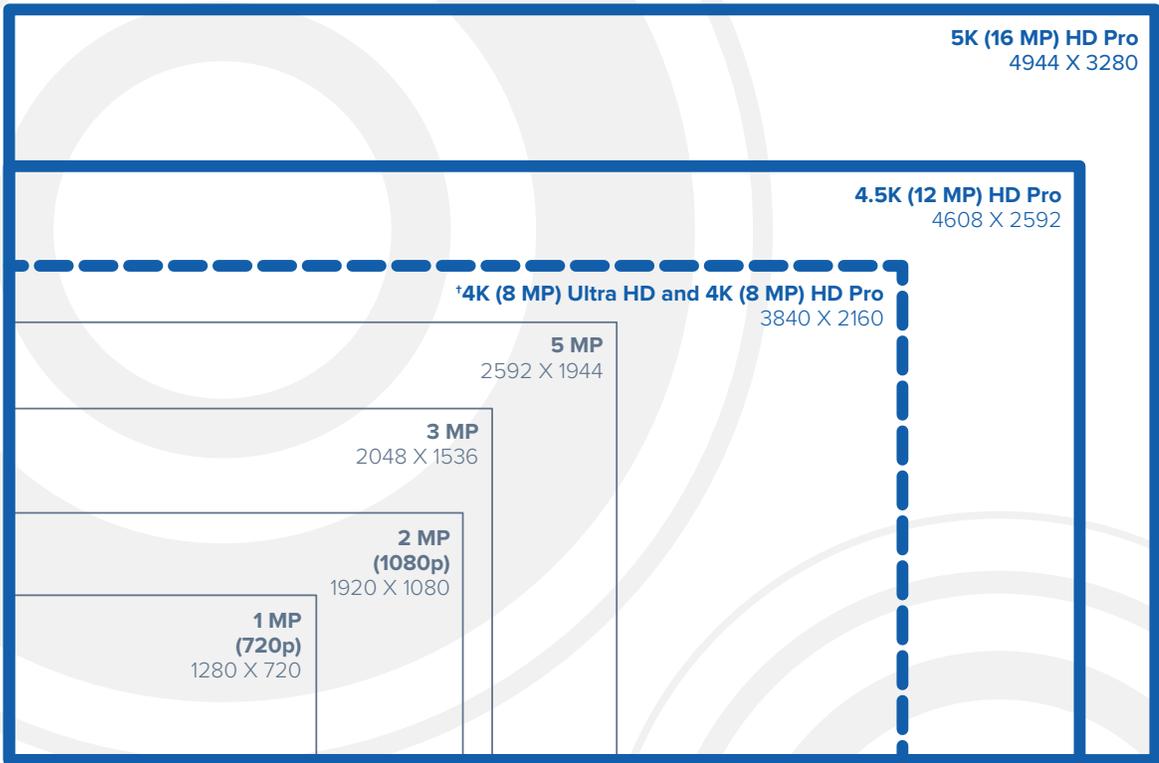


**ANALYTICS SOFTWARE REQUIREMENTS & CAPABILITIES**

Setup with Avigilon Control Center software	ACC version 6.x; or ACC version 5.4 and later
Setup with Avigilon Rialto™ Devices for Third-Party Cameras	Avigilon View
Real-Time Alerts and Events Configuration	Set up in ACC client
Real-Time Alerts and Events Notification	ACC client, other multiple notifications possible based on rules engine configuration
Forensic Search Capabilities	Set up in ACC client
Display of Video ACC Client for Forensic Searches	ACC client

**SUPPORTED VIDEO ANALYTICS DEVICES**

Avigilon H3A Series	1-3MP; bullet, dome and camera form factors
Avigilon HD Pro Series	4K (8 MP), 4.5K (12 MP) and 5K (16 MP)
Avigilon H4 Series	1-5 MP and 4K (8 MP); bullet, dome and camera form factors
ACC ES Analytics Appliance	Supports up to 4 direct camera connection channels, or up to 4 x Avigilon H.264 Analog Video Encoders
Avigilon Rialto Series	<ul style="list-style-type: none"> <li>Rialto I4, A4 and R-Series</li> <li>Avigilon View software is required</li> <li>Supported resolutions:                             <ul style="list-style-type: none"> <li>D1</li> <li>720 and 1080p (1920 x 1080) resolutions at 30fps using RTSP H.264 video streaming</li> <li>Analog 3rd party camera connection supports D1 resolution at 30fps</li> </ul> </li> </ul>



\*H4 Cameras, \*H4 Bullet, \*H4 Dome, HD Micro Dome Cameras and HD PTZ Cameras

**Avigilon HD Pro Cameras**  
4K (8 MP), 4.5K (12 MP) and 5K (16 MP)

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