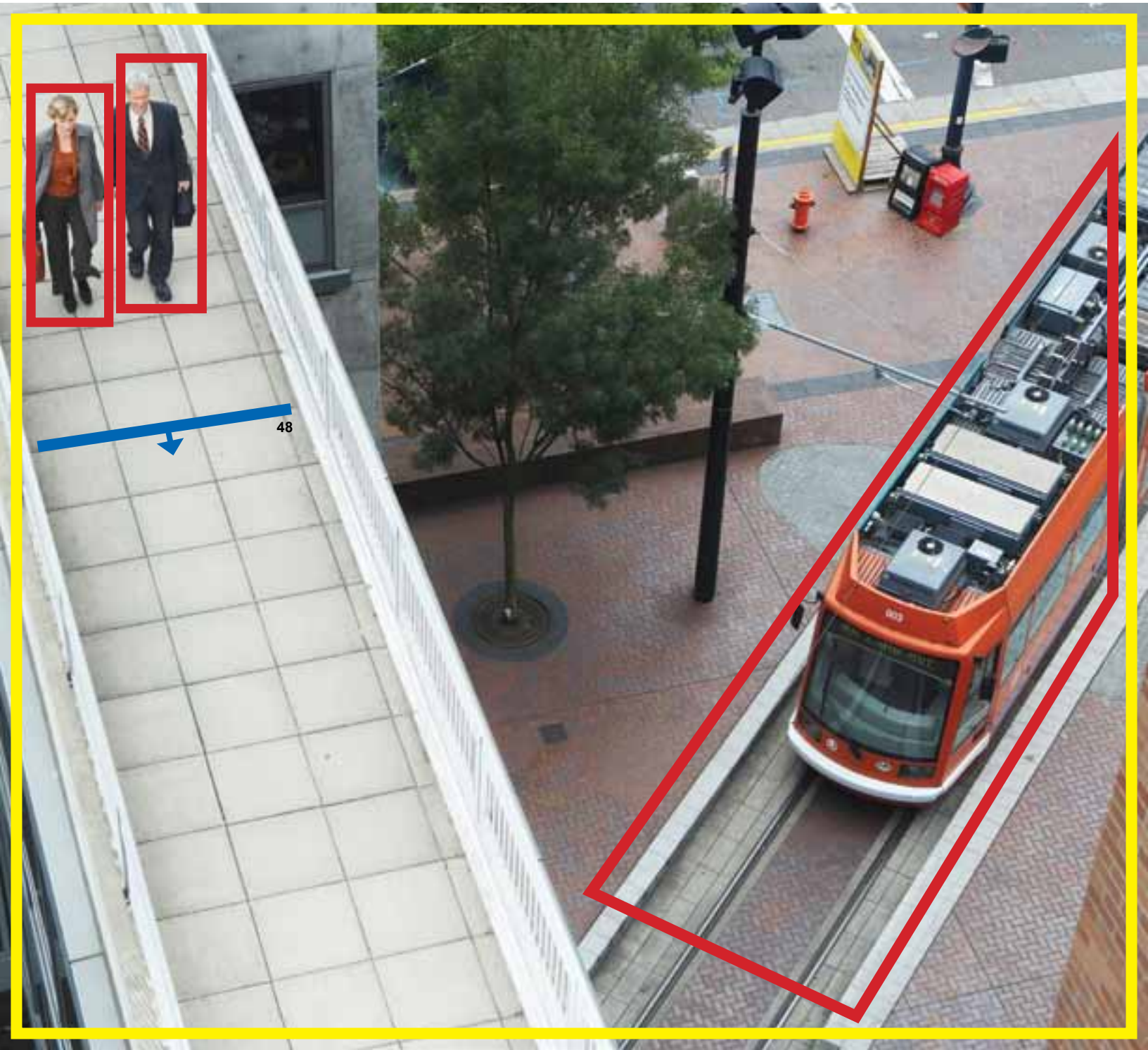


# Video Analytics

Extending Security with Technology



Few new technologies have excited the imagination of video security professionals like intelligent video analytics. Through constant automated digital screening and filtering, video analytics can identify specific conditions and notify operators of potential situations, allowing security officials to make quick, informed decisions.



# The Power of Video Analytics



Video Analytics are engineered to aid security professionals in making better-informed and quicker decisions when responding to incidents. Unlike human video system operators, intelligent algorithms can monitor scenes continuously without getting tired or bleary-eyed – sounding an alarm to notify system operators of abnormal activity.

## Programming Video Intelligence

Most Video Analytics programs use a mathematical model to recognize the background of a scene. Once the system establishes the baseline for the background, it can recognize pixel differences as objects “on top of” or “in front of” the background. Once a foreground object is detected, the system begins to recognize features: size, color and movement. These characteristics are used to track objects and recognize abnormalities to notify security personnel.



Ability to Track Objects and Recognize Abnormality

## Humans and Technology

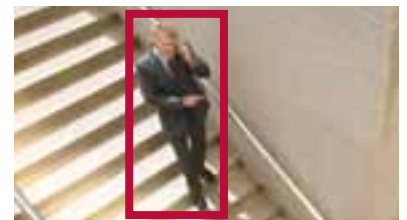
Computers and humans behave very differently when visually analyzing a scene. Humans have two cameras (eyes) and a powerful CPU (brain). At its root, video analytics (or visual analysis of a scene) involves pattern recognition. Storing and retrieving data from memory is very easy for computers, but difficult for humans. It is very easy for humans to perceive objects, even when those objects are in motion, but computers have to be programmed to recognize such behavior – and that programming intelligence is exactly what Pelco has accomplished.



Programmed Intelligence to Perceive Objects

## Tracking Motion

Tracking motion is a fundamental capability of many intelligent video algorithms. Directional motion and object counting are two examples – a system cannot count what it cannot track. Pelco Video Analytics are developed with the technology to perform these tasks – allowing customers to rest assured that, even when human eyes aren’t watching every monitor, an intelligent computer is.



Tracking Motion

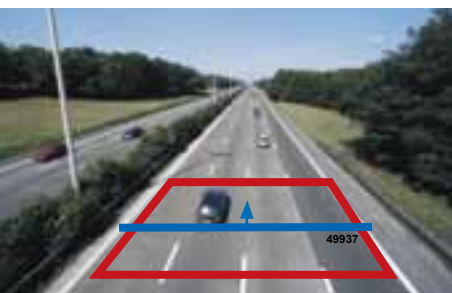
## System Set-Up Backed by Pelco

Configuration is the most important aspect of an effective intelligent video system. Pelco offers customers detailed instruction and support for setting up their systems through the Pelco Global Training Institute – eliminating issues with the false alarms that can result from improper set-up. A well-designed system gives the installer/user the ability to adjust a range of parameters, tuning the system to a given scene. Proper tuning takes a combination of sensitivity (ability to detect all things it’s supposed to) and specificity (ability to detect only the things it’s supposed to). If sensitivity is set too high, the system will generate false alarms. If it’s set too low, something important might be overlooked.



Pelco System Configuration

# Analytics Behaviors: What Can They Do?



Pelco offers various products with Video Analytics capabilities, including Spectra HD pan/tilt/zoom cameras, camera encoders and Sarix EP fixed cameras. Based on the type of installation and the customer's mission, Pelco has the reliable solution.

## Directional Motion

When motion is detected in a specific direction, an alarm is triggered to notify security personnel. Users have wide flexibility in defining areas of interest and activity thresholds to minimize false alarms. It's ideal to identify people walking against the normal flow in airports, cars taking an abnormal path in traffic settings or parking lots and an array of other security scenes.

## Adaptive Motion

This advanced motion detection behavior calibrates to scene conditions, allowing the system to distinguish targets from other movement in a scene, such as headlight glare, leaves blowing, a flag flying or snow falling. It's ideal for identifying people and vehicles in parking lots and perimeter detection with such outdoor conditions. Adaptive Motion reduces false alarms due to environmental conditions.

## Vibration Removal

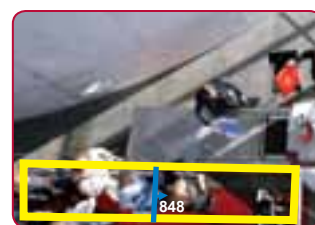
This behavior reduces video shake in applications where cameras are subject to vibration, providing a clear picture despite camera shake. It's ideal for manufacturing facilities, bridges, overpasses, cameras with long focal lengths, pole-mounted cameras and an array of other applications.

## Object Removal

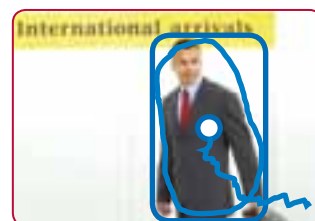
An alarm triggers when a stationary object, such as a priceless piece of art, is removed from a selected scene. This behavior allows the user to define an object or area of interest in a scene. Motion is allowed in the protected zone, but if an object is removed, an alarm is triggered. It's ideal for museums, high-end retail and similar asset protection missions.

## Object Counting

This behavior counts objects when motion is detected in a specific direction. Users have wide flexibility in defining areas of interest and activity thresholds. An alarm is generated when the threshold is exceeded. It's ideal for counting cars on a roadway, counting products at a manufacturing plant, counting people entering/exiting a building and similar applications.



Directional Motion



Adaptive Motion



Object Removal



Object Counting



## Camera Sabotage

This advanced video loss detection recognizes when video has been compromised. For example, if a vandal paints or covers a lens, or reaches to move a fixed camera away from an intended scene, an alarm is triggered. It's ideal for an array of high-security environments.

## Abandoned Object

An alarm triggers when a stationary object appears and remains in a scene, such as a person setting down a briefcase or duffel bag. This behavior allows the user to define an object or area of interest in a scene. Motion is allowed in the protected zone. It's ideal for malls, campuses, transportation hubs and more.

## Loitering Detection

When people or vehicles remain in a defined zone longer than the user-defined time allows, an alarm notifies security personnel. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells and school grounds.

## Stopped Vehicle

Vehicles stopped near a sensitive area longer than the user-defined time allows are detected. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns and vehicles waiting at gates.

## Auto Tracking

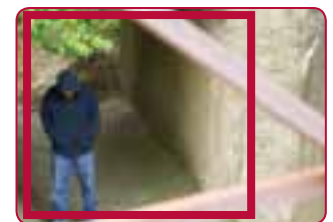
Unlike other analytics behaviors that function on a fixed camera, this behavior, currently available at no extra cost in Spectra HD cameras, has pan/tilt/zoom capability to track vehicles or humans entering or stopping in user-defined zones. Once identified, the camera locks on and follows the subject's path. This analytic is ideal for building perimeters.



Camera Sabotage



Abandoned Object



Loitering Detection



Automatic Tracking of Humans/Vehicles

# Wide Range of Options



Pelco Video Analytics packages are included at no extra cost with Spectra HD pan/tilt/zoom cameras, Sarix EP fixed megapixel cameras and NET5400 Series encoders. Pelco analytics are compatible with Pelco Endura systems.

## Sarix EP Megapixel Cameras

Sarix EP Series fixed cameras include eight user-configurable behaviors that are loaded for free with any Sarix order. The camera is capable of running up to three behaviors at the same time. For each behavior, several custom profiles can be created containing different camera settings.

### Product Features:

- Open IP standards
- Up to 2.1 megapixel resolution (1920x1080)
- Up to 30 images per second (1280 x 720)
- Auto Back Focus
- Low light sensitivity

## Spectra HD Positioning System

Spectra HD is a pan/tilt/zoom camera system that can perform unique behaviors like Auto Tracking that require the camera's ability to move. In addition to the Auto Tracking and Adaptive Motion behaviors Spectra has always featured, the Spectra HD Series has now incorporated seven other behaviors. Spectra HD is an ideal solution for capturing specific details such as faces, license plates, tattoos, playing cards (in casinos) and more.

### Product Features:

- Up to 1280 x 960 resolution
- 1.3 megapixel, 18X optical, Wide Dynamic Range
- Ability to control or monitor video over IP networks
- 360° continuous pan rotation at 400° per second

## NET5400 Series Encoder

The NET5400 Series adds a sophisticated Video Analytics engine to the normal video encoder function, with the ability to transform a normal security camera (including analog) into an intelligent camera. Once the encoder is installed and configured, object and activity detection behaviors can interpret unwanted activity and trigger an alarm. The ability to process Video Analytics at the edge of the network conserves bandwidth, as the unit only transmits video streams that have triggered a Video Analytics alarm.

### Product Features:

- H.264 baseline, main or high profile compression
- Dual-stream at up to 4CIF, 30/25 images per second per stream
- Integrated Coaxitron and Pelco D PTZ protocols
- 1-, 2- and 4-channel models



Sarix EP Megapixel Camera



Spectra HD Positioning System



NET5400 Series Encoder

# Building an Overall Business Solution



Now as a member of the Schneider Electric family, Pelco products are integrating into an overall business solution. Whether it's the Abandoned Object feature helping a store stay clean, or the Object Counting feature providing data for how many customers are served, there's no limit to how Pelco technology can be applied.

## Pelco Video Analytics Behaviors

	NET5400 Series Encoder	Spectra™ HD PTZ Cameras	Sarix™ EP Fixed Cameras	Sarix™ Fixed Cameras
<b>Vibration Removal</b>				
<b>Adaptive Motion</b>	●	●	●	
<b>Abandoned Object</b>	●	●	●	
<b>Object Removal</b>	●	●	●	
<b>Camera Sabotage</b>	●	●	●	●
<b>Directional Motion</b>	●	●	●	
<b>Object Counting</b>	●	●	●	
<b>Loitering Detection</b>	●	●	●	
<b>Stopped Vehicle</b>	●	●	●	
<b>Auto Tracking</b>		●		



OV Ready Sarix Megapixel Camera

## Choosing an Analytics Package

Pelco analytics packages are included with Spectra HD cameras, Sarix EP cameras and NET5400 Series encoders at no extra charge. Pelco analytics work with the Pelco Endura system. For customers with third-party, OV Ready systems, Pelco also offers an OV analytics suite in its Sarix EP camera with comparable behaviors (see information below). OV Ready analytics are pre-loaded into the camera and have different pricing and model number.



OV Ready Suite Tracks Various Behaviors

## ObjectVideo® (OV)™ Analytic Suites

In its ongoing commitment to open architecture integrated solutions, Pelco has added the ability to embed the ObjectVideo suite of analytics behaviors into its Sarix-based megapixel cameras. This ensures Video Analytics for customers with OV Ready systems. The OV analytic suite includes varying behaviors such as Tripwire Detection, Inside Area Detection, Camera Tamper Detection, Loitering Detection, Leave Behind Detection, Enters/Exits Counting, Occupancy Sensing and Dwell-Time Monitoring. For more information on OV Ready analytics and features offered, please visit [www.pelco.com](http://www.pelco.com) or [www.objectvideo.com](http://www.objectvideo.com).



An Overall Business Solution



*The recognized worldwide leader in video and security systems, Pelco by Schneider Electric boasts the most comprehensive array of products, services and expertise available in today's marketplace. And now as a member of the Schneider Electric family, Pelco brings a network of assets backed by the strength of a Fortune 500 company to help you define and achieve your business objectives.*

[www.pelco.com](http://www.pelco.com)

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