

## The Rise of Video Analytics

Video analytics finally experiencing mainstream adoption

Video analytics have been on the market for over a decade with mass adoption just out of reach. But now, with organizations demanding more sophisticated video management solutions that include business intelligence, analytics are being used to transform how organizations leverage security video into more than just a passive monitoring tool.

### TRANSITIONING AWAY FROM TRADITIONAL VIDEO MANAGEMENT

The majority of video systems still rely on security guards to monitor video footage and manually identify suspicious activities. However, as networks grow in size (consider a city-wide network, for example), this approach becomes prohibitively expensive, unsustainable and extremely susceptible to human error.

While a technology such as Traditional Video Motion Detection (VMD) can help detect changes in scenery and alert security personnel of possible suspicious activities, uncontrollable elements, such as clouds or leaves, can cause pixel changes, leading to a high rate of false alarms. In addition, VMD is not useful for areas where there is a lot of human and/or vehicle traffic, such as public transportation areas or shopping centers.

### VIDEO ANALYTICS OFFER A BETTER SOLUTION

Video analytics provide the machine intelligence to automatically detect suspicious activity. Advances in camera technology, computer processing power, and algorithm design enable the software to identify key objects and details while ignoring unimportant ones. They also enable analytics to successfully identify objects in challenging scenes (e.g. low light, water, lots of movement).



### THE POWER OF INTEGRATING VIDEO ANALYTICS WITH A VMS

By incorporating video analytics with a Video Management System (VMS), suspicious events can trigger recording, generate an alarm, or bookmark a time period for later analysis. Rules can then trigger additional actions to prevent further activity, or to track other related activities.

Video analytics are also extremely useful when performing intelligent search. For example, when reviewing footage from a security incident involving a known person, the system can automatically locate the presence of that person in previous footage.



License plate recognition

## COMMON USES FOR VIDEO ANALYTICS

Common uses for video analytics include:

- Face Recognition: Quick, unobtrusive identification of known individuals for access control, VIP/known-offender presence, and incident forensics.
- People/Vehicle Counting: Detect and count objects passing a configured trip line.
- Wrong Way Detection: Detect objects or people traveling in the wrong direction, such as attempting to enter through an exit (highly useful for controlled areas at airports, hospitals, and schools).
- Dwell Time: Detect objects that have not moved for a programmed amount of time. Used to monitor suspicious behavior, emergency exits, and customer service areas.
- License Plate Recognition: Capture license plate information for comparison against pre-defined lists.
- Object Removed: Detect when a critical item has been removed (possible act of theft).
- Object Left Behind: Identify items left for a period of time, such as parcels or luggage in transportation hubs.
- Object Tracking: Use PTZ camera to track or follow an object, ideal for quiet areas like after-hour parking lots or fence perimeters.

## PROS AND CONS OF CAMERA AND SERVER-BASED VIDEO ANALYTICS

Camera-based analytics reduce server loads and network bandwidth. However, the required processing hardware increases camera cost and may not support more advanced analytics.

Server-based analytics enable centralized configuration and the use of lower cost cameras. In addition, an analytic can move between cameras without physical intervention. The type of analytic used can have a dramatic impact on processing and bandwidth. For example, face or license plate recognition requires higher resolutions and processing than object detection. These factors need to be considered when assessing server design.

## HOW TO IMPLEMENT VIDEO ANALYTICS

In the past, successfully implementing video analytics was challenging. Newer software, however, has made configuration and setup much easier, with interactive web-based configuration the new norm. That being said, it is still important to select a partner and manufacturer with experience to ensure optimal results.



Facial recognition intelligent search



People tracking



Vehicle tracking



People counting