

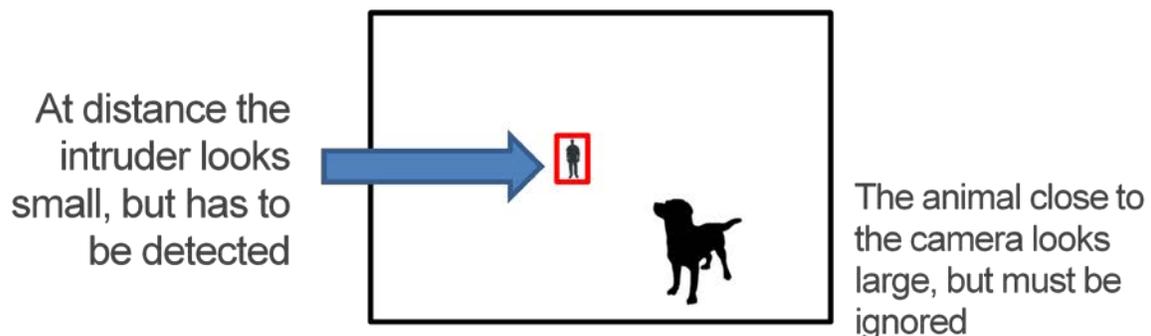
How Geo-Registration Helps Achieve Detection Accuracy

Perimeter security cameras that use video analytics are designed to detect movement, but outdoors, everything moves. Trees and foliage, small animals, and blowing debris can overload security operators with nuisance alerts and undermine trust in the system.



This is why SightLogix SightSensors are “geo-registered.” Geo-registration lets SightSensors know the actual location and true size of all pixels in its field of view. From this information, video analytic size rules can be used to eliminate movement which does not represent a security concern – like small animals or blowing debris – while still detecting human-sized intruders under all conditions.

Consider how human vision works: Our eyes give us depth perception – we can tell which object is close and which is far. But a “one-eyed” camera can’t, unless it’s geo-registered. For example, a small animal near the camera will look much larger than a man at 300 meters away, as you can see in the figure below.



A smart camera needs to ignore the animal at right while alerting on the distant person, even though the animal will cover more of the camera's field of view. The same approach applies to blowing trash, clouds, and other moving things which are always present the outdoors. With a SightSensor that is geo-registered, such non-security related movement will be ignored and will not send alarms.

Essentially, geo-registration enables a three-dimensional capability for an outdoor detection camera. And it's why SightSensors have earned their reputation as the most accurate detection solution with the lowest false alarm rates.

SightLogix SightSensors are geo-registered when first installed using a very simple and intuitive calibration process. The installer uploads a satellite map of the area under surveillance (similar to a Google Map), and compares two fixed points on the map with the same two points in the camera's live field of view. The installer then inputs the height of the camera off the ground. Once these three coordinates are known, the processing power inside the SightSensor can calculate the actual location of every pixel in the scene, allowing you to set very accurate video analytic rules.

In addition to detection accuracy, GPS location information unlocks key functional benefits for outdoor applications. For one, Physical Security Information Management (PSIM) software can use the GPS target data to display the topological positions of detected objects, overlaid on a top-down map of the surveillance area. This information can be used for situational awareness to accurately direct your response where the event is unfolding, in real-time. When protecting large outdoor perimeters, knowing where on a bridge or building an intruder resides is critical.

Another benefit of knowing the GPS "whereabouts" along a large perimeter is the ability to direct pan-tilt-zoom (PTZ) cameras to the exact location of an alarm and to zoom and follow a detected target. Often PTZ cameras are used to watch outdoor areas, but when applied to large areas, a PTZ camera's narrow field of view relative to the wide areas under surveillance almost guarantees that events will go unnoticed. Trying to manually steer PTZs over outdoor areas is like trying to find a needle in a haystack.



SightSensors detect at long range...



PTZs automatically show an up-close view

When SightSensors accurately determine the location of a moving object, they can automatically direct a PTZ camera to get a close-in view. Knowing this information enables accurate, real-time response directly to where the threat resides, while ensuring good forensic evidence after the fact. If multiple events unfold simultaneously, the system can track them all, and keep operators from becoming confused by a distraction or decoy.

Good decisions depend on timely information, and the impact of an event unfolding is directly proportional to a security department's ability to intercept it quickly. Every second counts. Using GPS location in the form of geo-registering a scene under surveillance can add a new dimension of accuracy – both to the camera's view and to system functionality. It's a valuable tool to enable a security professional to ensure the comprehensive security of his or her organization.

About SightLogix

SightLogix smart thermal intrusion detection systems protect energy, transportation, chemical, utility, communications, and government facilities. Unlike video surveillance cameras that simply record video for review, SightLogix SightSensors automatically detect security breaches in real-time with high accuracy to alert responders with full situational awareness. Learn more at www.sightlogix.com.