



AUTOMATING SECURITY

VistaScape's Policy-Based Video Surveillance

Current Security: Visual Monitoring

While cameras and recording devices allow for a response to suspicious and potential criminal activity, an organization can not monitor areas in real-time with this equipment... until now.

Security and safety are concerns that face all organizations and are now integral in day-to-day operations. News reports about security issues are more frequent, and this heightened awareness has led to wider adoption and implementation of security solutions, as well as increased expenditures for these initiatives. Purchasing more equipment and adding more staff does not ensure that an organization can adequately secure itself. These solutions are reactions that are rarely proactive or cost-effective.

Conventional surveillance systems place video cameras at strategic locations, which may deter criminal activity and enable security personnel to monitor these areas. Digital Video Recorders can record video for forensic analysis — capturing a record of criminal activity after it has already happened.

Recorded video can not prevent events from occurring. While cameras and recording devices allow for a response to potential criminal activity, an organization can not monitor areas in real-time. Security personnel must interact, review, and analyze the constant stream of data to provide any level of protection. All video feeds must be examined 24 hours a day, 7 days a week for this system to be effective.

Criminal activity can occur in the blink of an eye, and security staff can not afford a lapse of attention or judgment. Conventional processes require security personnel to monitor, analyze, and reach decisions continuously. The concentration and time required for these actions, the correct and rapid judgment of events that are occurring, and the interpretation of security policies often grant criminals a window of opportunity.

Visual Monitoring Process

Security personnel must continuously uphold the following objectives as part of their visual monitoring:

- Anything there?
 - Detect all activity. Continuously monitor the video feed to discern suspicious activity.
- What is it?
 - Classify activity on the screen as normal or abnormal. Rely on interpretation of the organization's security policy and a judgment of what normally occurs in that area.
 - Categorize the object (such as a person, car, or boat).
- Where is it?
 - Determine the object's location. If monitoring multiple cameras, quickly determine which physical area the camera is viewing.
 - Is the event near an area of concern? Is it at least a certain permitted distance from a sensitive area? Is it approaching an area of concern?
- What is it?
 - Identify the object (Is it an authorized person? A car that is recognized?)
- What do we do?
 - What is the appropriate action or response?
 - When is the event happening? The event may be acceptable during certain times.



Emerging technologies simplify and organize security monitoring, which contribute to increased efficiency, proactive prevention, and decreased labor costs. These technologies include:

- Video Motion Detection (VMD) systems detect pixel changes on digital still cameras, indicate motion, and determine if an event is actionable and security-related. VMD systems transmit data when they detect a change in the visual field.
- Digital Video Recorders (DVR) record video when they detect a change in a monitored area. This ability allows organizations to easily archive video.
- Classification technologies and algorithms provide specialized forms of object classification. These technologies include simple pattern recognition to determine the type of object, facial recognition, and the ability to automate and determine what is being seen.

High Cost and Complex Scalability of Visual Monitoring

As organizations install more cameras and require personnel to review more video, a higher Total Cost of Ownership (TCO) will result, directly proportional to the operating costs of personnel observing activity on monitors.

Although visual monitoring security systems are easy to implement, the price grows rapidly as an organization's security needs grow. This solution does not scale well, as organizations must hire additional staff to watch over these devices.

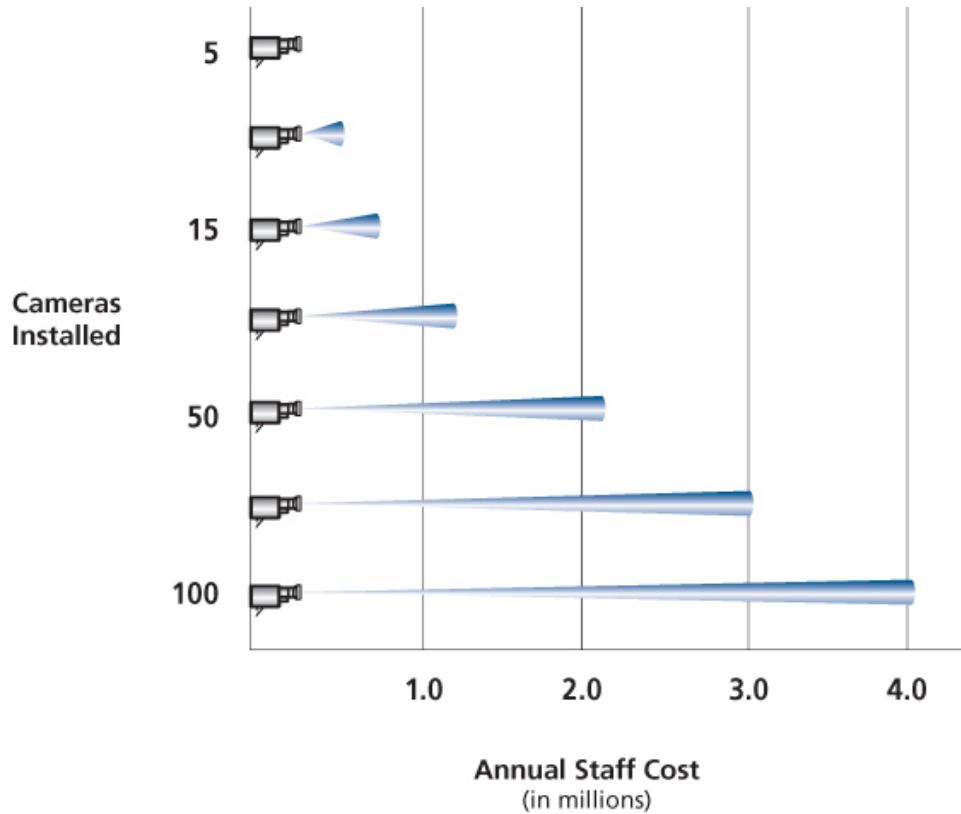
Faced with limited staff budgets, the organization is forced to discontinue camera installations and not monitor areas for suspicious activity.

Another solution is to record video with digital video cameras and DVRs. These devices record events and provide access at a later date for forensics. However, these devices do very little to proactively deter crimes or suspicious activity.



Consider the following:

- Every six to ten video monitors require one staff member in the command center.
- On a 24/7/365 basis, one security monitor position equates to 4-6 full-time employees.
- The average full-time, annual salary range for one guard is \$35,000-\$40,000.



As organizations install more cameras and security personnel review more video, a higher Total Cost of Ownership (TCO) results, directly coupled to the high operating costs of personnel observing activity on monitors. For instance, six cameras require a security guard to watch monitors displaying this activity. Extending this coverage 24 hours a day, 7 days a week requires three security guards to monitor video activity.

VistaScape and Automated Policy Enforcement

VistaScape's Security Data Management System (SDMS) is customized with a company's own policies, which translate to computer rules and enable rapid notification or response.

Security relies on a timely response to an event. However, rapidly changing conditions and the context surrounding the event dictate what actions security must perform. For instance, a delivery truck arriving at a port at 3 A.M. might be considered normal. If company policy restricts deliveries after midnight, then this event is a potential security breach and needs to be investigated. A policy is a definite course or method of action in light of given conditions.

The success of a security staff is related to how successfully it enforces policies. In a typical scenario, a security guard watches a monitor and uses judgment to detect suspicious activity. Once a person's judgment interprets policies, the decision becomes less definite and therefore less reliable. On the other hand, VistaScape relies on specific rules for policy enforcement. VistaScape's Security Data Management System (SDMS) is customized with a company's own policies, which are represented by computer rules and are followed without judgment or interpretation. With SDMS, security guards no longer need to interpret video feeds on a constant basis. This convergence of Information Technology (IT) and physical security enables guards to rapidly respond to consistent policies.

VistaScape and Proactive Security

VistaScape's SDMS manages physical security through automated policy-based processes, deciding what to detect and how to respond.

VistaScape's SDMS solves the problems of inconsistent policy enforcement and the high costs associated with visual monitoring. SDMS takes into account who, what, where, why, and when of security events and automates detection and response rapidly, reliably, and cost-effectively.

SDMS software manages physical security through automated policy-based processes, deciding what to detect and how to respond. VistaScape's software features user-defined, configurable policies and rules for securing a perimeter. The software alerts security personnel only when a significant event takes place. VistaScape improves security, drastically reduces response time, lessens

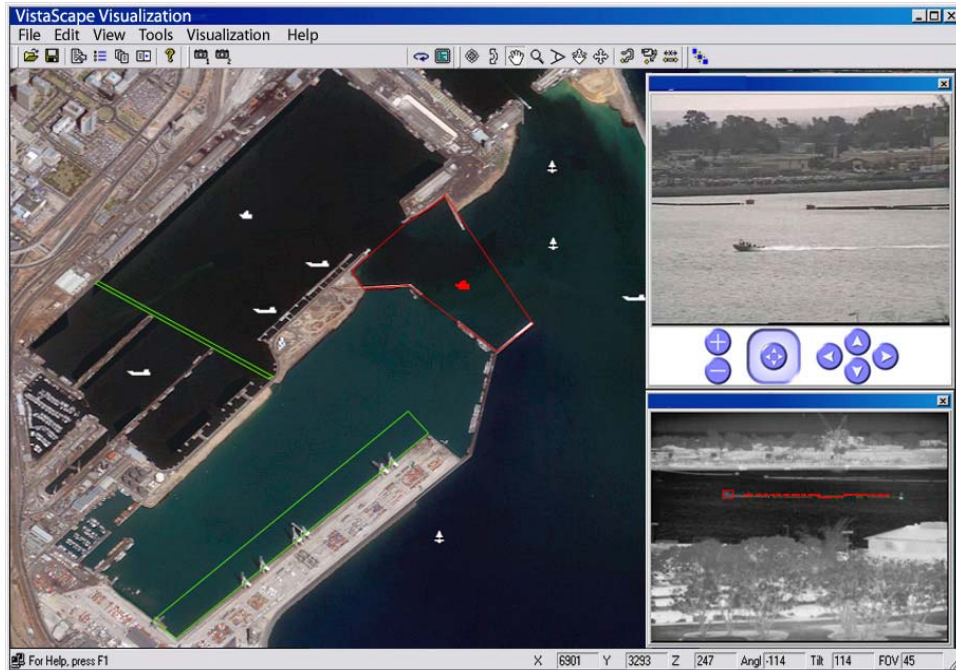
requirements for excessive employees and personnel expenses, consistently enforces policies, and virtually eliminates “false positives.”

Benefits of VistaScape's SDMS

- **Reduced Expenses**
 - SDMS reduces the need to monitor video feeds, allowing you to redeploy guards to the field.
- **Wide Area Visualization**
 - View your entire environment on one screen.
 - See the output of all cameras on one monitor instead of a few cameras per monitor.
- **Automated Policy Enforcement**
 - Utilizes computer systems to analyze and interpret events in real-time.
 - Reduces delays in judgment and policy interpretation errors.
- **Proactive Solution**
 - Enables quick incident response by providing real-time information to field personnel.
- **Provides Virtual Barriers**
 - Can be used in places where factors such as cost or environment (water, desert, etc.) make it too expensive or impossible to build a physical barrier.
- **Open and Scalable**
 - Uses industry-standard software.
 - Plug-in architecture allows for customization and modification.

How VistaScape's SDMS Works

- A map of the entire secured area is digitized and its coordinates are mapped by SDMS.
- Objects can be classified as birds, people, cars, trucks, etc. Based on your policy, these objects can be ignored or can trigger a response.
- SDMS' point-and-click interface enables you to create a "virtual barrier."
- Configure alarm criteria, such as a vehicle stopping or an unknown vehicle type entering the area.
- You define a range of actions to perform, such as sending messages and alerts to guards, activating warning sirens and flood lights, etc.



With SDMS, one monitor is capable of displaying the output of over 50 cameras. This provides a view of an entire secured area with one glance. By double clicking on an object onscreen, SDMS displays live video feeds in pop-up windows.

VistaScape and Reduced Cost

When organizations use VistaScape's SDMS, security staff can be redeployed to the field, where proactive, preventative action can be taken.

VistaScape's technology quickly and accurately follows the same steps and security policies a human would use to interpret event data and convert it to real security information. SDMS enables organizations to move security staff from behind the desk to the field, where proactive, preventative action can be taken. The result is cost-effective security, as opposed to guards confined to watch video monitors, where they must first interpret video and then investigate potential security problems.

SDMS allows additional surveillance cameras to be added to a security system without increasing the staff needed to monitor these systems. Rather than continually increasing staffing with additions to security monitor positions, a staff member can instead proactively patrol and immediately respond to possible security events as they happen.

VistaScape's Technology and Software Suite

SDMS utilizes industry-standard software such as Microsoft .NET and Extensible Markup Language (XML) services to present analyzed information in a single, Web-based user interface.

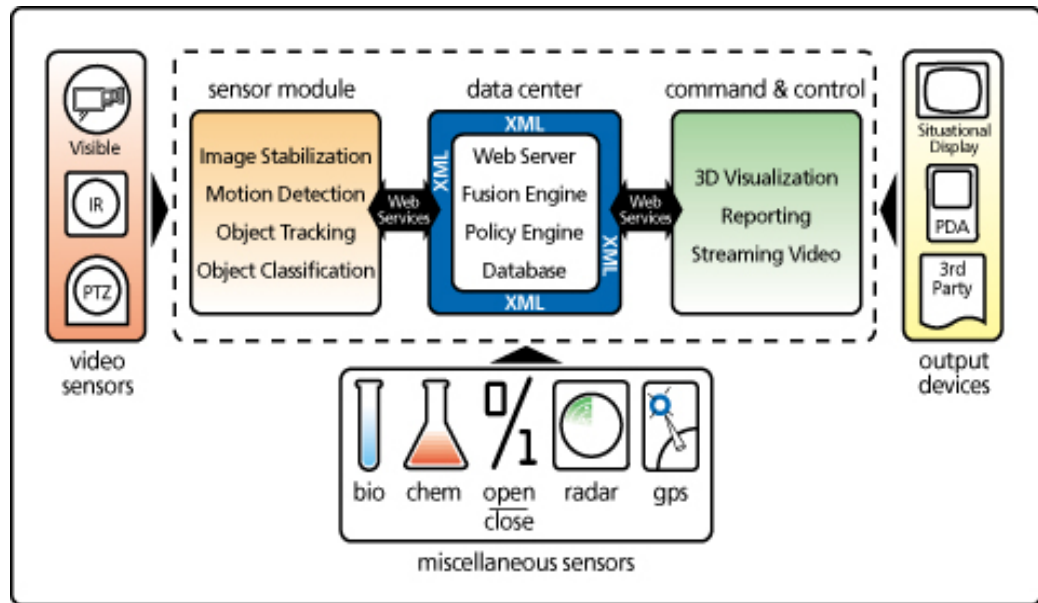
Vistascape's SDMS embraces your growing security needs, and easily integrates currently deployed and future security technologies. SDMS uses industry-standard software such as Microsoft .NET and Extensible Markup Language (XML) services to present analyzed information in a single, Web-based user interface. SDMS' integration provides the ability to detect potential threats, depict visual alerts on a 3-D model of a secure area, and instantly alert security

guards via wireless devices. The system identifies an object, tracks it from camera to camera, judges its speed and direction, and produces forensic-quality data.

VistaScape's SDMS consists of three main software components:

- Sensor Suite
- DataCenter Suite
- Command & Control Suite

Each of these suites uses a modular architecture to isolate its various components and allow for custom implementations and specialized support. These components can be improved, replaced, or (in the case of optional sub-components) removed without affecting the operation of the remaining parts. The following diagram illustrates the data flow in the system.



Sensor Module

A variety of sensors can be used to collect data. Processing occurs locally, so data sources that generate large amounts of information (such as live video cameras) can be used effectively as motion detection sensors, since video data is required only for on-demand viewing. Rather than send all video information, the Sensor

Module sends data to the DataCenter as documents with time and location information using Web-based communication methods.

DataCenter

The DataCenter receives data from all types of sensors and integrates them into a single database. Processing servers handle extensive data processing to meet the customer's needs for data analysis, automated decision-making, and security policy enforcement. Finally, processed data is available for presentation. The DataCenter architecture is highly scalable, allowing for multiple SDMS installations to meet any configuration and data volume requirements. Entry-level DataCenter systems can be implemented on a single system, running communication, database, and processing software. A typical non-redundant configuration includes one computer for the Web server and one computer for the database. A high-end configuration may include multiple sites with many servers in both redundant and load-balanced configurations.

Command & Control

The main purpose of the Command & Control Suite is to visualize and process collected information and to enable security professionals to make decisions during incident response situations. SDMS recreates an environment from digital elevation and image data, allowing the observer to freely navigate throughout the entire space in 3-D, finding the best vantage points for viewing. Real-time data representing activities in the area are retrieved from the DataCenter via Web-based communication channels. The user can zoom in and interact with displayed objects. Options include requesting detailed information about a particular object and receiving live video from a nearby camera. Multiple visualization systems can run in parallel, monitoring the same or different sections of the location. Configurations can range from command centers with large screen projectors showing the status of the entire area, individual workstations for detailed analysis, and laptops with modems displaying data in remote locations.

Summary

VistaScape's Security Data Management System transforms visual surveillance cameras and other devices into proactive sensors. With SDMS, cameras don't simply record, they automatically detect, classify, track, and alert in real-time. SDMS allows security managers to define their own security policies through a simple Windows-based PC interface. Policy enforcement is no longer dependent on an individual's sole judgment. Rather, policy is enforced consistently and accurately with sophisticated software algorithms.

With SDMS, you denote a secure boundary for detection and set alerts based on object size, speed, and location. Using your security policy, SDMS applies sophisticated object tracking algorithms to analyze video data streams and detect violations.

SDMS displays a complete view of your environment on a single monitor, pinpointing the exact coordinates of intruders. Live video can be streamed, on demand, to the central command station and to wirelessly enabled security personnel in the field. While visual monitoring merely records a policy violation, the VistaScape advantage can prevent a security incident quickly, accurately, and at a fraction of the cost. SDMS is an around-the-clock surveillance system that faithfully executes your defined security policy. VistaScape reduces your total cost of ownership by eliminating thousands of person-hours and unnecessary expenses required to monitor video screens.

And remember ... *our eyes never blink.*

About VistaScape Security Systems

VistaScape Security Systems is the leading provider of policy-based video surveillance solutions for at-risk facilities such as airports, harbors and power plants. We deliver intelligent analysis of video, GPS and other security-related sensor data. Our comprehensive software technology provides proactive video surveillance while reducing human error and oversight. VistaScape's policy-based approach substantially reduces manpower costs and improves overall security.

Founded in 1999 and based in Atlanta, Georgia, VistaScape is changing the perspective and expectations of end users of physical security systems by replacing traditional human detection and response with computer software intelligence and analysis.

VistaScape equips security managers with an automated solution for the creation, implementation and management of defined security policies. For the first time, processes common to network security professionals are available for deployment in the physical security world. Corporate, government and military organizations have implemented VistaScape's solutions to protect their environments.

Headquarters:

VistaScape Security Systems
300 Galleria Parkway, Suite 690
Atlanta, Georgia 30339 USA
Tel: 678.919.1130
Fax: 678.919.1142
E-mail: info@vistascape.com

Website: www.vistascape.com

Media/Press Contact:

David Gerulski
VistaScape Security Systems
678.919.2361
dgerulski@vistascape.com

Kathy Vivancos
Blanc & Otus
678.477.1111
kvivancos@blancandotus.com