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Integrated Systems

## Data Connect

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### Software locates usable information from a mass of data

There's a contradiction built into the idea of an integrated security system. The perfect security system would monitor every square inch of a protected area, send an instant alarm, swing surveillance cameras into place, deny access to intruders and allow access to authorized personnel the instant an event occurs. Although everything would be viewed, the system should only respond to events that concern security. How, from a mass of data, does one distill usable information? With more data, it is harder to know what's significant, but if there's not enough data, something important might get missed.

The main problem is how to convert large amounts of data into usable information. The solution is in the software.

#### The software

Video analytics (video content analysis) applications are designed to react based on the video data seen by a digital camera. This is an attempt to solve the basic problem of video surveillance: Many cameras can be run all the time, but instead of people monitoring the cameras, computers are used to analyze the data and alert a security guard when something unusual happens. The trick is how to get the software to distinguish unusual from the norm.



Analytics have evolved from the older technology of video motion detection (VMD). The basis of VMD is to send an alert when there is an abrupt change in the pattern of pixels. The problem with VMD is it causes a high number of false alarms. Since analytics is computer--software-based, it does more than merely respond to changes in scene. It counts the number of pedestrians entering a door or geographic region; determines the location, speed and direction of travel; and identifies suspicious movement of people or assets. A best, however, it is far from foolproof, but it can bring a scene to the fore, such as a person showing up in a normally deserted area, so that a security official can view it and make a decision as to whether more investigation is required.

There's also physical security information management (PSIM), which is a new concept in the integrated security field. Included under this umbrella are event-management platforms, such as Surveillint by Proximex; Surveillance ELS Vantage by Siemens; IPSecurityCenter- by CNL; VidSys; and ORSUS (recently acquired by NICE). These platforms accept data from a variety of life safety systems, which are then organized into a coordinated usable package for display, control and communication.

The Proximex package is interesting because it embodies pretty much all of the features that PSIM offers at this stage of development. can, therefore, serve as a guide to what can be done with software integration of building systems—chiefly, but not limited to, security.

Surveillint is a high-end platform that can be used for a single building, a campus or a network of connected organizations distributed around the world.

First and foremost, it provides a centralized console for interacting with all the systems that are linked into it. From one screen, an operator can view the status of any sensor or alarm and locate it on a map or floorplan. Rules set by the organization can be programmed into the system and can automatically determine responses to a given alarm. Or, the rules can generate a checklist for actions that the operator selects manually. Recorded and live video can be viewed simultaneously. Pan/tilt/zoom cameras and door access can be controlled, and reports can be sent to first responders and field personnel through Microsoft Mobile for SmartPhone and Pocket PC. The system includes tracking software that allows a moving person or object to be followed from one camera to the next with a mouse-click, and it can seamlessly move from recorded to live video.

A very important feature is that it uses an open standards-based platform so that it can interface with a wide variety of subsystems from different manufacturers by translating all of the data into the common information model followed. A library of integration modules is maintained for many of the common subsystems from different manufacturers, including video, physical access control, intrusion detection, video analytics, two-way radio, mass notification, and information technology systems. A user can also opt to develop particular software for integrating new or existing devices into the overall PSIM kit to be managed by Surveillint, by means of a toolbox called a software development kit.

**The next step**

The next step is for the industry is to come together to develop interoperability standards that will more easily allow all of the many different pieces of security systems from different manufacturers to easily talk to each other. The process already has begun.

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