Lenel® IntelligentVideo™ for OnGuard® VideoManager™
Digital Video Content Analysis

Advantages & Benefits

Overview

Lenel IntelligentVideo is a cutting–edge solution that harnesses the power of Lenel's advanced, industry-unique technologies to provide real-time digital video content analysis—the ability to analyze, recognize and classify information (objects) in live and captured video. Lenel IntelligentVideo™ is an alert-driven solution. A system user defines events by selecting predefined, generic events from a list, then optionally selecting relevant properties for each event. Lenel IntelligentVideo then monitors and alerts when those custom events occur. The real-world applications of this next-generation tool are truly limitless, encompassing everything from traffic analysis to behavioral monitoring and criminal investigation.

Lenel IntelligentVideo is a seamlessly integrated component of Lenel's digital video management solution, OnGuard VideoManager. Each Lenel IntelligentVideo module can be configured to support multiple Lenel Video Recorders.

Analysis of Stationary Objects

Lenel IntelligentVideo offers the ability to analyze and track static (stationary) objects. An alert can be issued when a vehicle is stuck in the road or is parked in an unauthorized location.

In forensic applications, Static Objects features can be used to spot when an object (a suspicious package, for example) has been left unattended for a period of time, or when a valuable item is removed from its normal location in a museum, or when a vehicle leaves the space it had occupied.

Object Left Behind: Abandoned Vehicle

An advanced Non-isolated Object filter is useful in dynamic, congested settings to identify which objects are actually part of the crowd rather than abandoned objects.
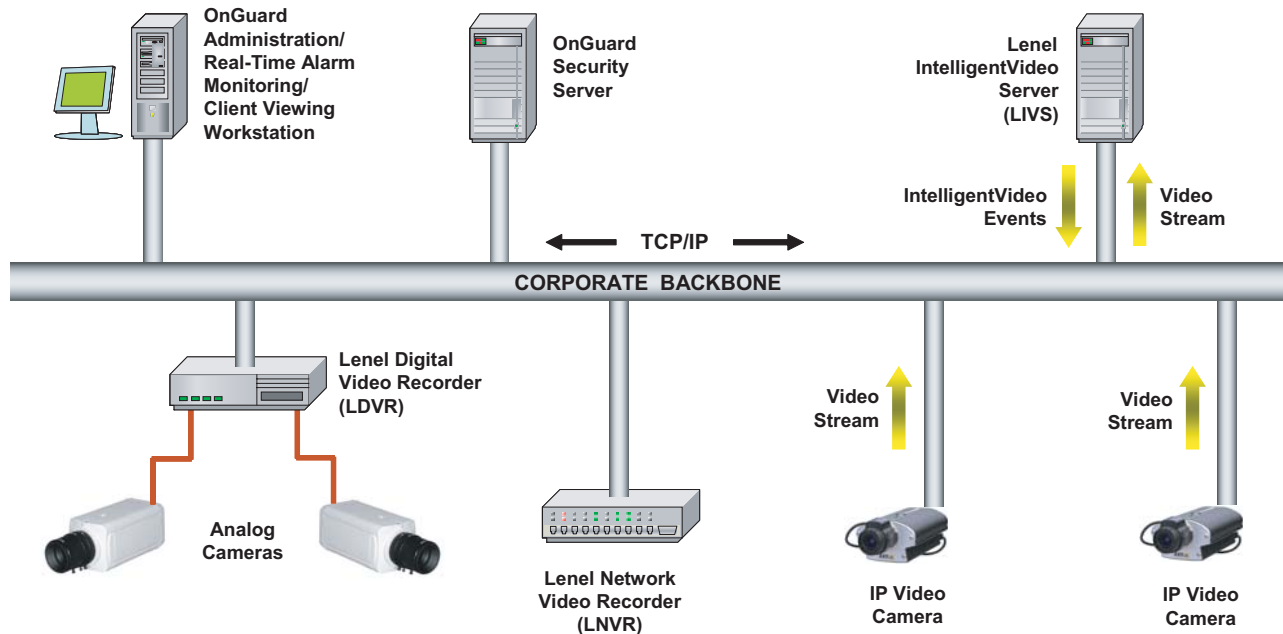
Loitering

Loitering

The Loitering feature detects individual loiterers in specified areas, and can be used for indoor or outdoor applications.

Lenel IntelligentVideo's Object Matching mechanism is employed to increase the reliability of detections.
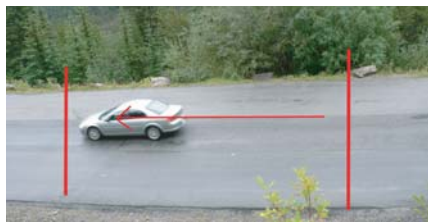
- Richest set of features and technologies in the industry
- Ability to quickly search through thousands of hours of recorded video information
- Event-triggered video recording reduces storage requirements
- Provides more effective real-time monitoring than is possible with monitoring by humans, deterring criminal activity
- Masks out disturbing areas, or areas of no interest, within the specified region
- Reduces manpower requirements
- Identifies & immediately alerts user to potential security breaches
- Features can be used at very low frame rates
- Powerful yet simple-to-use tool
- Easy calibration for specific applications
- Color-matching matches user-specified color to the video image
- Functions in outside environments with changing light conditions:
  - Auto-learning of Background feature
  - Object Saliency and Object Consistency mechanisms to filter out false objects
  - "Foreground model" that filters out false objects
- "Out of Focus" condition is user-calibrated by level of focus
- Single vendor solution

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Always OnGuard™

Total Security Knowledge Management Solution™

OnGuard Administration/ Real-Time Alarm Monitoring/ Client Viewing Workstation

OnGuard Security Server

Lenel IntelligentVideo Server (LIVS)

IntelligentVideo Events — Video Stream

← TCP/IP →

CORPORATE BACKBONE

Lenel Digital Video Recorder (LDVR)

Video Stream

Video Stream

Analog Cameras

Lenel Network Video Recorder (LNVR)

IP Video Camera

IP Video Camera

Intelligent Motion Analysis

Lenel IntelligentVideo provides Intelligent Motion Analysis of people, vehicles and other objects. This powerful feature set can be used to detect when a vehicle is traveling in the wrong direction or stops in the middle of an intersection. It can also be used to alert when a person exits an entry-only gate (such as at an airport).

The Object Moves Too Fast function detects any speeding object, such as a person running through an airport terminal or hallway, or a car speeding in a parking lot or road. The Object Starts to Move function can be used to send an alert when a monitored vehicle starts moving.

Intelligent Motion Analysis is also beneficial for perimeter control, as it can detect when a person or object crosses a boundary. Lenel IntelligentVideo uses Smart Motion Trajectory analysis to ignore the motion of invalid or "false" objects, and motion caused by rain, snow, hail or moving trees, thereby ensuring a high degree of accuracy.

Object Moves Too Fast

Crowd & Congestion Monitoring

Lenel IntelligentVideo includes Crowd Monitoring capabilities that can notify system operators when too many people have congregated within a specified area, such as in a lobby. These features can also monitor vehicle congestion in parking lots, and can be used for line control of people or vehicles on the road.

Object Stops

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Microsoft GOLD CERTIFIED Partner

ORACLE PartnerNetwork MEMBER PARTNER

IBM Business Partner

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Object Detection

The Object Detection capabilities of Lenel IntelligentVideo can detect vehicles and humans, and can distinguish between humans and animals in perimeter control applications. For even more advanced Object Detection, Lenel IntelligentVideo can be configured to detect objects by user-specified color and shape properties. Lenel IntelligentVideo filters out false objects using built-in advanced Object Saliency and Object Consistency mechanisms. An Auto-learning of Background model provides automatic adaptation to changing light conditions in outdoor environments. An anti-vibration mechanism ignores camera vibrations that are due to wind or other causes.

Object Detection - 3 boats

Detection of Human Being

Smart & Fast Motion Detection

Smart & Fast Video Motion Detection detects a change in the video. The software can be configured to trigger video recording or issue alerts whenever such a change occurs. Smart & Fast Video Motion Detection has built-in filters to ignore camera vibrations and areas with constant motion, and to distinguish between true motion and rain, snow, hail or other noise-creating activity. Smart & Fast Video Motion Detection utilizes an automatic mechanism that measures sensitivity, making it reliable even at dusk. The user can define object properties and—for some intrusion detection situations—direction, while still being able to process dozens of video channels on a single machine.

Invalid Camera Alert

Lenel IntelligentVideo can automatically generate an alert whenever someone or something has covered the lens of the camera, or when the camera has been moved, or when it is out of focus. The Invalid Camera function automatically detects when a camera has been tampered with. The engine uses a built-in mechanism that automatically measures the level of focus, making it also effective in situations where the focus deteriorates very gradually.

Once the software has issued an alert that a camera has become unavailable, the situation can be immediately investigated and remedied. The camera can then be put back into operation, with a minimal loss of time and valuable video information.

- Create new types of objects and events by storing and loading custom calibrations to address specific scenarios
- Object-matching for more reliable detection of loiterers in the specified region of interest
- Motion Trajectory Analyzer provides advanced analysis of the motion of objects
- Seamless integration into OnGuard Total Security Knowledge Management Solution
- Centralized administration
- High throughput of video channels per single machine
- Friendly and semi-automatic calibration. Displays parameter values that would have triggered an alarm for the current scene
- Optional filter for "isolated object" for the Object Left Behind
- Boolean and temporal logics of regions of interest
- Ignores vibrations caused by the wind in outside environment
- Automatic measuring of focus level
- Object Matching for more reliable Loitering detection
- People Counting also for external windowed door with direct dynamic light spots
- Automatic adaptation to various lighting conditions at dusk
- Monitoring motion patterns to reduce false alarms
- Automatic self-test of camera validity

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Facial Detection

Lenel IntelligentVideo has the ability to detect when a human being looks into a camera positioned at an entry point. The software keeps a record of each such instance of Facial Detection.

People Counting

The People Counting function uses an overhead camera positioned at an entry/exit point. System operators can be alerted whenever anyone passes through that point. People Counting can be integrated into a facility counting feature to count the number of people entering/exiting at that location. The People Counting function has an advanced mechanism to distinguish between dynamic spots of light and people, for use at external windowed doors.

The powerful Facility Utilization application integrates People Counting functionality at multiple access points such as gates. The application analyzes the data and provides statistical reports on the flow of people. Because the Facility Utilization application is integrated into OnGuard, the system can generate alarms based on user-defined thresholds for human traffic flow.
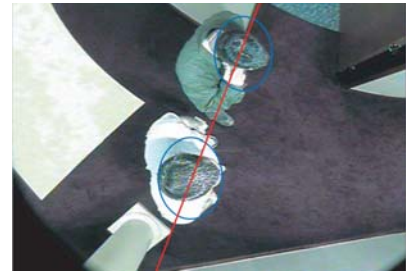
3-D People Counting

The 3-D People Counting and Anti-Tailgating function uses stereoscopic vision to very accurately monitor the flow of people through an area. It employs two cameras that can be part of the customer's OnGuard VideoManager system; no special hardware is required. Lenel has developed this functionality, and will make it available as an integrated component of the Lenel solution in the near future.

Facial Detection at Entry Point

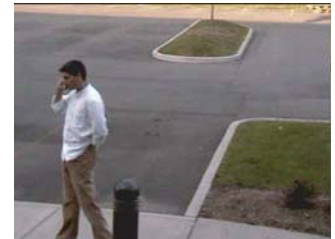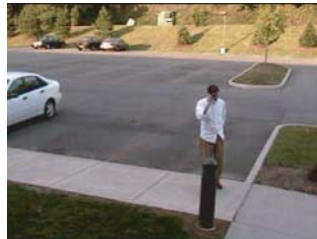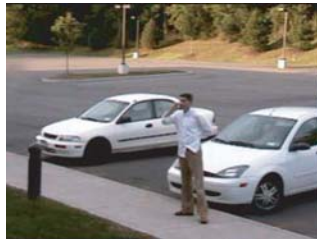**People Counting**

PTZ Auto-Tracking

The PTZ Auto-Tracking function uses a PTZ camera to automatically detect and lock on an intruder, tracking the person and reporting alarms in OnGuard. The camera pans, tilts and zooms to follow the object of interest, using Lenel Advanced Trajectory Analysis and Object Detection mechanisms. Lenel has developed this functionality, and will make it available as an integrated component of the Lenel solution in the near future.

PTZ Auto-Tracking of a Person

Seamless Integration with OnGuard

A total security solution that includes digital video is much more powerful than a standalone digital video application. Lenel IntelligentVideo is the only solution on the market that can be seamlessly integrated with the entire suite of OnGuard application modules, delivering the kind of comprehensive solution that today's complex business environments require. Lenel IntelligentVideo brings a whole new level of intelligence, efficiency and cost savings to both entry-level and enterprise security systems, reducing manpower requirements and increasing the overall level of security in an organization's facilities.

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