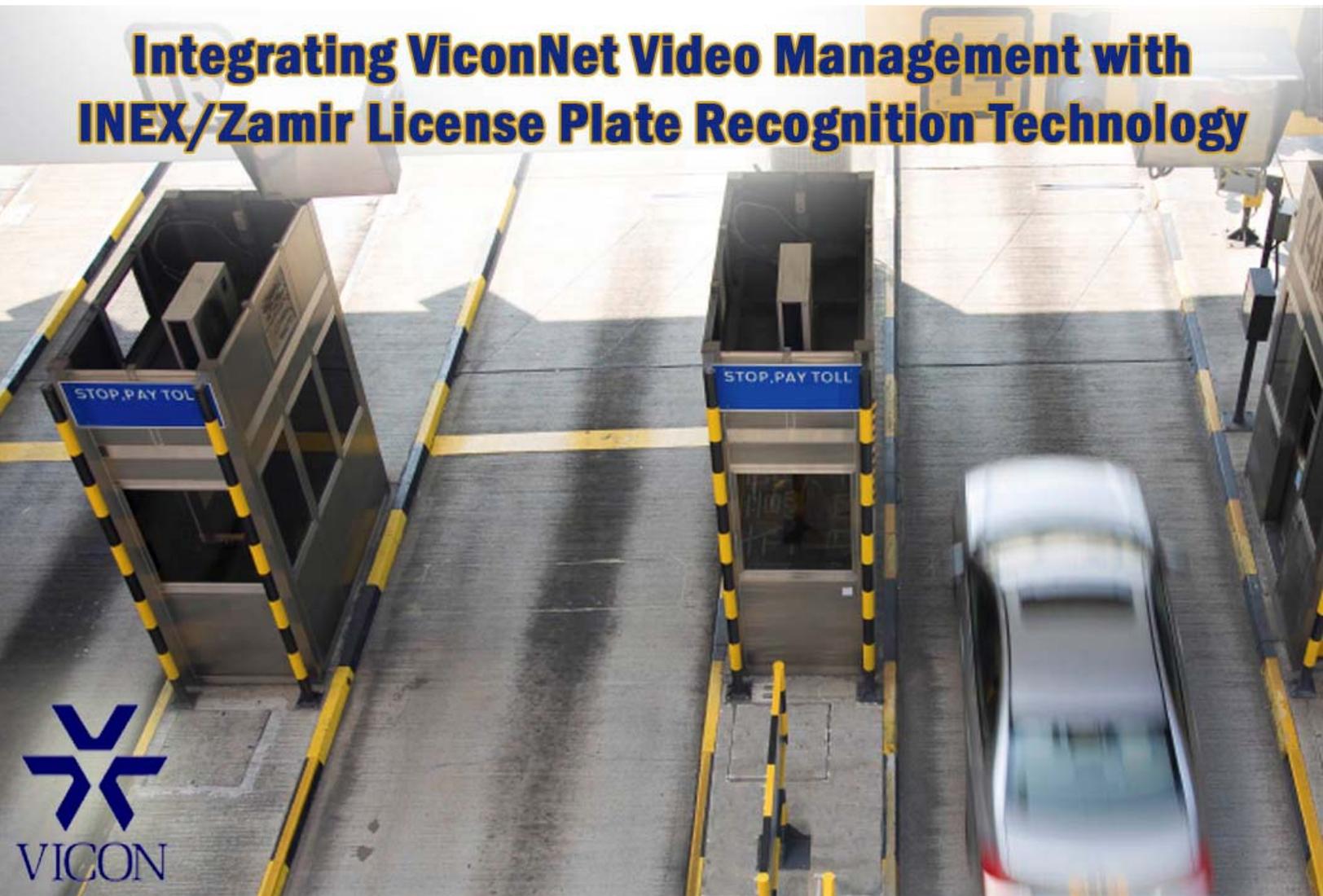


Integrating ViconNet Video Management with INEX/Zamir License Plate Recognition Technology



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Integrating ViconNet Video Management Systems with License Plate Recognition Technology from INEX/Zamir

This paper explains how ViconNet video management software and Inex/Zamir license plate reading software combine to provide added value to the end-user.

Introduction

The integration between ViconNet® and Inex/Zamir® provides an over-the-network solution that allows the ViconNet Video Management system to connect and receive License Plate Recognition (LPR) events from the Inex/Zamir system.

By itself, the Inex/Zamir system is a professional LPR solution for capturing, processing and tagging license plates. The Inex/Zamir system maintains a database of captured plates and provides the means to compare captured plates against pre-existing lists in order to classify each read.

When combined with the power of a ViconNet Video Management system, a whole new level of functionality becomes possible. Events captured by the LPR system are stored within ViconNet's Event Management database, and corresponding ViconNet video may be automatically linked to these events for live and playback purposes. By compiling complete case data for each read, the integrated system provides operators with the ability to retrieve and view comprehensive video evidence in cases that require investigation.

System Requirements

Integration with Inex/Zamir requires use of ViconNet version 5.6. This version of ViconNet introduces an event management feature, a key component in supporting interoperability between the two systems. In addition, the Inex/Zamir system must be operating with software InSignia version 4.13.30, and the Inex/Zamir driver must be installed within the ViconNet Event Management system.

The integration requires ViconNet version 5.6, Inex/Zamir InSignia version 4.13.30 and the Inex/Zamir driver.

ViconNet Event Management System

The ViconNet Event Management System creates a database that links various external events to ViconNet live or recorded video.

The ViconNet Event Management system (VEM) is a new component of ViconNet version 5.6. VEM was designed to integrate external events from various sources into a database with ViconNet live or recorded video. A logical association between the external event and ViconNet camera video is created and stored in the database. For example, when a license plate has been flagged by the LPR system, the corresponding video captured by ViconNet will be linked to that event.

The integrated event and video is then used to provide live or playback video from the ViconNet system to correspond to all or some events. The events sent from the external system can be screened and set to run macros on the ViconNet system when a selected field in the event matches a pre-defined term. A user searching the VEM database or running a query can call up the related video for playback from the stored recording by event.

VEM has a built-in query tool that can be used to create on-the-fly queries as well as permanent queries that can be saved and run on demand. This eliminates the need to purchase and learn third-party database query tools. VEM also comes equipped with a case builder application to compose event reports in a simple text format and attach snapshots from the video to the case.

The VEM database requires the installation of a Microsoft® SQL database engine. ViconNet provides the free MS SQL express version that can hold up to 4 GB of data. For systems that require a larger database or will be using an existing database, the responsibility for providing the database software is on the user.

Operational Examples

To demonstrate how an integrated system would work, the following describes a theoretical installation and provides three examples of how the system might be used:

Video and data from LPR system cameras are linked to corresponding ViconNet video showing car and driver.

A three-lane garage entryway is covered by Inex/Zamir LPR cameras. The cameras are positioned to read the license plate of the car stopped at the entry gate. The LPR system is connected to the gate system, allowing the gate to automatically open for authorized vehicles.

ViconNet cameras are positioned to cover each lane, providing video of the gate approach as well as a view through the car's front window to show the driver. As plates are read and logged by the LPR system, the events are also stored in the ViconNet system and corresponding ViconNet video is linked to each event.

Scenario 1: Authorized Car Approaches

License plate is read and gate opens to allow car to enter.

Detection of "white" or "black" listed license plates can trigger different events.

Scenario 2: Unauthorized Car Approaches

The LPR system identifies the plate as "Black Listed" and the gate remains closed. The ViconNet system is triggered by the "Black List" tag from the LPR system. ViconNet begins to display and record a live video feed from the LPR cameras and from the ViconNet cameras that cover the area and look into the car.

Scenario 3: An Accident Occurs in the Garage

A witness to the accident can partially recall the plate number of the car that caused it. The plate can be found both within the LPR system and within the ViconNet event management database. With a few clicks of the mouse, related video can be reviewed, providing the vehicle's make, model and possibly the identity of the driver.

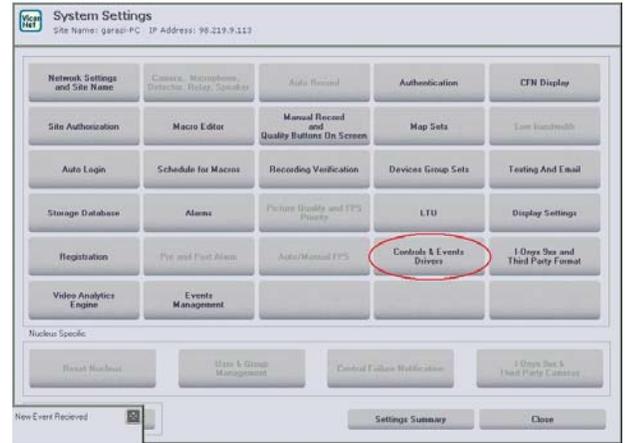
ViconNet video may be used to corroborate testimony of a witness.

System Integration

The ViconNet Event Management System can be configured to tag and log events from the Inex/Zamir system and initiate follow-up responses.

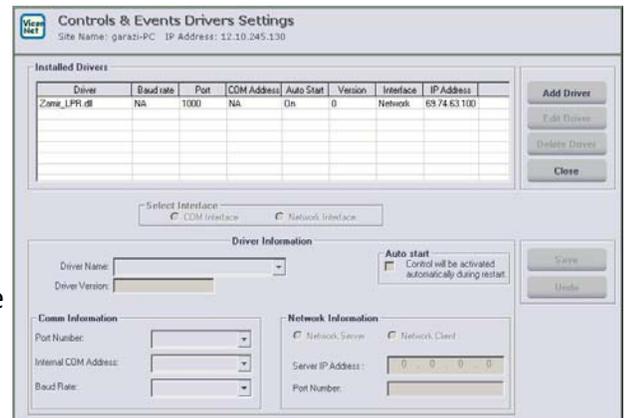
Integrating the ViconNet and the Inex/Zamir LPR systems is a simple procedure. Both systems must be installed, online and share a network connection. This is important as the event flow is network based.

This is accomplished by opening the ViconNet system and entering the Inex/Zamir server IP and port in the Controls & Events Drivers System Settings dialog box.



Once the IP address of the INEX system has been set, VEM can be configured as a tagging system. It will then log the events into its database and provide the following actions or responses to the events:

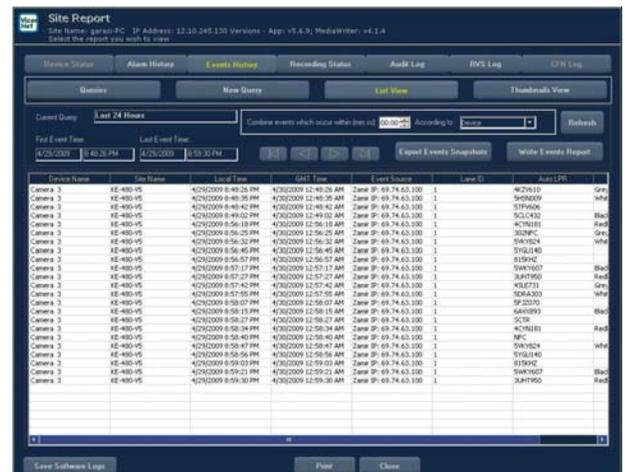
- Event text display on video
- Pop-up event window (i.e., show license plate number on the live video)
- Request for user text (i.e., make the security person add the car color to the event)
- Assign a camera to event (i.e., Lane 1 = camera 5)



Event List

Events can be called up from a list or thumbnail view.

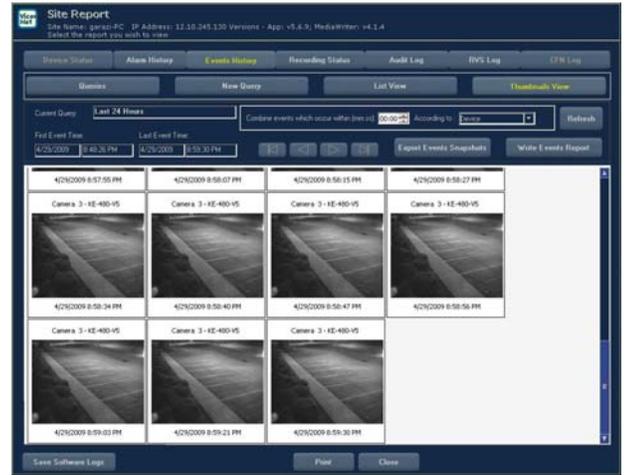
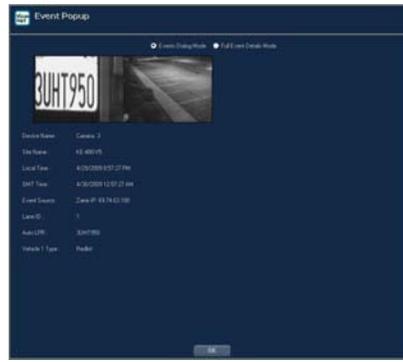
The events are stored in the database and can be accessed through the report screen. The user can get either a list of events or a thumbnail view of the event snapshot images.



Event Thumbnails

Clicking on the event line in the report or the thumbnail will open the event ticket and show the details as well as any snapshot that was taken by the event source (the license plate in the case of the LPR system) and the associated Viconet cameras.

Event “tickets” show details and snapshots that correspond to any logged event.



The same event line or thumbnail can call up playback of video from the time of the event or pre-event to allow the operator to review the recorded information related to the specific event.

Summary

By integrating the Viconet® video management system with Inex/Zamir® LPR technology, users can benefit from a robust, interactive solution that provides added security to situations that monitor and control the movement of vehicular traffic. Viconet Event Management allows events or actions to be triggered in response to license plate “reads” and creates an easily accessible database of events and corresponding video.

