XX113-08-01

Software Manual

Workstation and NVR

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FC
Assembled from tested components
Complete system not tested

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VICON

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About This Manual

The ViconNet Workstation Software Manual is comprised of the following chapters:

- **Chapter 1, Introducing ViconNet,** introduces the main concepts and system architecture of the ViconNet system.
- **Chapter 2, Getting to Know ViconNet,** describes the main ViconNet application windows and their functionality.
- **Chapter 3, Configuring the ViconNet System,** describes all available configuration functions in the ViconNet system, including system setup and creating macros and schedules.
- **Chapter 4, Viewing and Listening to Live Video/Audio,** describes the mandatory and optional tasks involved in viewing and listening to live video and audio.
- **Chapter 5, Recording Live Video/Audio,** describes the manual and automatic processes for recording live video and audio.
- **Chapter 6, Playing Back Recorded Video/Audio,** describes the process for playing back recorded video and audio.
- **Chapter 7, Managing Macros and Schedules,** describes how manage and work with macros and schedules in the ViconNet system.
- **Chapter 8, Generating Reports,** describes how to generate different types of reports available in the ViconNet system.
- **Chapter 9, Printing/Exporting Frames and Creating Video Clips,** describes how to print out or export selected frames from Playback, and to create video files from selected playback segments.
- **Appendix A, Installation,** provide thorough and accurate instructions for installing the Network Video Recorder.
- **Appendix B, Configuring your Personal Firewall,** describes how to configure your firewall to protect your ViconNet system.
- **Appendix C, Configuring the Network,** describes how to configure network adaptors and DHCP.
- **Appendix D, Setting Up a VPN Service,** presents an example of how to setup a Virtual Private Network (VPN) service (server and client) for the ViconNet application.
- **Appendix E, Using Video Analytics,** explains how to use the integrated video analytics with the ViconNet system.
- **Appendix F, Running ViconNet as a Service,** explains how to use ViconNet as a service configurator running on Windows, without the GUI.

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Chapter 1
Introducing ViconNet

This chapter introduces the ViconNet system and includes the following sections:

- **What Is ViconNet?,** page 1, provides a brief overview of the ViconNet system.
- **How Does ViconNet Work?,** page 2, describes overall functionality of the ViconNet system.
- **System Requirements,** page 5, outlines the main ViconNet system requirements.
- **System Architecture,** page 6, illustrates the ViconNet system architecture.

What Is ViconNet?

ViconNet is innovative open-platform video management software (ONVIF-S conformant) that allows integration with IP cameras, encoders and IP edge devices, including megapixel cameras. Open platform cameras and edge devices from numerous industry-leading manufacturers are compatible with ViconNet software. Additionally, the ViconNet interface has integrated Events Management and ViconNet VI video intelligence and IQeye embedded analytics.

ViconNet is a fully scalable secure network solution for Windows® platform. It allows viewing and recording of video from any camera anywhere on the network and integrates seamlessly with Vicon's line of Kollector DVRs and NVRs. The latest ViconNet version 8.X offers H.264 compression in addition to ViconNet's proprietary MPEG-4 optimized compression or JPEG compression. It is compatible with Vicon's Express series NVRs and DVRs and supports Vicon's Access Control System (VAX).

ViconNet is offered in tiered packages. All three packages offer the full suite of controls and features, but with different camera limitations. ViconNet JUMP software, for smaller systems, can be downloaded free from Vicon's website, www.vicon-security.com, and supports up to 6 cameras; ViconNet ZONE, for mid-sized systems, supports up to 35 cameras. ViconNet PEAK is the enterprise-level software, offering unlimited scalability.

The ViconNet software is available in two versions. ViconNet Master Workstation software, Model VWS-SW, is available for installation on any popular brand PC-type computer running Windows® platform. This software package has all the capabilities of the latest ViconNet version 8.X except the recording function. For recording capability, the VPK-SW is provided. The VPK-SW is intended to be used primarily when the recording function is required. Although it does offer the full ViconNet video management capabilities, it is recommended that its primary function be recording on a regular basis.

All versions of ViconNet are also available pre-loaded on factory certified PCs.

Note: *In this manual, features for Kollector Force are relevant to Kollector Elite and Pros upgraded to the latest version 8.X Kollector Strike features pertain to Kollector Lite units upgraded to the latest version 8.X.*

How Does ViconNet Work?

The idea behind the ViconNet system architecture is relatively simple - enable full flexibility and minimize system complexity for the users. The ViconNet system configured on a network can deal with numerous Workstations/NVRs/DVRs. This means that users can use their individual Workstations to view different cameras and microphones from all devices on the system that transmit video/audio, such as the Kollector family, IP camera, encoder and so on within the system simultaneously. The data that can be viewed includes all live data as well as recorded data.

In addition, users can perform recording operations on their individual NVRs within the ViconNet system according to their requirements. Depending on the assigned authority level, each user can view everything that is configured in the system at any time.

Connection to IP cameras and edge devices is available to local area networks (LANs), as well as wide area networks (WANs) and the Internet.

Frequently Asked Questions

The following set of questions and answers have been created to help customers get the most out of the potential of ViconNet. Each question is a real-life situation answered by Vicon's outstanding technical support group.

- **What parameters should be considered when calculating storage and bandwidth?**

Devices in the ViconNet system, much like other IP-based video systems, send the video over the network to a NVR or store it on DVR drives. This data is influenced by a few major parameters:

- Compression method – What compression is being used? ViconNet Normal/Full, M-JPEG, MPEG-4, H.264 are options with ViconNet or with other manufacturers open platform cameras.
- Frame rate – More frames per second will require more bandwidth and more storage.
- Picture resolution – The picture resolution (CIF to 4 CIF and Megapixel range) has significant influence on the storage, higher resolution = more storage.
- Motion type – Unless you are using M-JPEG, the amount of motion in the picture will affect the amount of data.

Make sure to obtain the storage calculator for ViconNet or the other manufacturers open platform camera you are using, and calculate the different types of cameras separately. When calculating bandwidth, estimate the "worst-case" to ensure your network can carry the traffic.

- **What are the options for storage?**

When using a DVR or an NVR, ViconNet offers several storage options:

- Internal storage – Hard drives in the DVR or the NVR.
- Internal RAID – Hard drives in the DVR (Kollector Force) or NVR (NVR Shadow) configured in a RAID 5 or 6 array.
- External RAID – Using an additional network card in the DVR/NVR, an external RAID unit can be attached and provide more storage and RAID protection (iSCSI).
- NAS – Although ViconNet can send video to a mapped drive (NAS) on the network, we recommend that this will not be used as the main storage method; it utilizes network resources and therefore Vicon can not estimate their performance.
- SAN – As an expansion to a single RAID, Vicon offers SAN solutions (iSCSI) for the DVR/NVR, utilizing a dedicated storage network and large storage arrays.

- **Does ViconNet require specific ports to be open in the firewall?**

Yes, ViconNet uses ports 4354 – 4359 both in TCP and UDP. These ports will be automatically open when ViconNet is installed. If Vicon web server is used, an additional port for the server will need to be open, typically port 80.

- **What network protocols does ViconNet use and support?**

ViconNet devices use TCP Unicast protocol to communicate and send video. ViconNet does support multicast-based video from several cameras, including its open platform cameras. The support of multicast depends on the camera.

- **Does ViconNet support video analytics?**

Yes, ViconNet VI is Vicon's video analytics solution. When ViconNet VI is installed, you can configure ViconNet to receive alarms and indications of the analytics detections. Additionally, IQeye embedded analytics is supported for those IQeye cameras that have the most up-to-date firmware.

- **Is there a limitation to the number of cameras ViconNet can handle?**

No, ViconNet can handle an unlimited number of cameras through an unlimited number of DVRs, NVRs, encoders and IP cameras. The system needs to be designed in a way that will allow it to function properly.

- **Is there a license per camera connected?**

ViconNet devices do not require per-camera license; in cases where 3rd party cameras are utilized, a onetime license fee will be charged to allow connecting this camera to the system.

- **Do I have to have a DVR in the system?**

No, ViconNet offers many devices to choose from; you can build a fully functional system with cameras and NVRs, without using a DVR at all. You can, however, use DVRs, NVRs, encoders and IP cameras in the same system, which allows you to choose the best solution for different camera types and still manage it from the same interface.

- **Can I buy ViconNet software without ViconNet hardware?**

Yes, Vicon offers the ViconNet software packages if you choose to install on your own PC hardware. This applies to the PC software and not the DVRs, which are hardware devices.

- **Is there any advantage in buying hardware from Vicon?**

Yes, Vicon offers a range of hardware components that have one thing in common; they were built and certified to work with the ViconNet software! Buying these components ensures the 3 year warranty from Vicon, single point of contact for support and maximum compatibility between system components.

- **Does Vicon offer a software developer's kit for custom applications?**

Yes. The API/SDK for the ViconNet series of products is a controlled document requiring a non-disclosure agreement to be signed prior to release. All requests for the API should be directed to your Vicon sales representative. All technical support questions regarding the API should be directed to the ViconNet engineers at support@vicon-security.com.

- **Can the network bandwidth be increased to allow for more information (frame rates)?**

The recorder will always use the maximum bandwidth available, but it will sacrifice FPS in order to maintain the selected quality within that available bandwidth. In different cameras, as well as H.264 compression in the NVR/DVR, you can select the bandwidth you wish to use.

- **Can we set up presets or tours through a recorder for our PTZ domes?**

Any dome feature is accessible from any recorder or Workstation, based on the logged in user's authorization profile and on whether PTZ drivers are installed and configured.

- **Is there a priority level available for PTZ domes on a recorder? If two people are looking at a Kollector remotely and trying to PTZ the same dome, what happens?**

In a primary/secondary setup, the first person connected to a camera controls the PTZ In a primary/secondary setup, the first person connected to a camera controls the PTZ (primary/ secondary status is indicated by a P or S in the lower-left corner of that video display). A secondary user with the same or higher priority can simultaneously control the dome or can force the changeover to become primary. If the second user has lower priority, there can be a request to take control; the current primary user decides whether or not to allow the changeover.

> ***NOTE:*** *This is exclusive of USER ID authorizations as determined by the system administrator.*

- **How do we save the recorded images to a transportable file type for video clips and what formats are supported?**

The Vicon line of products can burn CDs (if available) or can be saved to a portable USB device in the ViconNet proprietary format that will enable a viewer to be exported and allow playback of the secure (unalterable) format (the playback PC must meet the minimum requirements of the viewer). It can also create *.AVI, XVID or MPEG-4 files playable in Windows Media player (video and audio). These files are **not** secure, and can be altered. Still images (in *.JPG format) can also be exported from the application.

- **After capturing a still image from the recorder's software, can the image be processed or enhanced before exporting to improve quality of the image?**

The viewed image can be altered while on display (brightness, color, contrast), but the file itself cannot be changed; by extension, the exported images would not be altered. Most computers have a graphics application (such as Microsoft Paint) that can be used, and there are many third-party software products designed to alter *.JPG files (which is the type of picture created using the export feature).

- **What operating system does ViconNet use?**

Windows 8 or Windows 7. All software products can run on Windows 7, Windows 2003, 2008 and 2012 Server.

- **Does the ViconNet software have the ability to send any notification on an alarm?**

Alarm macros can be created on the recorder that sends the alarm notification and/or video to any other device (Kollector or Workstation/NVR) on the network. Alarms can also be sent over email or as a text message (requires mail server, text server).

- **What PTZ devices can the recorder control?**

The current driver version contains Vicon, Pelco (D Protocol), Ernitec, Samsung, Sensormatic, Kalatel and Philips (Bosch), Pelco P Protocol, Panasonic, Elbex (Ver. 0.77), Elbex (Ver 0.91). Vicon frequently updates the driver version. Contact Vicon for the most up-to-date driver information.

UPS System Requirements

Vicon requires the use of Uninterruptible Power Supply (UPS) systems in the electrical power service. Failure to comply with this will void the unit warranty.

Use the following minimum UPS requirements:

- Capacity: 1000 VA/600 W
- Maximum operation time:
  - 16 cameras recording/displaying with a typical 19" LCD monitor: ~20 minutes
  - 16 cameras recording/displaying with a typical 24" LED monitor: ~15 minutes
- Input:
  - Voltage: 115 VAC/ 230 VAC
  - Voltage Range: ±30% (with a 4-step AVR)
  - Frequency: 47 – 63 Hz (auto detection)
- Output:
  - Voltage: 115 VAC/ 230 VAC
  - Voltage Reduction (bat. mode): ±10%

NOTES:

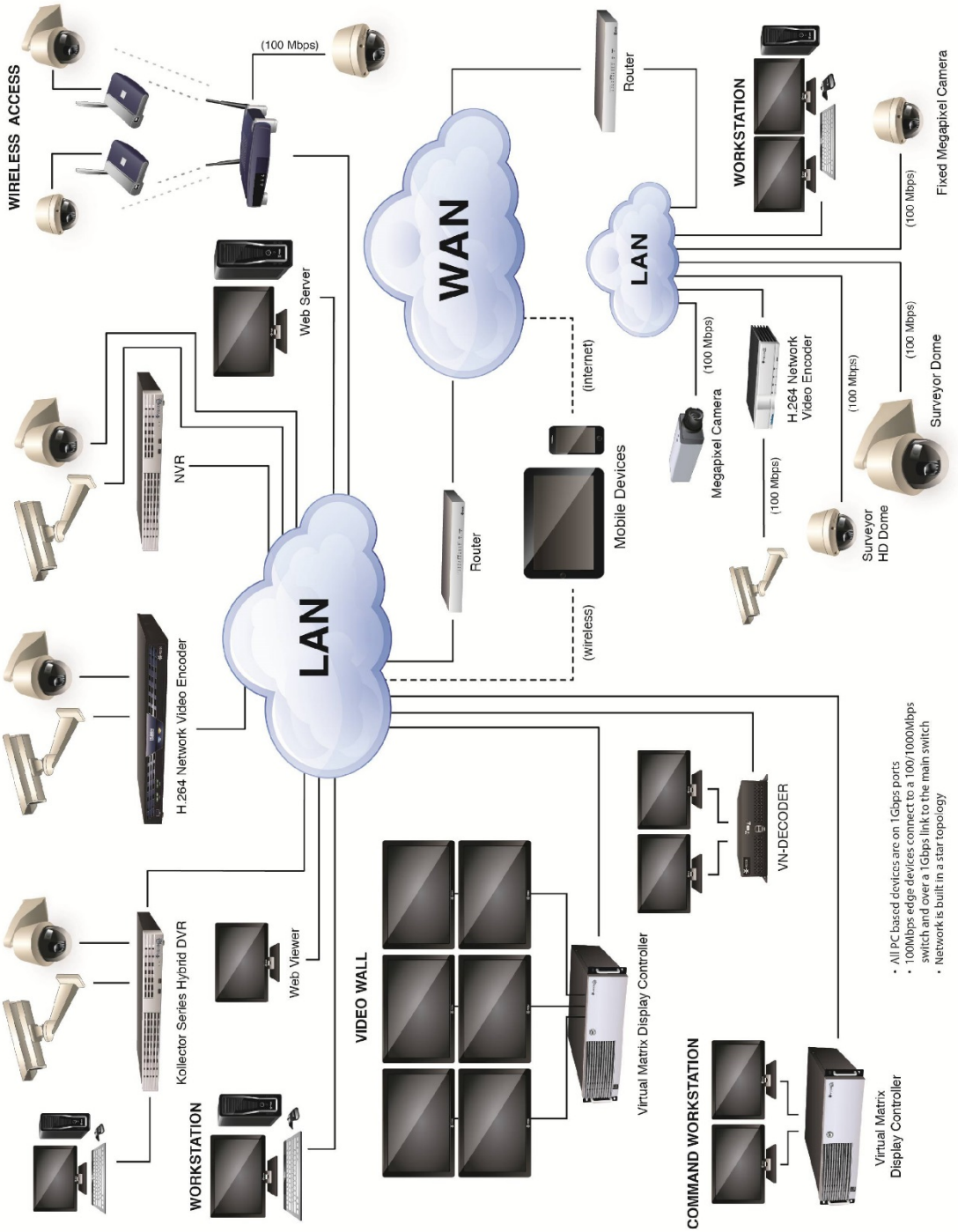
It is required that external devices (such as RAID units, backup drives or external DVD units) be connected to the power source via UPS when used with the ViconNet system.

It is strongly recommended that the Workstation's hard disks be formatted to the NTFS system format.

When rack mounting any Workstation configured in a rack-mounted PC, it is necessary to leave 1U (1.75 in./44.45 mm) of space between the units.

System Architecture

The diagram shown below illustrates a ViconNet system structure that incorporates a variety of ViconNet devices.



Chapter 2
Getting to Know ViconNet

This chapter describes the ViconNet application and familiarizes you with its components and functionality. This chapter contains the following sections:

- **Logging In,** page 8, describes how to log in to the ViconNet application.
- **Main Window,** page 9, describes all the elements in the ViconNet *Main* window that provide access to the basic functions required to operate the system.
- **Navigator Window,** page 36, describes all the elements in the ViconNet *Navigator* window that provide access to all playback functionality.
- **Alarm Window,** page 50, describes the popup window displayed when an alarm event occurs in the system.
- **Logging Out and Exiting,** page 53, describes how to log out without closing the ViconNet application, to close the ViconNet application and exit to the operating system, or to shut down or restart the ViconNet unit.

Note: *Some of the screens shown in this manual may be slightly different in appearance than those that are on your screen. There should be no difference in content or functionality.*

Logging In

Logging in to the ViconNet application is performed using your assigned user name and password. The allowed system operations are dependent on your assigned authorization rights (refer to *Chapter 3, Configuring the ViconNet System*, for additional details).

The full functionality of the ViconNet system is available only after the system is registered. Before registration is performed, the system will function with limited *Viewer* functionality only. Refer to the *Registering Your System* section in *Chapter 3, Configuring the ViconNet System* for further information.

A ViconNet Administrator user can configure the system to automatically log in selected users. Then, each time the user starts the application, he/she will be presented with the ViconNet *Main* window without having to enter a user name and password. Refer to the *Configuring Auto Login* section in *Chapter 3, Configuring the ViconNet System*.

To log in to the ViconNet application:

1. At your Workstation/NVR, double-click the ViconNet icon on your Windows desktop,

   -OR-

   Select **Start→ViconNet**. The ViconNet *Login* window appears, displaying the name of the last logged in user.

> ***NOTE:*** *If you restart your software, the ViconNet application automatically starts up with the Login window open.*

2. In the **User Name** field, enter your assigned user name. If you are an administrator entering for the first time, enter **admin**. If you are a guest, enter **guest**.
3. In the **Password** field, enter your assigned password.

> ***NOTES:***
>
> *If you are a guest, you do not need to enter a password.*

*If you are an administrator entering the application for the first time, you do not need a password. After logging in as **admin**, it is recommended to assign yourself a password, as described in Chapter 3, Configuring the ViconNet System.*

4. Click

. The ViconNet *Main* window is displayed, as shown in the following section.

***NOTE:** Pressing **Exit** from the Login window closes the application.*

Main Window

After logging in to the ViconNet application, the *Main* window is displayed, as shown on the following page, enabling you to:

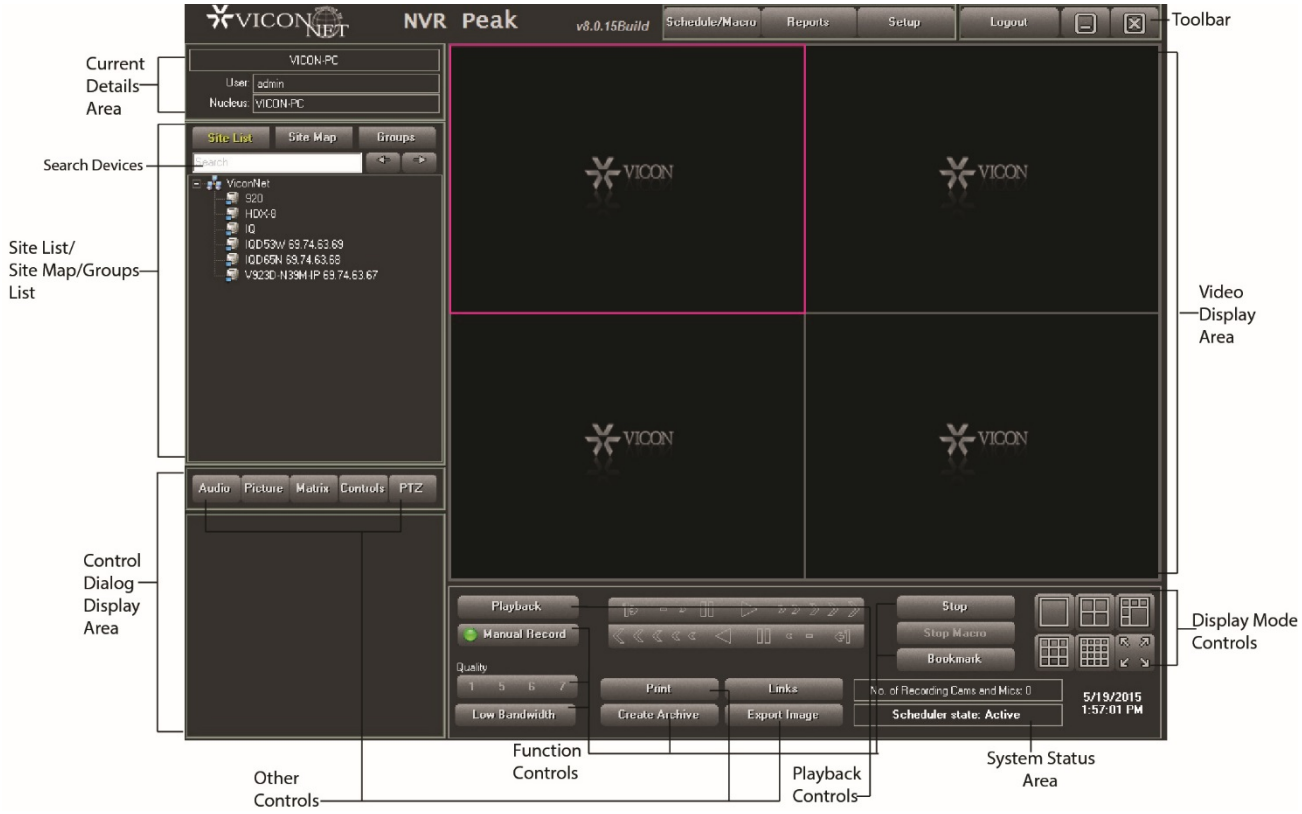
- Configure the ViconNet system.
- View and listen to live video and audio.
- Record live video and audio.
- Play back recorded video and audio.
- Create and manage macros and schedules.
- Control video images.
- Control devices.
- Generate reports.
- Print or export image frames.
- Configure an external control device.
- Use system utilities.

Each of the above tasks is described in detail in the subsequent chapters of this manual.

***NOTE:** The allowed operations depend on each user's assigned site authorization. Refer to Chapter 3, Configuring the ViconNet System, for additional details about configuring site authorization.*

The following example illustrates the elements and options in the ViconNet *Main* window: Note that on the Workstation *Main* window, the

button will be disabled (grayed out).



The window shown above provides access to all the basic functionality required to operate the system and contains the following elements:

- **Main Window Toolbar,** page 11
- **Video and Recording Elements,** page 15, which include:
  - Current Details Area
  - System Status Area
  - Site List/Site Map/Groups Lists
  - Video Display Area
  - Display Mode Controls
  - Function Controls
  - Control Dialog Display Area
- **Playback Controls,** page 33

- **Other Controls,** page 34, which include the following buttons:
  - Audio
  - Picture
  - Matrix
  - Controls
  - PTZ
  - Print
  - Export Image
  - Links

Main Window Toolbar

The ViconNet *Main* window toolbar provides quick access to all the major functionality of the ViconNet application, as well as all configuration and report generation options.

The ViconNet *Main* window toolbar appears at the top of the window and contains six buttons, as follows:

The following is a brief description of each toolbar button and its function:

Button	Description
	This option enables you to manage and work with macros that have been configured in the system. Macros are used for recording video and audio according to preconfigured schedules and preconfigured alarm events, as well as for performing sequence sessions. Refer to *Chapter 3, Configuring the ViconNet System* and *Chapter 7, Managing Macros and Schedules*, for detailed configuration and management procedures.
	This option enables you to view and generate the following types of reports: • **About**: Displays important details about the system running. • **Device Status:** Displays the current activity state of all currently configured devices. • **Alarm History:** Displays all the alarm events that have occurred in the system. • **Event History:** Displays all the triggered events that have occurred in the system (requires ViconNet event management license and inputs). • **Recording Status:** Displays an estimate of the recording time remaining, according to the database capacity and current data rate (BPS/frame), as well as a total of devices that are currently recording. • **Audit Log:** Provides a basic log of operations performed in the system, which is useful for history and debugging purposes. Information is accumulated continuously. 8,000 record lines can be accumulated and removed thereafter on a first-in-first-out basis. • **CFN Log:** Provides a basic log of all failures that generated central failure notifications. This report is only available from the Nucleus. Refer to *Chapter 8, Generating Reports*, for detailed report generation procedures.

	Enables you to close the application and return to the operating system by clicking the **Exit to O.S.** button, available from the *Setup Site Selection* window.
	This option also enables you to configure the ViconNet system, which includes:
	• Registering your system.
	• Modifying the system configuration, including configuring:
	  • Network setup.
	  • Cameras, microphones and sensors (remotely on Kollector/IP camera/encoder).
	  • PTZ controls.
	  • Site information.
	  • Other controls and drivers.
	• Configuring system authorizations, including:
	  • Defining groups.
	  • Defining users.
	***NOTE**: Users and Groups are defined on the Nucleus unit.*
	• Configuring automatic login.
	• Configuring site authorization.

Button	Description

	• Configuring storage database utilities, including:
	  • Configuring storage locations.
	  • Clearing storage locations.
	• Configuring system authentication.
	• Configuring manual recording (VPK NVR only).
	• Configuring recording management (VPK NVR only).
	• Enable the picture quality manual override buttons.
	• Creating, editing and deleting macros (recording function on VPK NVR only).
	• Picture quality and FPS priority
	(remotely on Kollector/IP camera/encoder).

Button	Description

	• Configuring alarm events, including:
	  • Defining alarm setup links.
	  • Setting pre/post alarms.
	• Creating and modifying schedules.
	• Restoring and backing up system settings from/to any network location.
	• Configuring a control panel.
	• Auto/Manual FPS – Manual FPS distribution of each camera per DSP, so that you know exactly how many FPS are recorded and displayed per camera (remotely on Kollector).
	• Language Translation Utility (LTU)
	• Central Failure Notification (CFN) continually sends notification, to specified sites, of errors that occur in the system. Includes a Recording Verification System (RVS) that ensures continuous recording by notifying users of any recording errors.
	• Device Groups – enables you to create logical groups of devices, regardless of the site to which each device is connected.
	• Map Sets – enables you to map your working environment in terms of where ViconNet systems are physically located on your premises.
	• Open Standard Camera – defines the parameters of each open platform camera on the system and provides a link to that camera's browser for configuration.
	• Open Standard Camera Format – the selection of the default video stream type of the open platform camera for that workstation.
	• Display Settings – allows you to select a resolution and screen aspect ratio.
	• Video Analytics – detects activity using ViconNet integrated video intelligence or Vicon IQeye embedded analytics.
	• Events Management – create profile for user-defined events connected to an external system (such as access control or license plate recognition).
	• Settings Summary – provides a summary of all the settings configured in a specific site.
	• Archive - configure how video is saved, using the advanced mode with playback or the wizard provided.
	• Links – create a list of convenient URL links to sites for easy access from ViconNet.
	• Web Server - how to setup to view ViconNet as a web browser and use with mobile devices.
	• Video Masking - how to create masked areas on the video image to block sections of the video from view.
	• Reset Nucleus – resets the list of sites appearing in the main **Site List** and the setup browser. Clears all history of disconnected sites. Disconnected sites appear in the **Site List** and the *Setup Site Selection* window with the following icon:
	Refer to *Chapter 3, Configuring the ViconNet System*, for detailed configuration procedures.

	This option enables you to log out without closing the ViconNet application. You can then log in as a different user.

Button	Description
	Minimize: Enables you to set the keep the application open but not display at full size. ***Note About Auto Maximize**: While the application is minimized, it is automatically maximized in the event of an alarm.*
	Close: Enables you to close the application and return to the operating system.

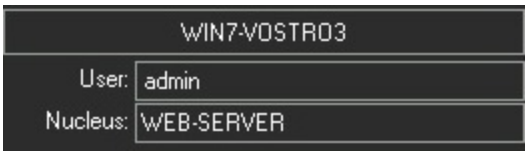
Video and Recording Elements

The ViconNet system enables you to view and record (VPK-NVR only) live video and audio and play back recorded video and audio by selecting devices and displaying their contents, as required. You can view and record the contents of selected devices using the following video and recording elements:

- **Current Details Area,** page 15
- **System Status Area,** page 16
- **Site List,** page 16
- **Site Map,** page 19
- **Groups,** page 21
- **Video Display Area,** page 23
- **Display Mode Controls,** page 29
- **Function Controls,** page 31
- **Control Dialog Display Area,** page 33

Current Details Area

The **Current Details** area displays the name of the currently logged in user and the name of the master Nucleus:



System Status Area

The **System Status** area provides the following information about the current state of system resources:

Number of Devices Recording (VPK-NVR only)

When the

button (Function Controls) is clicked, the selected device starts recording and the following information display is updated:

- **No. of Recording Cams and Mics:** The combined total of cameras and microphones that are currently recording.

A few moments are required for the information to be generated.

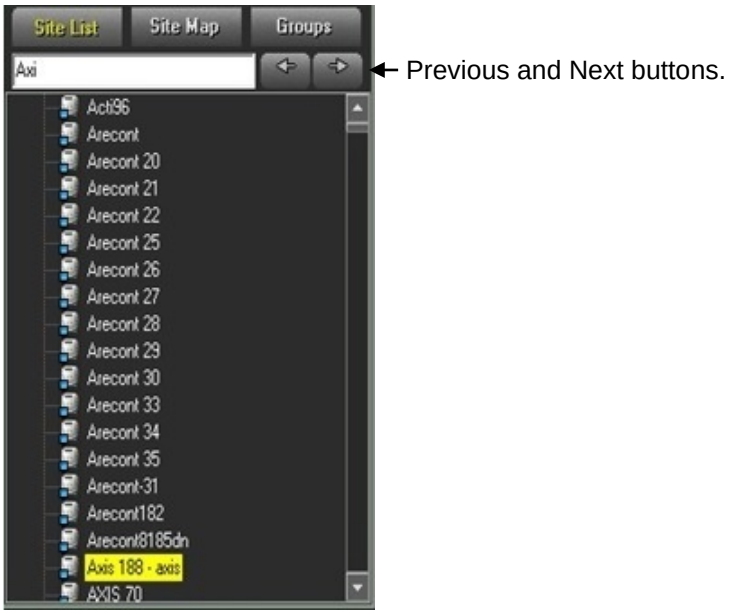
Scheduler State

The current operational state of the Macro Scheduler is displayed:

For details about the Macro Scheduler, refer to *Chapter 7, Managing Macros and Schedules*.

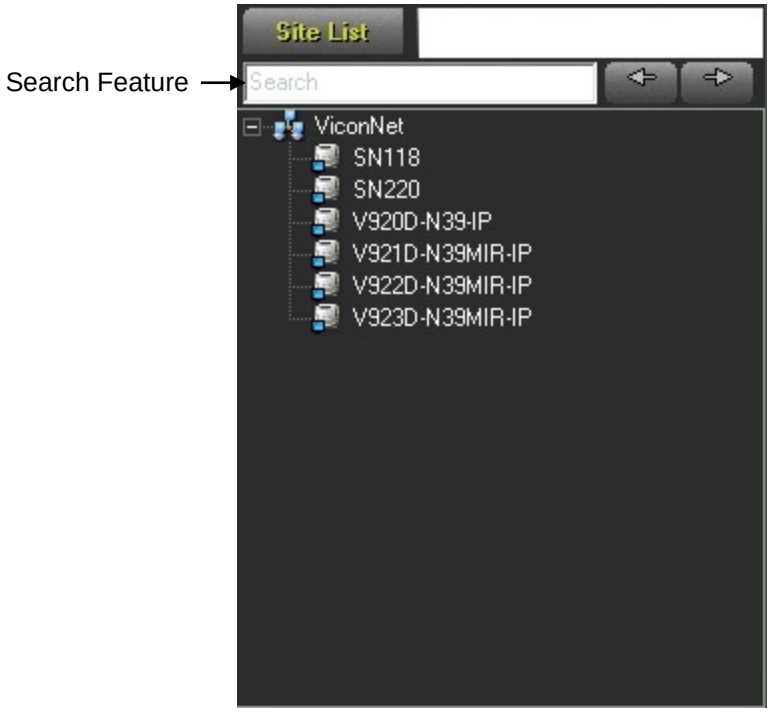
Search Feature

To quickly locate a device in any of the device lists, there is a search feature. Type the name of the device into the Search field. The search result will highlight in the list. A next and previous button provides navigation in the list as needed. This search feature is in several places within ViconNet where there are device lists, for example Macro editor.



Site List

The ViconNet **Site List** is a hierarchical list that displays the current transmitters and devices in the system. The **Site List** can be navigated using standard tree expand and collapse functionality. Each storage location contains the devices that are available for viewing and recording live video and audio segments and each transmitter and device list is correlated to a specific storage location.



The following five device types can be configured to accommodate your individual and organizational requirements:

Device Type	Description
Video or	**Camera or PTZ Camera**
Audio	**Microphone**
Detector	**Sensor**
Relay	**Relay**
Speaker	**Speaker**

NOTES:

*The cameras that appear in the **Site List** are automatically detected by the system during startup. If a camera is not physically connected to the system, it will not appear in the list. If the camera is disconnected*

*after startup, a red **X** icon ( ) is displayed next to the relevant camera in the **Site List** and a blank screen appears in the **Video Display** area.*

*For the Kollector, microphones appear automatically in the **Site List**, regardless how many microphones are actually connected. Only the currently associated physical microphones are operational. Each site can have up to 16 cameras, microphones and sensors connected to it (4 microphones and sensors for the Kollector Strike).*

Selecting a device starts that device's video/audio transmission and enables you to perform all viewing, listening and recording operations.

Using the **Site List**, you can select or deselect cameras and microphones for viewing and recording, as follows:

To view a camera or hear a microphone from the Site List:

- Select a camera in the list **or** drag and drop it from the list to the **Video Display** area. The following occurs:
  - The icon appears highlighted in yellow.
  - The live video transmission begins and is displayed in the selected location in the **Video Display** area. There is a *Connecting* indication until the video displays.
  - The pink border in the **Video Display** area automatically moves to the next available display location.
- Select a microphone by clicking its icon in the list. The following occurs:
  - The icon appears highlighted in yellow.
  - The audio transmission begins.

To reverse a selection:

Select the device in the list again. The following occurs:

- The icon is not highlighted in the list (it is gray).
- The live video and audio transmission is stopped. The video appears static in the **Video Display** area.

To view all cameras from a specific transmitter:

Drag and drop the transmitter from the list to the **Video Display** area. The following occurs:

- All camera icons are highlighted in the list.
- The live video transmission for all cameras connected to the transmitter begins and is displayed in the **Video Display** area.

NOTES:

*When you select a video display location that contains an active display, a pink border is displayed around the relevant device in the **Site List**.*

*You can also click the **STOP** button to stop all video and audio transmission immediately, if required.*

For the Kollector devices, the maximum number of cameras that can be selected simultaneously is sixteen, depending on the current display mode. If you select more than the maximum number, it will overwrite a previously selected camera.

A total of sixteen microphones and/or cameras can be selected simultaneously on the Kollector Force (4 on Kollector Strike).

You can also change the maximum number and location of the cameras you want to view and record (VPK-NVR only), as described in *Video Display Area*, page 23 and *Display Mode Controls*, page 29. Refer to *Chapter 4, Viewing and Listening to Live Video/Audio* and *Chapter 5, Recording Live Video/Audio*, for detailed procedures using the **Site List**.

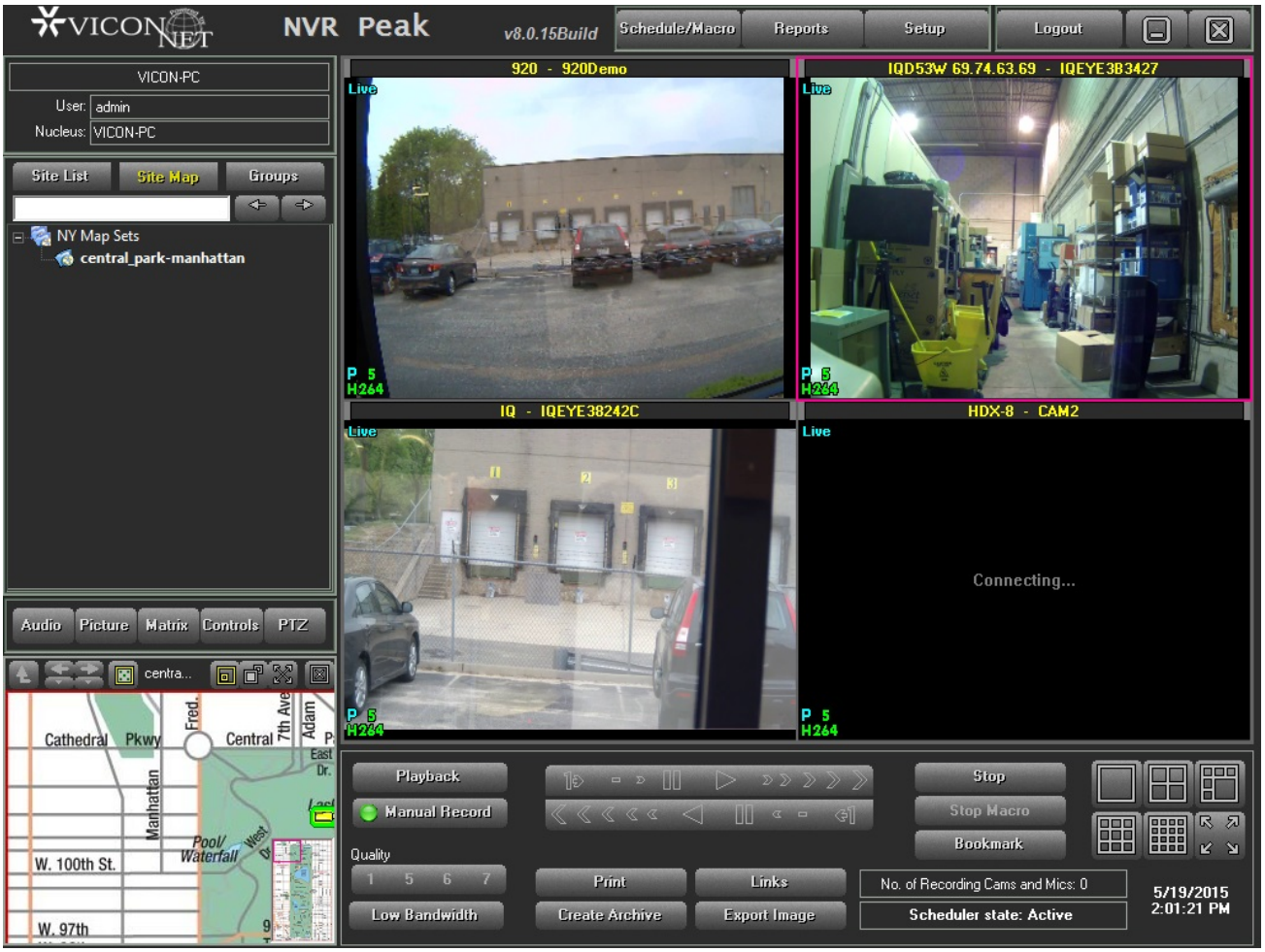
Site Map

The ViconNet **Site Map** provides you with the ability to define the location of WS/NVR/DVR units, cameras and microphones on a map of the physical environment/premises. Maps can be grouped into map sets. The map set you are currently working on is called the working set. The Working Set site maps can be viewed by clicking on **Site Map** in the left hand panel of the Main window. The **Site Map** list can be navigated in the same way as the **Site List**. However, the devices in the **Site Map** list are organized by maps and map sets, not by site (meaning, by physical location of devices as opposed to by device name).

You can define your maps and map sets by selecting *Map Sets* from the *System Settings* window. The image in the lower-left panel changes according to the object selected in the **Site Map** list.

Maps are loaded in to the system using the **Add New Map** utility. (For more details, refer to the *Defining Site Maps and Map Sets* section in *Chapter 3, Configuring the ViconNet system*.) Maps can be loaded from any media, including CDs and USB drives.

The map can be dragged to the middle of the editing space and then expanded or navigated, and so on, as described below.



The following options are available for working with the selected map in the Map Set:

Button	Description
	Enables you to navigate to the parent map.
	Enables you to navigate to other maps in the Map Set.
	Enables you to remove text labels from the map.
	Enables you to expand the picture.
	Enables you to return the map to its previous state (expansion).
	Enables you to maximize the map to fit the entire screen.
	Enables you to close the map image. The **Site List** tab is redisplayed in the left-hand panel.

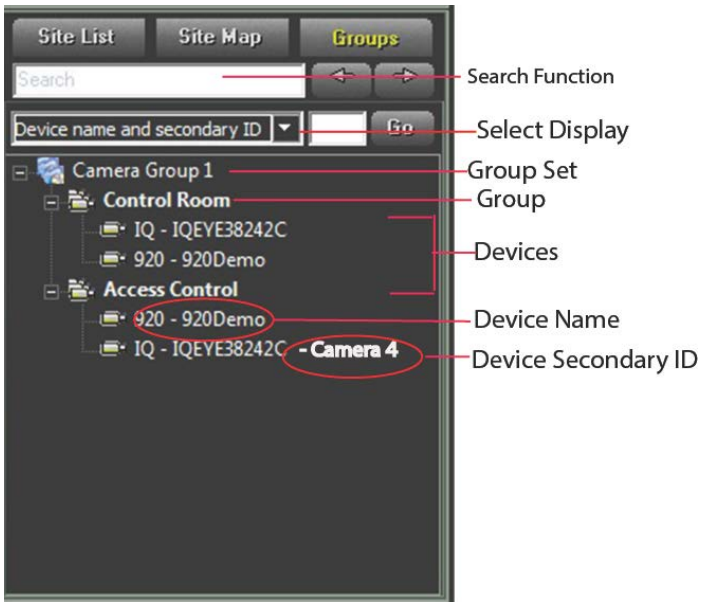
To activate or deactivate a camera, click the camera icon on the map. If the camera icon is flashing, it is deactivated. If it is steady, it is active.

NOTE: *If there are two monitors connected to a Kollector, clicking* ***Site Map*** *in the Main window opens the map set (the Working Set) on the second monitor.*

For more details about Site Maps, see *Chapter 3, Configuring the ViconNet System*.

Groups

The ViconNet **Groups** list is a hierarchical list like the **Site List**, which displays the transmitters and devices connected to your ViconNet system. The **Groups** list can be navigated using standard tree expand and collapse functionality in the same way as the **Site List**. However, in contrast to the **Site List**, which is organized by transmitters, the devices in the **Groups** list are organized by logical groups and group sets, where each group can consist of cameras and microphones from multiple distinct transmitters.



You can define your groups and group sets by selecting *Devices Groups Sets* from the *System Settings* window, as described in *Chapter 3*, *Configuring the ViconNet System*.

NOTE: *When defining device groups in the Devices Group Sets Management window, you can define one group set as the* ***Working Set****. This is the group that will appear in the* ***Groups*** *list in the Main window. To view a different group set, you must change the working set in the Devices Group Sets Management window.*

Groups are loaded in to the system using the **Add New Group** utility. (For more details about defining groups and group sets, refer to the *Defining Groups and Group Sets* section in *Chapter 3, Configuring the ViconNet System.*)

NOTE: *The* ***Groups*** *list is only enabled after at least one group has been defined in the Devices Group Set Management window.*

Individual devices can be dragged from a group to the **Video Display** area.

In the **Groups** list, you can select to list the devices by name, secondary ID (as configured in the *Groups Sets Management* window) or both.

To select whether to display device name, secondary ID or both:

- In the **Groups** list, select the required option from the dropdown list and click **Go**. The devices in the selected Group Set will be displayed according to your selection.

Selecting a device starts that device's video/audio transmission and enables you to perform all viewing, listening and recording operations.

Using the **Groups** list, you can select or deselect cameras and microphones for viewing and recording, as follows:

To view a camera or hear a microphone from the Groups list:

- Select a camera in the **Groups** list **or** drag and drop it from the list to the **Video Display** area **or** enter the device's secondary ID in the **Go** box and click **Go**.
- . The following occurs:
  - The icon appears highlighted in yellow.
  - The live video transmission begins and is displayed in the selected location in the **Video Display** area.
  - The pink border in the **Video Display** area automatically moves to the next available display location.
- Select a microphone by clicking its icon in the list. The following occurs:
  - The icon appears highlighted in yellow.
  - The audio transmission begins.

To reverse a selection:

Select the device in the list again. The following occurs:
The icon is not highlighted in the list (it is gray).

- The live video and audio transmission is stopped. The video appears static in the **Video Display** area.

NOTES:

*When you select a video display location that contains an active display, a pink border is displayed around the relevant device in the **Groups** list.*

*You can also click the **STOP** button to stop all video and audio transmission immediately, if required.*

Devices (cameras, servers and so on) can be added to a group by dragging them directly to the list of devices in the *Groups Editor* window.

For more details about Groups, see *Chapter 3, Configuring the ViconNet System*.

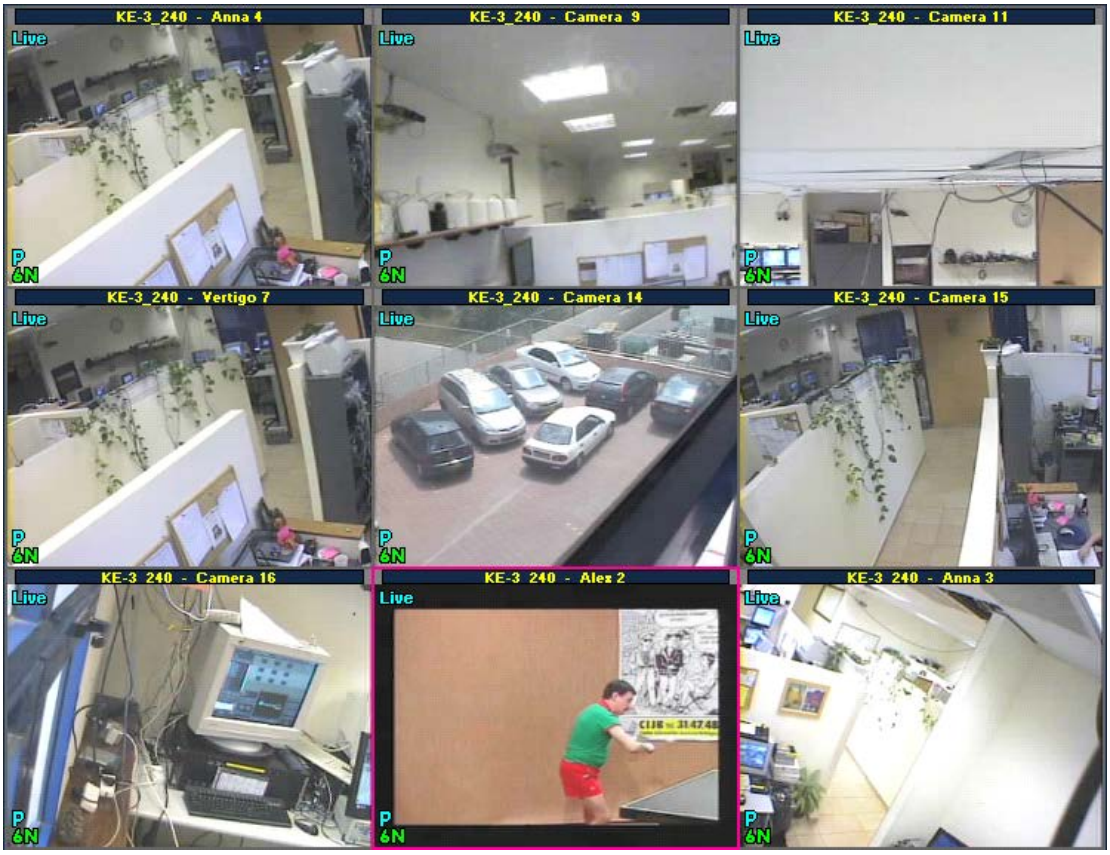
Video Display Area

The ViconNet **Video Display** area is for viewing and recording live video and audio and playing back recorded video and audio. You can view both live video and audio, as well as recorded segments from up to sixteen different cameras simultaneously in the video display locations in this area, as required.

You can display a camera's video in this area in one of the following ways:

- By selecting the camera from the **Site List**, **Site Map** or **Groups** list (the camera is displayed in yellow). The video is automatically displayed in the **Video Display** area.
- By dragging and dropping a camera from the **Site List**, **Site Map** or **Groups** list to the **Video Display** area.
- By entering the device secondary ID in the **Go** box at the top of the **Groups** list and clicking **Go**.
- By selecting a recorded camera in the *Navigator* window and then displaying its video in the **Video Display** area, as described in *Navigator List*, page 38.

The following example shows nine live video transmissions displayed in the **Video Display** area, with the name of each camera located at the top of each video display location.



The selected location (indicated by the pink border) then becomes the active location and its video and audio transmission is affected by the display mode controls (page 29), playback controls (page 33) and other controls (page 34).

NOTE: *The camera currently displayed in the active video display location is also indicated by a pink border around its icon in the* ***Site List/Site Map/Groups*** *list.*

When a camera's video is displayed in one of the video display locations, its related information is also displayed, such as the following:

- **Live**, **Playback** or **Recording** indications, according to the function currently being performed.
- The camera name during recording operations
- The recording time and date during playback operations.
- **P** (Primary) or **S** (Secondary) status of the site relative to this camera. The first site to operate a camera (whether locally or remotely) acquires Primary status relative to it. Any other site that accesses the camera while it is already being operated acquires Secondary status relative to that camera. If the

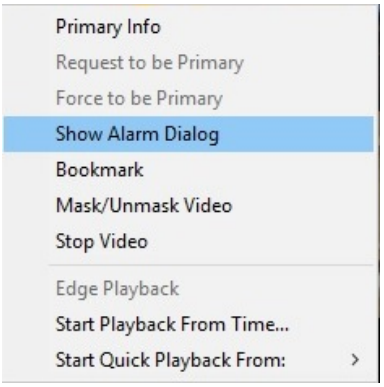
Primary site disconnects from a camera that currently has Secondary sites associated with it, the secondary site that connected earliest automatically acquires Primary status relative to that camera.

- The picture quality and refresh mode during Live and Playback operation. For example, indicates the quality 5 at the Normal refresh mode. (For details, refer to the *About Picture Quality and Refresh Mode* section, page 30.)

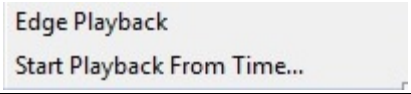
If you want to enlarge the size of an image in one of the video display locations, double-click the required location. The selected image is maximized to fill the entire **Video Display** area. You can double click the image again to restore it to its previous size.

You can also change cameras from one video display location to another within the **Video Display** area, as required, for example, when viewing live and recorded segments simultaneously. The default location for all the display modes is the top left, but you can change it by clicking in a different location. The pink border moves and indicates the new active location.

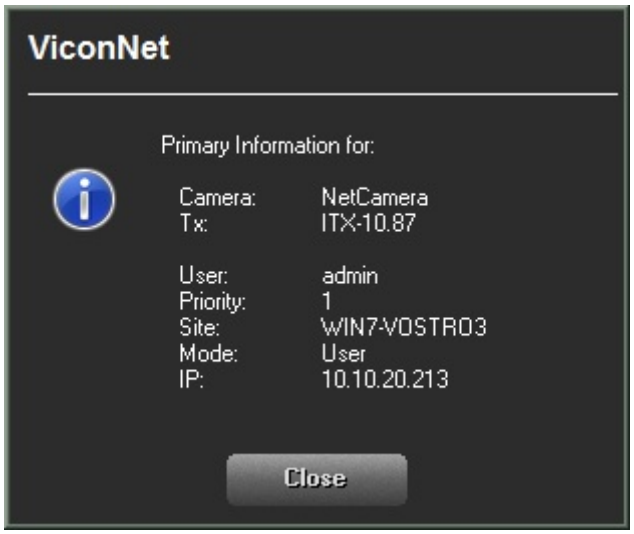
Right-clicking anywhere in a camera that is currently recording displays a shortcut menu with several options, as shown.



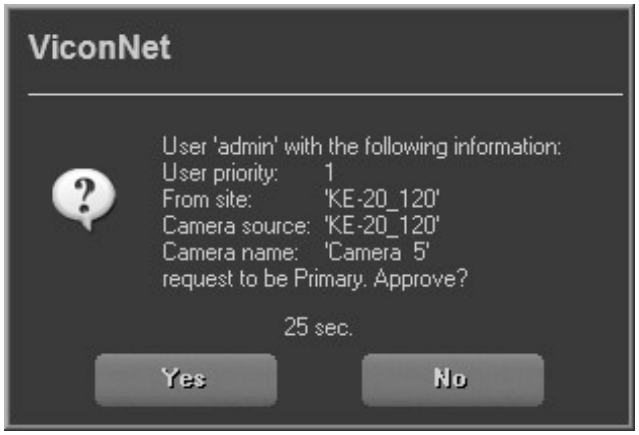
NOTE: *If the selected camera is live, all options are displayed. If the selected camera is not live, only the* ***Start Playback From Time*** *and* ***Edge Playback*** *options are displayed.*



- **Primary Info:** Displays the *Primary Information For* window, which shows details regarding the Kollector/Workstation that currently has Primary status relative to this camera.

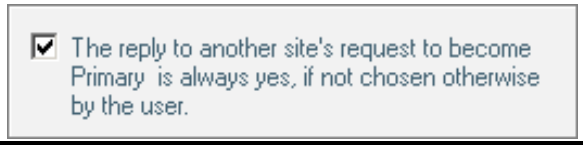


- **Request to be Primary:** Enables you to send a request to the current primary user to take control and become the primary user. If you request to be the primary user, a message is displayed on the current primary user's display.



  - The current primary user will select **Yes** or **No**.
  - When you have the same or higher priority, you can request or force.

NOTE: *In the Quality and FPS Priority window, selecting the checkbox on the lower-right side (default = checked) sets the response to automatically accept the* ***Request to be Primary*** *if 30 seconds pass with no response from the current primary user.*



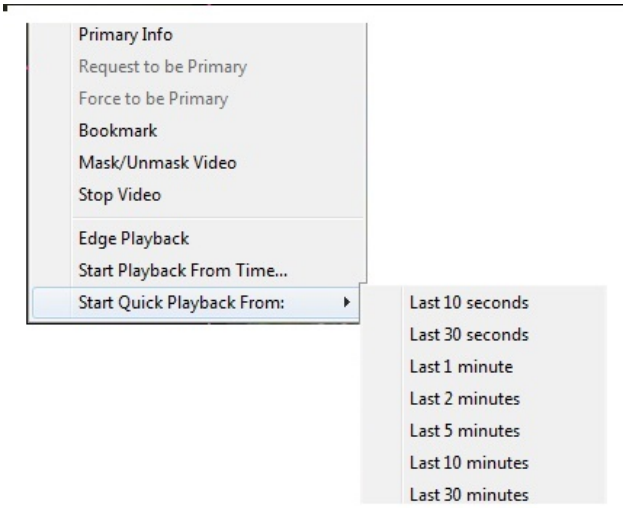
- **Force to be Primary:** Enables you to force yourself to be the primary user, providing that you have the same or higher user priority than the current primary user (as defined in the *User and Group Management* window). If you force yourself to be the primary user, the P in the corner of the display on the current primary users display changes to S and the S in the corner of your display changes to P.

  If the user is already the Primary user, the **Force to be Primary** option is disabled.

  If the user has lower priority than the current primary and selects **Force to be Primary**, the message "Request to be primary was not approved" will be displayed.

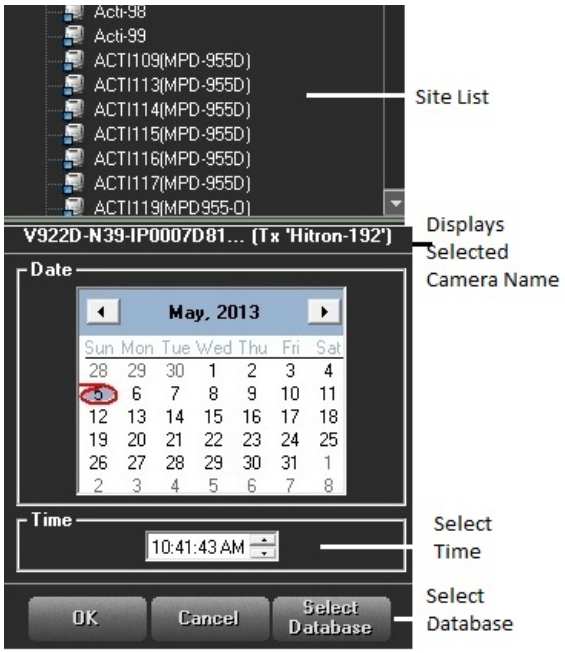
- **Start Quick Playback From:** Enables you to play video back from that camera (in an adjacent camera display location), without interrupting the recording process. This avoids having to remove one's eyes from the current live video while playing back to investigate suspicious activity, as would be the case if Playback is initiated from the *Navigator* window.

- **Edge Playback:** Enables you to play back video directly from the edge device user interface, as long as that device has the playback capability.



  For details about how to perform Quick Playback, refer to *Quick Playback* in *Chapter 6, Playing Back Recorded Video/Audio*.

- **Start Playback From Time:** Enables you to play video back from a live camera (in an adjacent camera display location). When **Start Playback From Time** is selected, calendar and time boxes are displayed.



To select the database to be played back, click **Select Database.** A site list with Audio Video Databases (AVDB) is displayed in the lower-left panel. If there is no data in the database, a message is displayed.

If there is data in the database, the playback image is displayed in the cell adjacent to the camera recording and it waits for you to press **Play**. If the selected database is the local database, you can either run it from there or by pressing **Playback** in the Navigator window. The advantage of activating the playback from the *Main* window, as opposed to from the *Navigator* window, is that all *Main* window functionality is still displayed.

To activate **Start Quick Playback From, Edge Playback** and **Start Playback From Time,** right-click the live camera (meaning, a camera that is currently recording) or right-click the camera in the **Site List**. If a camera is off, or if it is not live, the only options are **Start Playback From Time** and **Edge Playback**.

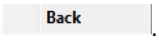
Display Mode Controls

The ViconNet Display Mode Controls enable you to select and modify the number of video display locations that are displayed simultaneously in the **Video Display** area by clicking the required icon. In the display modes with more than one video display location, you can use all or only some of the locations to view, listen, record and play back video and audio, as required.

For example, if you want to record video and audio from seven cameras, you would select display mode **Nine** and have two blank video display locations and seven active ones. Refer to *Chapter 6, Playing Back Recorded Video/Audio*, for detailed procedures for recording video and audio.

When performing viewing and playback operations, you can change the display mode during the operation without affecting the currently displayed video and audio. Refer to *Chapter 4, Viewing and Listening to Live Video/Audio*, for detailed procedures for viewing and playing back video and audio.

The ViconNet system provides the following display modes, which enable you to select the number of cameras from which to view or record video in the **Video Display** area of the *Main* window:

Display Mode	Description
	Single: Enables you to view or record from one camera.
	Two-by-two matrix (Quad): Enables you to view or record from up to four cameras simultaneously.
	Hexa (Six): Enables you to view or record from up to six cameras simultaneously.
	Three-by-three matrix (Nine): Enables you to view or record from up to nine cameras simultaneously.
	Four-by-four matrix (Sixteen): Enables you to view or record from up to sixteen cameras simultaneously.
	Full Screen: Enables you to **maximize** a selected video display location to fit the entire screen (including the **Site List**). To restore the maximized screen to its previous size, click the icon in the top right corner or right-click in the screen and click  . You can also click **<ESC>**.

NOTES:

*The upper left video display location in all of the display modes is the default video display location for the first camera that you select for display in the **Video Display** area, unless otherwise allocated.*

Refer to Chapter 4, Viewing and Listening to Live Video/Audio, Chapter 5, Recording Live Video/Audio and Chapter 6, Playing Back Recorded Video/Audio, for additional details about selecting cameras and video display locations.

In addition, double-clicking a video display location in the **Video Display** area enlarges the selected location to full video display size, which is the same as the **Single** display mode, described on page 29. To return the **Video Display** area back to its previous display mode, double-click the full display again.

TIP: *The display mode can also be changed from the Navigator window, if required, as described in the Changing the Display Mode section, page 46.*

About Picture Quality and Refresh Mode

The notation at the bottom-left of each camera view indicates the picture quality and the refresh mode of the image in the view.

For example, 5N indicates the quality 5 at the Normal refresh mode. These concepts are described in the following sections.

Picture Quality

Picture quality (also known as resolution) refers to the compression level of the video images. The following qualities are available for recording purposes (these refer to ViconNet devices and/or megapixel cameras using ViconNet mode; this does not pertain when the system is being run in H.264 mode):

Quality	Type	Properties
1	4 CIF	Better picture quality, but slower data transmission.
2		
3	2 CIF	
4		
5	CIF	Less clear picture quality, but faster data transmission.
6		
7	HCIF	
8		

The quality and refresh mode in which video was recorded is displayed during the first five seconds of playback.

The recorded video quality is determined according to the configuration settings for Manual Recording, Recording Management (at the camera's source site), Macro Creation and Pre/Post-Alarm (at the camera's source site). For additional details, refer to the relevant sections in *Chapter 3, Configuring the ViconNet System*.

When different recording options are requested concurrently, the recorded picture quality that applies is determined according to prioritization settings in the picture quality and FPS priority settings in the camera's source site. For details, refer to the *Picture Quality and FPS Priority* section in *Chapter 3, Configuring the ViconNet System*.

In order to improve transmission speed, the maximum quality of live images is set automatically according to the selected display mode, as follows:

Display Mode	Max Display Quality
Single	1
Two-by-two matrix	5
Hexa (Six)	5
Three-by-three matrix (Nine)	6
Four-by-four matrix (Sixteen)	7

The Single mode is assigned the highest available resolution, while other modes are assigned lesser resolutions, in proportion to their number of views. This is because the smaller views (for example, 3x3 or 4x4) generally do not benefit from higher resolutions and are equally legible in a lower resolution.

When the

buttons in the *Main* window **Function Controls** area are enabled, you can manually override the display mode-determined live picture quality for the currently selected camera. The qualities 1, 5, 6 and 7 are available for this purpose. The quality and refresh mode of the live video is displayed during the first five seconds following the manual Quality change. (For information about enabling the buttons, refer to the *Configuring Manual Recording and Video Quality* section in *Chapter 3, Configuring the ViconNet System*.)

Refresh Mode

The refresh mode refers to whether all the frame data (Full mode, represented by an **F** in the bottom-left of the camera view) is displayed each time or only changes that occur in the frames (Normal mode, represented by an **N** in the bottom-left of the camera view) are displayed. The view image is automatically played back in the refresh mode in which it was recorded.

For open platform cameras there is no **N** designation. The mode will either be **F** (full motion JPEG) or **MPEG/H.264**.

The refresh mode of the recorded image is determined according to the configuration settings for Manual Recording, Macro Creation and Pre/post Alarm. For additional details, refer to the relevant sections in *Chapter 3, Configuring the ViconNet System*.

Function Controls

The ViconNet Function Controls enable you to record or stop the live video and audio currently displayed in the **Video Display** area, as well as stop the macros currently running in the system, if required. Additionally,

an archive wizard is available that allows a quick archiving tool directly from the camera without using the playback screen.

Option	Description
	Records all video currently displayed in all the video display locations in the **Video Display** area and stores the recorded data into the predefined local storage location. To stop recording, click the **Stop Record** button. Refer to *Chapter 5, Recording Live Video/Audio*, for detailed recording procedures (VPK-NVR only).
	Stops the transmission of all video currently displayed in the **Video Display** area. To begin recording again, you must re-select the required cameras, as described in *Chapter 5, Recording Live Video/Audio*.
	Stops all macros currently running independently within the system or as a result of the scheduler. Macros control operations such as: • Preconfigured schedules. • Preconfigured alarm events. • Sequence sessions. • Manual macro execution. Refer to *Chapter 3, Configuring the ViconNet System* and *Chapter 7, Managing Macros and Schedules*, for additional details.
	When these buttons are enabled, you can manually override the live picture quality for the currently selected camera, as required. The qualities 1, 5, 6 and 7 are available for this purpose. (For information about enabling the buttons, refer to the *Configuring Manual Recording and Video Quality* section in *Chapter 3, Configuring the ViconNet System*.)
	Enters a bookmark in the events management log (requires ViconNet event management license).
	Enables ViconNet system to work in a low bandwidth network. When this button is pressed, the scale factor of the compression changes. The higher the compression, the lower the quantity of data (kB). In this case, smaller frames are transmitted, but more frames per second (FPS) are sent over the network. Low bandwidth functionality is subject to video priority settings.

NOTE: *If there are multiple users watching the same camera, from two locations, the low bandwidth is activated according to the settings in the Quality and FPS Priority window in the camera's source site and according to the priority of the user who selects it.*

***For example**: If one user has 1 Normal and the other user has 5 Normal priority and Highest Requested Quality is checked in the source site's Quality and FPS Priority window, then:*

If 5 Normal requests low bandwidth, it is not activated.

If 1 Normal requests low bandwidth, it is activated on both users (that is, it is forced on the other user).

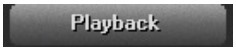
Option	Description
	Low bandwidth can also be configured by checking the **Low bandwidth** checkbox in the *Macro Editor* window (in the quality area). You can define whether or not museum search information is sent over low bandwidth. For more details, see the *Configuring Low Bandwidth* section in *Chapter 3*, *Configuring the ViconNet System*.
	To increase the maximum FPS available when working in low bandwidth, you can select that there be no museum search for low bandwidth from the Low Bandwidth System Settings window.
	Opens archive wizard. From this screen, select the cameras whose video is to be saved, the dates and times of the video to be saved and select the storage location.

Control Dialog Display Area

The **Control Dialog Display** area changes and provides access to different functionality according to the currently selected control in the **Other Controls** area. For example, if you click the button, the **Control Dialog Display** area displays additional controls specific to controlling the picture. Refer to the *Other Controls* section, page 34, for additional details about the controls that affect this area.

Playback Controls

The ViconNet system enables you to play back one or multiple recorded segments in the **Video Display** area.

The playback controls are enabled when selected video is played back in the **Video Display** area. (Playback is started by clicking  to access the *Navigator* window, from which camera and time interval selections are made and then clicking the button to redisplay the ViconNet *Main* window, in which the playback can be viewed.)

The playback start time for the recorded segment(s) depends on the start time that you defined in the *Navigator* window when choosing which segment(s) to play back. Refer to *Playback Start Time Selector*, page 44 and *Chapter 6, Playing Back Recorded Video/Audio*, for additional details.

You can then use the playback controls, to navigate the selected recorded segment during playback, as follows:

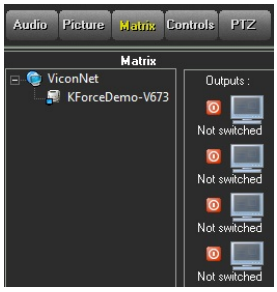
Option	Description
	Forward: Plays the recorded video and audio segment. This control also enables you to restart playback of a recorded video and audio segment that has been stopped automatically due to an alarm event. ***NOTE:*** *Refer to Chapter 3, Configuring the ViconNet System, for additional details about configuring alarm events.*
	Fast Forward: Fast-forwards the recorded segment at the following speeds (related to the normal speed): 1/4, 1/2, x2, x5, x10, x50 and x100. ***NOTE:*** *Place the mouse cursor over a button to view its related fast forward speed.*
	Backward: Rewinds the recorded video and audio segment.
	Fast Rewind: Fast rewinds the recorded segment at the following speeds (related to the normal speed): 1/4, 1/2, x2, x5, x10, x50 and x100. ***NOTE:*** *Place the mouse cursor over a button to view its related fast rewind speed.*
	Stop/Pause: Stops/pauses the current playback of the recorded segment.
	Prev: Displays the previous frame in the recorded segment.
	Next: Displays the next frame in the recorded segment.

Other Controls

The **Other Controls** area provides functions that affect one selected device at a time and are active only if a relevant device type is selected. As you select each of these controls, additional controls or information,

relevant to the selected control, are displayed in the **Control Dialog Display** area. Additionally, a button that allows connection to a list of URLs created for this system can be accessed.

The **Other Controls** area provides the following functions:

Function	Description
Audio	This button displays controls in the **Control Dialog Display** area for modifying the sound of the playback and live video images (change volume or mute).
Picture	This button displays controls in the **Control Dialog Display** area for modifying the color, brightness and contrast of the displayed video images. Changing the picture settings is irreversible (meaning that after the settings have been changed, the previous settings are lost). ***NOTE:*** *The last saved picture settings can only be restored by selecting* ***Restore*** *from the System Settings window, However, this restores ALL the last backed-up system settings. Refer to the Step 3: Controlling the Picture section in Chapter 4, Viewing and Listening to Live Video/Audio, for additional details.*
Matrix	This button displays controls in the **Control Dialog Display** area (lower-left panel) for viewing the four analog outputs made available by the matrix capable Kollector Force rear panel. The matrix feature enables four digital streams to be converted back to analog from the Kollector, and servers such as analog monitors or TVs can be used to view the output.  If there are no sites with the relevant hardware, the message: *"No site supporting the switching matrix exists"* appears.
Controls	This button displays buttons in the **Control Dialog Display** area by which system functions can be configured to operate via external device commands. This button is operational only when an external control panel has been configured on your system. Refer to the *Configuring a Control Panel* section in *Chapter 3, Configuring the ViconNet System*, for additional details.
PTZ	This button enables you to display video from a PTZ camera in the **Video Display** area. This option also automatically displays a driver-specific interface for PTZ-enabled cameras in the **Control Dialog Display** area and on the screen. The user must be authorized in the Site Authorization list to use PTZ and Set Preset controls. Refer to the *Operating a PTZ Camera* section in *Chapter 4, Viewing and Listening to Live Video/Audio*, for additional details.
Print	This button enables you to print out the *Main* window **Video Display** area panel, showing the frames currently being displayed. Refer to *Chapter 9, Printing/Exporting Frames and Creating AVI Files* for additional details.

Function	Description
	This button displays the *Navigator* window, enabling you to select recorded video and audio segments for playback viewing and listening. Refer to *Navigator Window*, page 36 and *Chapter 6, Playing Back Recorded Video/Audio*, for additional details.
	This button enables you to save a selected single frame or group of consecutive frames being viewed in playback to any network destination as JPEG images. Refer to *Chapter 9, Printing/Exporting Frames and Creating Video Files* for additional details.
	Opens the list of URL links.

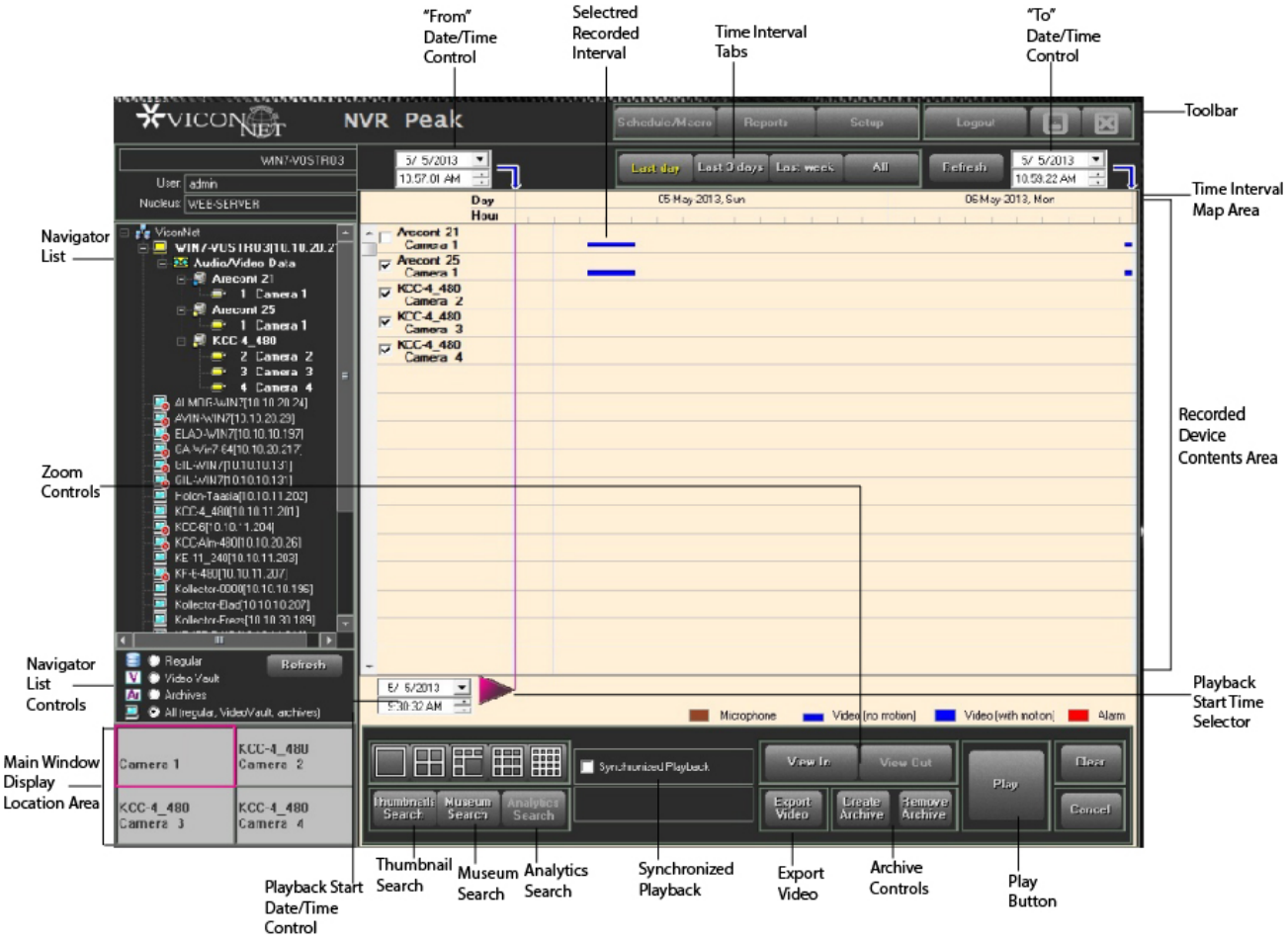
Navigator Window

The *Navigator* window, which is accessed by clicking the **Playback** button in the ViconNet *Main* window, displays a visual mapping of the storage location, enabling you to:

- Select recorded video and audio segments.
- Change the *Main* window display location.
- Select the playback time interval.
- Select the playback start time.
- Display and play back recorded video and audio content in the *Main* window.
- Create or remove archives of recorded video and audio segments.
- Link related audio and video.
- Synchronize multiple playback segments.
- Search for unique recorded segments.
- Create Video files.

Each of the above tasks, which are available for playing back recorded video and audio, is described in detail in *Chapter 6, Playing Back Recorded Video/Audio*.

The following example illustrates the elements and options in the *Navigator* window, which provide access to all playback functionality:



- **Navigator Window Toolbar,** page 38
- **Navigator Area,** page 38, which includes the following elements:
  - Navigator List
  - Navigator List Controls
- **Recorded Device Contents,** page 41, which includes:
  - Recorded Device Contents Area
  - Time Interval Tabs
  - "From" and "To" Date/Time Controls
  - Time Interval Map Area
  - Playback Start Time Selector
  - Playback Start Date/Time Control

    - Selected Recorded Interval
    - Zoom Controls
- **Main Window Display Location Area,** page 45
- **Functions and Settings,** page 47, which includes the following elements:
    - Museum Search
    - Synchronized Playback
    - Archive Controls
    - Thumbnails Search
    - Export Video
    - Analytics Search
    - Play Button
    - Clear and Cancel Buttons

Navigator Window Toolbar

The *Navigator* window toolbar is an extension of the ViconNet *Main* window toolbar, featuring identical options and functionality, as described in *Main Window Toolbar*, page 11.

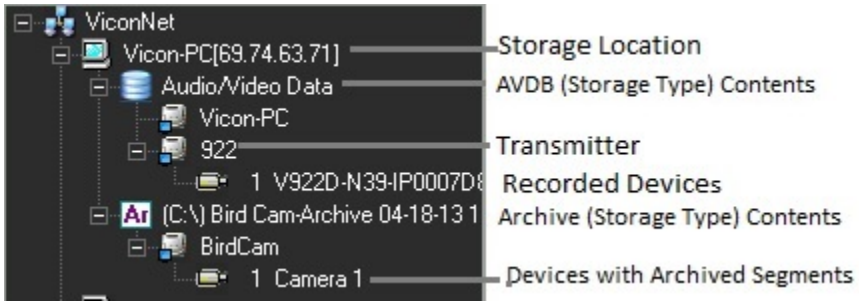
Navigator Area

The window elements by which you can navigate and select the system devices are described in the following sections:

- **Navigator List**, page 38
- **Navigator List Controls**, page 40

Navigator List

The *Navigator* list displays a hierarchical list of the current storage location sources, transmitters and devices configured in the system, as well as any currently defined archives. The *Navigator* list can be navigated using standard tree expand and collapse functionality.

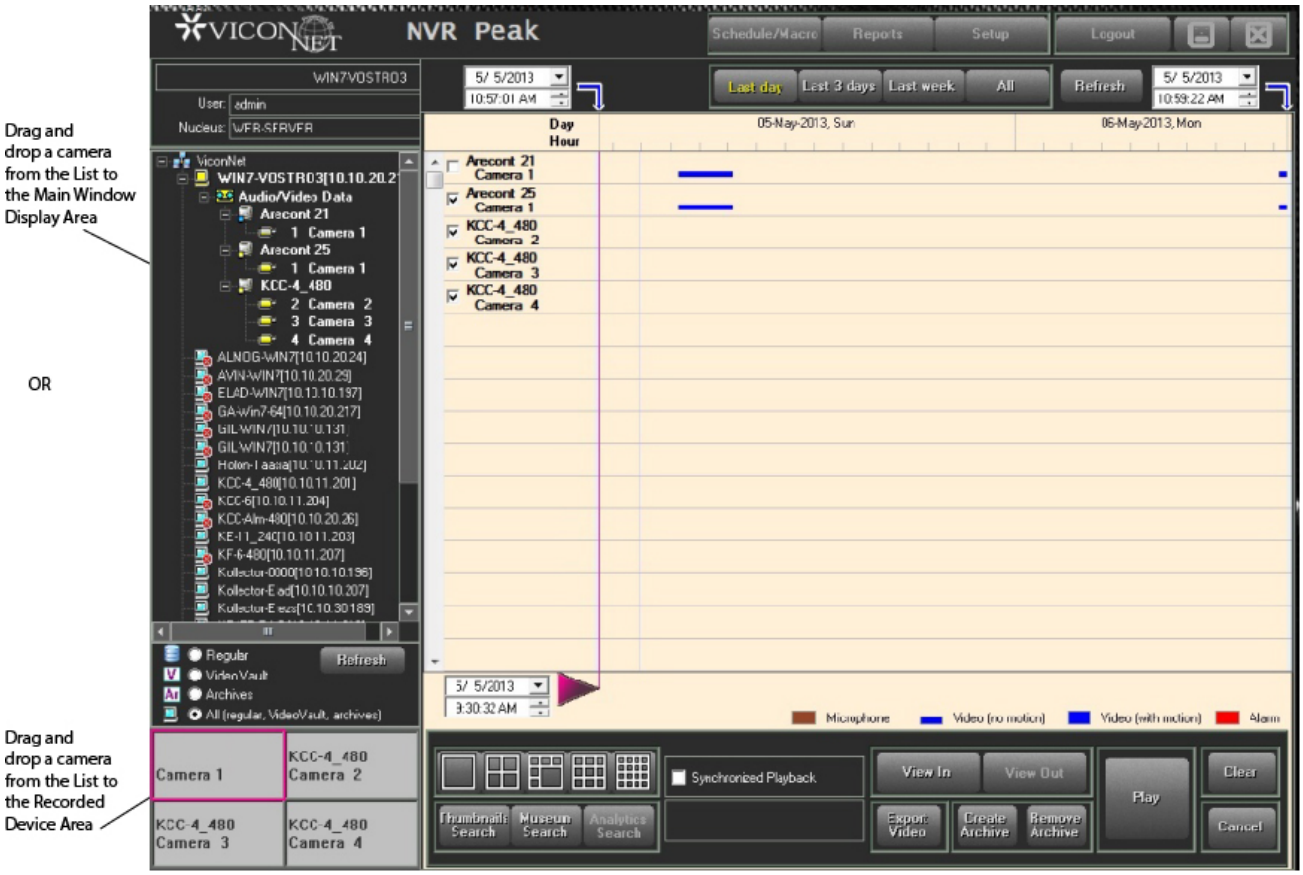


Each storage location (represented by a site name plus its IP address) contains the contents of all recorded devices available for viewing and playing back recorded video and audio segments.

Each transmitter and camera list is correlated to a specific storage location, within a storage type – **AVDB** (Audio and Video Database) or **Archive**. The AVDB contains all saved (recorded) video and audio data, while the Archive contains the previously archived video and audio data. Data from both storage types is available for playing back.

Using the *Navigator* list, you can select or remove recorded cameras for viewing, as follows:

To view recorded contents:



A camera or microphone is selected by clicking its icon in the list.

The following occurs:

- The icon appears highlighted in yellow.
- An automatic scan for the device's recorded contents in the storage location is performed.
- The camera or microphone name appears selected in the **Recorded Device Contents** area and its recorded contents are displayed.
- The name of the camera appears in the next default video display location in the **Main Window Display Location** area.

To reverse a selection:

- Select the camera or microphone in the list again. The following occurs:
  - The icon is not highlighted in the list.
  - The camera or microphone information is removed from both the **Main Window Display Location** area and the **Recorded Device Contents** area.

To remove the camera or microphone from the Main Window Display Location area but still view its recorded contents:

- Deselect the camera or microphone in the **Recorded Device Contents** area. The following occurs:
  - The icon is not highlighted in the list.
  - The camera name is removed from the **Main Window Display Location** area.
  - The camera or microphone name appears as deselected

in the **Recorded Device Contents** area, but its recorded contents are still displayed.

If you select more than the maximum number of cameras or microphones, you will be prompted to remove a camera or microphone to make room for another one. (For the Kollector devices, the maximum number of cameras that can be displayed simultaneously is sixteen, depending on the current display mode; for the Kollector Force, sixteen microphones; for the Kollector Strike, 4 microphones.) You can also change the maximum number and location of the recorded cameras that you want to view and play back, as described in *Main Window Display Location Area*, page 45.

Navigator List Controls

The Navigator list controls, displayed at the bottom of the Navigator list, enable you to define what is displayed in the Navigator list, as follows:

Regular: Displays only the regular databases that contain recorded video and audio segments. Refer to *Chapter 5, Recording Live Video/Audio* for additional details about recording live video and audio.

Archives: Displays only the archives (and their relevant devices) that have been created in the system. Refer to *Chapter 6, Playing Back Recorded Video/Audio* for additional details about creating archives and playing back recorded/archived video and audio.

Video Vault: Displays the recorded data that has been designated to be saved in the video vault. Refer to *Chapter 3, Configuring the ViconNet System, Storage Database*.

Both (regular & archives): Displays both the regular databases (and their relevant devices) and all current archives (and their relevant devices).

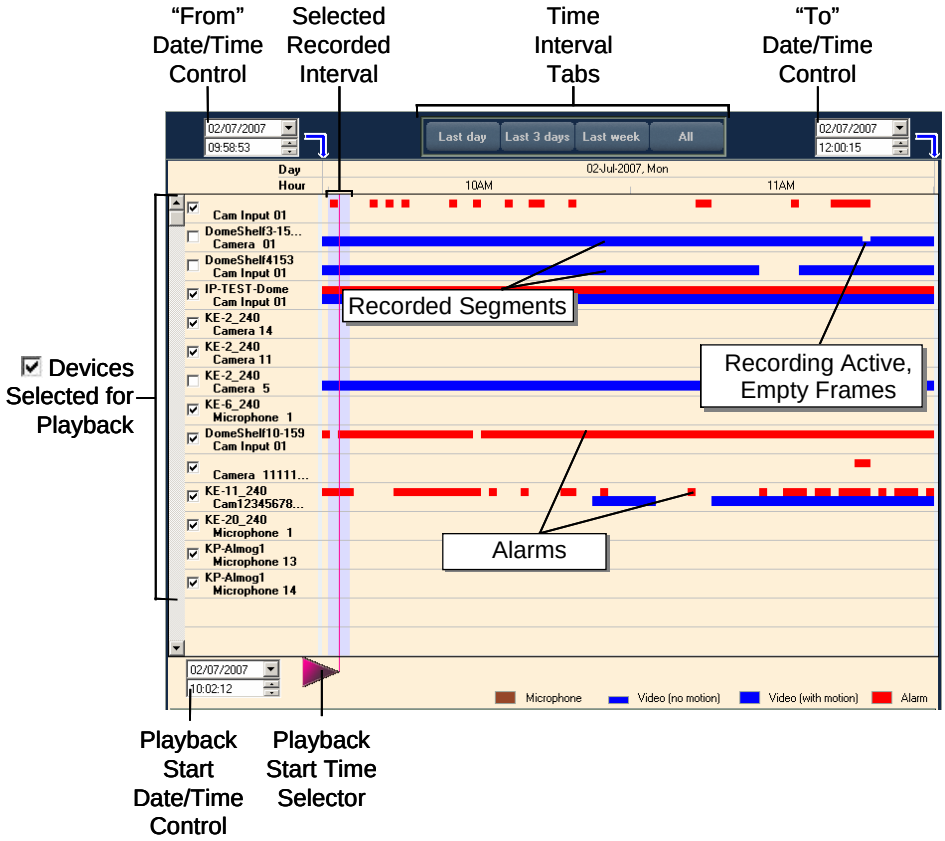
Recorded Device Contents

The recorded devices selected for playback and other purposes are managed within the **Recorded Device Contents** area and are managed using the elements described below:

- **Recorded Device Contents Area,** page 41
- **Time Interval Tabs,** page 42
- **"From" and "To" Date/Time Controls,** page 43
- **Time Interval Map Area,** page 43
- **Playback Start Time Selector,** page 44
- **Playback Start Date/Time Control,** page 44
- **Selected Recorded Interval,** page 44
- **Zoom Controls,** page 45

Recorded Device Contents Area

The **Recorded Device Contents** area appears as follows:



The **Recorded Device Contents** area displays a list of the cameras and microphone that have been selected for viewing and playing back their recorded contents, as described in *Navigator List*, page 38.

The list in this area displays the name of each selected camera or microphone, as well as a graphical representation of the recorded contents, which appears as a horizontal bar with the following indications:

- Blue indicates a recorded segment.
- Half-height blue line indicates a recording where no data was found (empty frames).
- Red above a recorded segment indicates an alarm event.
- Brown indicates an audio recording.

In addition, a legend for the currently displayed information is displayed at the bottom of the **Recorded Device Contents** area, as shown in the following example:

NOTES:

The recorded contents that are displayed depend on the playback time interval you select, as described in Time Interval Tabs, below and Date/Time Controls, page 43.

*You can also zoom the recorded segments in the **Recorded Device Contents** area, as described in Zoom Controls, page 45.*

Next to each camera or microphone in the list is a checkbox, enabling you to select and deselect it as an active viewing camera for display in the *Main* window. You can select up to sixteen cameras depending on the selected display mode, (as well as sixteen microphones for the Kollector Force or four microphones for the Kollector Strike), at one time from which to view and play back recorded video and audio, as described in *Navigator List*, page 38.

Time Interval Tabs

The time interval tabs enable you to quickly select the range of time for the recorded segment(s) that you want to view and play back in the **Recorded Device Contents** area, as follows:

Tab	Description
Last day	Displays all recorded segments for the selected cameras and microphone during the **last 24 hours** (from the current time). This option is the default.
Last 3 days	Displays all recorded segments for the selected cameras and microphone during the **last 72 hours** (from the current time).
Last week	Displays all recorded segments for the selected cameras and microphone during the **last 7 days** (from the current time).
All	Displays all recorded segments for the selected cameras and microphone regardless of when the recording occurred.

When you select a time interval tab, the **Time Interval Map** area changes to reflect your selection, as described below. The display of the recorded contents of the selected device is also updated, as described in *Recorded Device Contents Area*, page 41.

Refer to the following section for an alternate time interval selection method.

Date/Time Controls

The **From** and **To** Date/Time controls

in the **top-left** and **top-right** of the window enable you to specify an exact start (**From**) and end (**To**) date and time for the recorded segment(s) that you want to view and play back in the **Recorded Device Contents** area.

This alternate time interval selection method (used instead of the time interval tabs) lets you fine-tune the time interval period. Using the time interval controls, you can select a specific:

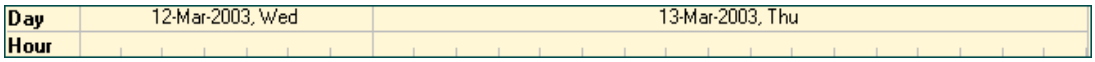
- Date range by selecting To and From dates for the recorded segment(s) you want to view (using a popup calendar).
- Time range (hour, minutes and seconds) for the recorded segment(s) you want to view by specifying the required start and end time.

After you select a date range and/or time range, you must click the **View In** (Zoom Controls) button to implement the selection. The **Time Interval Map** area is automatically updated according to the dates and times specified, as described below. In addition, all the video and audio segments recorded during the date and time range are displayed, as described in *Recorded Device Contents Area*, page 41.

NOTE: *The time interval controls are used in the Selecting Payback Time Interval procedure in Chapter 6, Playing Back Recorded Video/Audio.*

Time Interval Map Area

The **Time Interval Map** area displays a graph with the current range of time specified by the selected time interval tab or controls, as follows:



When you modify the time interval, as described in *Time Interval Tabs*, page 42, or *Time Interval Controls*, above, the **Time Interval Map** area automatically changes and reflects the new time interval.

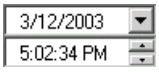
Playback Start Time Selector

The playback start time selector is a scrollable pink arrow with a vertical line running the length of the **Recorded Devices Content** area. You can move the arrow to indicate the location in the recorded segment where the playback will begin when it is played back in the *Main* window.

When you click on the pink arrow, a tooltip appears, displaying the date and time of its current location in the recorded segment. This enables you to move the arrow and pinpoint the exact playback start time, if required.

For detailed procedures for using the playback start time indicator, refer to the *Selecting the Playback Start Time* section in *Chapter 6, Playing Back Recorded Video/Audio*.

Playback Start Date/Time Control

You can also set the playback start time by using the Start Date/Time control 

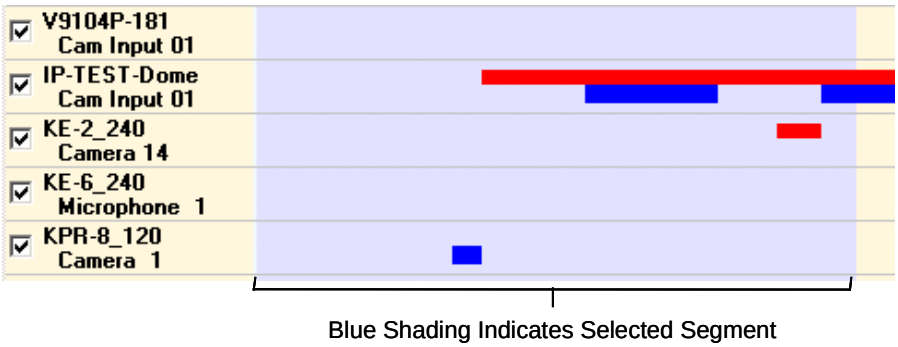
on the **bottom-left** side of the window.

Selected Recorded Interval

Recording time segments must be selected in order to implement various procedures, for example, to Zoom within a select a time frame. (For details regarding the Zoom feature, refer to the *Zoom Controls* section, page 45.)

To select a recorded segment:

- In the **Recorded Devices Content** area, hold down the left mouse button at the required starting point of the segment and drag the mouse pointer to the required ending point. Blue shading covers the selected segment, as shown in this example:



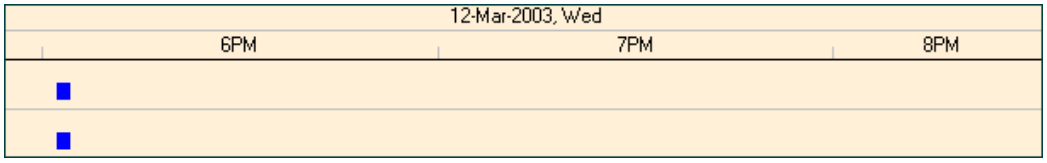
Zoom Controls

The Zoom Controls enable you to view in and out of a selected segment in the **Recorded Device Contents** area to make it easier to view. This provides you with the option to fine-tune your view of a selected segment and view only the required portion, which makes it easier to select a specific playback start time, as described in both *Time Interval Tabs*, page 42 and *Date/Time Controls*, page 43.

Option	Description
View In	Zooms in on the selected segment in order to fine-tune the selection capability and simultaneously updates the **Time Interval Map** accordingly. This option is also used to implement the selections you make in the Date/Time controls, as described on page 43.
View Out	Zooms out of the selected segment, returning the **Time Interval Map** area to its previous display status. This option is available according to the number of "zooms in" that were triggered.

To zoom in on a selected time segment:

1. Select the required segments, as described in the *Selected Recorded Interval* section, page 44.
2. Click the View In button. The **Time Interval Map** area time line is changed according to the indicated zoom.



3. To redisplay the time line before the Zoom action, click the View Out button.

The Zoom feature is used in the *Step 4: Zooming the Video Display* section in *Chapter 4, Viewing and Listening to Live Video/Audio*.

Main Window Display Location Area

The **Main Window Display Location** area is a small graphical representation of the **Video Display** area in the *Main* window.

This area enables you to choose where each selected device in the **Recorded Device Contents** area will be displayed in the *Main* window for viewing and playback operations.

The relevant device name is displayed in the next default location when you perform any one of the following actions:

- Select a device in the *Navigator* list.

  -OR-

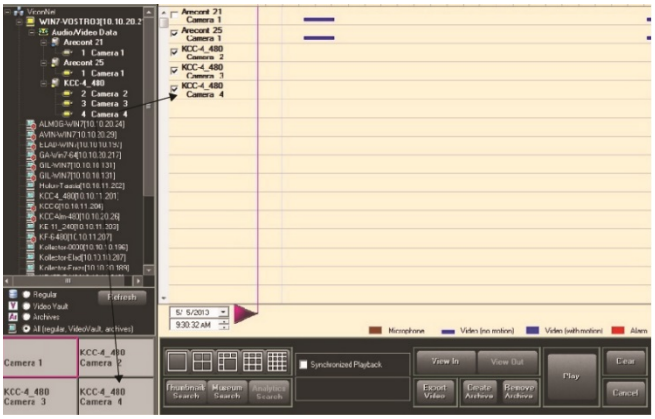
  Drag and drop a camera from the Navigator list:

  - To the **Recorded Device Contents** area.

    -OR-

  - To the **Main Window Display Location** area.

  -OR-



- Select a deselected device in the **Recorded Device Contents** area.

NOTES:

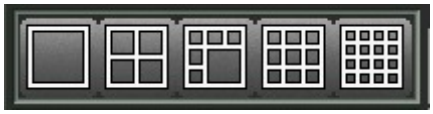
The current default video display location is indicated by the pink border and can be changed by clicking on a different location.

*Only one camera can be placed in each video display location. For example, if display mode **Quad** is selected, only four cameras can be selected in the **Recorded Device Contents** area and, therefore, displayed in the **Main Window Display Location** area.*

Changing the Display Mode

The number of video display locations in the currently selected display mode determines the number of cameras that can be selected at one time (up to a maximum of sixteen). The first time you access the *Navigator* window, the *Main* window display location (**Quad**) is displayed.

The display mode can be changed from the *Navigator* window by clicking the required Display Mode icon (located under the **Main Window Display Location** area).



Thereafter, when the **Play** button is selected, the devices in the **Main Window Display Location** area are displayed in their respective locations in the *Main* window, ready for viewing and playing back.

TIP: *The display mode can also be changed from the Main window, if required, as described in Display Mode Controls, page 29.*

Functions and Settings

The functions and settings provided by the *Navigator* window are described in the following sections:

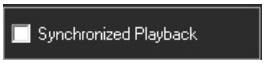
- **Museum Search,** below
- **Synchronized Playback,** page 47
- **Thumbnails Search,** page 48
- **Export Video,** page 48
- **Analytics Search,** page 48
- **Archive Controls,** page 48
- **Play Button,** page 49
- **Clear Button,** page 49
- **Cancel Button,** page 49

Museum Search

The

button enables you to search for a specific camera's data within a defined region of the database, saving you having to review the whole database. You can locate all the video segments that include a specific difference, for example, a main door opening, or a car being moved. (For details, refer to the *Museum Search* section in *Chapter 6, Playing Back Recorded Video/Audio*.)

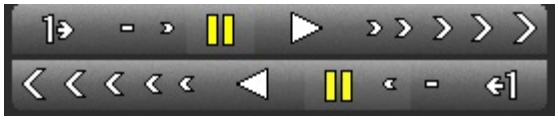
Synchronized Playback

When the 

checkbox is selected, prior to selecting the **Play** button, the *Main* window playback controls will apply simultaneously to all the selected devices.

When you select the

button, the *Navigator* window is replaced by the *Main* window, enabling you to view and play back the selected recorded cameras and microphone in that window's **Video Display** area, as described in the previous sections.

The *Main* window playback controls  (refer to page 33) then enable you to view and play back the recorded segments for the selected cameras and microphone according to the selected time interval, playback start time, display mode and video display location.

If **Synchronized Playback** is **not selected**, then the playback controls will apply to only one selected camera at a time. That camera is selected by clicking its block in the **Main Window Display Location** area (the

selected block will have a pink border). The *Main* window playback controls then apply only to the selected camera.

The **Synchronized Playback** checkbox is selected automatically whenever a microphone is selected. (The **Synchronized Playback** selection is mandatory for audio playback.)

This option is used in the *Displaying Video/Audio Content* procedure in *Chapter 6, Playing Back Recorded Video/Audio*.

NOTE: *The **Synchronized Playback** checkbox must be selected before clicking the **Play** button. The synchronization of devices only applies to Playback mode.*

Thumbnails Search

The

button enables you to search a selected video segment on open standard cameras for the exact video required. For details, refer to *Chapter 6, Playing Back Recorded Video/Audio* and *Chapter 9, Printing/Exporting Frames and Creating Export Video Files*.

Analytics Search

The

button enables you to search for video displaying behavior violations from one camera at a time. (This is only available if ViconNet VI has been installed and configured on the system; it can NOT be used for Vicon IQeye analytics.) Select a defined segment of time from the selected camera. Clicking the **Analytics Search** button will display video to show each violation during the selected time. A slider visually represents when the violation occurred in that time period.

Archive Controls

The archive controls enable you to create or remove archives that contain specific recorded data from specific devices:

Option	Description
	Enables you to create a new archive, which includes specifying the archive location, name and contents. The archive can also be created directly from a selected camera from the Main screen.
	Enables you to remove an archive and all its contents.
	Enables you to create a video clip to a DVD player or media player.

The archives are included in the *Navigator* site list together with other databases and can be selected for viewing, or any other file operations, as required.

All playback functions can be performed on the archived data in the same way as regular recorded data, as described beginning from the *Selecting Recorded Video/Audio* section in *Chapter 6, Playing Back Recorded Video/Audio*.

You can archive directly to a CD, DVD or USB. Archives can be played on any PC, from an automatically started "Player" version of the ViconNet application. (The ViconNet application does not have to be installed on the PC.)

If the System Authentication feature is configured, an authentication status is added to the archive, which enables verification that live or played-back ViconNet-produced videos were not tampered with. Refer to the *Configuring System Authentication* section in *Chapter 3, Configuring the ViconNet System* for more details.

Play Button

After a camera and recorded time interval is selected, clicking the

button displays the ViconNet *Main* window, in which the playback can be viewed in the **Video Display** area.

Clear Button

The

button clears the current *Navigator* window settings.

Cancel Button

The

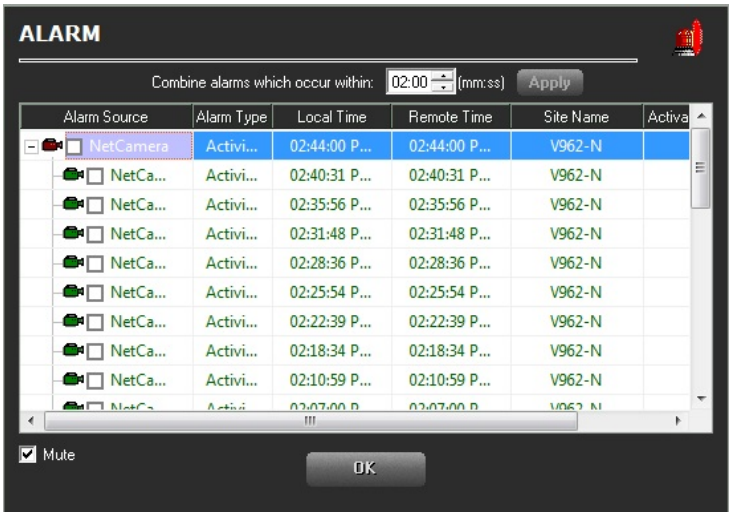
button closes the *Navigator* window and reinstates the *Main* window.

Alarm Window

Whenever an alarm event occurs in the system, regardless of the window in which you are currently working, the *Alarm* window is displayed as a popup window on top of your current window in the bottom-left corner. You can drag the *Alarm* window to anywhere on your screen and it remembers its last location the next time it is opened.

If you want to open the alarm dialog manually, right click on the Main screen. A choice to show the Alarm Dialog box will be offered. Click on that to display the Alarm window.

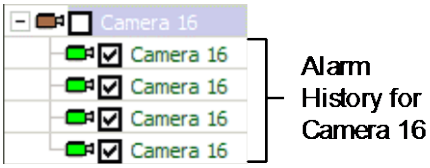
The *Alarm* window displays the current alarm (indicated by a red icon), as well as all recently alarmed devices (indicated by a green icon).



The **Mute** checkbox enables you to mute the alarm siren. While this is selected, you can still view the video from the device on which the alarm event occurred.

The siren is auto-enabled (the **Mute** checkbox is automatically deselected) after each new alarm.

The *Alarm* window contains the following information:

Column	Description
Detector Name	The name of the device on which the alarm event occurred. When you click the device's icon, the alarm history for that device is displayed, as shown in the following example:  ***NOTE:*** *The ☑ checkbox is provided for your optional use, for example, to remind yourself which alarms you have already viewed.*
Alarm Type	The type of alarm.
Local Time	The local time of the alarm, translated from the local time zone where the alarm event occurred.
Remote Time	The time at the remote location where the alarm event occurred. ***NOTES:*** • *If the alarm occurred locally or at a site in the same time zone, the local time and remote time will be identical.* • *If the alarm occurred at a remote site in a different time zone, the local time will display the local time zone translation of the remote time.* ***Example:*** *If the alarm occurred in London at 0700 and the display you are looking at (the Nucleus) is in Eastern US, the remote time displayed is 0700 and the local time is 0200.*
Site Name	The name of the Kollector/NVR/Workstation.
Activations Number	Indicates the number of times an alarm has been activated on the specific device within a specific time period. Each time the alarm is activated, another alarm event line is added to the alarm history for that device (except in the case of a re-activation, as described below). In cases where the alarm was activated and then re-activated within a very short period of time afterwards, the re-activation of the alarm is **not** displayed in the alarm history.

Column	Description
Combine Alarms which occur within …	The time interval that passes after an initial alarm, in which another alarm action will not trigger a new alarm, but will cause an increment of +1 in the **Number of Activations** field. This is useful if there are a lot of similar alarm triggers and you do not want to continuously activate new alarms.

NOTE:

*In the Alarm Setup window, the value in the field **Min time between alarms** field determines how much time must pass after the first and subsequent alarms before a new alarm is generated (for a specific camera).*

*The difference between **Min time between alarms** and the **Unite Alarms which occur within…**, is that the **Min time between alarms** field defines that an alarm is not generated within a certain time, where as the **Combine Alarms which occur within…** field determines which alarms are combined as additional activations of the last alarm.*

Example:

***Minimum time between alarms** = 1 minute*

***Combine alarms which occur within** = 2 minutes*

*If alarms are continuously being generated, a new line only appears in the Alarms popup screen after one minute has passed. If an alarm occurs between one and two minutes after the former alarm, it is added to the previous alarm's data (existing row) as an additional activation. If **Combine alarms which occur within...** is smaller than **Minimum time between alarms,** the number of activations is always one and each alarm generates a new row (alarm.)*

In order for the *Alarm* window to pop up during an alarm event, the specific device must be configured in the *Active Detectors and Associated Macros* window, as described in *Chapter 3, Configuring the ViconNet System*.

NOTES:

When an alarm event occurs in the system, you will notice that the relevant red LED on the Kollector Force front panel blinks. Alarm sensors are NOT defined when version 6 is installed. The sensor must first be added and configured in Alarm setup. Refer to Alarm Configuration in Chapter 3.

When a macro is running as a result of an alarm event, the following is applicable:

- *If the macro is performing **display operations**, all functions in the ViconNet Main window, except for the **Stop Macro**, **Schedule/Macro**, **exit** and **minimize** buttons, are disabled.*
- *If the macro is performing **all other recording operations**, all functions in the ViconNet Main window remain operational.*

You can also generate an Alarm History report that contains all the alarms that occurred in the system, as described in *Chapter 8, Generating Reports*. Video can be played back from this report.

Auto Maximize Feature

If the application is minimized (refer to the **Minimize** button description, page 15) it will be maximized automatically in the event of an alarm.

Logging Out and Exiting

Logging Out

Logging out is performed when you want to exit from the ViconNet application but need the application to remain open, for example, to log in as a different user.

To log out of the ViconNet application:

1. Click

in the Main window toolbar. The following message is displayed:

2. Click **Yes**. The ViconNet *Login* window is redisplayed, as described in *Logging In*, page 8.

NOTE: *If the user is not authorized to logout, a **Change User** button replaces the **Logout** button. Once **Change User** has been pressed, the Login window appears, with the **Cancel** button enabled (in case the user regrets trying to log out).*

Exiting the Workstation

Exiting is performed when you want to exit the ViconNet application.

To close the ViconNet Workstation and exit to the operating system:

1. Click the

to display the *Setup Site Selection* window. (For details about this window, refer to the *Activating the Configuration Functions* section in *Chapter 3, Configuring the ViconNet System*.)
2. Click the **Exit to O.S.** button.

   OR

   1. Click the Close button on the *Main* window toolbar. The following window is displayed:

   2. Click **Yes** to exit (close) the application.

      OR

   1. Click **Logout** in the *Main* Window Toolbar. The *Login* window is displayed.
   2. Click **Exit**.

Chapter 3
Configuring the ViconNet System

This chapter describes all the configuration functions available in the ViconNet system and contains the following sections:

- **Accessing the Configuration Functions,** page 55, describes how to access the *System Settings* window, which enables you to start to perform configuration functions for a selected site.
- **Registering your System,** page 58, describes how to the register your ViconNet system.
- **Modifying the System Configuration,** page 60, describes how to modify all ViconNet default system configurations, including network setup.
- **Using Reset Nucleus,** page 78, describes how to remove all disconnected sites from all site lists and sub-lists in the ViconNet system.
- **Using the Central Failure Notification (CFN) Mechanism,** page 80, describes how to receive notifications indicating that certain applications have failed, i.e., macro, recording and database failures.
- **Configuring the Central Failure Notification (CFN) Effects** page 82, describes how to configure when Central Failure Notifications will be displayed and for how long.
- **Configuring System Authorizations,** page 84, describes how to categorize users into groups according to the system operations that you want them to access.
- **Configuring Site Authorization,** page 92, describes how to define the system operations that can be accessed by each group of users.
- **Configuring Auto Login,** page 98, describes how to configure the system to automatically log in selected users.
- **Configuring Storage Database Utilities,** page 100, describes how to set up video storage locations for storage purposes.
- **Configuring System Authentication,** page 109, describes how to activate the display of system authentication results.
- **Defining Device Groups and Group Sets,** page 110, describes how to organize devices into defined logical groups and group sets.
- **Configuring Manual Recording and Video Quality,** page 116, describes how to configure the picture quality and refresh rate that applies to manually initiated recording (VPK NVR only).
- **Configuring Recording Management,** page 118, describes how to setup 24/7 recording or boosting recording parameters upon motion (VPK NVR only).
- **Configuring Auto/Manual FPS,** page 120, describes how to select automatic or manual configuration of the FPS per DSP.
- **Using the Recording Verification System (RVS),** page 123, is combined into CFN functions since version 7, to notify users of any recording errors (VPK NVR only).
- **Creating Macros,** page 124, describes how to create sets of instructions that cause the system to perform specific tasks in a specific order. (Information about scheduling of macros is provided in the *Creating Schedules* section, page 176)

- **Defining Email and Texting,** page 137, describes how to configure the ViconNet system so that a Text Message or Email can be triggered by a macro.
- **Setting Video and Audio Priority,** page 139, describes how to define the video settings to be used when different viewing/recording functions are requested concurrently.
- **Configuring Alarm Events,** page 143, describes how to define alarm setup links and how to set pre alarms and post alarms.
- **Configuring the Video Analytics Engine,** page 161, describes how to enable the video analytics and set up the configuration.
- **Configuring Events Management,** page 162, describes how to define events generated from an external control system and how to control and present information about these events.
- **Configuring Archives,** page 173, describes how to define the Archive Wizard that is used from the Main screen.
- **Links,** page 175, allows the creation of a list of convenient URL links to be used by the system.
- **Creating Schedules,** page 176, describes how to create schedules that instruct the system about when to run specific macros.
- **Configuring Low Bandwidth,** page 182, describes how to configure low bandwidth to send museum search information over low bandwidth.
- **Restoring and Backing Up System Settings,** page 183, describes the ViconNet system restore and backup features.
- **Configuring an External Control,** page 184, describes how to enable system operation via buttons on an external control panel.
- **Defining Site Maps and Map Sets,** page 188, describes how to receive notifications indicating that certain applications have failed, for example, macro, recording and database failures.
- **Open Standard Cameras,** page 196, describes how to enable and configure the open standard cameras that are available on the network (both Vicon cameras and those from other vendors).
- **Non-Vicon Open Standard Camera Format,** page 201, describes how to set up the video format of the open standard cameras from other vendors.
- **Using the LTU,** page 202, describes how to set up and install a translation of all the user interface terminology for use by non-English speakers.
- **Web Server,** page 206, describes how to setup to view ViconNet as a web browser and use with mobile devices.
- **Video Masking,** page 210, describes how to create masked areas on the video image to block sections of the video from view.
- **Viewing the Settings Summary,** page 213, describes how to view all the settings for a specified site in one place, without navigating through all the windows of that site.
- **Display Settings,** page 214**,** describes how to change the screen resolution and aspect ratio.

Note: *In this section the term Workstation is often used to refer to both a Workstation and NVR, unless specifically stated otherwise.*

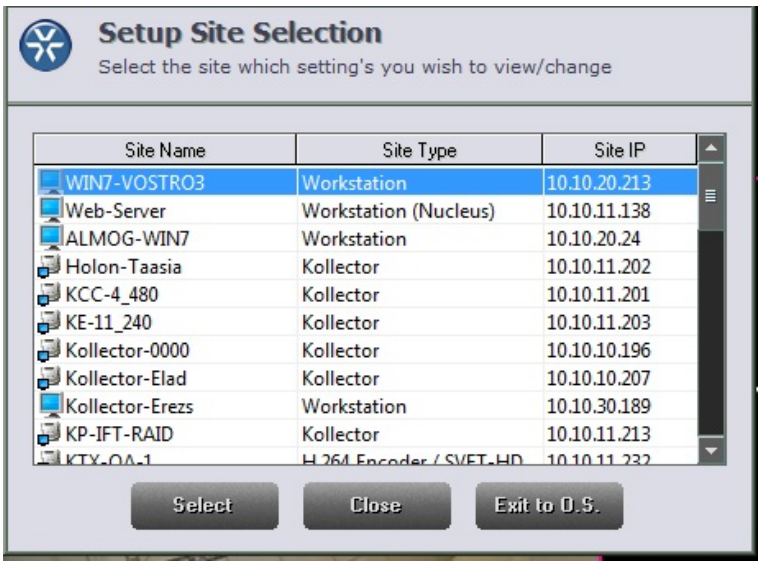
Accessing the Configuration Functions

The configuration functions are performed via the *System Settings* window applicable to a selected site.

To access the *System Settings* window:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations:



The local site always appears at the top of the list. The Nucleus site is listed second, displayed as **(Nucleus),** unless the local site is the Nucleus, as shown above.

The **Exit to O.S.** button enables you to exit to the Operating System and to close the ViconNet application.

NOTE: *There is a limit to the amount of time you can leave the setup screen open without working in it. Therefore it is important to save your settings each time you make a change. Before ViconNet will shutdown in this situation, the following warning screen will display.*

8. Select the site for which you want to configure the network setup and click Select. The System Settings window is displayed. The options displayed in the System Settings window depend on whether you are directly configuring a Kollector, via the Workstation/NVR, or configuring the Workstation/NVR directly.

NOTE: *The Workstation/NVR can configure all sites in the network.*

The *System Settings* window for a VPK NVR has the following options:

These options are only enabled if the Workstation/NVR being configured is also the Nucleus.

When the function is not supported, the associated button is disabled (grayed out). For example, the VPK NVR/Workstation does not support:

- Pre- and Post-Alarm
- Auto/Manual FPS
- Camera, Microphone, Detector, Relay, Speaker
- Picture Quality and FPS Priority
- Low Bandwidth

Additionally, the ViconNet Workstation (VWS-SW) does not support:

- Manual Record and Quality Buttons on Screen
- Record and Record and Display on the Macro Editor
- Recording Management

NOTE: *The **Site Name** and **Site IP** information are displayed automatically on this and subsequent windows.*

Registering Your System

The full functionality of the ViconNet system is available only after the system is registered. Before the registration procedure is performed, the system will function with limited "Viewer" functionality only. (For details regarding the Viewer functionality, refer to the *ViconNet Application Options* section in *Chapter 1, Introducing ViconNet*.)

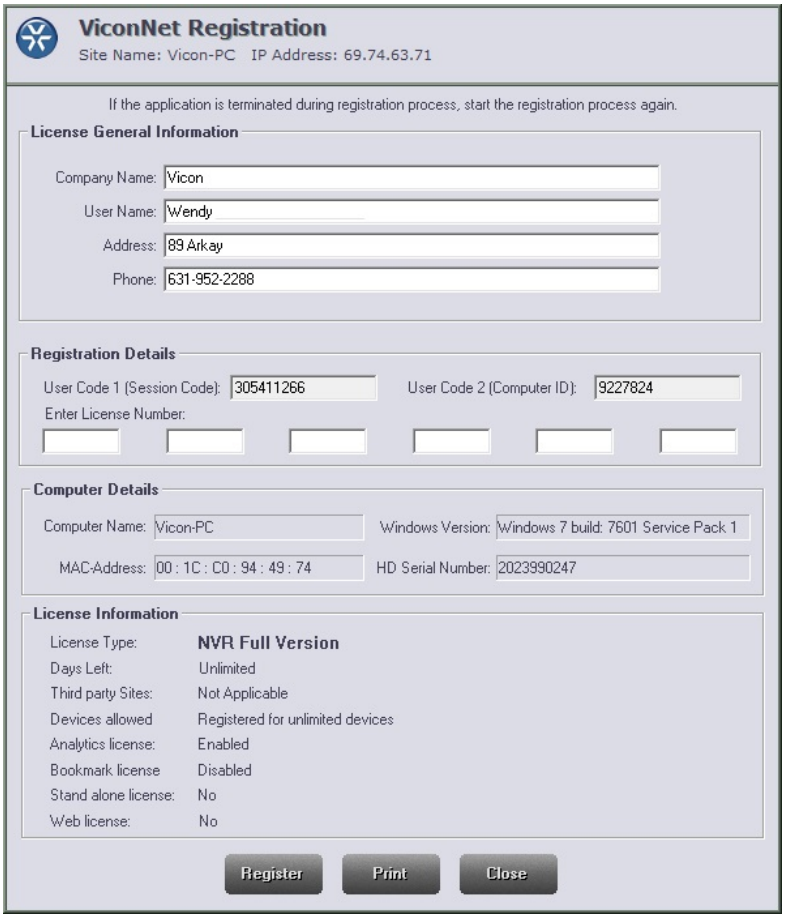
Registration is NOT required for a VWS-PC/VPK NVR or a free Viewer. Registration is ONLY required for software VWS-SW/VPK-SW series products installed on a customer-supplied PC, to enable full functionality of the software

NOTES:

1 *This procedure should be performed the first time the application is started, following installation. The application may also need to be re-registered if the application is installed on another system or the hard disk drive of your system is changed.*

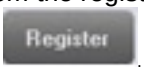
To register your system:

1. In the Workstation application, navigate to the *System Settings* window, click Registration. The *Registration* window appears.



2. Fill in your company details.
3. Fill in your user name.
4. Make note of the two user codes that are on the ViconNet *Registration* screen. You will need these to complete registration.

NOTE: *Licensing is done through Vicon's website. On www.vicon-security.com, go to the Support tab and select Software Registration and follow those instructions. Be sure to have the License ID and password that is on the label of the software packet. You will need these to register. Follow the prompts.*

5. Enter the six license numbers generated from the registration process into the six License Number fields of the *Registration* window, and click 

. The application automatically restarts in order to implement the new registration and enable the functionality of your purchased application.

Note: *If your system includes non-Vicon open platform camera(s), they need a license (VN-CAM-LIC) and to be registered after the software registration is completed. Non-Vicon open platform cameras only need to be registered once in the Nucleus for the entire system.*

Modifying the System Configuration

The ViconNet system default configuration can be modified, depending on your requirements, as described in the following sections:

- **Configuring the Network Setup,** below, describes how to configure the network setup for each device in the system, including which device is running the master Nucleus and which device is running the backup Nucleus.
- **Configuring/Modifying PTZ Controls,** page 77, describes how to configure PTZ camera controls, such as driver and version information.

Configuring the Network Setup

The network setup parameters are configured individually for each device in the ViconNet system. Network setup configuration is performed using the ViconNet application installed on each device. When setting up a network, **one** of the sites must be assigned as a *Nucleus* and the other sites in the network must know where this Nucleus is. Each site (either a transmitter or a Workstation) has the option to input the Nucleus IP address.

Devices that share the same subnet mask can connect to the same Nucleus and form a system, which enables them to connect to each other. This includes the ability to synchronize multiple devices with the Nucleus time or update all the time settings to another time zone.

To configure the network setup, you must specify both the master Nucleus IP on all devices and may choose to specify the backup Nucleus IP addresses on the device running the master Nucleus. The backup Nucleus setup is configured only on the master Nucleus device. When a backup Nucleus is defined on the Nucleus device, the settings of the Nucleus device are copied automatically to a folder on the backup Nucleus device defined to be the “Backup.” These “backup” settings are updated under three conditions:

- Each time the Nucleus device is restarted or the user **Exits** the ViconNet software and then launches it again.
- Each time the user makes any setup changes on the Nucleus device and clicks the **Close** button on the *Setup* screen.
- Each time the “backup Nucleus” device is restarted or the user **Exits** the ViconNet software and then launches it again.

NOTES:

If the Nucleus goes down, any device that uses that master Nucleus will automatically shift to local operation mode. This means that it will use the latest Nucleus configuration from before losing the Nucleus and will keep operating without a Nucleus.

The Nucleus and backup Nucleus must have fixed IP addresses. DHCP cannot be used on the site running the Nucleus (for more details, refer to the Configuring the DHCP section in Appendix B, Configuring the Network).

Configuring the Nucleus

The Nucleus takes an active role in the ViconNet system, acting as a central station that connects all devices running the ViconNet application. This is why the ViconNet system is designed in a way that will allow it full operation even if the Nucleus is down. The information on the Nucleus is always sent to all devices (after any update), so in a case where the Nucleus goes down, they can use that data to operate until the Nucleus is restored. In such cases, only "new" actions that require the Nucleus, will not work (like adding a new site). The more devices connected to the system, the more resources the Nucleus requires. The device holding the backup Nucleus files, which runs at all times, can also be configured as a safety mechanism for cases when the system does not operate due to a problem, such as a power failure in the Nucleus. When there is a failure on the Nucleus device, all systems that were connected to the Nucleus will display as "not connected." The user can then change the name of the backup workstation to the computer name of the original Nucleus Workstation/NVR and then change the IP of the "Backup" to be the same as that of the Nucleus PC. Then the user must restore the settings from the Nucleus backup folder to the "Backup Nucleus." This makes this device transparent to the other Workstations and they will all connect to it as if they are connected to the original Nucleus PC.

Note: *When working with a Kollector Force or Strike (or any Kollector updated to the latest version 8 or higher), the Nucleus on a Workstation/NVR must also be the latest version 8; it is not recommended to use a Workstation/NVR Nucleus with a lower version.*

In a small network (fewer than five sites), the Nucleus and backup Nucleus (if it exists) can be on any of the transmitters or Workstations and a backup Nucleus should only be configured if deemed necessary. If the Nucleus is configured on a site and it is heavily loaded with recordings and transmissions, the Nucleus should be moved to a dedicated Workstation. In a large network (more than five sites), it is strongly recommended that the Nucleus and backup Nucleus be run on dedicated Workstations/NVRs.

Creating a New Network

This procedure provides a five-step example of how to create a new ViconNet network using a field-proven method of setup and commissioning. In this example, we will create a network made up of a number of sites.

- **Step 1: Setting the Sites' IP Addresses,** page 62
- **Step 2: Configuring the Network Setup for a Master Nucleus System,** page 63
- **Step 3: Configuring a Site to Connect to Nucleus,** page 64
- **Step 4: Connecting the Master Nucleus to the Backup Nucleus,** page 64
- **Step 5: Testing the Network,** page 65

NOTES:

To prevent problems, it is recommended that you methodically plan your network ahead of time.

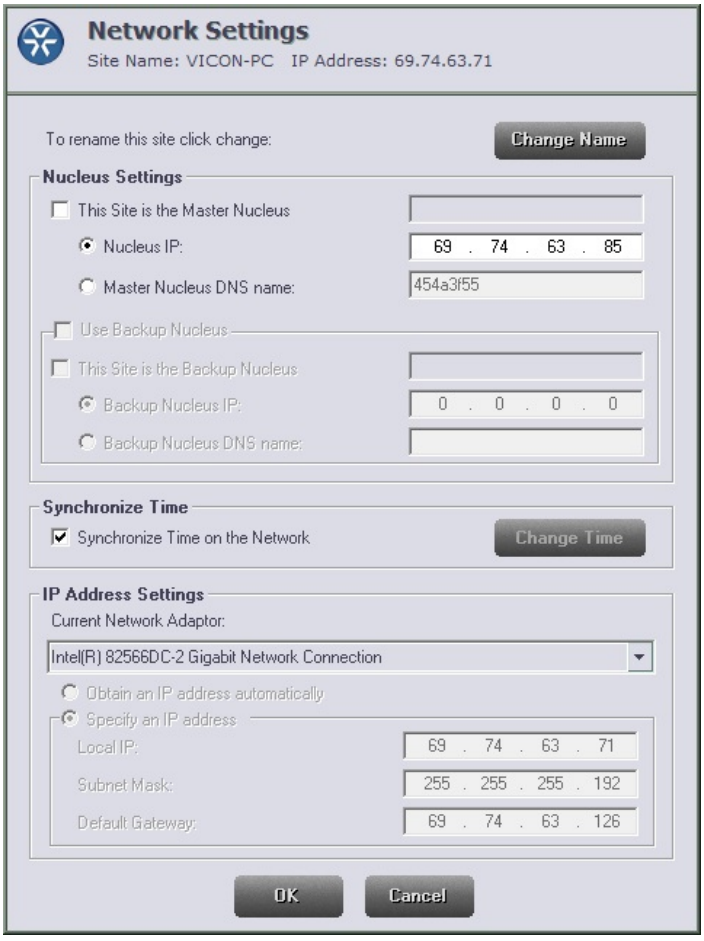
Do not use this procedure to modify an already existing network.

Before beginning, ensure that all CAT5 cables to the transmitters and Workstations are connected to a hub or switch and that they are properly wired on each end, per 568B (or 568A). It is important to **not** mix connection methods or connect or disconnect cables when the application is running.

Step 1: Setting the Sites' IP Addresses

In this step, you will configure the IP addresses of the sites in the network.

1. Go to the site whose IP address you want to set. Then, from the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to configure the network setup and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click Network Settings and Site Name. The *Network Settings* window is displayed.



NOTE: *The options in the **IP Address Settings** area, as well as the **Change Time** button, are disabled during remote setup and in a Workstation that is not an active Nucleus.*

4. You can change the device's name, if required, by clicking Change Name to open the *Change Name* window. After you have assigned a new name to the site, click OK . The system will reboot.

5. (Optional) To manually synchronize the local device time with all sites connected to the Nucleus, select the **Synchronize Time on the Network** option (default=checked).

> ***NOTE:*** *The system also automatically synchronizes the time every one minute.*

6. (Optional) To synchronize the time with your local time settings,

   6.1 Deselect the **Synchronize Time on the Network** option (if it is selected).

   6.2 Click Change Time and update the time in the displayed *Date/Time Properties* window. This is useful if you move from one time zone to another.

   6.3 Re-select the **Synchronize Time on the Network** option (if it was previously selected). The new time is synchronized on the other sites on the network.

> ***NOTE:*** *If you are changing the time on the Nucleus, ignore steps 6.1 and 6.3.*

7. In the **IP Address Settings** area, select the **Specify an IP address** radio button and set the **Local IP** address and the **Subnet Mask**.

> ***NOTE:*** *The option **Obtain an IP address automatically**, in the **IP Address Settings** area, is only available for a DHCP server.*

8. Click OK. The application will reboot.

Step 2: Configuring the Network Setup for a Master Nucleus System

The ViconNet system enables you to configure the Workstation that you want to function as the master Nucleus in the system.

1. Follow the steps in *Registering your System*, page 58, to register your application, and ensure that the words **WS FULL VERSION** appear in the **Current License Usage** area of the *Registration* window.

2. Go to the site you want as the master Nucleus and follow steps 1 through 3 in *Step 1: Setting the Sites' IP Addresses*, page 62.

3. In the **Nucleus Settings** area, select the **This Site is the Master Nucleus** checkbox to indicate to the system that this device is running the ViconNet master Nucleus. When you select this option, the following occurs:

   - The local IP address and DNS are displayed automatically in the **Nucleus IP** and **Master Nucleus DNS** name fields.

   - The **This Site is the Backup Nucleus** option is disabled.

4. In the **IP Address Settings** area, select the **Specify an IP address** radio button and set the **Local IP** address and the **Subnet Mask**.
5. Click OK. The application will reboot.

Step 3: Configuring a Site to Connect to Nucleus

Follow the procedure below to connect a site to the Nucleus.

1. Go to the site you want to setup and follow steps 1 through 3 in *Step 1: Setting the Sites' IP Addresses*, page 62.
2. In the **Nucleus Settings** area, deselect the **This Site is the Master Nucleus** checkbox.
3. In the **Nucleus Settings** area, select the **Nucleus IP** radio button and enter the IP address.
4. Click OK. The application will reboot and the Nucleus name will appear in the top-left corner of the application, for example, **Nucleus: Workstation-1**.
5. Repeat this procedure for each site in the network.

Step 4: Connecting the Master Nucleus to the Backup Nucleus

Follow the procedure below to setup a backup Nucleus and connect the backup Nucleus to the master Nucleus.

1. Go to the site that you setup as the Nucleus in Step 1.In the **Nucleus Settings** area, select the **Backup Nucleus IP** radio button and enter the IP address of the backup Nucleus. By default, **0.0.0.0** is displayed as the backup Nucleus IP.
2. Click OK. The application will reboot.
3. Repeat step 1. The name of the backup Nucleus should be grayed out so that you cannot change it.

NOTE: *If the Nucleus goes down, any device that uses that master Nucleus will automatically shift to local operation mode. This means that it will use the latest Nucleus configuration from before losing the Nucleus and will keep operating without a Nucleus.*

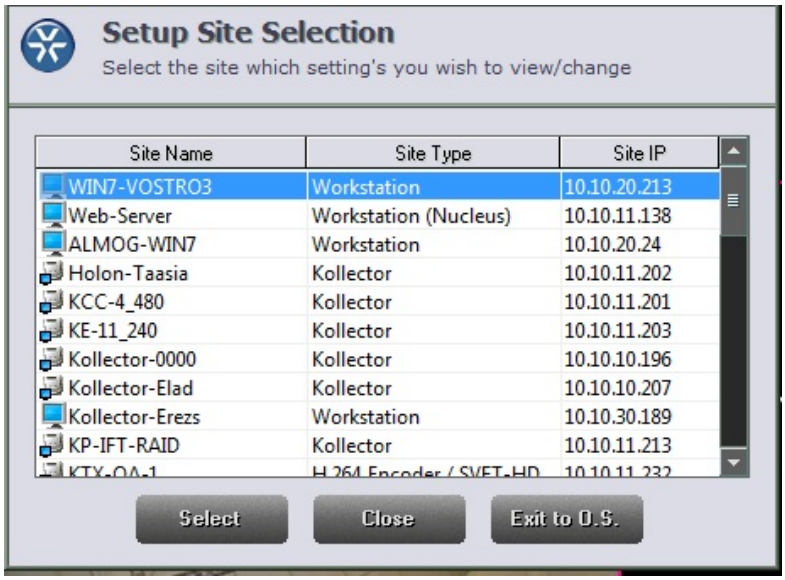
Step 5: Testing the Network

In this final step, you will carry out a number of operational tests to ensure that the network has been setup properly.

1. In the *Main* window, ensure that all sites appear in the **Site List** when they come online and that you can select a camera from each site by clicking on it.

2. From the *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations:



3. Ensure that the **Site Type** column displays the following:

   - **Kollector** for all Kollector types
   - **Workstation**
   - **IP-Camera-xx**
   - **Offline**

   If the **Site Type** column displays the word **Other**, it means that the application is not communicating correctly with that site. This can occur if the network connection is broken between that site and then reconnected (for example, due to an unplugged network cable) or because of some other network interruption. To correct this problem, go directly to that site, exit to the operating system and then restart the application.

4. Go to the site handling the master Nucleus and drag a camera from the **Site List** *t*o check if video can be seen from a site on the Nucleus.
5. Go to the site and playback a camera. The site should appear in the **Site List**.
6. Log in to each of the sites in the list and playback a camera.
7. Configuring a Workstation to Work with an Existing Network Nucleus

To configure a Workstation to work with an existing network:

1. Follow steps 1 through 3 in Step 1: Setting the Sites' IP Addresses, page 62.
2. Deselect the **This Site is the Master Nucleus** checkbox.
3. Select the **Nucleus IP** radio button and then enter the IP address of the site handling the master Nucleus.
4. Click

. The application will reboot.

Configuring/Modifying Cameras, Microphones, Sensors and Relays

The ViconNet system enables you to configure or modify the various devices that you want to be operational in the system, depending on your requirements, including:

- **Configuring/Modifying Local Cameras,** page 67
- **Configuring/Modifying Microphones,** page 74
- **Configuring/Modifying Sensors (Detectors),** page 75
- **Configuring/Modifying Relays,** page 76

Each device that you connect to a specific input in the system must be configured separately, using the ViconNet application, so that the system can recognize and operate the device. This consists of configuring information that enables the system to identify the device such as the device type, name, input number and so on.

NOTE: *Device configuration from the Workstation is done by remotely connecting to a Kollector (using the Site Selection window in the Workstation) and configuring the specific devices connected to the specific site selected.*

During device configuration, a table of buttons for all devices is displayed. When you select a device from this table, the configurable information, specific to the selected device and input, is displayed in the bottom portion of the window.

NOTE: *The device appears in the Site List automatically and can be used immediately for all available system functions. No configuration is required for this purpose.*

Configuring/Modifying Local Cameras

The ViconNet system enables you to reconfigure or modify up to 16 local cameras in the system.

The settings described in this section, which are accessed via the Camera, Microphone, Detector, Relay, Speaker button, apply when connecting to any remote transmitter.

NOTE: *This feature is not active when a Workstation is selected in the Setup Site Selection window.*

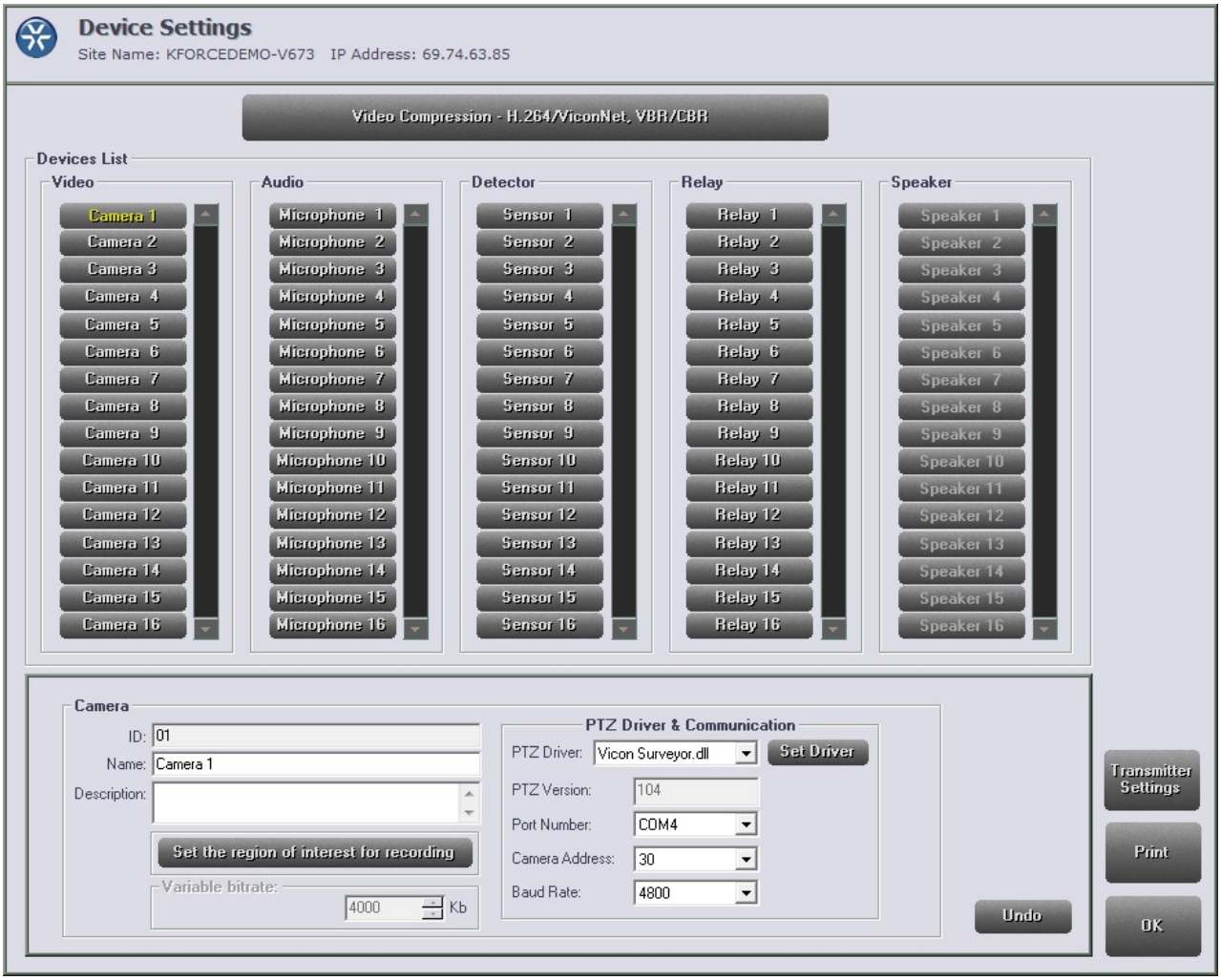
TIP: *The local camera definition procedure, described below, includes a region of interest (ROI) area definition aspect, by which recording and display update is triggered only when the changes to the camera view affect defined ROI areas, at specified sensitivities. This usefully conserves storage capacity by limiting the number of frames recorded to those required for business purposes.*

To configure/modify a local camera:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site for which you want to configure/modify a local camera and click Select. The *System Settings* window is displayed, as shown on page 55.

3. Click

. The *Device Settings* window is displayed. The options displayed in the *Device Settings* window depend on whether you are configuring a Kollector or the Workstation itself.



NOTES:

*You can click **Undo** to restore the last saved settings, if required.*

***TIP:** You can print the current Device List details by clicking the **Print** button.*

4. Select a camera button from the **Video** section of the **Devices List** area. The **Video Input Setting** area at the bottom of the window displays all the configurable settings for the selected device. A numerical index number is displayed automatically in the **ID** field. The ID number is assigned by the system and cannot be changed (read-only). Select detector Normal state, Close or Open, if not already done so in the Alarm Wizard.

5. To select the compression method for all cameras, select the

button. The following screen will display.

6. Select either ViconNet proprietary compression algorithm or H264. If ViconNet is selected, choose either Standard or Super fine picture quality. Standard is a very high picture quality provided by ViconNet; for users who require extremely high quality, select Super fine. This lowers the overall compression and results with an even higher picture quality but this will impact on bandwidth and storage (approximately 15% addition to standard bandwidth and storage calculation). If H264 is selected, choose VBR (Variable Bit Rate) or CBR (Constant Bit Rate). If CBR is selected, select **Bitrate Setting**. The following screens will display.

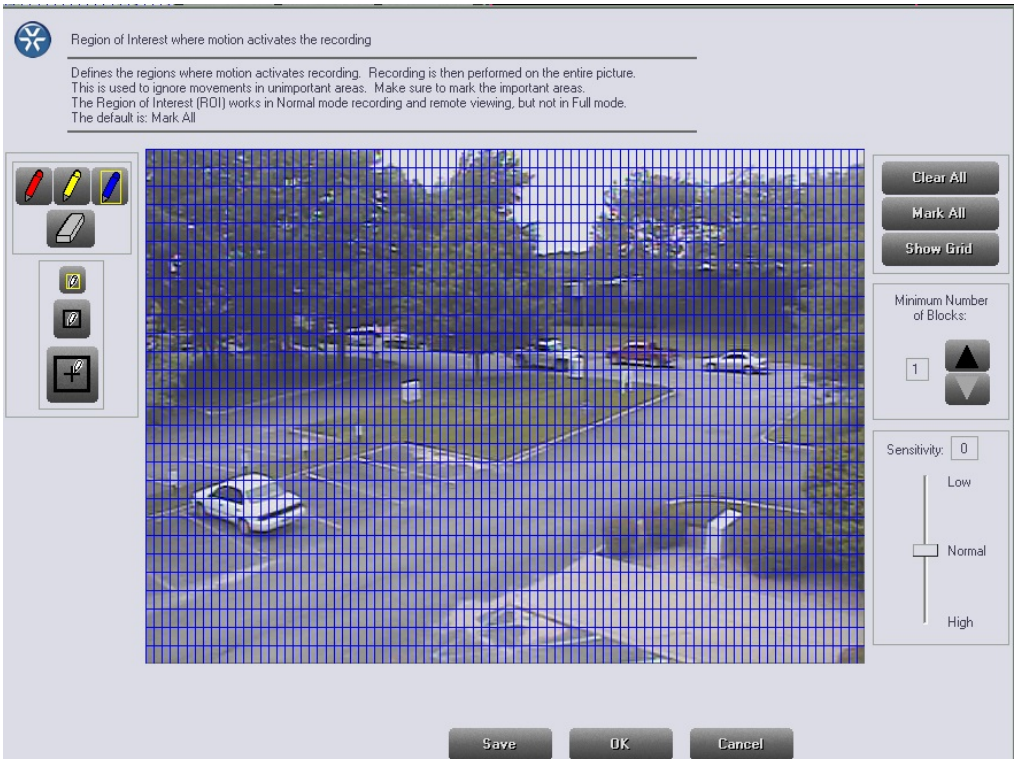
Select the required video bit rate for the camera (max 8000).

7. To select the microphone sample rate and modify the balance between playback speed and recording storage space, select the Transmitter Settings button from the Device Settings screen. The *Transmitter Settings* screen will display.

8. Select the required audio sample rate (8000, 16000 (default), or 24000) and click **OK**. The sample rate is for all microphones defined in the site list/system.

9. In the **Recording storage vs. Playback performance** area move the slider to select the balance you want between how fast video will be played back and the amount of storage space required for your system.

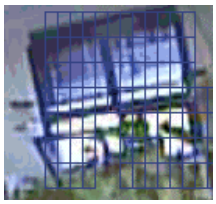
5. Click the **Set the region of interest for recording** button to define/modify how detected changes in the view area will trigger recording on the selected camera. You can limit the triggering to when changes are detected in specific regions of interest (ROIs). The *Region of Interest Definition* window is displayed.



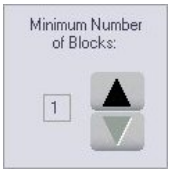
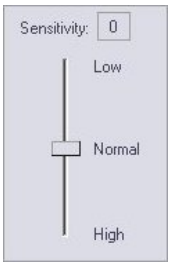
The window shows the live view of the selected camera, with blue, red or yellow colored grid blocks over selected regions of interest. If no settings were yet defined for this camera, the colored grid blocks cover the entire picture, indicating that the change detection that would trigger recording currently applies to the entire camera view area.

You can focus the change detection mechanism on security-sensitive objects in the camera space by using the window functions to vary the coverage of the colored grid blocks. (Only the segments covered by colored grid blocks are considered for change detection purposes.)

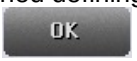
For example, you can focus on windows or doors (as shown in the picture opposite) to monitor opening/closing events.



The following options are provided:

Option	Description
	This button clears all the current colored grid blocks in the view. You can then use the **Pencil** tool to define grid blocks for specific ROIs within the view surface. ***NOTE:*** *Change detection does not function unless ROIs are identified by colored (blue, red or yellow) grid blocks.*
	This button marks colored grid blocks over the entire window surface, meaning that change detection will apply to the entire camera view. You can then use the Eraser tool to remove specific grid blocks.
	When the **Pencil** tool is selected, the cursor becomes a pencil icon. You can define ROIs by clicking and dragging over the required view area segments, thereby drawing arrays of red, blue or yellow grid blocks (according to which pencil is selected). The **Tool Size Selector** area includes buttons for three pencil sizes. According to the selected size, the cursor draws a small (single block), medium (4-block) or large (16-block) width of grid blocks per sweep.
	When the Eraser tool is selected, the cursor becomes an eraser icon. You can erase ROI segments by clicking and dragging over selected grid blocks, thereby erasing them. The **Tool Size Selector** area includes buttons for three eraser sizes. According to the selected size, the cursor will erase a small (single block), medium (4-block) or large (16-block) width of surface blocks per sweep.
	The *Block Size Control* selector enables you to define how many blocks of the colored grid arrays must be simultaneously involved in the change before recording is triggered. For example: • "1" (the most sensitive setting) indicates that recording should be triggered if a change is detected in even one block amongst all the defined ROIs. • "16" (the least sensitive setting) indicates that the change must be simultaneously detected in at least 16 blocks within the entire view area. The blocks do not have to be contiguous. ***NOTE:*** *The selected maximum cannot exceed the total number of blocks defined in ROIs.*
	The *Sensitivity Control* enables you to adjust the triggering sensitivity (by dragging the slider) between **High** (higher detection of changes) to **Low** (lower detection of changes). ***NOTE:*** *In general, a "normal" sensitivity should be selected. The highest sensitivities may generate false alarms, while the lowest may cause interesting events to be missed.*

Option	Description
	The **Show Grid** button applies a gray planning grid to the parts of the window where no ROIs (colored grid blocks) are defined. The gray grid is only for purposes of viewing where ROIs may potentially be defined and does not affect the change-detection process. When selected, the button changes into a **Hide Grid** button by which the planning grid can be suppressed, making only the "active" colored grid blocks visible.

When you have finished defining grids and recording triggering sensitivity for the selected camera, click the or  button. (Both buttons save the current settings. The **Save** button leaves the window open for additional changes, while **OK** redisplays the *Device Settings* window.)

6. If the local camera is a PTZ, configure the PTZ driver and communication information, as described in *Configuring/Modifying PTZ Controls*, page 77.

7. To configure or modify additional local cameras, repeat steps 4 to 9, as required.

   As you select another camera button in the *Device Settings* window, the new or modified name of the local camera that you have just configured is displayed automatically on the appropriate button in the **Video** section (for example,).

8. Click . The new or modified local camera configuration is saved automatically in the system (without requiring a reboot) and the camera appears in the *Site List* in the ViconNet *Main* window as an available device, meaning it is available immediately for all operations.

> ***NOTE:*** *After you have configured a device in the system, it also appears in all other device lists, such as when creating macros, defining alarm setup links and setting pre/post alarms. Refer to the relevant sections in this chapter for additional details.*

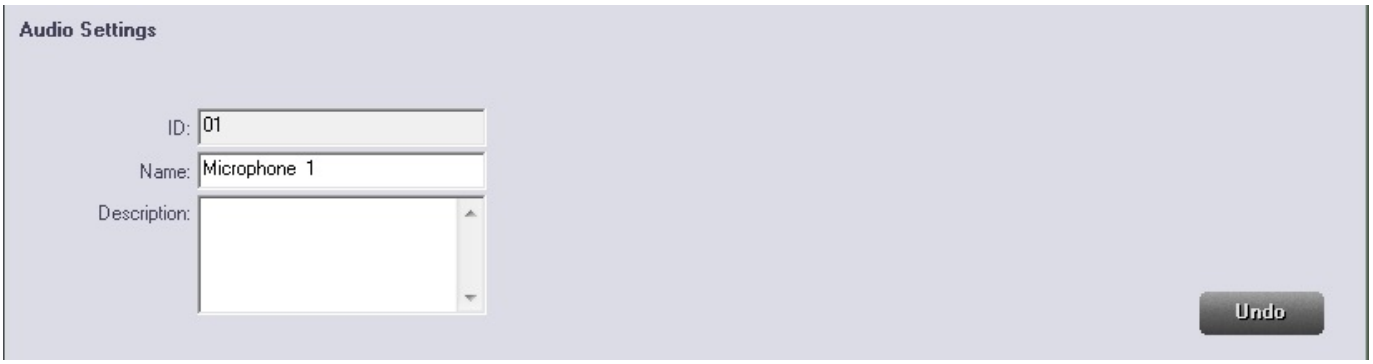
In addition, the system automatically notifies all connected sites (through the network) of the new or modified local camera configuration.

Modifying Microphones

The ViconNet system enables you to remotely modify up to 16 microphones for a Kollector Force from the Workstation (by accessing the *Main Settings* window of the Kollector Force); with ViconNet version 5.6 and higher, Kollector Strike enables you to remotely modify up to 4 microphones.

To modify a microphone:

1. Perform steps 1 to 3 in *Configuring/Modifying Local Cameras*, page 67.
2. Select a microphone button from the **Audio** section of the **Devices List** area. The **Audio Settings** area at the bottom of the window displays all the configurable settings for the selected device.



   In addition, a numerical index number is displayed automatically in the **ID** field. The ID number is assigned by the system and cannot be changed (read-only).
3. In the **Name** field, enter a logical name for the microphone.
4. (Optional) In the **Description** field, enter descriptive textual information about the microphone.
5. To modify additional microphones, repeat steps 1 to 4, as required.

   As you select another button in the *Device Settings* window, the new or modified name of the microphone that you have just modified is displayed automatically on the appropriate button in the **Audio** section and the configuration is automatically saved.
6. Click

. The new or modified microphone configuration is saved automatically in the system (without requiring a reboot).

NOTE: *After you have configured a device in the system, it also appears in all other device lists, such as when creating macros or setting pre/post alarms. Refer to the relevant sections in this chapter for additional details.*

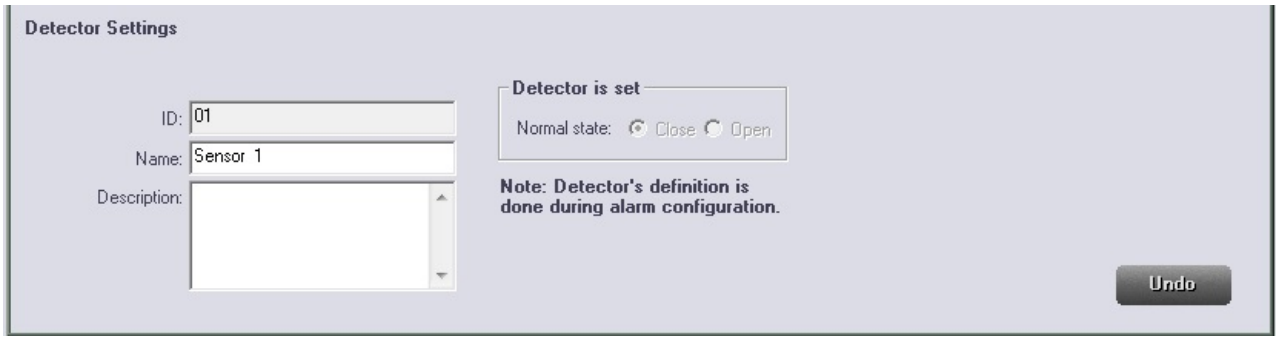
In addition, the system automatically notifies all connected Workstations (through the network) of the new or modified microphone configuration.

Configuring/Modifying Sensors (Detectors)

The ViconNet system enables you to configure or modify up to 16 sensors, if required. Each sensor that you configure in the system must be associated to a specific alarm type.

To configure/modify a sensor (detector):

1. Perform steps 1 to 3 in *Configuring/Modifying Local Cameras*, page 67.
2. Select a sensor button from the **Detector** section of the **Devices List** area. The **Detector Setting**s area at the bottom of the window displays all the configurable settings for the selected device.
3. In addition, a numerical index number is displayed automatically in the **ID** field. The ID number is assigned by the system and cannot be changed (read-only).
4. In the **Name** field, enter a logical name for the sensor. For example, you can assign a name that relates to the associated alarm type.



5. (Optional) In the **Description** field, enter descriptive textual information about the sensor.
6. To configure/modify additional sensors, repeat steps 1 to 4, as required.

   As you select another button in the *Device Settings* window, the new or modified name of the sensor that you have just configured is displayed automatically on the appropriate button in the **Detector** section and the configuration is automatically saved.

7. Click

. The new or modified sensor configuration is saved automatically in the system (without requiring a reboot) and the sensor appears in the **Site List** in the ViconNet *Main* window as an available device, meaning it is available immediately for all operations.

NOTE: *After you have configured a device in the system, it also appears in all other device lists, such as when defining alarm setup links. Refer to the relevant sections in this chapter for additional details.*

In addition, the system automatically notifies all connected Workstations (through the network) of the new or modified sensor configuration.

Configuring/Modifying Relays

The ViconNet system enables you to configure or modify up to 16 relays, if required.

NOTE: *The relays are only enabled in this window when using the Kollector Force with the matrix rear panel. In this case, the system automatically recognizes the relays.*

To configure/modify a relay:

1. Perform steps 1 to 3 in *Configuring/Modifying Local Cameras*, page 67.
2. Select a relay button from the **Relay** section of the **Devices List** area. The **Relay Settings** area at the bottom of the window displays all the configurable settings for the selected device.
3. In addition, a numerical index number is displayed automatically in the **ID** field. The ID number is assigned by the system and cannot be changed (read-only).
4. In the **Name** field, enter a logical name for the relay. For example, you can assign a name that relates to the proper relay operation.

5. (Optional) In the **Description** field, enter descriptive textual information about the relay.
6. To configure/modify additional relays, repeat steps 1 to 5, as required.

   As you select another button in the *Device Settings* window, the new or modified name of the relay that you have just configured is displayed automatically on the appropriate button in the **Relay** section and the configuration is automatically saved.

7. Click

. The new or modified relay configuration is saved automatically in the system (without requiring a reboot) and the relay appears in the *Controls* area in the ViconNet *Main* window as an available device.

NOTE: *You can also define an external relay by selecting* ***Controls & Events Drivers*** *in the System Settings window. For more details, refer to Configuring an External Control, page 184.*

Configuring/Modifying PTZ Controls

When you use PTZ cameras in the ViconNet system, you must configure/modify each device according to its specific camera specifications, such as the driver, version number and so on.

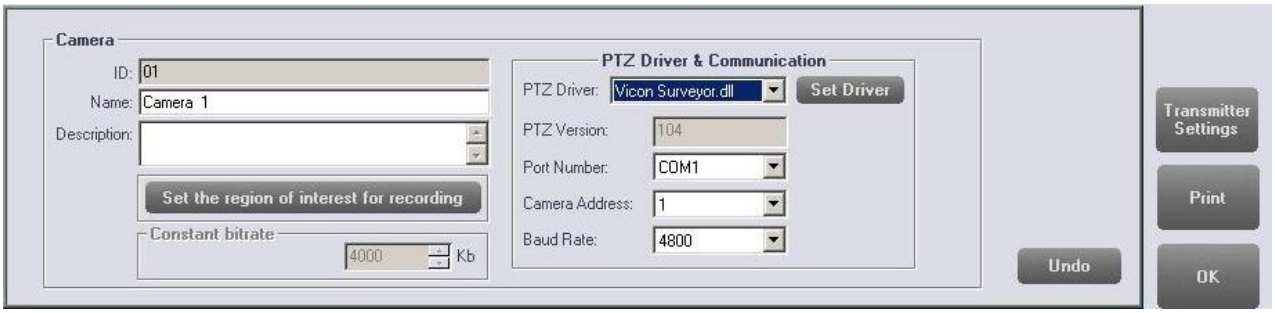
> ***NOTE:*** *To activate remote PTZ cameras on the Workstation, PTZ drivers (DLLs) must exist locally on the Workstation. If the drivers are not already installed on the Workstation, you can install them using the ViconNet Drivers Installation package.*

To configure/modify PTZ controls:

1. In the *Device Settings* window, shown on page 74, select the appropriate PTZ camera button from the **Video** section of the **Devices List** area.

   > ***NOTE:*** *When working in the Devices Settings window, you can click **Undo** to restore the last saved settings, if required.*

2. In the **PTZ Driver & Communication** area, enter the required PTZ configuration settings, as follows:



Option	Description
PTZ Driver	Select the appropriate driver from the dropdown list or click Set Driver to automatically select the appropriate driver.
PTZ Version	The PTZ software version is displayed after the appropriate driver is selected.
Port Number	The port number is shown for information purposes.
Camera Address	Select the camera address from the dropdown list. ***NOTE:*** *The address must be identical to the address configured on the camera.*
Baud Rate	Select the Baud rate from the dropdown list.

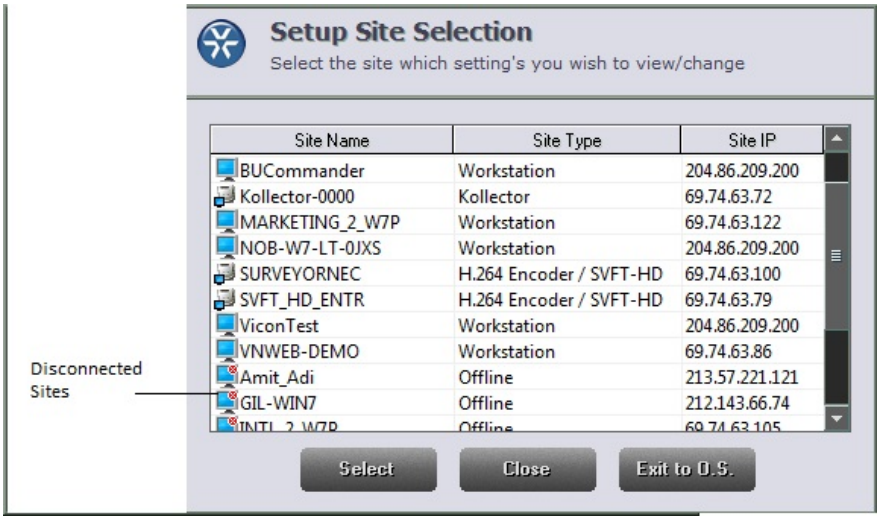
3. To configure or modify PTZ controls for additional PTZ cameras, repeat steps 1 and 2, as required.

Using Reset Nucleus

The purpose of the Reset Nucleus feature is to clean up all site lists and sub-lists (such as: macros, controls, site selection setup, reports site selection and so on) by removing all associated disconnected sites. This feature is only available in the Nucleus (or by remote from another site with the correct authorizations).

To reset the Nucleus:

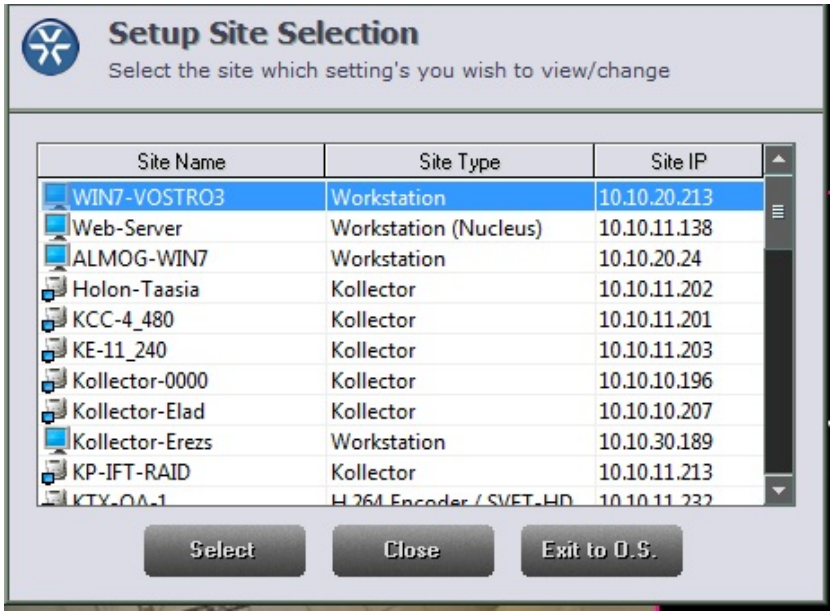
1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.



2. Select the site with the Nucleus and click Select. The *System Settings* window is displayed, as shown on page 55.

3. Click

. All sites that appeared in the *Setup Site Selection window*, the **Site List** in the *Main* window and other sub-lists as disconnected (offline) have now been removed from the lists. An example is shown below:



Using the Central Failure Notification (CFN) Mechanism

The CFN mechanism enables Workstations and transmitter sites connected to the same Nucleus to receive notifications indicating that certain applications have failed, for example, macro, recording and database failures.

CFN increases the user's awareness of problems that could occur at unmanned remote sites. It sends error/warning notifications, via the network, to other sites that share the same Nucleus. The notifying site is the same one that handles the Nucleus.

The CFN mechanism is available **only** for the site that handles the Nucleus.

You can configure the duration for which the CFNs will be displayed by selecting the

option in the *System Settings* window, as described in the *Configuring the Central Failure Notification (CFN) Effects* section on page 82.

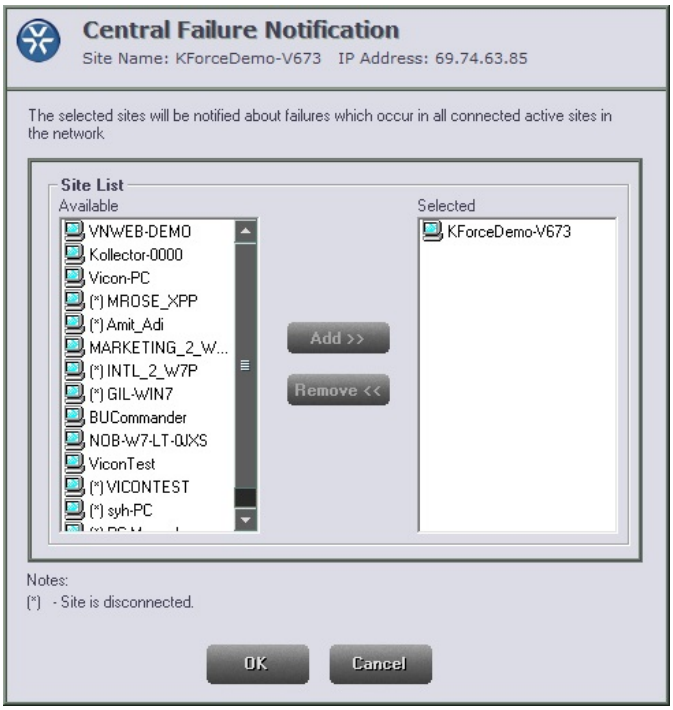
To activate the CFN mechanism:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site with the Nucleus and click

. The *System Settings* window is displayed, as shown on page 55.
3. Click

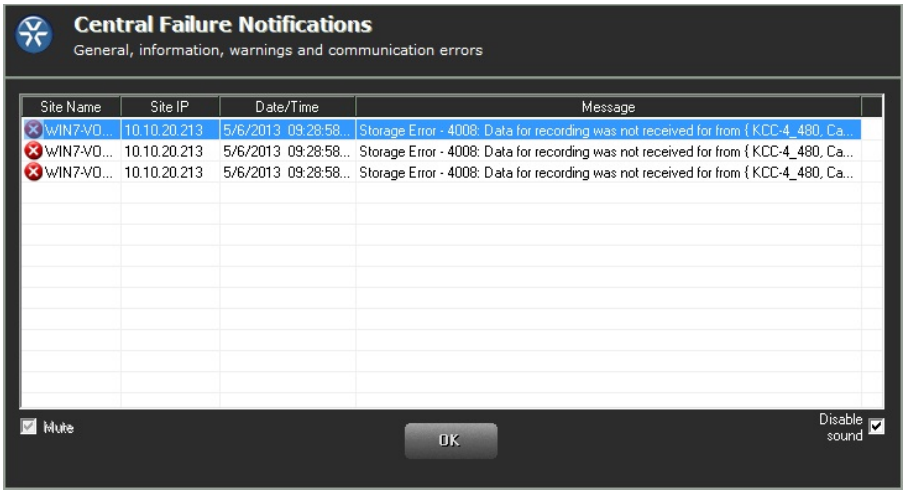
. The *Central Failure Notification* window is displayed.



4. In the **Site List** section, select which site(s) to notify about a failure occurring in any other site that shares the same Nucleus from the **Available** area and then click Add >> . The selected site(s) is displayed in the **Selected** area.

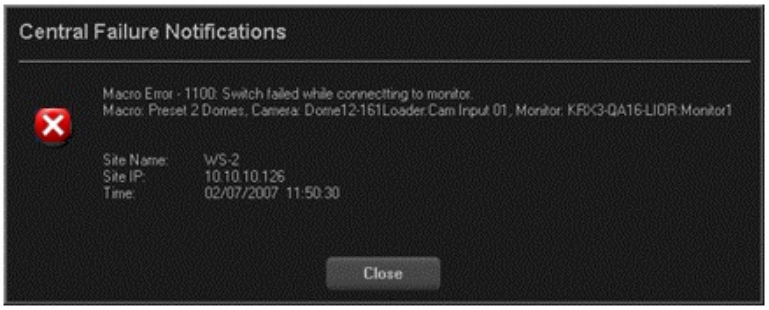
5. When you have finished, click **OK**.

When a failure occurs, a *Central Failure Notifications* window is displayed in the sites selected in the CFN setup, containing information about the time the failure occurred, the site name, the site IP address and a short description of the failure (the failure message).



This window is accompanied by a sound (similar to the *Alarm* window). Selecting the **Mute** checkbox silences the alarm for this message; however, the next time the window is displayed, the alarm will sound. Checking the **Disable sound** checkbox disables the sound option completely, meaning that the alarm will not sound again.

To see more details about the error, double-click it to open a window like the one shown here.



NOTES:

The local site in which the failure occurred receives the user notification even if it was not selected in the Nucleus CFN setup.

Disconnected sites are marked with a (*).

Configuring the Central Failure Notification (CFN) Effects

The CFN mechanism enables Workstations and transmitter sites connected to the same Nucleus to receive notifications indicating that certain applications have failed, for example, macro, recording and database failures.

When a failure occurs, a *Central Failure Notifications* window can be displayed in the sites selected in the CFN setup, containing information about the time the failure occurred, the site name, the site IP address and a short description of the failure (the failure message).

CFN increases the user's awareness of problems that could occur at unmanned remote sites. It sends error/warning notifications, via the network, to other sites that share the same Nucleus. The notifying site is the same one that handles the Nucleus.

The CFN mechanism is available **only** for the site that handles the Nucleus. For details on how to use the CFN Mechanism, see the Using the Central Failure Notification (CFN) Mechanism section on page 80.

The CFN configuration is only performed in the Nucleus. After the CFNs have been configured for your ViconNet network, each site selects whether or not to display the CFNs. This section describes how to configure when Central Failure Notifications will be displayed on the selected site and for how long.

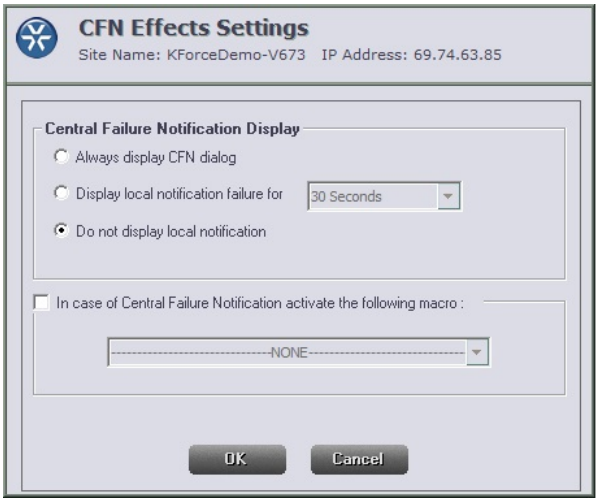
To configure the display of Central Failure Notifications:

1. From the ViconNet Main *window*, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the required site and click

. The *System Settings* window is displayed, as shown on page 55.
3. Click

. The *CFN Effects Settings* window is displayed.



4. Select one of the display options, as described below:

    - **Always Display CFN Dialog:** Specifies that the *Central Failure Notifications* window be displayed continuously until it is closed manually by clicking **OK**.
    - **Display Local Failure Notification For:** Specifies the duration that the *Central Failure Notifications* window be displayed each time a CFN is sent.
    - **Do Not Display Local Notification:** Specifies that CFNs relating to the local site (meaning, the site on which you are working) should not be displayed.

5. From this screen you can activate a macro when there is a Central Failure Notification. Check the box and select the macro you want to run from the dropdown list. Refer to the section on the Macro Editor on how to configure macros.

Click **Save**. If either **Display Local Failure Notification For** or **Do Not Display Local Notification** was selected, a message is displayed requesting that you confirm your selection.

The *CFN Effects Settings* window is closed.

The *Central Failure Notifications* window, as shown on page 81**Error! Bookmark not defined.**, is displayed according to the setting you selected.

Configuring System Authorizations

The ViconNet system enables you to configure system authorizations, depending on your organizational requirements. The authorizations that you configure determine both user access and the authorized system operations for users according to the group to which you assign them.

Configuring system authorizations consists of defining the groups and users in your system, as described in the following sections:

- **Defining Groups,** page 84
- **Defining Users,** page 89

Users and Groups can only be defined in the Nucleus. The **User & Group Management** button in the *System Settings* window is disabled in all other sites.

After groups and users have been defined, you can define which system operations will be available to each group of users, per site, as described in *Configuring Site Authorization*, page 92.

Thereafter, each authorized user can access the system and the ViconNet application, using their assigned user name and password. The system automatically checks the login information according to the assigned group and then enables the allowed system operations, which can include:

- Configuring the network setup, as described on page 60.
- Configuring PTZ controls, as described on page 77.
- Viewing and recording live video/audio, as described in *Chapter 4, Viewing and Listening to Live Video/Audio* and *Chapter 5, Recording Live Video/Audio*.
- Playing back recorded video/audio, as described in *Chapter 6, Playing Back Recorded Video/Audio*.

Access to the available sites and devices (cameras, microphones and so on) is also dependent on the assigned authorization of each user.

Defining Groups

The ViconNet system enables you to define groups to which you can assign specific users. The purpose of each group is to categorize specific users so that they can all be assigned the same site authorization rights. These rights determine the system operations each group can perform.

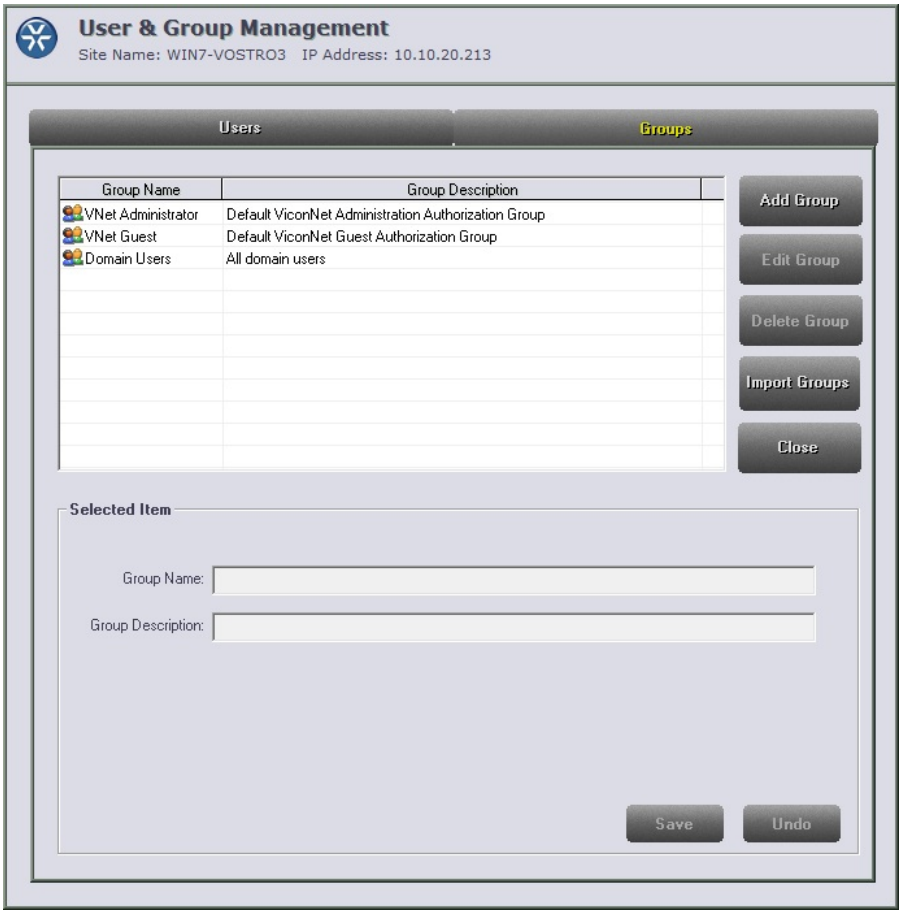
After defining the groups, you can assign users to the groups, as described in *Defining Users*, page 89.You can then configure the site authorization for each group, as described in *Configuring Site Authorization*, page 92.

To add a new group:

1. From the ViconNet *Main* window (in the Nucleus), click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.

2. Select a site name and click Select. The *System Settings* window is displayed, as shown on page 55.

3. Click User & Group Management. The *User & Group Management* window is displayed with the Users option selected by default. Select **Groups** option to add a new group.



NOTE: *When working in the User & Group Management window, you can click* ***Undo*** *to restore the last saved settings, if required.*

The system provides two default groups (**Administrator** and **Guest**), each with their respective site authorizations. Refer to *Configuring Site Authorization*, page 92, for a description of these groups.

4. Click Add Group . The fields in the bottom portion of the window are enabled, as follows:

5. In the **Group Name** field, enter a logical group name.
6. (Optional) In the **Group Description** field, enter a description for the group. For example, this can be a reference to the type of users you plan to add to the group.
7. Click Save. The new group is added to the group list at the top of the window.
8. To add additional groups, repeat steps 4 to 7, as required.

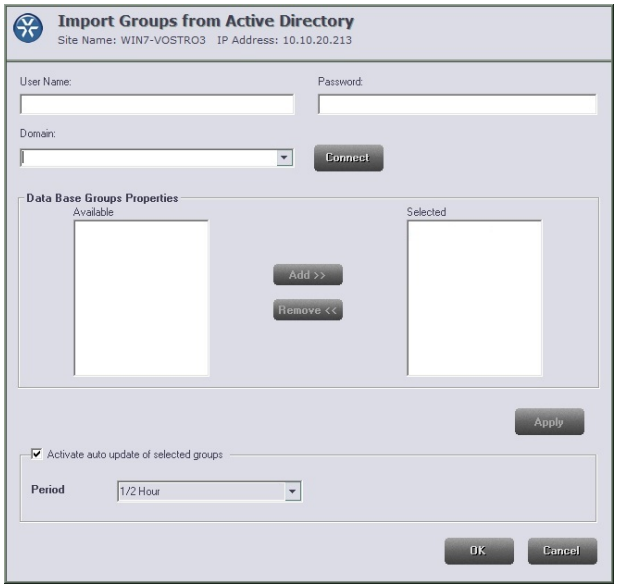
NOTES:

*To edit a group, select the group from the list in the User & Group Management window and click **Edit Group**. Then modify the displayed settings, as described in the procedure above and click **Save**.*

*To delete a group, select the group from the list in the User & Group Management window and click **Delete Group**.*

ViconNet provides an Active Directory, an interface that allows importing groups and users from another server to ViconNet. These groups can then be used as any other group in the system.

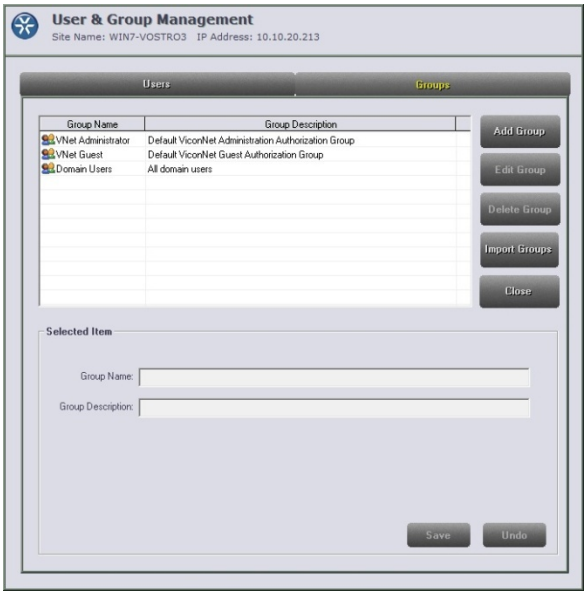
1. Select the Import Groups button. The following screen displays.



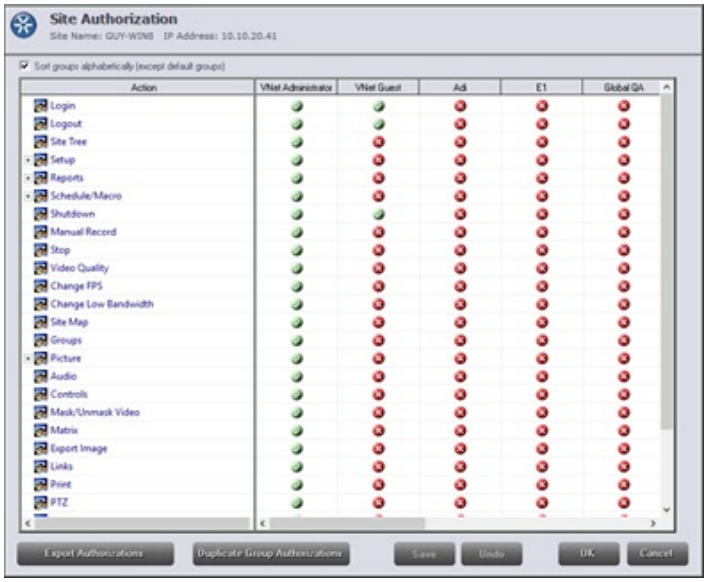
2. To access the domain to import, enter the user name and password of an authorized domain user and the domain site. Click Connect. A list of groups in that domain will display in the Available area of the screen.

3. Select the groups to be imported into ViconNet (those with relevant users) from those available in the domain and click *Add*. That group is now a group on your system. Repeat for all the groups to be added. A group can be deleted by selecting it in the Selected list and clicking *Remove*. Since groups on other domains may be periodically updated by their system managers, you can select to have your group updated as well. Check the box to *Activate auto update of selected group*; then select a time period of from ½ hour to 24 hours for how often the list is updated. When all groups

have been added, click *Apply* and then *OK*. These groups are now included in the group list on the Users & Groups Management page.



4. These new groups can now be edited and users added like any other group. Additionally, a Domain column will be added to the Site Authorization list to define which system operations can be accessed by each group from the domain. To allow a logical order of the user groups when configuring their authorization, there is an option to display them in alphabetical order rather than the order they were added (with the exception of default groups). Check the box at the top of the screen.

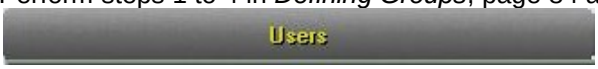


You can now add specific users to the defined groups, as described in the following section. When connected to Active Directory, the users who are members of the groups are also imported, so there is no need to create a user or associate them, just define their authorization.

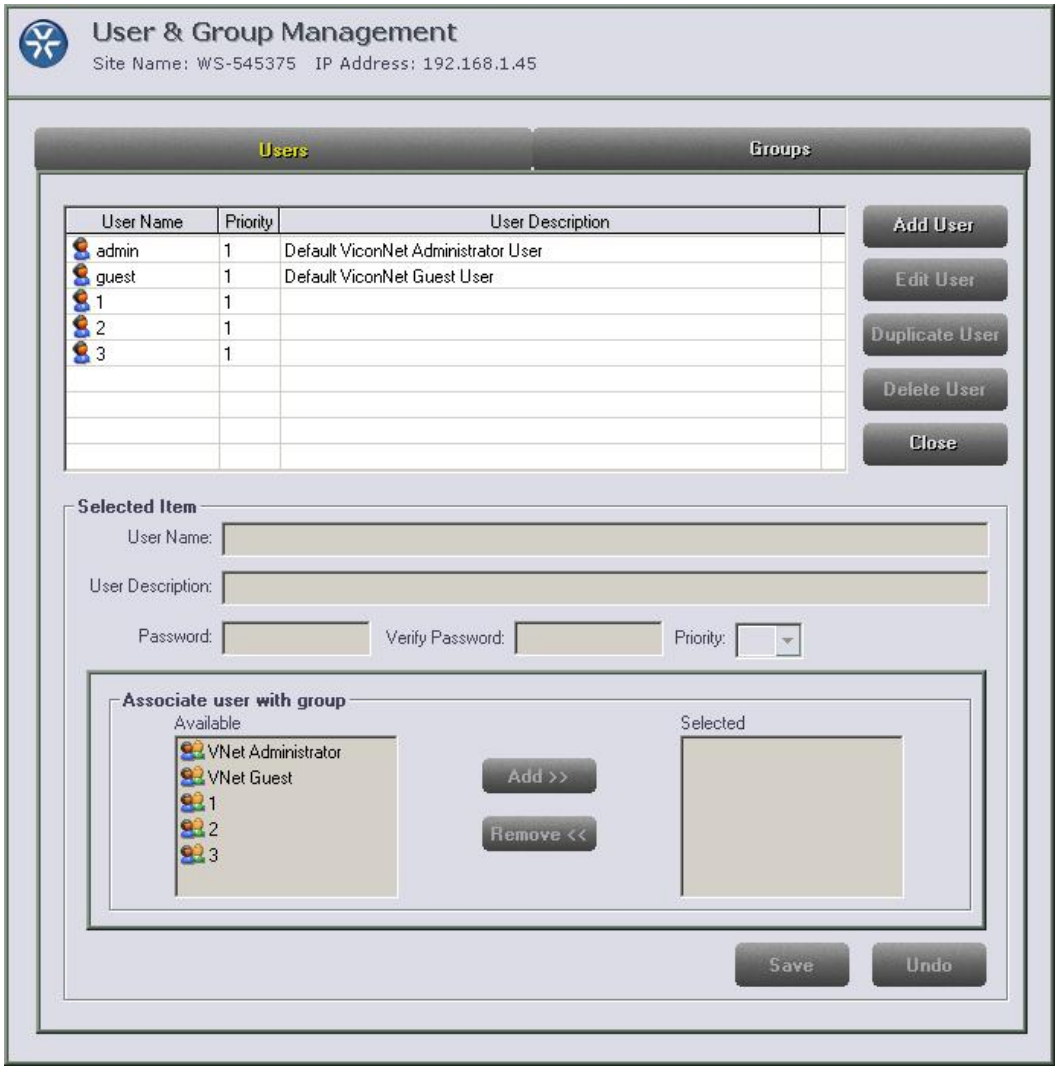
Defining Users

The ViconNet system enables you to categorize the specific users in your system into groups. Users must be defined in the Nucleus and can be seen in all the sites. You can then configure the site authorization for each group of users, per site, depending on the system operations that you want them to be able to access.

To define a new user:

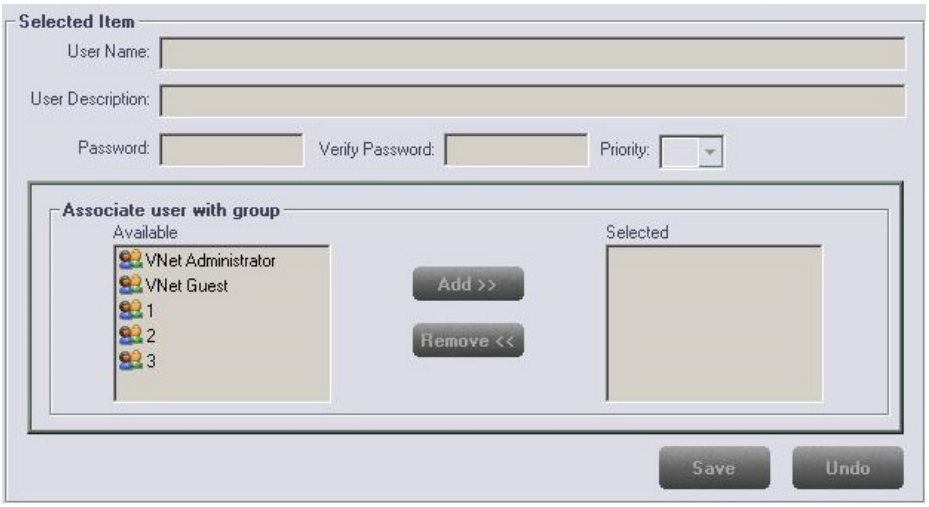
1. Perform steps 1 to 4 in *Defining Groups*, page 84 and ensure that the 

option in the *User & Group Management* window is selected. The *User & Group Management* window is displayed.



NOTE: *When working in the User & Group Management window, you can click* ***Undo*** *to restore the last saved settings, if required.*

2. Click Add User. The options in the bottom portion of the window are enabled, as follows:



3. Enter the user details, as follows:

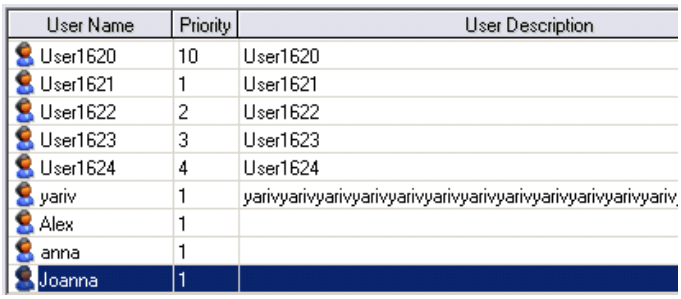
Option	Description
User name	Type in a logical user name.
User description	(Optional) Type in a description for the user, if required.
Password	(Optional) Type in an alphanumeric password of up to any 15 characters.
Verify Password	(Optional) Type in the same password that you entered in the **Password** field.
Priority	Select the user's priority in the system. This priority is used by the system when there is a situation where a user requests or forces him/herself to be the primary user (default = 1). For example, post alarm recording is performed at the quality of the user/macro that has the highest priority. Refer to the *Creating a Macro* section for an example of use of user priority.

4. In the **Group Association** section, select which group to assign the user from the **Available** area and then click Add >>. The selected group is displayed in the **Selected** area.

5. To add the same user to another group, repeat step 4.

NOTE: *You can remove a group from the **Selected** list by selecting it and then clicking **Remove**. The group is redisplayed in the **Available** area.*

6. Click Save. The new user is added to the user list at the top of the window.



User Name	Priority	User Description
User1620	10	User1620
User1621	1	User1621
User1622	2	User1622
User1623	3	User1623
User1624	4	User1624
yariv	1	yarivyarivyarivyarivyarivyarivyarivyarivyarivyarivyarivyariv
Alex	1	
anna	1	
Joanna	1	

NOTES:

*To edit a user, select the user from the list in the User & Group Management window and click **Edit User**. Then modify the displayed settings, as described in the procedure above and click **Save**.*

*To delete a user, select the user from the list in the User & Group Management window and click **Delete User**.*

7. To add additional users and their group assignments, repeat steps 3 to 7, as required.

8. Use the **Duplicate User** button to create a new user with the same associated groups and priorities as the selected user.

   You can now set the site authorization for each group of users that you have defined, as described in *Configuring Site Authorization*, below.

Configuring Site Authorization

The ViconNet system enables you to define the site authorization for each group of users that you have defined in the system. This consists of specifically defining which system operations can be accessed by each group.

The system also provides the following two default groups:

- **ViconNet Administrator:** Users assigned to this group have authority to perform all system operations.
- **ViconNet Guest:** Users assigned to this group have authority only to log in, log out and exit the ViconNet application. Default values shown in entry fields may also be changed, if required. All other options are disabled.

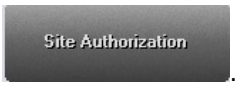
When configuring site authorization, each group is displayed in its own column along with a list of available system operations. This enables you to set site authorization for one or multiple groups by selecting the appropriate options in each column.

To configure site authorization:

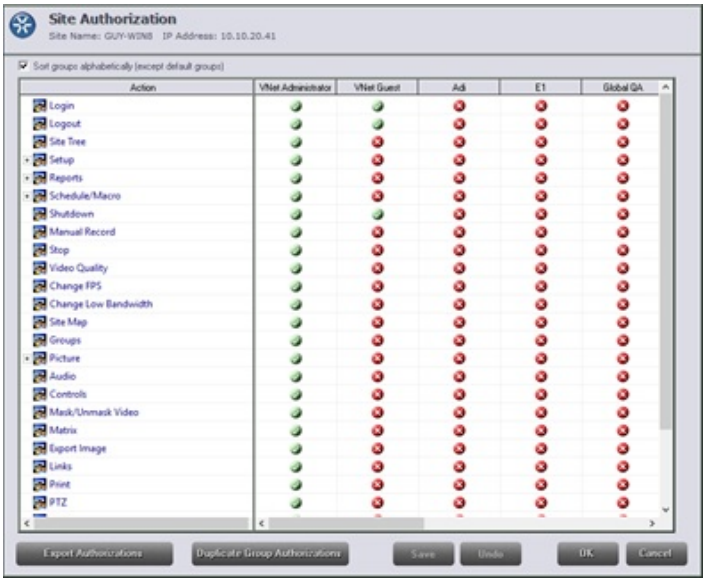
1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to configure site authorization and click

. The *System Settings* window is displayed, as shown on page 55.

3. Click 

. The *Site Authorization* window is displayed, as shown below.



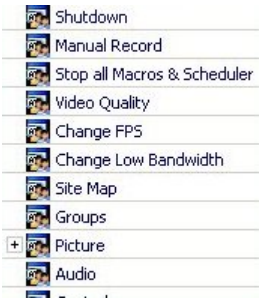
NOTES:

When working in the Workstation, the Site Authorization window opens with all administrator functions checked. However, only those functions described in this manual as active are actually enabled.

When working in the Site Authorization window, you can click ***Undo*** *to restore the last saved settings, if required.*

The *Site Authorization* window contains the two default groups (**Administrator** and **Guest**) as well as all other groups currently defined in your system. The operations in the **Administrator** group cannot be modified, but you can modify the operations in the **Guest** group, if required.

4. Expand the branches in the **Action** list to view the categories, as required (see the examples below).



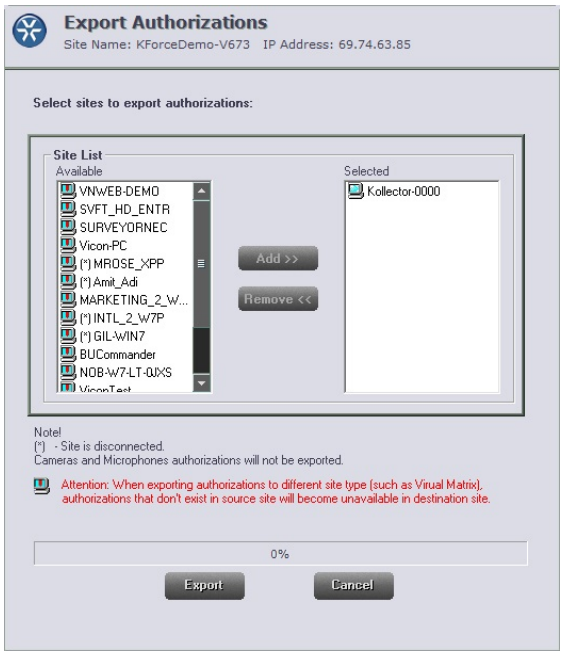
> ***NOTE:*** *The **Live View** action enables the users of an authorized group (see next step) unlimited access to the specified device. (The actual feasibility of the device use depends on the device's authorization for the relevant group.)*

5. In the appropriate group column, define the system operations that you want authorized for that group by selecting ( ) or deselecting ( ) the appropriate categories, as required.

For example, under Groups Device Sets, each group within a Devices Group Set can be assigned different authorizations. In this way, users in each group only have access to the cameras associated with the group they are in.

> ***NOTE:*** *The **Live View** feature, as well as the **Device Data Retrieval** feature under the **Playback** branch, are authorized on a per device (camera and microphone) basis.*

6. To copy the actions from this site and send them to another site, use the Export Authorizations button. The following screen displays.



Select the site to which the actions are to be exported from the **Site List** and click **Add**; that site will appear in the **Selected** list. Sites can be removed from this list by clicking **Remove**.

7. To copy the actions of one group to another group, use the Duplicate Group Authorizations button.

Select the source of the actions to be duplicated. Select the destination group to be duplicated from the **Available** list and click **Add**; that group will appear in the **Selected** list. Groups can be removed from this list by clicking **Remove.**

8. To restore the last saved settings, click **Undo**.
9. Click Save. The following message is displayed:

10. Click Close in the message.

11. In the *Site Authorization* window, either:

    Click to save and exit,

    or

    Click to exit without saving.

NOTES:

*If you click **Cancel** in the Site Authorization window before you click **Save**, a message is displayed, prompting you to save your changes.*

To edit the existing site authorization for a group, repeat the procedure above, select or deselect the options, as required and then save your changes.

IMPORTANT:

*When replacing the Nucleus of the system (by changing the **Nucleus IP** in the Network Settings window), you must first redefine all the users and groups in the new Nucleus. To do so:*

1. *Go to the site that is to be the new Nucleus and manually define all the users and groups.*
2. *In all the sites connected to the current Nucleus, change the **Nucleus IP** in the Network Settings window to the IP of the new Nucleus. In each site, the system will restart. Upon restart, the site will ask you if you want to run a conversion (to put all the current site authorizations into the new Nucleus).*
3. *Either:*

   *Click **Yes** – site authorizations from the existing Nucleus are saved in the new Nucleus,*

   or,

   *Click **No** – site authorizations are lost and only the administrator and guests can log in to sites connected to the new Nucleus. In the local Site Authorization window, all the rows appear with red crosses (Xs). For other users to access the sites connected to the new Nucleus, follow the **To configure site authorization** procedure, as described on page 92, for each site.*

IMPORTANT:

When joining a new Nucleus with either a Workstation or Kollector recorder, the new user obtains a group list from that Nucleus. This group list (on the new unit) will have no privileges (meaning that by default, all Actions are labeled with a red X). In order for the new user to obtain privileges in that group, a user must login to the Nucleus as an Administrator, locally or remotely and enable the privileges (change the red Xs to green checks) for that unit. This procedure must be repeated on all units in the system where group privileges are required.

When joining a new Nucleus with either a Workstation of Kollector recorder, the previously established group privileges will be disabled on that unit when the "Nucleus" designation is removed. To restore those privileges, the unit must disengage from the new Nucleus unit and re-establish itself as a standalone Nucleus.

Configuring Auto Login

Any user with appropriate access authorization can configure the system to automatically log in selected users. Afterwards, each time the application starts, the ViconNet *Main* window will display without the need to enter a user name and password. (The regular Login procedure is described in the *Logging In* section in *Chapter 2, Getting to Know ViconNet*.)

The user's Auto Login configuration can also be removed, as required.

To configure a user for Auto Login:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to configure Auto Login and click

. The *System Settings* window is displayed, as shown on page 55.
3. Click

to display the *Auto Login* window.

NOTE: *If Auto Login has already been defined for the user name, the window fields will show the user name and 8 asterisks (********) in the Password field.*

4. Select the **Login as Specified User** checkbox to enable entering data to the window.

5. Enter the required user's user name and password in the applicable fields. (If you want to remove a user's Auto Login configuration, delete the displayed entries or unclick the checkbox.)

6. Click **OK**. The *System Settings* window is redisplayed.

> ***NOTE:*** *If the entered user name and password combination is not defined in the system, an error message will be displayed. You should try the entries again.*

The specified users will now be able to access the system without a login procedure.

> ***NOTE:*** *The Auto Login (or Auto Login removal) becomes operational only after the next restart of the application by the Administrator user.*

Configuring Storage Database Utilities

The ViconNet system enables you to configure the storage locations of the Video and Audio database in your system, depending on your requirements. Each storage location can be made up of a combination of multiple disks (sections), depending on the number of available disks in the system.

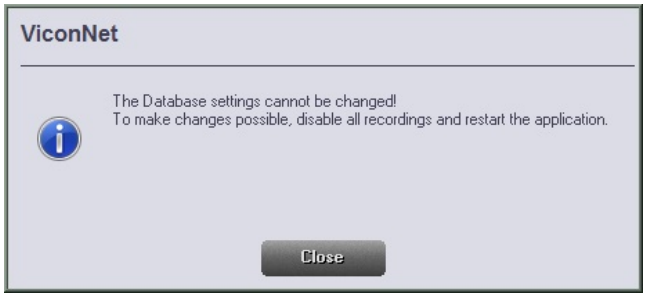
IMPORTANT: *When you add a disk to an existing storage location or enlarge the disk size, all recorded data is retained. If you reduce the size of an existing storage location, all recorded data is removed from the system.*

When you run the ViconNet application for the first time, the default storage location settings are applicable.

This section describes how to configure or clear databases, as follows:

- **Configuring Storage Locations,** below
- **Clearing Video and Audio Storage Locations,** page 107

NOTE: *To avoid damage to databases, if the current session involves recording (since the last reboot), the Storage Database Utility is disabled. Otherwise, the following message is displayed:*



In this case, disable recording management and macro recording, restart the application and then select the Storage Database Utilities option again.

Configuring Storage Locations

Configuring a storage location consists of defining the actual location of the video/audio database. You must also define the storage size of each storage location, depending on the available disk size.

This function is disabled while recording (manual, automatic, or macro-initiated) is in progress.

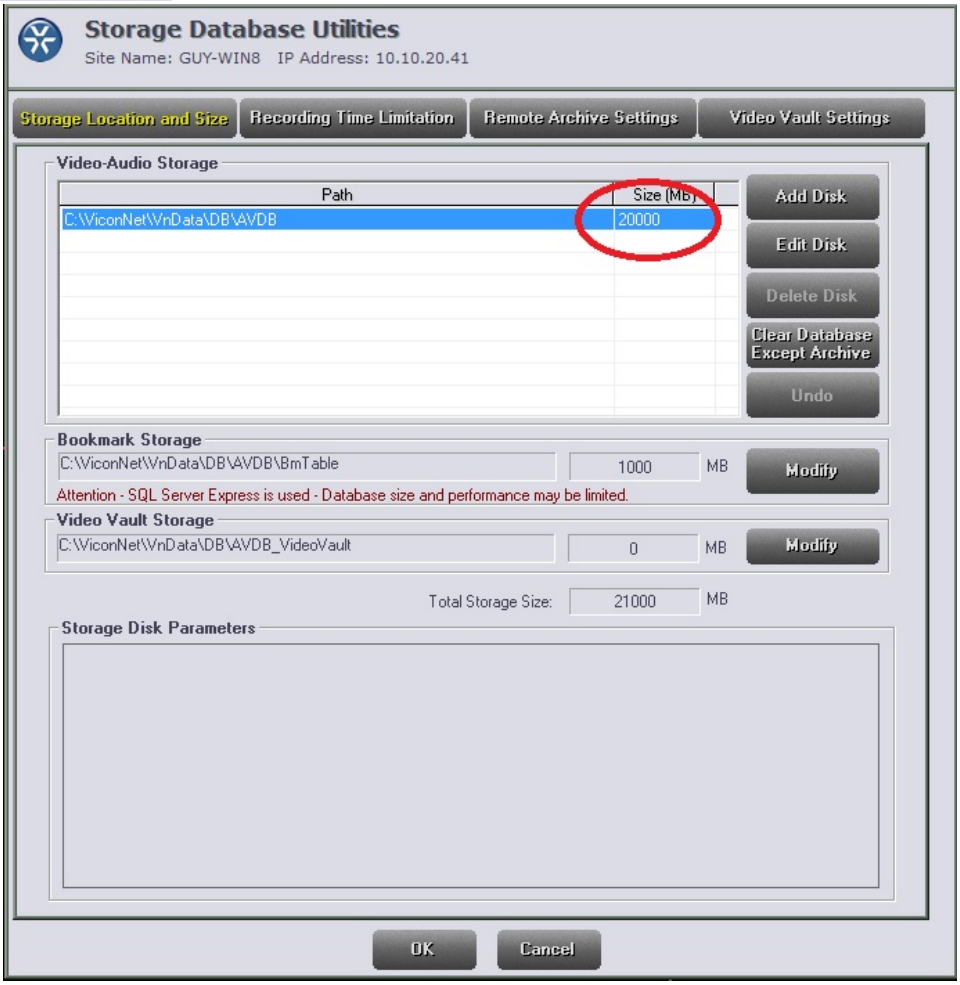
To configure Storage Database Utilities:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the local Workstation and click

. The *System Settings* window is displayed, as shown on page 55.

3. Click Storage Database. The *Storage Database Utilities* window is displayed with the Storage Location and Size tab selected by default.

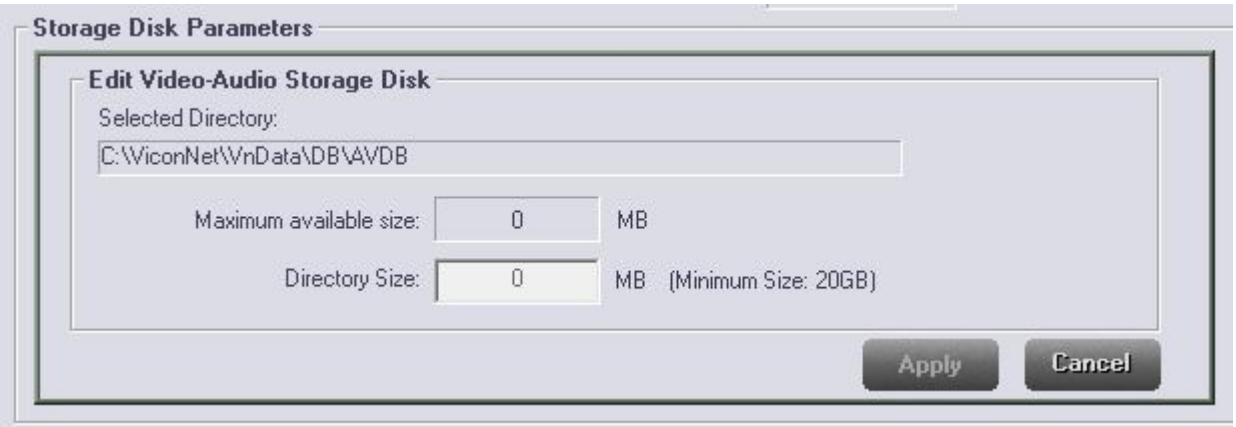


NOTES:

When working in the Storage Database Utilities window, you can click ***Undo*** *to restore the last saved settings, if required.*

In addition, the options in the Storage Database Utilities window are disabled during remote setup.

4. Click Add Disk. The bottom portion of the *Storage Database Utilities* window is enabled, as follows:



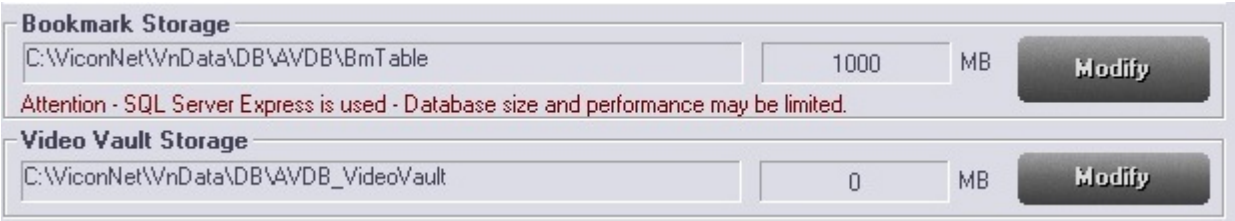
5. Click the arrow next to the **Select Disk** dropdown list and then select the required location. *Do not record on the OS C drive or any other internal drive if a RAID is attached.*

   The system automatically detects the **Maximum Size** of the selected directory, depending on the available disk space. The default directory size is 20000 MB (which is also the minimum size).

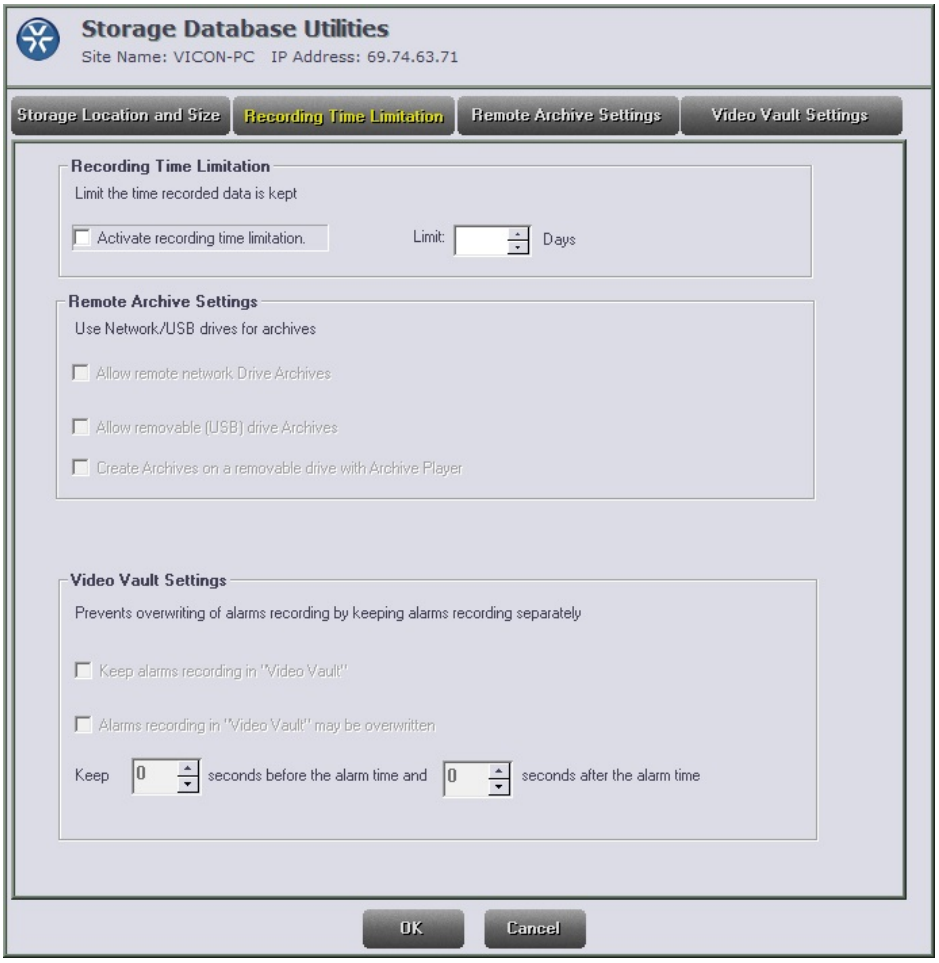
6. In the **Directory Size** field, type in the required size (between the minimum and maximum).

7. Click Apply in the bottom of the window. The new storage location information is added to the storage location list at the top of the window.

8. Click Modify to change the location of the DB Storage for the Bookmark and Video Vault recorded data.

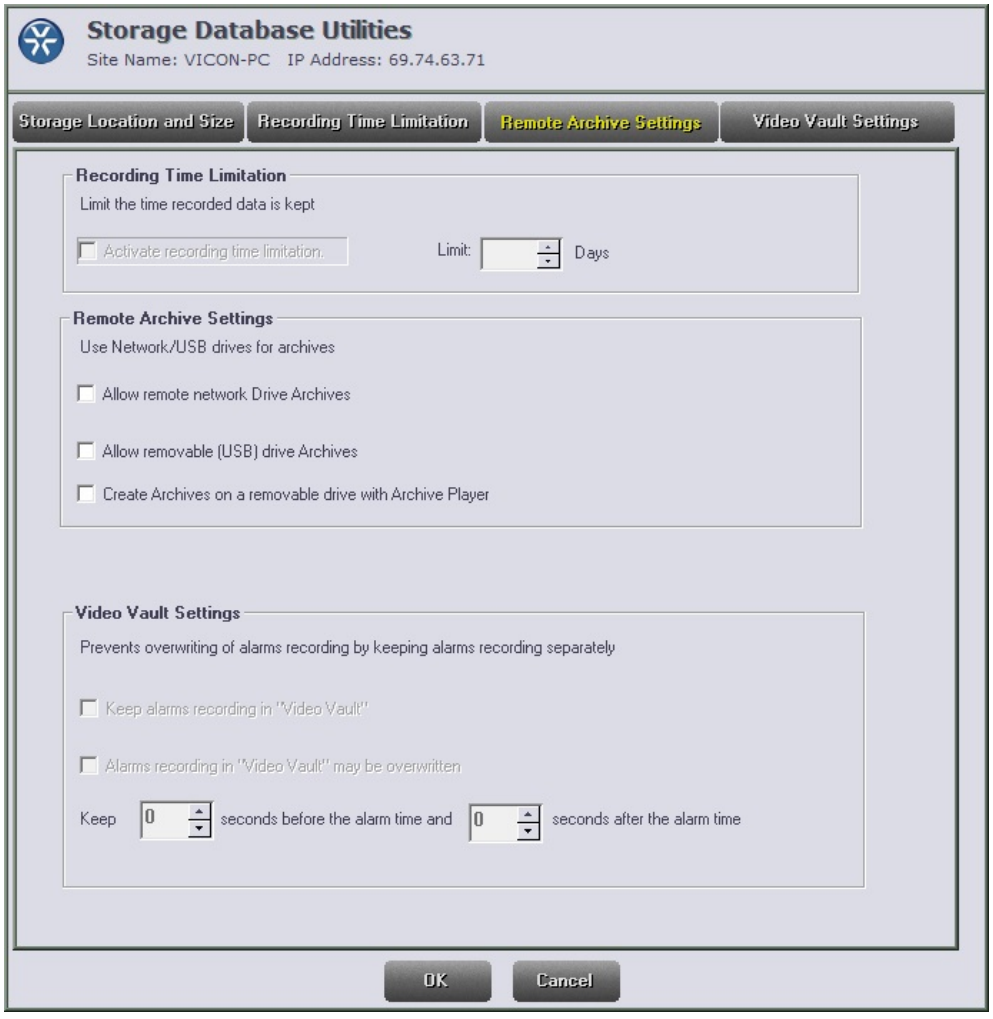


9. Click the Recording Time Limitation tab. Selecting this option enables you to activate/deactivate the recording time limitation and to select the maximum duration for which recordings should be stored.



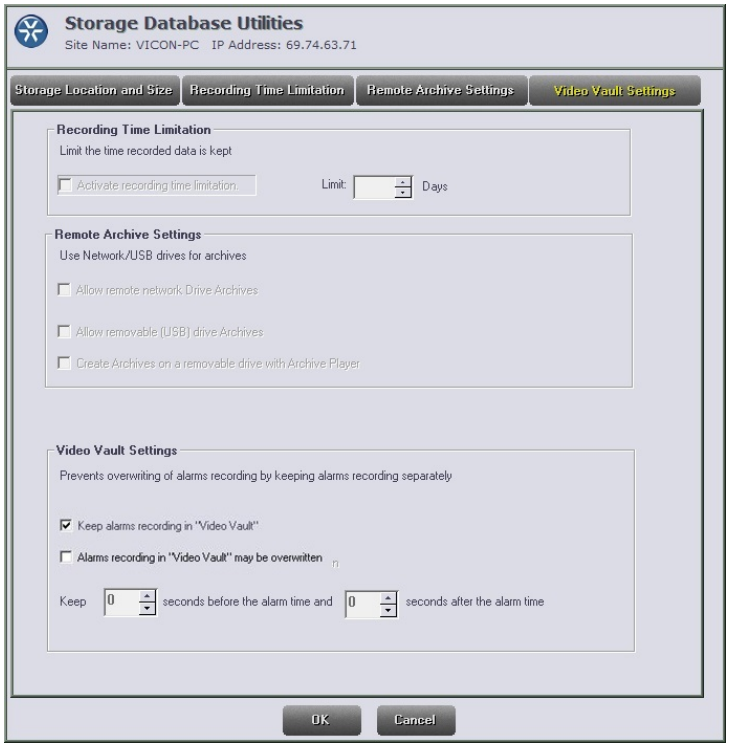
10. Check the box and enter the number of days to limit recording.

11. Click the Remote Archive Settings tab. Selecting this option enables you to select the type of disk on which an archive can be saved. If nothing is checked, you can only save locally.



- **Allow remote network Drive Archives:** Select this option to enable you to save an archive on a non-local disk (i.e., Network drive). If it is not selected, you can only save locally.
- **Allow removable (USB) drive DB Archives:** Select this option to enable you to save an archive on a removable disk such as a USB device or a CD. Deselect to disable.
- **Create Archives on a removable drive with Archive Player** This is enabled (On) by default; it allows you to save an archive together with the ViconNet Viewer on a removable disk, such as a USB device or a CD, so that on selecting to play the archive, the ViconNet Viewer automatically runs. Deselect to disable.

12. Click the Video Vault Settings tab. Selecting this option allows the recorded data to be moved to a secure location when the database is full where it will not be automatically overwritten. Record must be on for this setting.

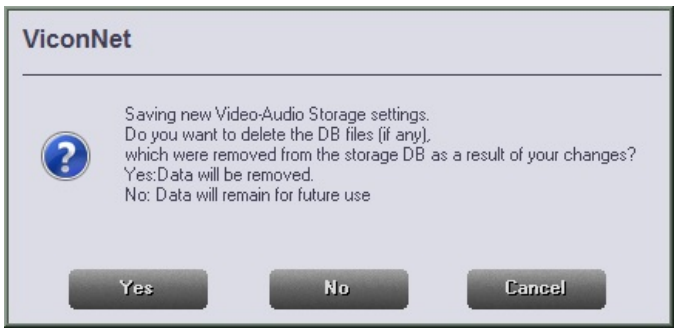


Check whether to allow this archive to be overwritten. Additionally, you can select a number of seconds before and after the alarm to be saved.

13. To add an additional disk, repeat steps 4 to 11, as required.

> ***NOTE:*** *To edit a storage location, select the storage location from the list in the Storage Database Utilities window and click* ***Edit Disk****. Then modify the displayed settings, as described in the procedure above and click* ***Save****.*

14. Click OK. When saving a change to the size of the database, data may be deleted (if database size is reduced). The confirmation message shown below is displayed, to give you the option of either deleting any excess data or just hiding it.



15. Either:
    - Click **Yes** to delete the data that does not fit in the new database, or
    - Click **No** to hide the data that does not fit in the new database. (That means, the data files can still be viewed from Windows Operating System, but you will not see them in the ViconNet application. If in the future the database is enlarged, the data files will again become visible.)

    The data is deleted/hidden on a FIFO (First In First Out) basis (meaning that the oldest data is deleted/hidden first). The following message is displayed:

16. Click

to confirm your changes.

Deleting Disks

Storage locations can be deleted if no longer required. To delete a storage location, select the storage location from the list in the *Storage Database Utilities* window and click **Delete Disk**.

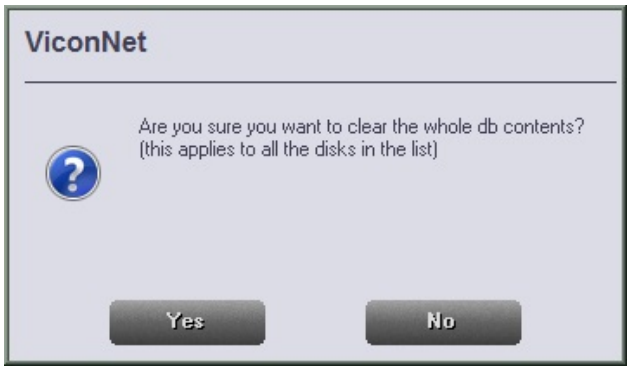
Clearing Video and Audio Storage Locations

The entire video and audio storage database can be cleared.

It is recommended that authorization to this function be assigned only to Administrator users.

To clear databases:

1. Repeat steps 1 to 3 of the *Configuring Storage Locations* procedure, page 100.
2. In the *Storage Database Utilities* window, click the Clear Database Except Archive button. (No selections are required beyond the indicated defaults). The following confirmation window is displayed.



3. Click **Yes** to confirm the action. The selected database is cleared.

HD Mobility

The HD Mobility feature enables saving data from the hard disk of a malfunctioning NVR/Workstation or recorder (a recorder that has stopped working). This feature enables you to take the hard disk from the malfunctioning recorder and insert it into a working recorder.

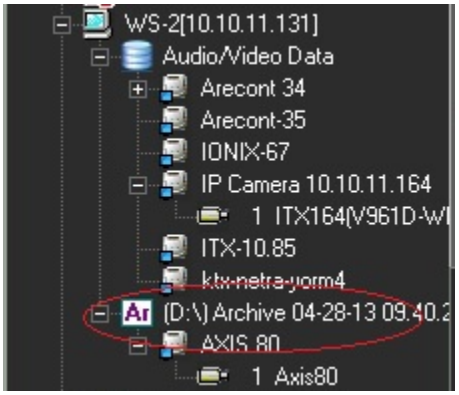
To restore data from a malfunctioning NVR/Workstation or Kollector:

1. Disconnect the hard disk from the malfunctioning site.
2. Insert the hard disk into a working site as an additional disk (meaning, not as part of the existing storage configuration).

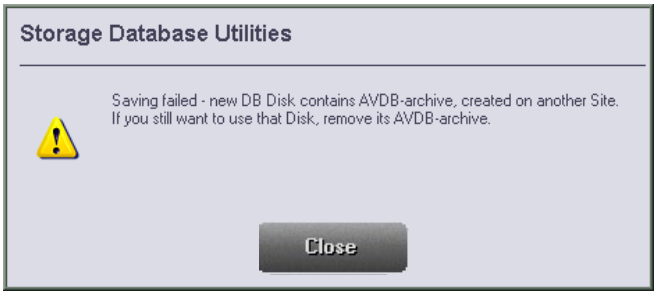
   For example: If your storage configuration already consists of 2 hard disks **C** and **E**, you can add a disk and map it to any disk drive whose name appears alphabetically after all existing disk drives (in this case, after **E**).

   NOTE: *Ensure that the working recorder has the option to connect additional disks.*

Once the hard disk is connected, it is recognized and displayed in the Navigator as an archive.



NOTE: *Since this disk contains an external database, you cannot add it to the local database configuration using the storage database utilities window in the setup. If you try to add it, you get the following message:*



Configuring System Authentication

When the **Check Picture Authentication** feature is active, the ViconNet system automatically verifies that live or played back ViconNet-produced videos were not tampered with. According to the results of the verification, one of the following system authentication statuses is displayed on the video:

- **Auth ✓:** Indicates the video segment has been confirmed as authentic.
- **Auth X:** Indicates that the authentication was checked properly but the results were poor and could not be confirmed as authentic.

To view authentication results for video played on the destination site:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to view system authentication results and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click Authentication. The *Authentication Setup* window is displayed.

4. Select the **Check Picture Authentication** checkbox. This will activate the authentication reporting mechanism in the video destination.

   When you play back a video segment or watch live video, the system reports whether or not the video is authentic. (When the **Check Picture Authentication** checkbox is deselected, authentication results are not reported.)

5. Click OK to save your selection.

Defining Device Groups and Group Sets

The Device Group feature enables you to group devices (cameras and microphones) according to your requirements, instead of the standard collection by transmitter, as displayed in the **Site List**. A group can be formed according to any criteria, such as: location, camera type and so on. Instead of trying to find a particular camera by transmitter name in the **Site List**, Groups can be used in the **Groups** list and the devices status (activated/deactivated) can immediately be seen. If more than one grouping method is needed, Group Sets can be defined.

Groups are added using *Devices Group Sets Management*.

NOTE: *Only users with administrator rights can edit New Devices Group Sets.*

Creating a Group Set

A Group set usually consists of various groups of devices. For example, in a large company with several multi-story buildings, there may be a group set for each building. In each group set (building) there could be a number of groups, each one for a different floor.

When using the Vicon Access Control System (VAX), it is recommended to create a camera group to be associated exclusively with the VAX system. This will simplify setting up the VAX system and accessing those specific cameras through ViconNet. Refer to the Access Control documentation for details on setting up your VAX system.

To create a Group Set:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the Workstation for which you want to define a Group Set and click

. The *System Settings* window is displayed, as shown on page 55.

3. From the *System Settings* window, select

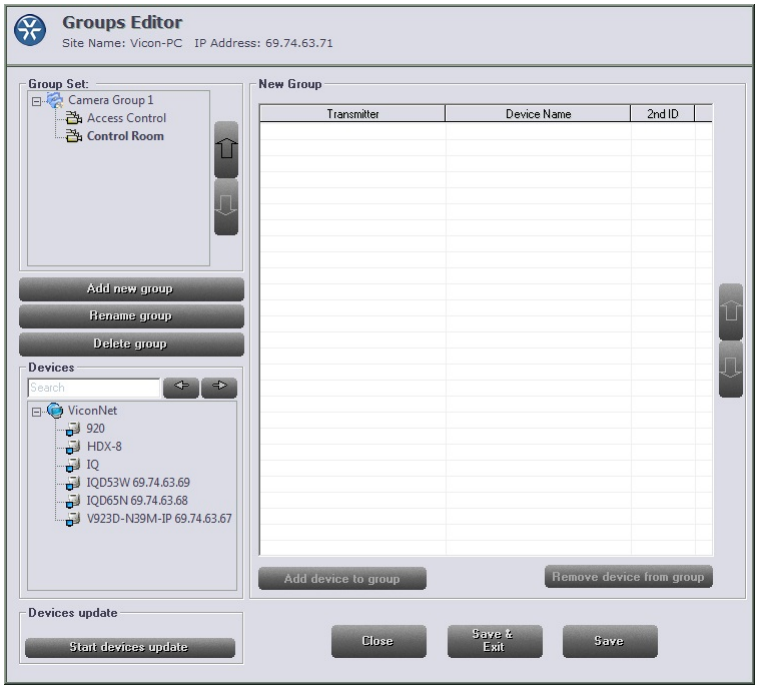
. The *Devices Group Sets Management* window appears.

4. Click **Add**. The next blank line in the **Devices Group Sets** area becomes editable and the text *New Devices Group Sets* appears automatically as the name of the new group set.

5. Enter a name for the new Group Set and press **Enter**.

NOTE: *Upon clicking* ***Select as working Set****,* ***– Working Set*** *is displayed next to the name of the* Group Set.

6. To configure which groups to put into a Group Set, double-click the Group Set name. The *Groups Editor* window appears with the name of the new (selected) Group Set at the top of the list in the upper-left panel.

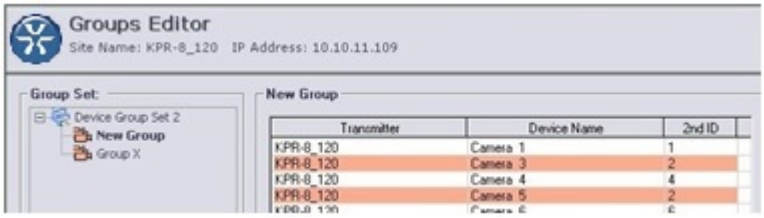


7. Select the new group in the list in the top left to add to this Group Set and click **Add new group**. A group called **New Group** appears in the Group Set (in the list). You can edit the name of the group by either typing directly while it is still editable (indicated by blue highlight) or later by selecting it and clicking the **Rename group** button.

8. Navigate to and select the device you want to add to the group in the **Devices** list in the bottom-left corner of the window. Once the Group is highlighted, and the name appears at the top of the window above the Group Set navigation list, drag the device to the list of devices on the right select the device and click **Add new device** button. Note that there is a Search function available that can quickly sort through the list of devices to locate the device you want to add.

9. (Optional) For each device selected, enter a unique secondary ID (**2nd ID**). This ID can be any number up to 3 digits. This number must be entered if you are going to use a VMDC keypad.

NOTE: *If you try to give two devices the same secondary ID, the conflicting lines are colored pink, as shown below. In addition, if the devices, which have the conflict, are placed in two groups, the group's icon in the Group Set list are also colored pink.*



10. (Optional) You can reorder the list view in the Group by clicking on the up and down arrows to the right of the list.
11. Clicking the will update (refresh) the screen to reflect all changes.
12. Click **Save** or **Save and Exit**.

NOTES:

Double-clicking the device name in the device list does not add it to the group.

If you try to save Groups in which multiple devices have the same secondary ID, the following message is displayed:

After a Group Set has been created as the Working Set, you can select to display either the device name or secondary ID or both *Main* window **Groups** list.

Exiting the Groups Editor Window

There are two ways to exit the *Groups Editor* window:

- To save your changes, click **Save & Exit**.
- To close the window without saving your changes, click **Close**. In this case, a confirmation message appears to verify that you do not want to save your changes.

In both cases, the *Groups Editor* window is closed.

Editing a Group Set

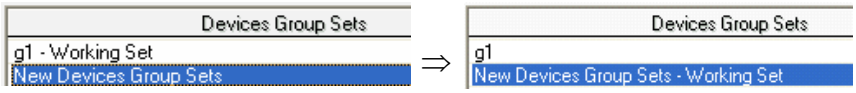
After a Group Set has been created, it can be edited as follows:

- **The definition of the Group Set:** The Group Set can be renamed, deleted or defined as the Working Set.
- **The content of the Group Set:** Groups and devices can be added to or deleted from the Group Set.

To edit a group set:

- In the *Devices Group Sets Management* window, click **Edit**. The *Groups Editor* window appears. The Group Set can be edited as described above.
- To rename the Group Set, from the *Devices Group Sets Management* window, click **Rename**.
- Devices can be added to the group by selecting the device and dragging it to the list or by clicking **Add new device**. To remove a device from the group, highlight it in the list and click **Remove device from group**.
- To select which group set is to be displayed in the *Main* window, click

. The name of the group set in the list is then automatically changed to add the suffix *"– Working Set".*



To see the working set in the *Main* Window, click the **Groups** tab.

Configuring Manual Recording and Video Quality

The ViconNet system enables you to control the display quality that applies to manually initiated recording by configuring the picture quality and refresh rate.

Note: *The Quality and Mode settings on the* ***Recording and Display Quality*** *window are ONLY enabled when using a VPK-SW/VPK NVR series preconfigured PC; they are disabled when working on a VWS-SW or VWS-PC.*

The

buttons in the *Main* window **Function Controls** area can also be enabled, which allow you to manually override the display mode-determined Live picture quality for the currently selected camera. The qualities 1, 5, 6 and 7 are available for this purpose. (For more information, refer to the *Function Controls* section in *Chapter 2, Getting to Know ViconNet*.)

NOTE: *Changing the display mode after you manually select a quality will override your selection.*

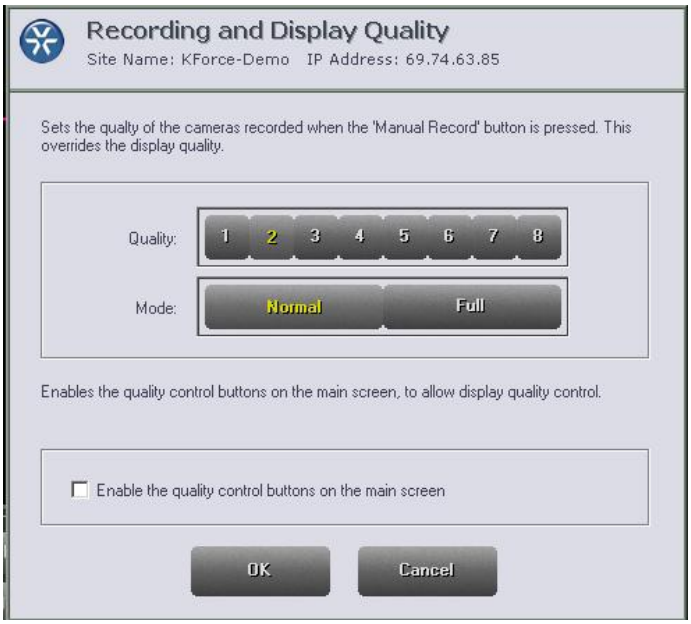
To configure manual recording:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to configure manual recording and click

. The *System Settings* window is displayed, as shown on page 55.
3. Click

. The *Recording and Display Quality* window is displayed. The Quality and Mode area is grayed out on the VWS-SW/VWS-PC.



4. Make the required **Quality** (picture quality) and **Mode** (refresh mode) selections, as follows:

Option	Description
Quality	The picture quality that you select determines the resolution at which the video images will be recorded. Select the required picture quality from the range of one to eight, where: • **1** = best picture quality, but slowest data transmission. • **8** = least clear picture quality, but fastest data transmission. ***NOTE:*** *When different recording options are requested concurrently, the recorded picture quality that applies is determined according to prioritization settings. For details, refer to the Picture Quality and FPS Priority section, page 139.*
Mode	The refresh mode determines the rate that the frames will be refreshed during the recording. Select the required refresh mode, as follows: • **Normal:** Records only changes within the frames, resulting in an economic storage location process. This option enables you to view the recorded video at a high frame per second rate, depending on the magnitude and number of changes. • **Full:** Records full video image frames. During the recording operation, this refresh mode causes the selected storage location to fill up at a faster rate.

NOTE: *For additional details about picture quality and refresh mode in recording vs. playback, refer to the About Picture Quality and Refresh Mode section in Chapter 2, Getting to Know ViconNet.*

5. In order to enable the

buttons in the *Main* window **Function Controls** area, select the **Enable the quality control buttons on the main screen** checkbox.

6. Click **OK** to save the Quality and Mode settings for manual recording.

Configuring Recording Management

The ViconNet system enables you to configure recording management, which allows the system to record the selected connected cameras and/or microphones continuously (24/7), to boost recording upon motion, to record 24/7 and then boost upon motion, or to record only upon motion.

Configuring recording management consists of selecting the cameras and/or microphones that will be recorded and selecting the recording settings.

To configure recording management:

1. From the ViconNet *Main* window, click

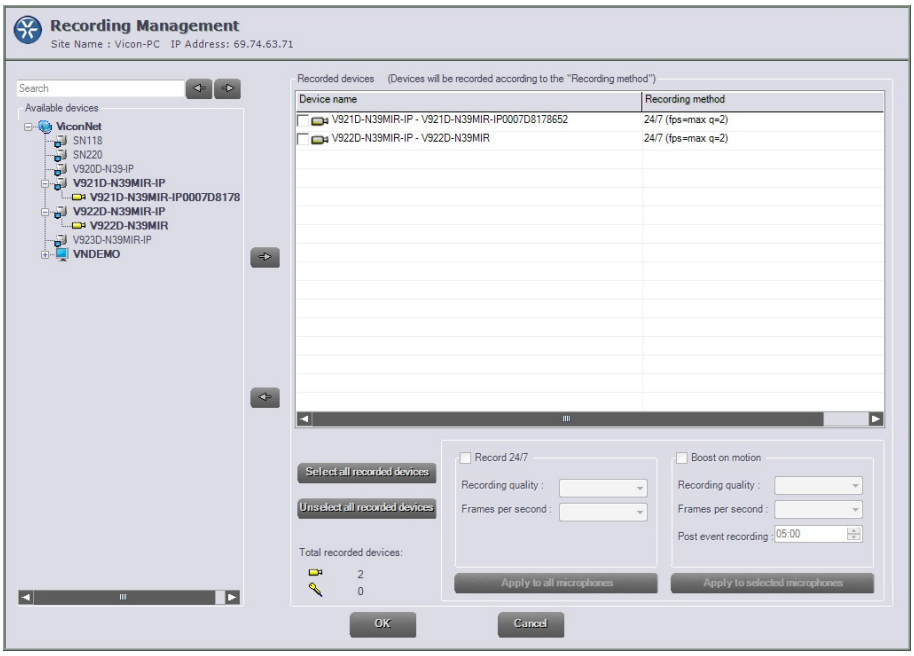
. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.

2. Select the site name for which you want to configure automatic recording and click

. The *System Settings* window is displayed, as shown on page 55.

3. Click

. The *Recording Management* settings window is displayed.



4. The Available devices list displays all camera/microphones on the system. Select the required devices to be configured for recording. Either drag the device into the Recording devices list or highlight it and click the

(add icon). From here each device can be configured. To remove a device from the list, check the box or highlight it and click the

(remove icon).

5. Select the checkbox of the device in the Recording device list to select it. Each device can be configured to record 24/7 (default) or to boost on motion; both options can be selected for the device. Additionally, a device can be configured to record only when there is a motion alarm by deselecting the

Record 24/7 checkbox. Each device can be configured individually. To select multiple devices, click the checkboxes and then the Apply to selected cameras button; click Apply to all cameras if they are all to have the same configuration.

Note: When recording on motion or boosting on motion, the motion settings must be done from the camera browser.

6. When configuring Record 24/7, select the Recording quality number from the list (Q number). Then select the Frames per second (fps).
7. When configuring Boost on motion, select the Recording quality number from the list (Q number). Then select the Frames per second (fps). Select a time for Post event recording (minutes:seconds). Highlight the minutes/seconds and click the up/down arrow to change the value.
8. If it is desired to only record when motion occurs, deselect Record 24/7 and the Boost on motion fields screen will change to Record on motion only. Select the Recording quality number from the list (Q number). Then select the Frames per second (fps). Select a time for Post event recording (minutes:seconds). Highlight the minutes/seconds and click the up/down arrow to change the value.
9. When configuration is complete, select OK. The configuration screen will close. A message will display that this screen will time out if left idle for too long. Be sure to save settings.

Configuring Auto/Manual FPS (Frames Per Second)

NOTE: *This feature is only available if you select a Kollector from the Setup Site Selection window. If you select the local Workstation, Configuring Auto/Manual FPS is disabled.*

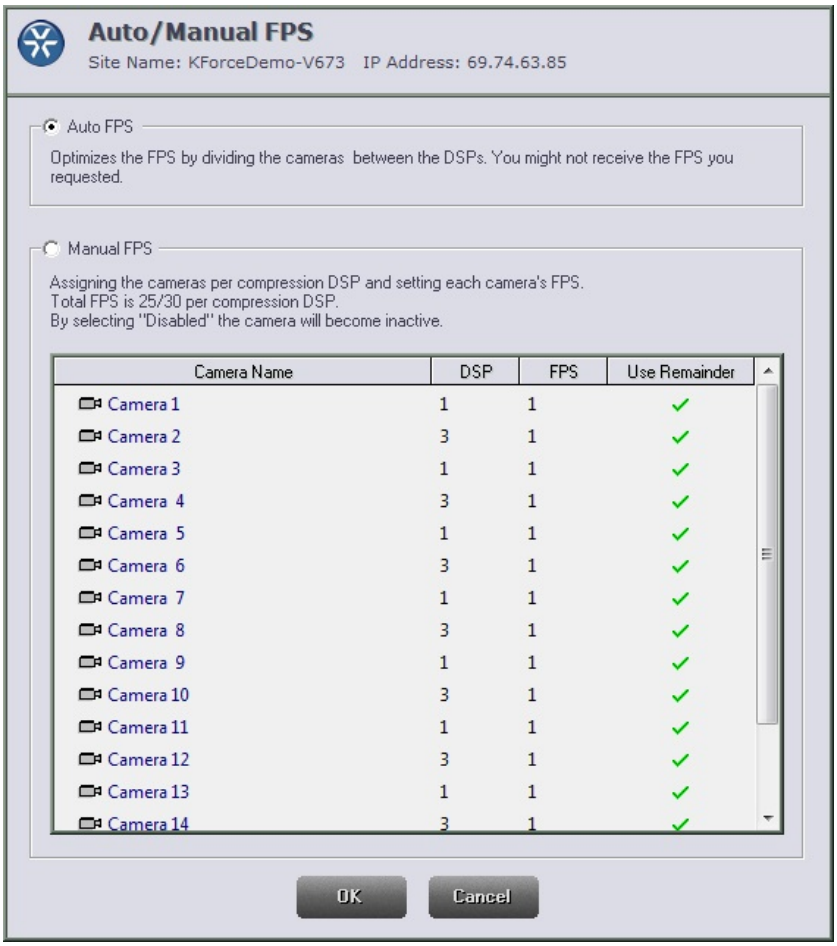
The purpose of the Auto/Manual FPS feature is to enable the user to determine the FPS for each camera. Here, the user can select whether the FPS distribution to the DSPs (Digital Signal Processors) is automatic or manual. The default setting for FPS is automatic.

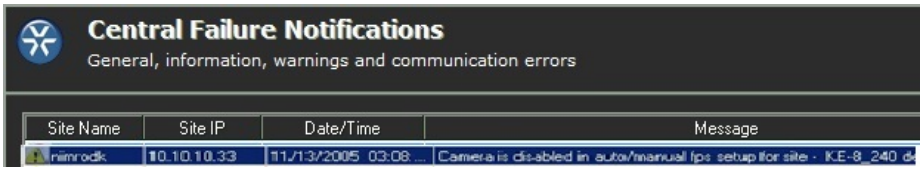
NOTE: *Digital Signal Processing is a method of digitally processing signals that are converted from analog form.*

The maximum FPS that can be assigned to any specific DSP is 30 for NTSC format (25 for PAL format). If the total FPS for two cameras assigned to the same DSP is above this maximum and **Auto FPS** is selected, the FPS on one or more cameras will be reduced to the amount of FPS available.

Example (NTSC format)

Camera 1 and camera 5 are assigned to a specific DSP. If camera 1 has 20 FPS configured, camera 5 has 20 FPS configured and Auto FPS is selected, then the FPS for camera 5 will be cut to 10.



Column	Description
Camera Name	The camera for which the FPS is being defined.
DSP	The DSP to which the camera is assigned. The number of DSPs depends on the type of Kollector, 120-480 FPS. Each DSP has a maximum of 30 frames; if, for example, the site is a 120 FPS, it offers DSPs 1-4. Select the required DSP. The system will prevent adding too many cameras to a DSP (in this case 4 as 4x30 =120).
FPS	The number of FPS of the camera. In manual FPS configuration, a camera can also be disabled by selecting **disable** from the drop down list in this column. If a user tries to record with the disabled camera, or open it live, the following notification is displayed. 
Use Remainder	If selected, the system will automatically use all the remaining FPS for the specified DSP (default = selected).

Automatic FPS

When configuring macro recording, recording management and pre/post alarms in their respective windows (meaning, all windows that configure cameras for recording), the cameras are distributed to the DSPs and are automatically assigned FPS, according to a preset algorithm (meaning that you do not control the distribution of the FPS to the DSPs).

NOTES:

*If the FPS configuration is set to **Auto FPS**, the FPS obtained for a camera may be different to that which was specified in a specific window (see above examples).*

In the Recording Management window, the camera assignment to DSPs is cyclic, meaning camera 1 goes to DSP 1, camera 2 to DSP 2, camera 3 to DSP 3, and so on.

Example

If the selected site is 120 FPS, there will be 4 DSPs and each one will have 30 FPS. The cameras will be distributed evenly between the DSPs.

To select automatic FPS configuration:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the Kollector for which you want to configure automatic recording and click

. The *System Settings* window is displayed, as shown on page 55.
3. Click

. The *Auto/Manual FPS* window is displayed.

4. Select the **Auto FPS** checkbox.

5. Click **OK**.

Manual FPS

If you do not want to distribute the FPS equally between the DSPs and the cameras (using the default algorithm), you can manually set the FPS configuration. In manual FPS configuration, the cameras are assigned FPS per compression DSP, meaning that you set each camera to a specific DSP, with the required FPS (up to the maximum available for each DSP).

Example

If a system has four DSPs and eight cameras and has **Auto FPS** is selected, the camera distribution will be cameras 1 and 5 to DSP1, cameras 2 and 6 to DSP2, cameras 3 and 7 to DSP 3 and cameras 4 and 8 to DSP 4. When **Manual FPS** is selected, if DSPs 1 and 2 do not have enough FPS available, the user can change cameras assignment. In this way, FPS can be more evenly distributed so that the number of FPS is not cut and the number of FPS requested in recording management can be implemented.

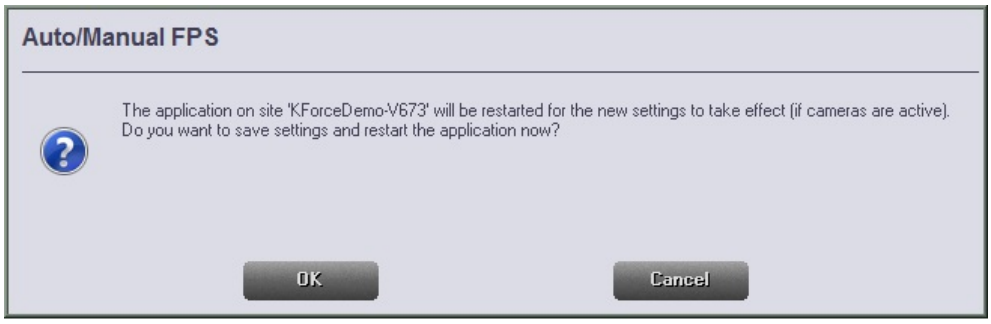
To select manual FPS configuration:

1. Follow steps 1-3 in the procedure **To select automatic FPS configuration**, above.

2. Select the **Manual FPS** checkbox. The list of cameras is enabled.

3. One by one, select the required DSP and FPS for each camera.

4. Click **OK**. The following message is displayed, warning that the changes will take effect once the application is restarted.



5. Click **OK**. The manual settings are saved and the manual FPS set here, in the *Auto/Manual FPS* window, overrides all FPS settings in other windows.

***NOTES**:*

If the settings in the Auto/Manual FPS window are changed, ALL recording and live video are performed with the new settings.

If low bandwidth is selected in the site, and manual FPS is also selected, the FPS will not be higher (as it would with low bandwidth and Auto FPS). The FPS will remain the same as with normal bandwidth, meaning, in this case, low bandwidth will only reduce the bps (bits per second).

Using the Recording Verification System (RVS)

Automatic recording and scheduled macros are two of the ViconNet application's most important features. The RVS mechanism ensures continuous recording by notifying users of any recording errors. It monitors automatic recording activity (audio and video) at all times, both locally and over the network. ***This function has been combined into the CFN function since version 7 and higher; the button is grayed out (not functional) on the System Settings. Refer to the section on CFN for details.***

Note: *The VWS-SW does not record, but it can monitor other devices on the system.*

Creating Macros

The ViconNet system enables you to create macros, which are sets of instructions that are made up of user-defined commands that the system executes either automatically or manually in the specific defined order. The commands in each macro give instructions to the system about which devices will perform specific tasks, for how long and in what order. In addition, you can configure macros for each Workstation independent of the other sites in the system, according to your requirements.

Note: *The VWS-SW and VWS-PC cannot use the Record and Display or Record functions of a macro.*

There are two types of macros:

- **Regular macros:** which are comprised of a series of instructions as described in the section *Creating Regular Macros*, below.
- **Matrix macros:** which are comprised of a series of instructions for defining which cameras are to be displayed on each of the four analog outputs. More details are provided in the section *Creating Matrix Macros*, page 134.

For information about the scheduling of macros, refer to the *Creating Schedules* section, page 176.

Creating Regular Macros

Creating macros consists of configuring various settings for each command in a macro, such as:

- Cameras and microphones to record/display.
- Duration of each command in the macro.
- Recording location.
- Picture quality (resolution).
- Refresh (display) mode.
- Frames per second rate.
- Related devices.
- Sending alarms.
- Activating remote macros.
- Sending emails.
- Sending text messages.

NOTE*: Matrix macros have limited configuration options, see section To create a matrix macro, page 134.*

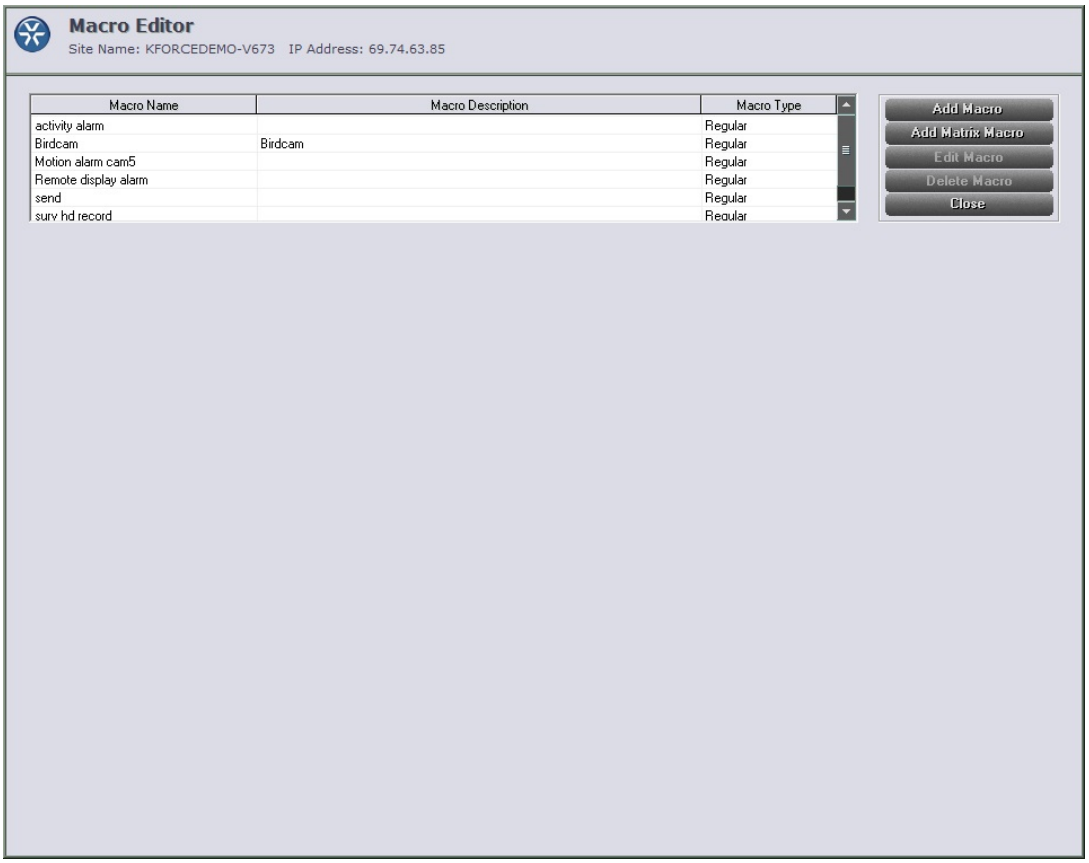
After you create a macro, you can configure the system to activate the macro in the defined order by:

- The alarm setup links, as described in *Defining Alarm Setup Links*, page 144 (automatic).
- A user-defined time schedule, as described in *Creating Schedules*, page 176 (automatic).
- Manual selection, as described in *Chapter 7, Managing Macros and Schedules*.

You can also modify or delete an existing macro, if required. (For more details, refer to step *16* in the *To create a macro* procedure, below.)

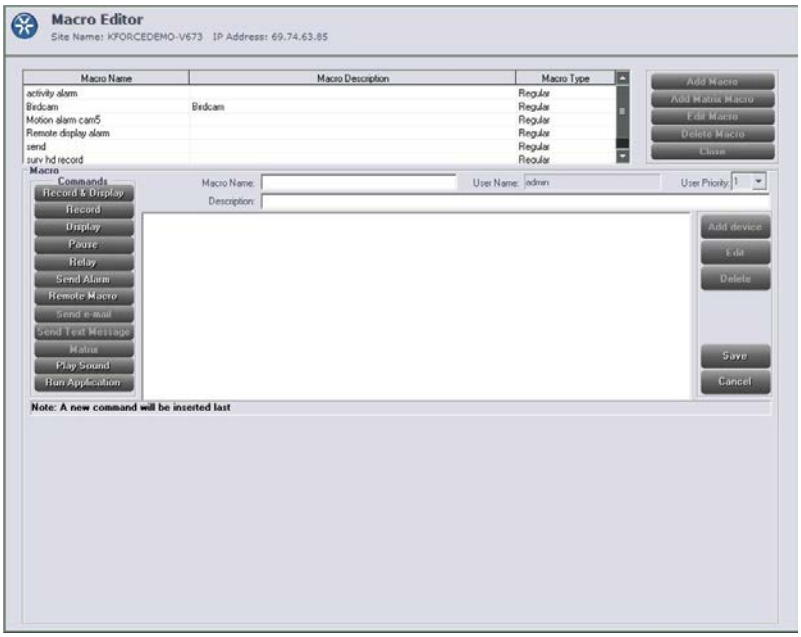
To create a macro:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to configure a macro and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click Macro Editor. The *Macro Editor* window is displayed.



NOTE: *Initially, the top portion of the Macro Editor window is blank. If macros have been defined previously, they will appear in the list.*

4. Click Add Macro. The *Macro Editor* window changes and displays the **Macro** area in the middle of the window. This section of the window is where you define the sequence of commands for each macro.



5. In the **Macro Name** field, enter a logical name for the macro, for example, Front Entrance **External Cameras** or **Emergency – All Cameras Recording**.

NOTE: *The **User Name** is displayed automatically according to your log in information.*

6. (Optional) In the **Description** field, enter a brief textual description of the macro.

7. Add the first command by selecting the required command type, as follows:
   - **Record & Display:** Simultaneously records and displays live video/audio from the selected camera/microphone. This function is disabled when using a VWS-SW/VWS-PC.
   - **Record:** Only records live video/audio from the selected camera/microphone. This function is disabled when using a VWS-SW/VWS-PC.
   - **Display:** Only displays live video/audio from the selected camera/microphone.
   - **Pause:** Pauses all recording and displaying actions between operations.
   - **Relay:** Activates the selected relay.
   - **Send Alarm:** Automatically forwards alarm events to the destination site you specify. This causes an alarm notification message to be displayed on the destination site.
   - **Remote Macro:** Automatically executes the selected macro on the destination site you specify.
   - **Send Email:** Automatically sends an email to the Email address you specify.
   - **Send Text Message:** Automatically sends a text message to the telephone number you specify.
   - **Play Sound:** Automatically send a .wav audio file.
   - **Run Application:** Automatically launch an .exe/batch file; a second file cannot run until the first is finished.

NOTES:

*If you select the **Record & Display** option, then the selected device records and displays live video/audio simultaneously. If you select the other command types, then the macro runs in the sequence of commands that you define.*

Record operations are available both locally and remotely, but display operations are always local.

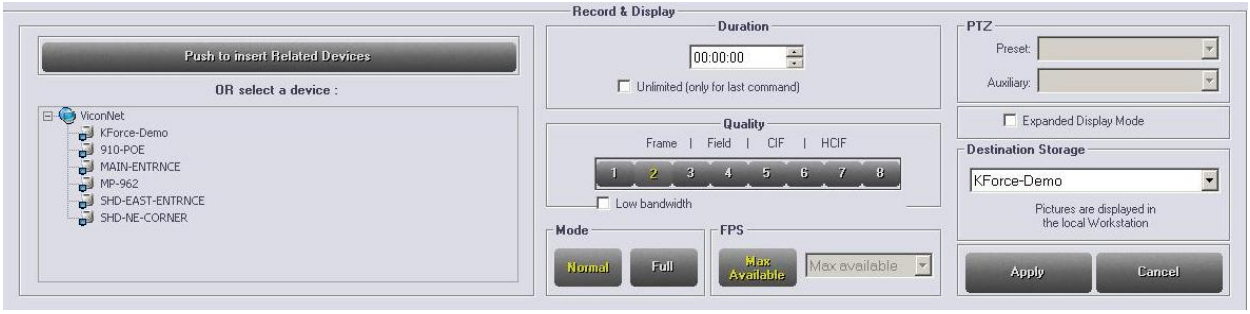
*If a macro is running **display operations** (manual, scheduler, or alarm-initiation) all functions in the ViconNet Main window are disabled, except for the **Stop Macro**, **Schedule/Macro, exit** and **minimize** buttons.*

*If a macro is performing **any other operations**, all functions in the ViconNet Main window remain operational.*

*The **Send Test Message** and **Send e-mail** options are only enabled if these options are checked in the Email and Texting Settings window.*

As you select a command type, the bottom portion of the *Macro Editor* window changes and displays the settings relevant for the type of command that you selected.

The steps that follow provide an example for the **Record & Display** settings. For details about all the settings for all the macro commands available, see the *Macro Commands* section on page 132:



***NOTE:** All displayed settings for each command type are mandatory.*

8. EITHER:

   Select

to include the related devices that you defined for the device during alarm setup (refer to Defining Alarm Setup Links, page 144, for additional details),

   -OR-

   Select the required transmitter in the list to view its available devices (yellow icon = active; gray icon = disabled). Note that there is a Search function available that can quickly sort through the list of devices to locate the device you want to select.

Then select one or more required devices from the list. After selection, the device names and icons appear highlighted

.

9. In the *Duration* field, use the up/down arrows to select the duration of the command (in HH:MM:SS format),

   -OR-

   Select the required time segment and type in the required value using the keyboard.

> ***NOTE:*** *The **duration** is set for the entire operation and not per device.*

10. Configure the Quality (picture quality), Mode (refresh mode) and FPS (frames per second) settings for the selected device, as follows:

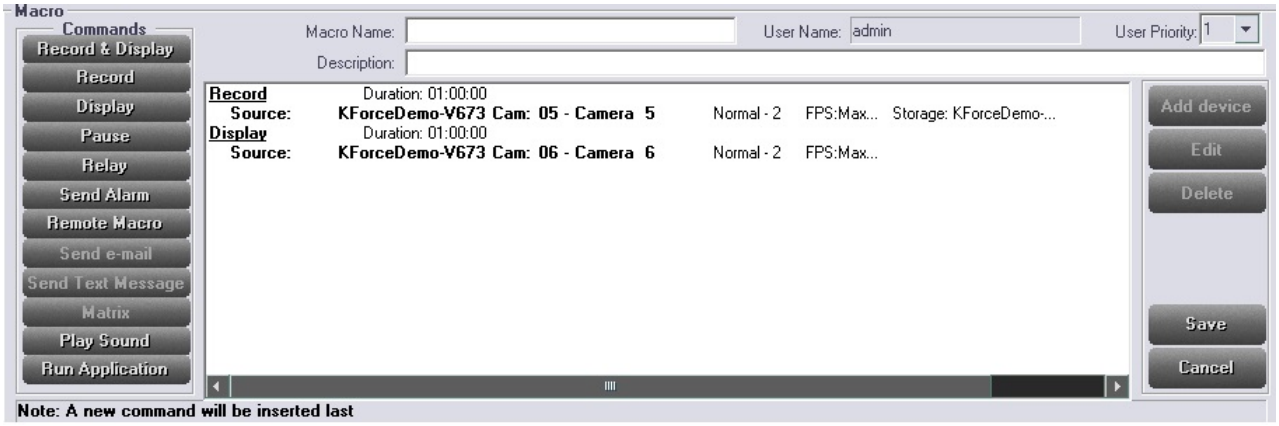
Option	Description
Quality	The picture quality that you select determines the resolution at which the video images are recorded when the macro is activated. Select the required picture quality from the range of one to eight, where: • **1** = best picture quality, but slowest data transmission. • **8** = least clear picture quality, but fastest data transmission. ***NOTE:*** *When different recording options are requested concurrently, the recorded picture quality that applies is determined according to prioritization settings in the Picture Quality and FPS Priority window in the camera's source site.*
Low Bandwidth	Selecting low bandwidth raises compression. When the compression is higher, the quantity of data (kB) is lower and in this case, smaller frames are transmitted, allowing more frames per second (FPS) are sent over the network.
Mode	The refresh mode determines the rate that the frames are refreshed when the macro is activated. Select the required refresh mode, as follows: • **Normal:** Records/displays only changes within the frames. • **Full:** Records/displays full frames of the live video images.
FPS	The FPS determines the rate at which the video segments are recorded. Select the required frames per second, as follows: • **Max:** Sets the frames per second (FPS) rate to the maximum available from the system. • **Custom:** Enables you to set a custom FPS rate (1-30 for NTSC or 1-25 for PAL). ***NOTE:*** *When different recording options are requested concurrently, the recorded FPS that applies is determined according to prioritization, as configured in the Picture Quality and FPS Priority window in the camera's source site.*

NOTE: *For additional details about picture quality and refresh mode in recording vs. playback, refer to the About Picture Quality and Refresh Mode section in Chapter 2, Getting to Know ViconNet.*

11. Configure the **PTZ**, **Preset**, **Expanded Display Mode** and **Destination** settings for the selected device, as follows:
    - **Preset:** The Preset dropdown list enables operation of a preset for the currently selected PTZ camera. The presets, representing fixed location-and-zoom points in the video display, must first be defined as described in *Operating a PTZ Camera* in *Chapter 4, Viewing and Listening to Live Video/Audio*. Then, when a preset is selected (for example, preset1), the macro automatically moves the camera to the view area indicated by the preset.
    - **Expanded Display Mode:** Select this checkbox to expand the current screen display to fit the entire screen (including the *Site List*).
    - **Destination Storage:** Select the local or remote transmitter (storage location) to which you want to record the live video/audio when the macro is activated.

NOTE: *The **Expanded Display Mode** checkbox is set for the entire operation and not per device.*

12. Click Apply. The *Macro Editor* window displays the settings of the first command that you defined in the macro script area of the window.

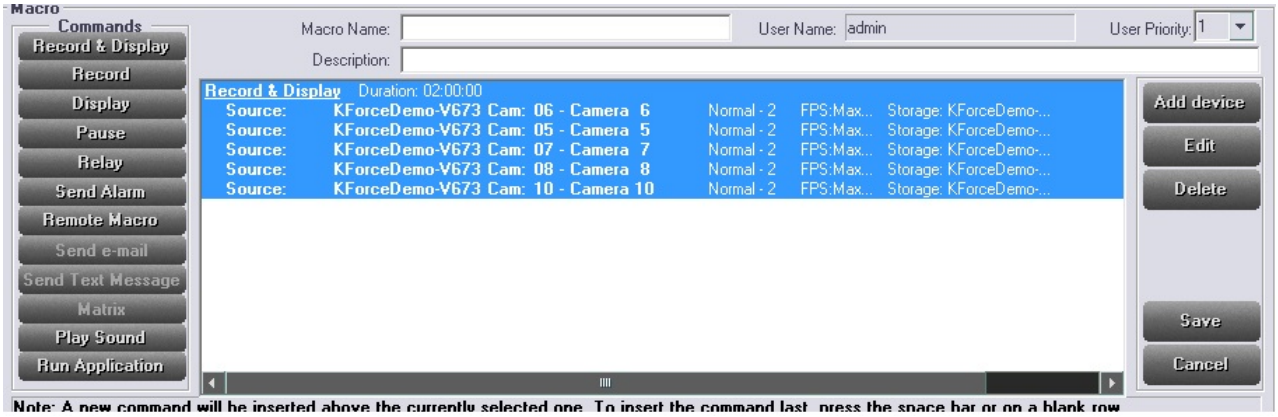


NOTE: *The **Add device**, **Edit**, and **Delete** options also become enabled at this point.*

13. (Optional) To add another device to the **same** command, click Add device. The relevant settings are displayed in the bottom of the window, as shown on page 128.
    - Select an additional device from the list and configure its settings, as described in steps 8 to 12.

14. (Optional) To add a **new command** to the macro script area, select the required command type and configure the command settings, as described in steps 7 to 12.

    The following example shows a single command (Record & Display operations) that has been defined for the macro, with five cameras selected.



NOTES:

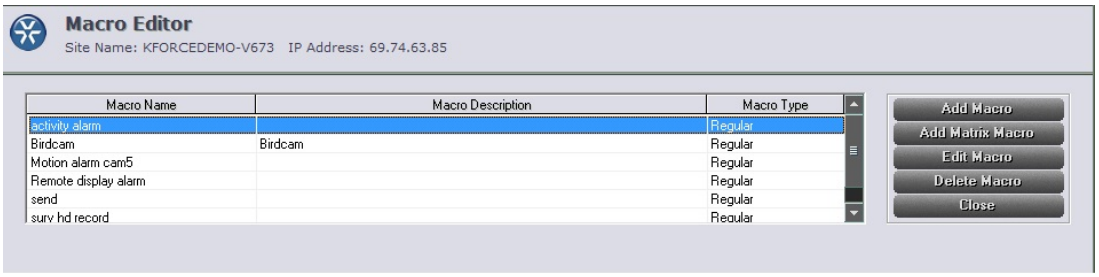
The location of each new command is above the highlighted command. In order to add the command to the bottom, you must cancel the highlighting (by clicking once in the blank area of the macro script area) before clicking ***Apply****.*

To edit a command line in the macro script area, select it and click ***Edit****. Then modify the displayed settings and click* ***Apply****. Double-clicking on the command also opens the editing panel at the bottom of the window. For the* ***Record****,* ***Display*** *and* ***Record & Display*** *commands, if the command line is selected, only the* ***Duration*** *and* ***Expanded Display Mode*** *fields can be updated. If a single device under the* ***Record****,* ***Display*** *or* ***Record & Display*** *command is selected for editing, all the settings relevant to that command are displayed, as described in the above procedure and in the Macro Commands section on page 132.*

To delete a command line from the macro script area, select it and click ***Delete****.*

When you have defined all the commands for the macro, click

. The macro is saved and the new macro name and description are displayed in the list at the top of the *Macro Editor* window.



15. To define additional macros, repeat steps 4 to 15, as required.

> ***NOTES:***
>
> *To edit a macro in the list, select it and click **Edit Macro**. Then edit the macro settings, as described in the previous steps in this procedure.*
>
> *To delete a macro from the list, select it and click **Delete Macro**.*
>
> *If you change the macro name during editing, you are asked if wish to create another macro in addition to the first one. (This is similar to the Save As option in other applications.)*
>
> *If the system reboots while a macro is running or due to run, on startup the macro is resumed from the place it stopped (if it is still within its defined time limits).*

16. Click Close to close the *Macro Editor* window. The *System Setting* window is redisplayed.

All macros that you define(d) are available during alarm setup, as described in the following sections:

- *Defining Alarm Setup Links*, page 144.
- *Creating Schedules*, page 173 (via the *Scheduler Settings* window).
- *Manual macro selection*, as described in *Chapter 7, Managing Macros and Schedules*.

Macro Commands

The following is a list of the commands (actions) available to be triggered by a macro, including a description of the settings to be configured for each command:

Command	Setting	Description
Record & Display For more details about the **Record & Display** command settings, see the preceding procedure.	Select devices -OR- Click Push to insert Related Devices	The devices to record and display. For more details, see step 8 above.
	Duration	Select the duration for which recording and displaying should be performed.
	Quality	The picture quality (1-8).
	Low bandwidth	Low/regular bandwidth: The compression level and number of FPS are affected by this setting.
	Mode	The refresh mode (Normal/Full).
	FPS	Frames Per Second: The rate at which the video is recorded.
	PTZ	Presets and auxiliary for a PTZ camera. All presets (created in the PTZ control of a specific camera) are available via a macro. The Preset number represents a fixed location and zoom point in the video display, meaning a specific location to which the camera will point. The Auxiliary number indicates the camera mode required for its own setup/calibration. In both cases the user defines a Preset and/or Auxiliary number.
	Expanded Display Mode	Expands the current video display to fit the entire screen.
	Destination Storage	Selects the transmitter (storage location) to which to record the live video/audio when the macro is activated.
Record For more details about the **Record** command settings, see the above procedure.	Select devices -OR- Click Push to insert related devices	The devices to record and display. For more details, see step 8 above.
	Duration	Select the duration for which recording and displaying should be performed.
	Quality	The picture quality (1-8).
	Low bandwidth	Low/regular bandwidth: The compression level and number of FPS are affected by this setting.
	Mode	The refresh mode (Normal/Full).
	FPS	Frames Per Second: The rate at which the video is recorded.
	PTZ	Select presets and auxiliary for a PTZ camera. (For more details, see the PTZ description on page 132 above.)
	Destination Storage	Select the storage location to which to record the live video/audio when the macro is activated.

Command	Setting	Description
Display For more details about the **Display** command settings, see the above procedure	Select devices	The devices to record and display. For more details, see step 8 above.
	Duration	Select the duration for which recording and displaying should be performed.
	Quality	The picture quality (1-8).
	Low bandwidth	Low/regular bandwidth: The compression level and number of FPS are affected by this setting.
	Mode	The refresh mode (Normal/Full).
	FPS	Frames Per Second: The rate at which the video is recorded.
	PTZ	Select presets and auxiliary for a PTZ camera. (For more details, see the PTZ description above.)
	Expanded Display Mode	Expands the current video display to fit the entire screen.
Pause	Duration	The duration for which to pause.
Relay	Select Devices	Select a site and a relay on this site.
	Action	Select whether to turn the relay on, off or on for a specific duration (milliseconds).
Send Alarm	Destination	The ViconNet site to which an alarm is to be sent.
Remote Macro	Site/Macro	Select a remote site (that will open) and then a macro to run on it.
Send e-mail	Subject	The subject of the e-mail to be sent.
	Message	The content of the e-mail message.
	Name	The name of the user to whom an email is to be sent.
	E-mail address	The e-mail address of the user to whom an email is to be sent.
Send Text Message	Message	The content of the text message.
	Name	The name of the user to whom a text message is to be sent.
	Phone Number	The telephone number of the cellular phone to which the text message is to be sent.
Play Sound	Browse for file	A .wav audio file that will play. Sound will be overridden if another sound command was executed.
Run Application	Application Path	An .exe or batch (.bat) file that will launch. Attempting to run a second exe/bat file while one is already running, will fail!

NOTES:

*For the **Record**, **Display** and **Record & Display** commands, the **duration** and **Expanded Display Mode** values are set for the entire operation and not per device.*

*For the **Send e-mail** and **Send Text Message** commands, multiple recipients can be added by entering each name and e-mail address/phone number and clicking **Add**. Recipients can be removed by selecting the recipient in the list and clicking **Remove**.*

Creating Matrix Macros

The Kollector Force rear panel has four outputs that enable four digital streams to be converted back to analog. Analog monitors or TVs can view these four outputs. The purpose of the matrix macro is to enable configuration of a specific camera to a specific output (of these four outputs), so that the camera output displayed can be changed every few minutes. For example, you can select that the analog monitors will first display the output from cameras 1 to 4, and after a few minutes, change the display on the analog monitors to cameras 5 to 8.

NOTES:

This feature is only available for all Kollector Forces that have the optional matrix rear panel.

Matrix macros can only be created by directly accessing the System Settings window of the Kollector devices, not via that of the Workstation.

To create a matrix macro:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the Kollector for which you want to configure a macro and click Select. The *System Settings* window is displayed, as shown on page as shown on page 55.
3. Click Macro Editor. The *Macro Editor* window is displayed.
4. Click Add Matrix Macro. The *Macro Editor* window changes and displays the **Macro** area in the middle of the window.

5. In the **Macro Name** field, enter a logical name for the macro, for example, Front Entrance **External Cameras** or **Emergency – All Cameras Recording**.

NOTE: *The **User Name** is displayed automatically according to your log in information.*

6. (Optional) In the **Description** field, enter a brief textual description of the macro.

7. Enter the macro commands. The commands available for matrix macros are **Pause** and **Matrix**.

   - **Pause:** In the case where several matrix commands are configured, Pause **e**nables you to set the amount of time the first command will run before the second matrix command takes over.

     Example

     In one matrix command, only four cameras can be configured. If you want more than four cameras to be displayed on the analog outputs, you can configure the matrix macro so that every X minutes another four cameras are displayed. To do this, you must configure several matrix commands, each time with four other cameras, but between the matrix commands, you set pause commands with a duration of X minutes.

     NOTE: *In a macro with only one matrix command (up to four cameras), there is no need for a pause command because once the matrix macro is running, the cameras will be displayed on the analog monitors until the macro is stopped manually.*

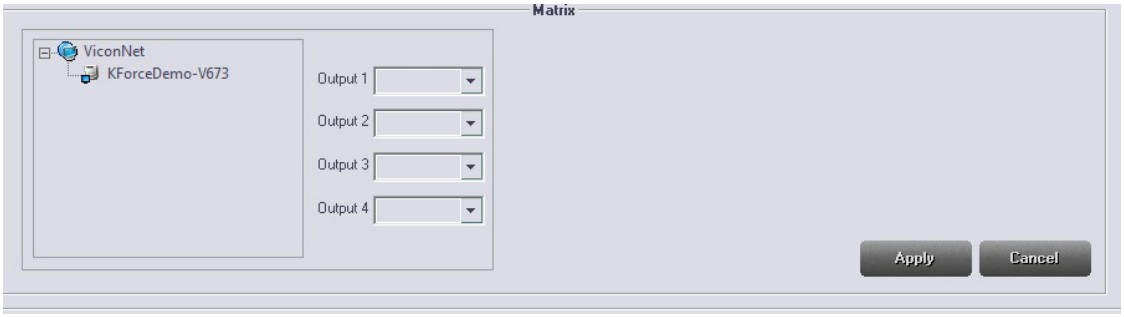
   - **Matrix:** Displays the site list (bottom left) and four output dropdown boxes (monitors). From the output boxes, select which camera goes to which output.

   7.1 To define which camera display connects to which output, click **Matrix**.

   7.2 Select the camera to be displayed on each analog output from the dropdown boxes in the bottom panel and click **Apply**.

   7.3 To define the duration of the recording click **Pause**.

   7.4 To set other cameras to connect to the four analog outputs after the pause, repeat steps 7.1 to 7.3.



8. To apply the changes, click **Apply**.

9. To save the changes, click **Save**.

The matrix macro can be run manually from here, or scheduled from the scheduler (see section *Creating Schedules*, page 173.

NOTE: *The Matrix macro is also referred to as the Switcher macro.*

Activating Relays in Macros

The Kollector Force rear panel has sixteen relay outputs that can be toggled between the states Open (**Off**) and Closed (**On**), or **Momentarily** enabled for a set duration. On system start up, the relay state is Normally Opened (NO).

These relays can be used to drive indicators and alarm enunciators and to enable or disable devices. Within a macro, any number of relays can be activated between as many states as desired. The relay can be directly connected to a switching load with maximum ratings of 60 VAC or DC at 1.0 Amp current.

To activate a relay in a macro:

1. Follow steps 1 to 6 of the ***To create a macro*** procedure.

   OR

   Select a macro from the list at the top of the *Macro Editor* window and click **Edit Macro**.

2. To configure a relay function in the macro, click the **Relay** button. The relay configuration options are displayed at the bottom of the window.

3. Select **On** (Closed), **Off** (Open) or **Momentarily** (configurable between 500 and 2500ms).

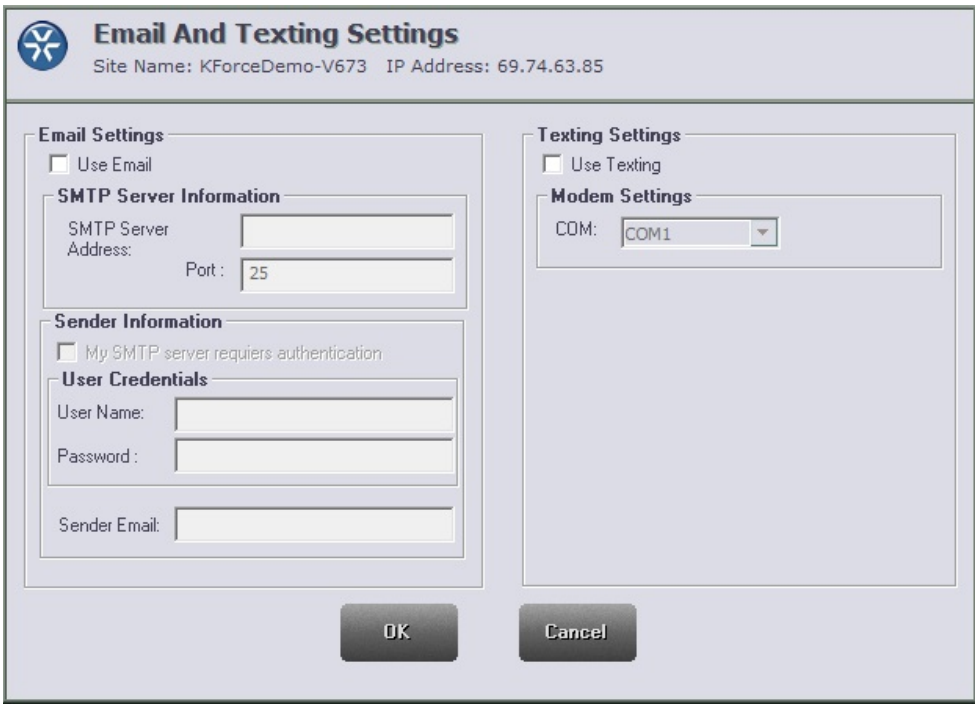
4. Click **Apply**.

Defining Email and Texting

The *Email And Texting Settings* window enables you to configure your ViconNet system to enable you to select to trigger the sending of emails and text messages via a macro. The email and text message recipients and content are defined in the *Macro Editor* window. For more details about setting up macros, see the *Creating Macros* section on page 124.

To configure email and texting settings:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select your local Workstation and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click Texting And Email to display the *Email And Texting Settings* window.



4. Set your Email Settings:
   - **Use Email:** Select/deselect to activate/deactivate the Email option in the *Macro Editor* window.
   - **Set the SMTP Server Information,** as follows (your system administrator can provide you with this information):
     - **SMTP Server Address:** Enter your SMTP server address.
     - **Port:** Enter the SMTP server port number.

5. Set the **Sender Information** (your system administrator can provide you with this information):
    - Select/deselect **My SMTP server requires authentication**, as required.
    - Set your **User Credentials**:
        - **User Name:** Enter your email account user name.
        - **Password:** Enter your email account password.
    - **Sender Email:** Enter your email address.
6. Set the **Texting Settings**:
    - **Use Texting:** Select/deselect to activate/deactivate the texting option in the Macro Editor window.
    - **Set the Modem Settings** (your system administrator can provide you with this information):
        - **COM:** Select your modem COM port.
7. Click **OK**.

Setting Video and Audio Priority

This section describes how to define the video settings that are used when different recording functions are requested concurrently for the same camera. The procedure for changing the rate of audio sampling from the higher quality 16 kHz (default) to 8 kHz is also described.

NOTE: *This feature is only available if you select a Kollector from the Setup Site Selection window. If you select the local Workstation, Setting Video and Audio Priority is disabled.*

Picture Quality and FPS Priority

The recording procedures, described in various sections of this chapter (*Manual Recording*, *Recording Management*, *Macro Creation* and *Pre/Post-Alarm Configuration*), each include picture quality and FPS settings that should apply when those options are executed.

A problem arises when two or more recording options are executed concurrently on the same cameras - which function's settings should be used for the recording? In this case, the setting that should be utilized can be determined in two ways:

- **Highest setting value**: The highest of all the setting values used by the applicable recording options is utilized (default method). For example, for picture quality purposes - if Pre/Post alarms uses quality 8, Recording Management uses quality 1 and both functions are executed concurrently, quality 1 is used for this recording.

  NOTE: *If the **Highest Requested Quality/FPS** is not selected, the recording FPS and quality are determined by a combination of the setup in the Quality and FPS Priority window and the User/Macro priority.*

  -OR-

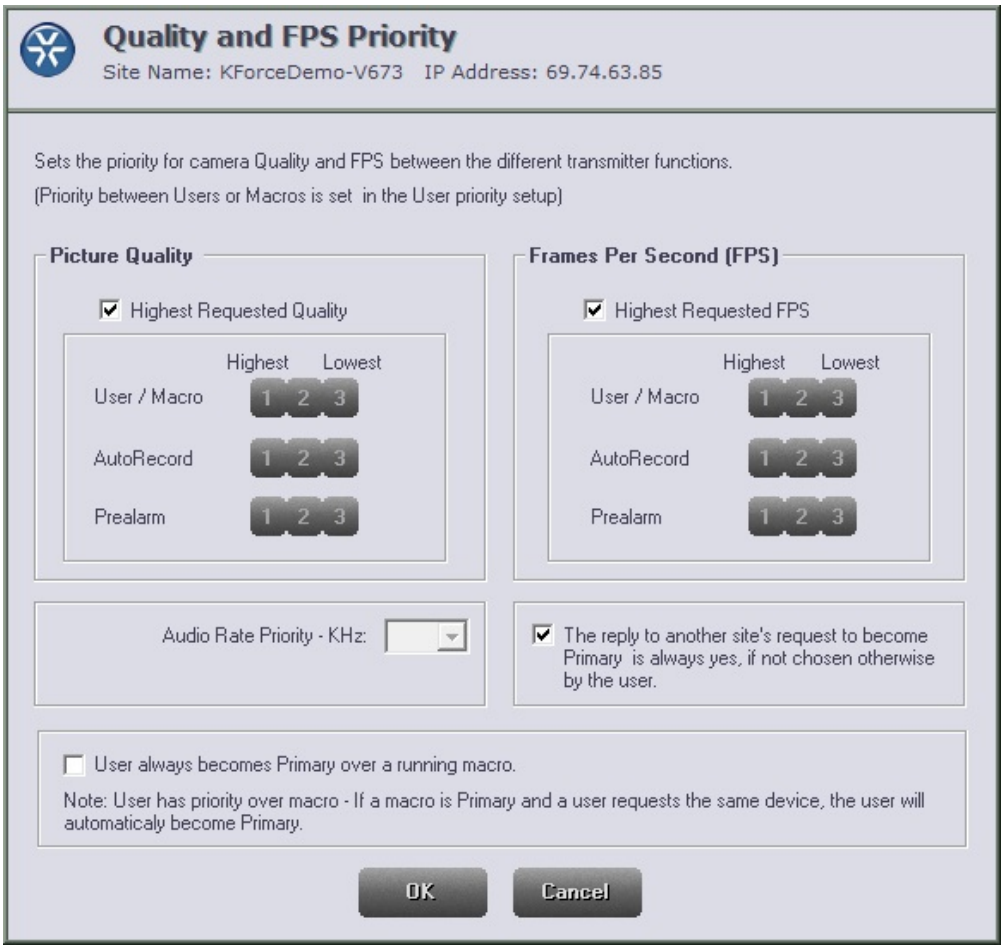
- **Highest priority rank**: The setting value used by the recording option having the highest priority rank is utilized. For example, for picture quality purposes, you can set Pre/Post alarms with priority 1 and Recording Management with priority 2. Then, if both functions are executed concurrently, the Pre/Post alarms quality setting is used for this recording.

  (The **Highest priority rank** criteria selection actually includes three priority levels, enabling you to prioritize between all the recording functions - see step 4 in the procedure below.)

  NOTE: *The Priority is set up between different functions of the system, NOT between users or macros.*

To define picture quality and FPS priorities:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name (not a Workstation) for which you want to define priorities and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click Picture Quality and FPS Priority. The *Quality and FPS Priority* window is displayed.



4. In the **Picture Quality** area:
   - Select the method for determining Picture Quality setting precedence:
     - To always use the highest setting value, select the **Highest Requested Quality** checkbox (selected by default) and continue to step 6.
     - To use a priority ranking as the selection criteria, leave the **Highest Requested Quality** checkbox unselected.

- Enter priorities for each function, as required:
  - Select the "1" cell of the function that should have highest priority. (Its Picture Quality setting should always be used if any other recording function is executed concurrently.) Note that as you select a cell, the other cells' priorities are automatically renumbered, since only one function at a time can have the same priority.

  - Select the "2" cell of the function which should have second priority. (Unless the "1" function is executed concurrently with it, the "2" function's setting should always be used.) The remaining function is then automatically set as "3".

NOTE: *The priority cells in an area are enabled only when the area's* ***Highest Requested Quality*** *checkbox is unselected.*

5. In the **Frames Per Second (FPS***)* area, make the required selections regarding FPS setting precedence and priorities, in the same way as described in step 4.
6. To enable the user to manage the camera on which macros are running, meaning, to allow the user to take over as the primary user of the camera select **User always become Primary over a running macro** (default = unchecked).
7. Click **OK** to save the selections.

NOTE: *When a camera is selected to record at* ***3N*** *and at* ***3F*** *simultaneously, it will record at* ***3N****, meaning that Normal mode takes priority over Full mode when the resolution is the same number.*

User/Macro Priority

Two users/macros can work or run on the ViconNet system at the same time. The following rules are implemented to define which user/macro will have the priority to define, for example, system behavior or settings, in each conflicting situation.

Macro vs. User

If a macro is running and activates a camera before a user, the macro becomes the primary user of that camera. A user may need to make certain changes to that camera and therefore needs to be the primary user. (For example, a secondary user cannot change PTZ, picture settings, quality or FPS). Selecting the option **User always become Primary over a running macro** (default = unchecked) enables the user to manage the camera on which macros are running, by allowing the user to take over as the primary user of the camera.

***NOTE**:*

This feature does not relate to whether the user priority is higher or lower than the macro's priority.

The last macro to start takes over the PTZ presets, regardless of its priority.

If the **User always become Primary over a running macro** option is unselected and the user priority is lower than the priority of the macro, then the user cannot take over as primary under any circumstances.

User vs. Macro

A macro can get primary status from the user only if the user has the lower priority.

***NOTE:** User priority configuration is irrelevant if **Highest Requested Quality** is selected.*

Example

If the user is the primary user and the macro is due to start with secondary status, it will take the primary status from the user automatically ONLY if it (the macro) has higher priority. If the macro has lower priority, it will run all commands, except those that only the primary user can control, such as PTZ preset, FPS and quality.

***NOTE:** If the **Highest Requested Quality** is selected in the Quality and FPS Priority window in the source of the camera and the macro has the highest FPS and quality, the FPS and quality WILL be controlled by the macro.*

Macro vs. Macro

If one macro has higher priority than another macro, it will take control.

If a user and a macro, a macro and another macro, or a user and another user, have the same priority, the priority is determined on a "first come first served" basis.

***NOTE:** The last macro to start takes over the PTZ presets, regardless of its priority.*

Configuring Alarm Events

An alarm event is an action or condition that is configured to trigger a physical alarm in the system when the action or condition occurs.

The ViconNet system enables you to configure alarm events by:

- **Defining Alarm Setup Links,** page 144, which consists of linking a macro to a specific device and a specific alarm event. In this case, when the preconfigured alarm conditions are met, the system automatically runs the linked macro, which gives instructions to the system about which devices to activate, for how long and so on.
- **Setting Pre/Post Alarms,** page 157, which consists of configuring what devices the system will activate before and/or after an alarm event occurs. This includes configuring settings such as the recording duration, video quality and so on. (This function is disabled in the Workstation.)

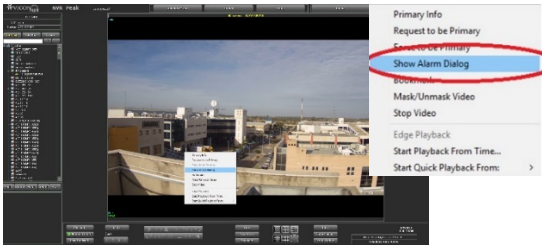
Alarms can be activated from various sources, including:

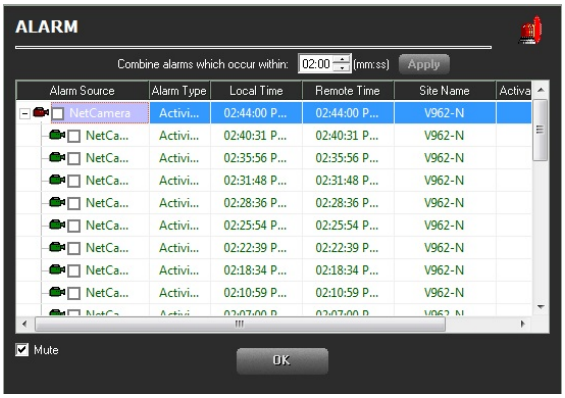
- **Sensors:** Each sensor is configured to be associated with a specific alarm type, such as smoke, fire, motion detection, perimeter intrusion, window intrusion, door intrusion and so on.
- **Video Loss:** A loss of video signal to the devices, for example by means of a disconnected video connection.
- **VMD – Video Motion Detection:** Activity detected in a preconfigured area of the premises where activity is cause for concern.
- **Video Analytics:** Activity detected using ViconNet video intelligence and Vicon IQeye embedded analytics; provides various types of video analytic data detection.
- **Serial Connection or Network Connection Message:** Integrated module alarm notification.

NOTE: *The Serial Connection or Network Connection Message feature will be functional in future versions.*

In order to activate a macro via an alarm, the source device must be linked in the system to the macro that will run when the alarm conditions are met. When an alarm is activated, a notification is sent to the local station and the relevant macro linked to that alarm is executed.

By default, alarms are displayed as a popup window in the bottom-left corner, on top of your current window. You can drag the *Alarm* window to anywhere on your screen and it remembers its last location the next time it is opened. You can also right-click on the screen and manually open the alarm dialog box For more information about the *Alarm* window, see the *Alarm Window* section in *Chapter 2*, *Getting to Know ViconNet*.





Defining Alarm Setup Links

The ViconNet system enables you to define the alarm setup for each device in the system. The alarm setup instructs the system how to react in the case of an alarm event on a specific device, which can include:

- Displaying the *Alarm* window. This happens automatically on the local station for every type of alarm event. (Refer to *Chapter 2, Getting to Know ViconNet*, for additional details about the *Alarm* window.)
- Initiating any defined pre/post alarms. (Refer to *Setting Pre/Post alarms*, page 157, for additional details.)
- Executing any linked macro. In this case, you can configure the alarm conditions that will cause the macro to run on the device if the alarm conditions are met during a specific time period. (Refer to *Creating Macros*, page 124, for additional details).

Important: *If a device is removed from the list of alarm setup links, you will* ***not*** *receive automatic notification from the system that the alarm event has occurred.*

NOTE:

When a macro is running as a result of an alarm event, the following is applicable:

- *If the macro is running **display operations** (manual, scheduler, or alarm-initiation) all functions in the ViconNet Main window are disabled, except for the **Stop Macro**, **Schedule/Macro** and exit* *buttons.*
- *If the macro is performing **any other operations**, all functions in the ViconNet Main window remain operational.*

To define alarm setup links:

1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.

2. Select the site name for which you want to define alarm setup links and click

. The *System Settings* window is displayed, as shown on page as shown on page 55.

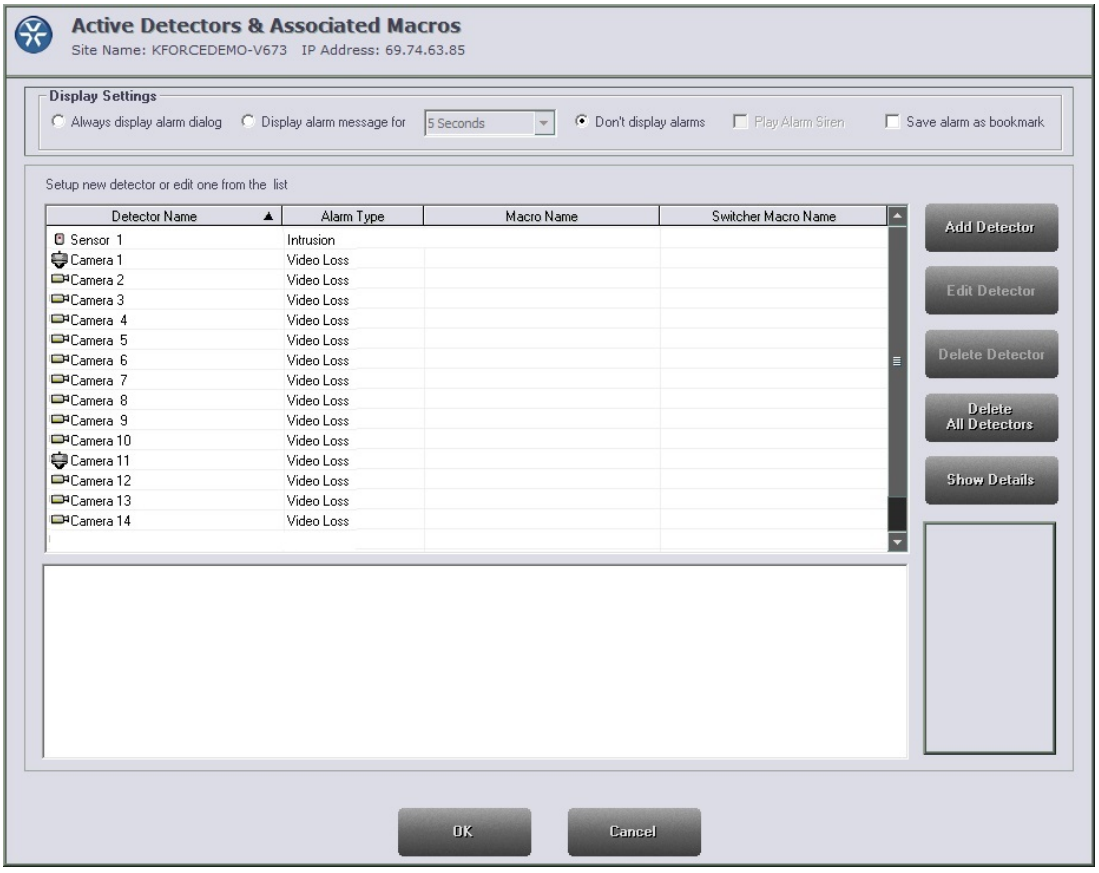
3. Click

. The *Active Detectors & Associated Macros* window is displayed, showing the default alarm setup links and previously defined alarm setup links, if any.

   If a Workstation was selected that has the ability to receive alarms, one external alarm can be configured; the default state is disabled (Off). If enabled, when other sites send alarms to the Workstation, it can trigger the macros linked to the external alarm. A choice of video analytic alarms can also be configured from the Workstation.

   Configuration of alarms on other sites (not Workstations) performed remotely via the Workstation, function as described below.

For the Kollector, the default alarm setup links consist of 16 cameras with alarm type **Video Loss** and 16 sensors with alarm type **Intrusion**.



NOTES:

Instructional notes appear in all the alarm setup windows to assist you in defining the alarm setup links.

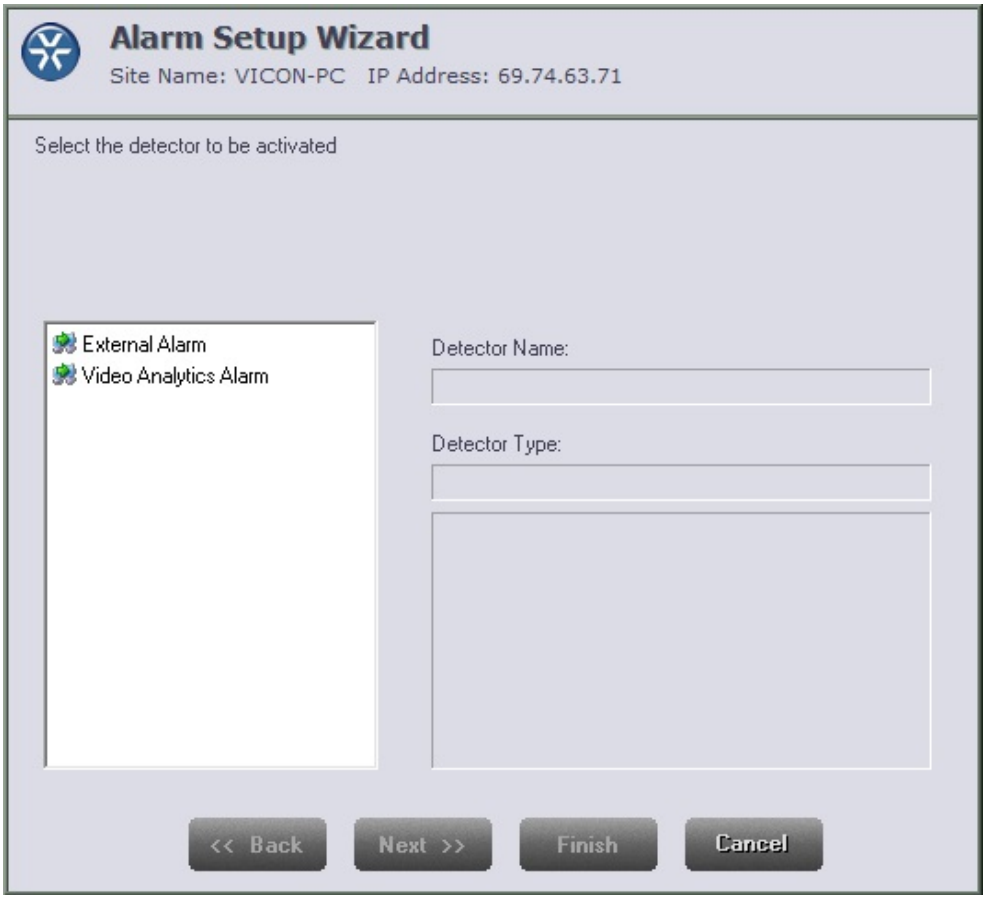
Switcher Macro = Matrix Macro.

4. Select the alarm **Display Settings**, as follows:

   - **Always display alarm dialog:** The Alarm window is displayed indefinitely, until you close it. The default position is in the bottom left-corner.
   - **Display alarm message for …… seconds:** The Alarm window is displayed for the amount of time selected in the dropdown list box.
   - **Don't display alarms:** The *Alarm* window is not displayed.
   - **Play Alarm Siren:** Upon the occurrence of an alarm, a siren is sounded.

5. Click

. The first step of the *Alarm Setup Wizard* window is displayed, where you select the detector for which you want to set up an alarm link. When setting up an NVR/Workstation, External Alarm or Video Analytics Alarm can be selected. In a case where dry contact sensors are connected, they will also be allowed. (The *Active Detectors and Associated Macros* window **Edit Detector** button enables you to modify already defined alarms.)



6. From the displayed list, select the required detector. The name and type of the selected device is displayed automatically in the **Detector Name** and **Detector Type** fields, as well as a device-specific alarm link description (if an alarm link is already defined).

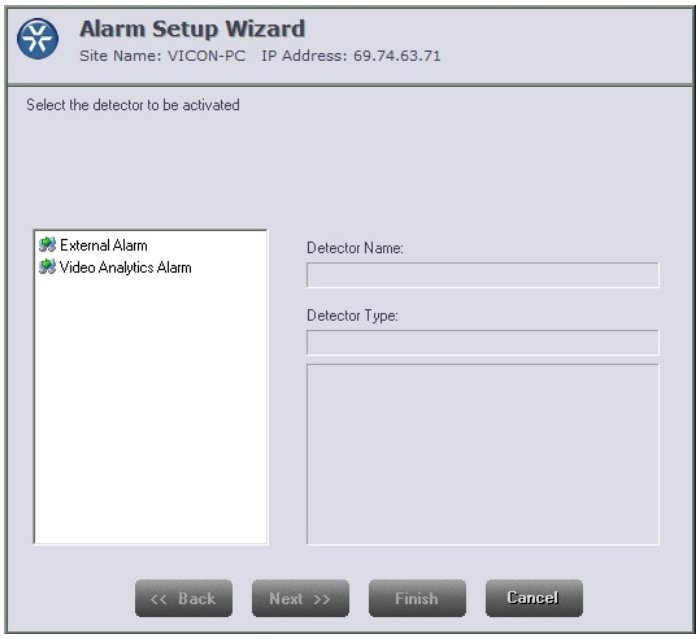
NOTE: *The detector type is based on the physical type of device.*

NOTES:

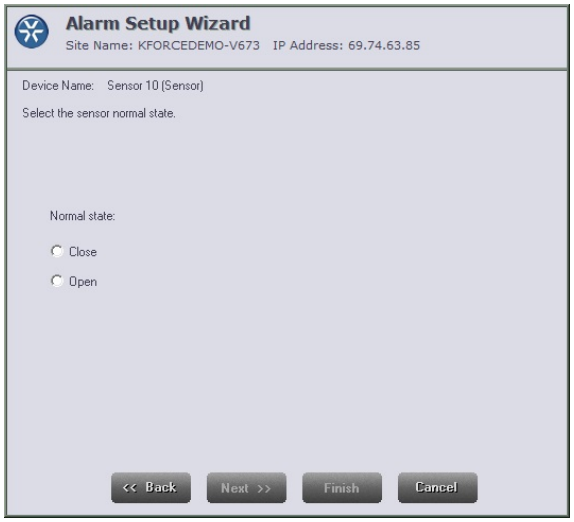
If you are configuring the External Alarm for an NVR/ Workstation, skip directly to step 12.

The following window appears only when remotely configuring a remote site and is different when a sensor or video analytics alarm is selected as a detector.

7. Click Next >> to proceed to the next step of the *Alarm Setup Wizard*.



If Sensor type was selected, select whether the sensor is to be Close or Open.



8. Select the **Camera Alarm Type**, as follows:
   - **VMD - Video Motion Detection:** Activates an alarm due to activity beyond specified sensitivities in preconfigured regions of interest (ROIs) in the camera view area. (Refer to *When Not to Use VMD*, page 157, for an important warning about using this option.)
   - **Video Loss:** Activates an alarm due to the video signals being stopped by any means (for example, a cut power line).

   -OR-

If you selected a sensor as the detector, select the Sensor Alarm Type (**Intrusion**, **Motion Detector**, **Smoke**, **Perimeter**, **Fire**, or **Other**).

-OR-

If you selected a video analytics alarm as the detector, select the alarm type from the list. **All Analytics Alarms** is the default setting. See display below. Note that to use Video Analytics, you must be connected to the Nucleus and to a Video Analytics Engine, when using VI, page 161.

9. Click

.

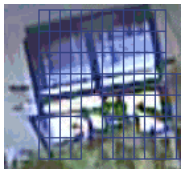
- If you selected **Video Loss**, or a sensor as the detector, continue to step 10, where you will define the time schedule for the macro.
- If you selected **VMD - Video Motion Detection**, continue to step 9, where you will define the regions of interest (ROIs) on which the VMD mechanism will focus.
- If you selected **Video Analytics**, continue to step 12, where you will define the time schedule for the macro.

10. If you selected **VMD - Video Motion Detection**, the *Select Alarm Region of Interest* window is displayed, which enables you to define the regions of interest (ROIs) for which VMD should trigger alarms for the selected camera.

The window shows the Live view of the selected camera, with colored grid blocks over selected regions of interest. If no settings were yet defined for this camera, colored grid blocks cover the entire picture, indicating that the change detection that would trigger alarms applies to the entire camera view area.

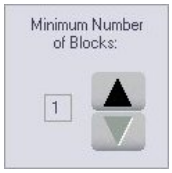
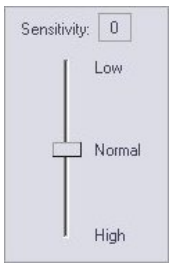
You can focus the VMD on security-sensitive objects in the camera space by using the window functions to vary the coverage of the colored grid blocks. (Only the segments covered by colored grid blocks are considered for VMD purposes.)

For example, you can focus on windows or doors (as shown in the picture opposite) to monitor opening/closing events.



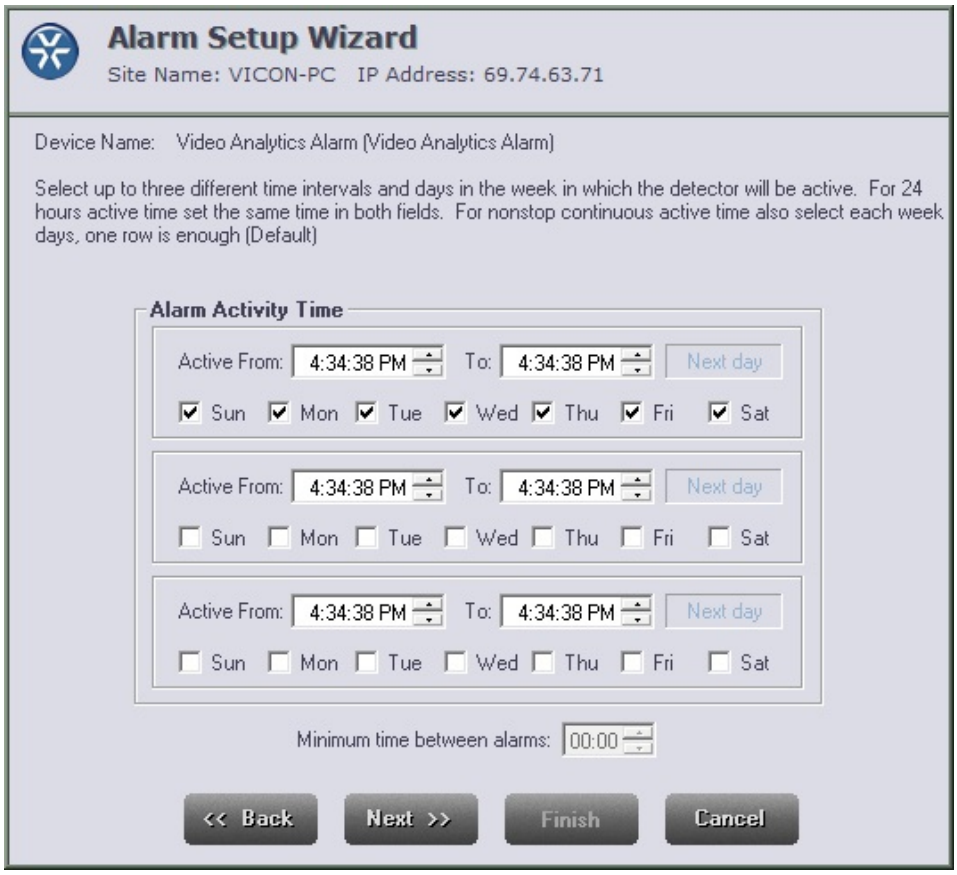
The following options are provided:

Option	Description
Clear All	This button clears all the current colored (blue, red or yellow) grid blocks in the view. You can then use the **Pencil** tool to define grid blocks for specific ROIs within the view surface.
	NOTE: *The VMD does not function, unless ROIs are identified by colored grid blocks.*
Mark All	This button marks colored grid blocks over the entire window surface, meaning that VMD will apply to the entire camera view. You can then use the **Eraser** tool to remove specific grid blocks.

Option	Description
	When one of the **Pencil** tools is selected, the cursor becomes a pencil icon. You can define ROIs by clicking and dragging over the required view area segments, thereby drawing arrays of blue, red or yellow grid blocks (according to which pencil is selected). The **Tool Size Selector** area includes buttons for three pencil sizes. According to the selected size, the cursor draws a small (single block), medium (4-block) or large (16-block) width of grid blocks per sweep.
	When the **Eraser** tool is selected, the cursor becomes an eraser icon. You can erase ROI segments by clicking and dragging over selected grid blocks, thereby erasing them. The **Tool Size Selector** area includes buttons for three eraser sizes. According to the selected size, the cursor erases a small (single block), medium (4-block) or large (16-block) width of grid blocks per sweep.
	The *Block Control* selector enables you to define how many blocks of the colored grid arrays must be simultaneously involved in the change before an alarm is triggered. For example: • **1** (the most sensitive setting) – indicates that an alarm should be triggered if a change is detected in even one block amongst all the defined ROIs (that is, the alarm triggering is unlimited). • **16** (the least sensitive setting) – indicates that the change must be simultaneously detected in at least 16 blocks within the entire view area. The blocks do not have to be contiguous. ***NOTE:*** *The selected minimum cannot exceed the total number of blocks defined in ROIs.*
	The *Sensitivity Control* enables you to adjust the triggering sensitivity (by dragging the slider) between **High** (higher detection of changes) to **Low** (lower detection of changes). ***NOTE:*** *In general, a "normal" sensitivity should be selected. The highest sensitivities may generate false alarms, while the lowest may cause interesting events to be missed.*
 	The **Show Grid** button applies a gray planning grid to the parts of the window where no ROIs (colored grid blocks) are defined. The gray grid is only for purposes of viewing where ROIs may potentially be defined and does not affect the change-detection process. When selected, the button changes into a **Hide Grid** button by which the planning grid can be suppressed, making only the "VMD-active" colored grid blocks visible.

11. When you have finished defining grids and VMD sensitivity for the selected camera, click Next >>.

12. The *Alarm Setup Wizard* window is displayed, where you define the time schedule for the macro.



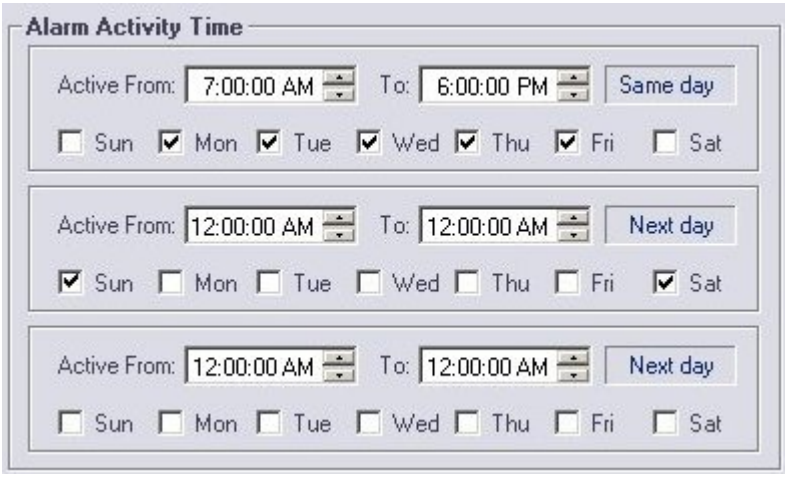
13. (Optional) To cause the system to activate the macro **only** if the alarm conditions are met during a specific time range on specific days (for example, during non-working hours on weekdays), define the time period in the **Alarm Activity Time** area, as follows:

Option	Description
Active From/To	Select the start and end time for the time period (in HH:MM:SS format) by: • Selecting the required time segment and then using the up/down arrows to scroll to the required value, **-OR-** • Selecting the required time segment and using the keyboard to type in a numerical value.
Sun, Mon, Tue, Wed, Thu, Fri, Sat	Select the days of the week for the time period. ***NOTE:*** *The default is 7 days a week, 24 hours a day (from midnight to midnight).*
Minimum time between alarms	Select how much time must pass after the first and subsequent alarms before a new alarm will be generated (for any specific camera).

Up to three time-range-and-days definitions can be defined in the **Alarm Activity Time** area.

The following example shows an alarm activity time scheduled:

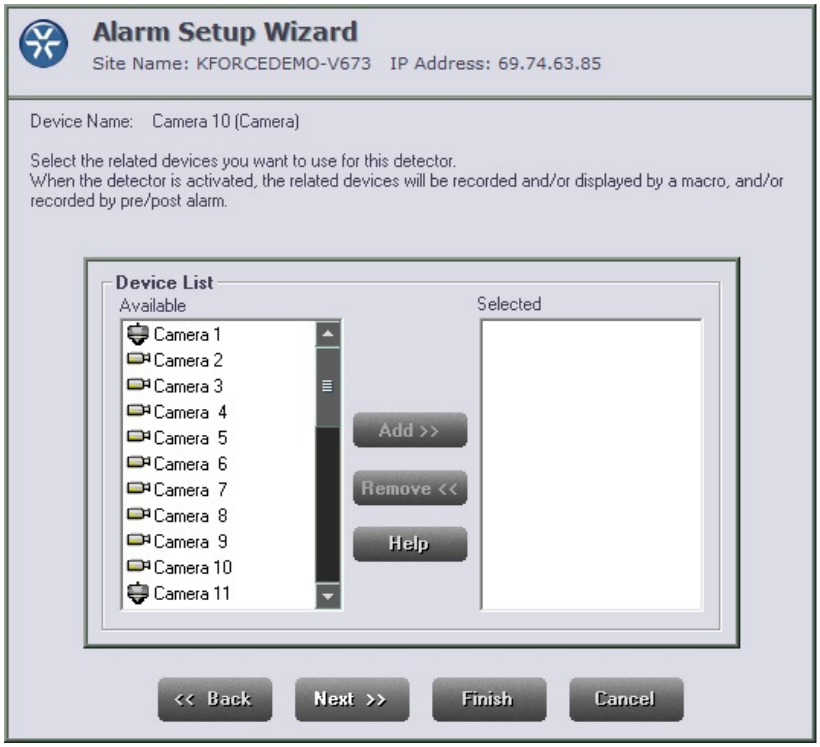
- From 7:00 AM to 6:00 PM, on Monday to Friday, and
- From 12:00 AM to the following 12:00 AM (full 24 hours), on Saturday and Sunday.



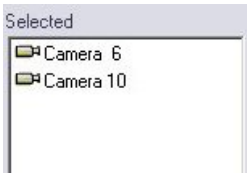
NOTE: *If you are configuring a Workstation, skip directly to step 16.*

14. Click

to proceed to the next step of the *Alarm Setup Wizard* where you can define the related devices.

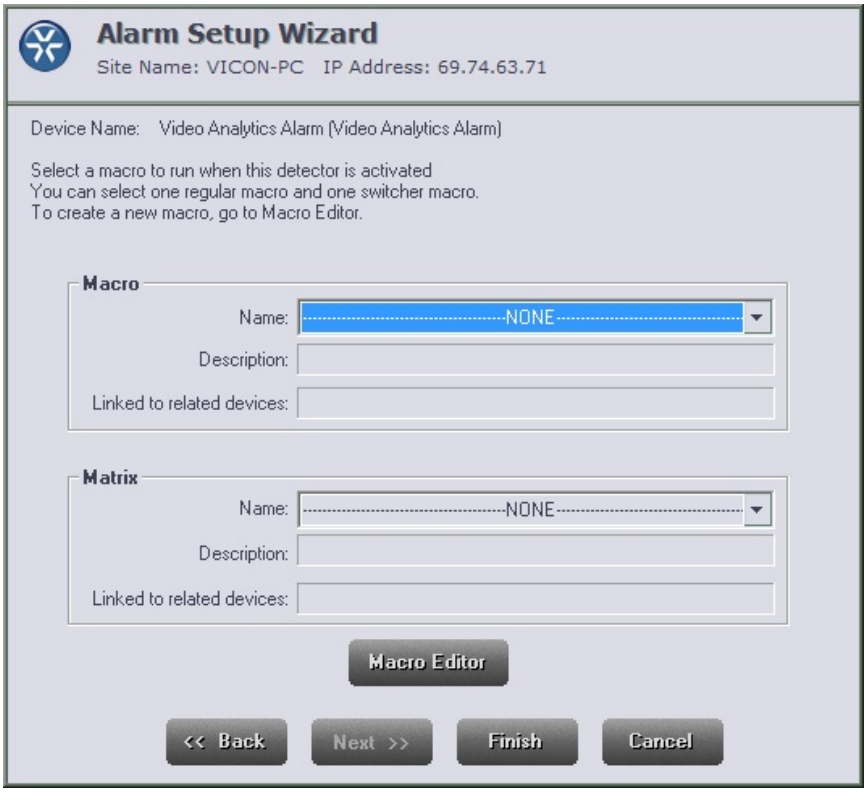


15. (Optional) Select the required devices in the **Available** area and click Add >> to add them to the **Selected** area.



> ***NOTES:***
>
> *You can remove a device from the **Selected** area by selecting it and then clicking **Remove**. The device is redisplayed in the **Available** area.*
>
> *The related devices that you select here will be included automatically when you use the **Push to Insert Related Devices** option during macro creation. Refer to Creating Macros, page 124, for additional details.*

16. Click Next >> to proceed to the next step of the *Alarm Setup Wizard* where you can select a macro or a matrix macro (switcher macro) to link to the device. A list of macros currently defined in the system is displayed.



NOTE: *You cannot select a macro with an unlimited duration for an alarm setup. Upon selecting a macro with an unlimited duration and clicking* ***Finish****, the following message is displayed:*

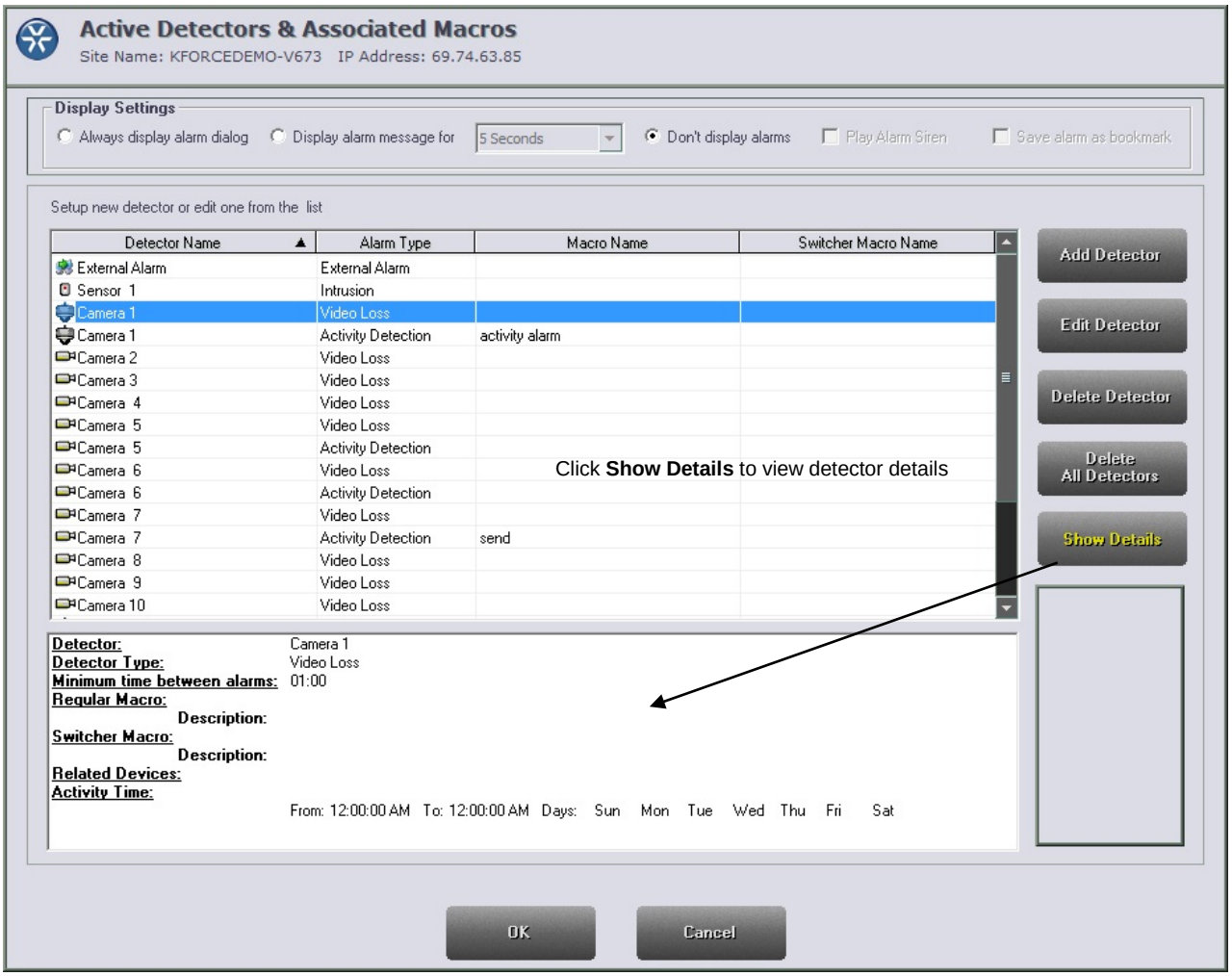
17. (Optional) From the list, select the macro to be activated by the system when the selected alarm conditions are met on the specific device.

NOTES:

A macro can also be linked to related devices, if required, so that when the alarm conditions are met on any of the configured devices, it automatically causes the system to run the macro on all the devices related to the alarmed device.

At this point, you can also create a new macro (meaning, macros do not have to be pre-defined) or edit an existing macro, by clicking the ***Macro Editor*** *button. Refer to Creating Macros, page 124, for detailed information about creating new macros.*

18. Click Finish. The device's new alarm setup link is displayed in the list in the *Active Detectors & Associated Macros* window.



19. (Optional) Select the device name and click Show Details to view its alarm setup link information in the bottom of the window, as shown in the above example.

> ***NOTES:***
>
> *To edit a linked macro, select it from the list and click **Edit Detector**. The second Alarm Setup Wizard window is displayed. Modify the displayed settings, as described in the procedure above.*
>
> *To delete an alarm setup link from the list, select the appropriate device and click **Delete Detector** or click Delete All Detectors, if required.*

20. Click OK to exit the *Active Detectors & Associated Macros* window.

When Not to Use VMD

To conserve valuable hard drive space, it is recommended that the VMD mechanism be used to trigger recording only when motion occurs. On a very active camera, however, this can result in a constant stream of alarms and endless recording. This unending alarm state creates an enormous log of thousands of entries displayed on top of the application. As this log only overwrites after 24 hours and uses a great deal of system resources, potential delays could occur when clicking in any of the application menus. Therefore, unless there is a true need for alarm notification upon motion, using the VMD alarm is not recommended for very active cameras.

Instead, it is preferable to use the recording trigger setup options provided in the *Devices Settings* window, as described in step 6 of the *To configure/modify a local camera* procedure, page 67. When all cameras are programmed to your satisfaction, you must set them up in Recording Management in order to begin recording. Using this approach enables the Kollector/NVR to record video only when motion occurs within the selected grid you programmed.

As the Kollector always record the time stamp, upon playback you will see the on-screen clock update every second, even though the video does not refresh more than once every 20 seconds (when the device takes a *reference frame*). For example, if you set a camera to record a clock and you mask out any motion on the clock face itself (like the sweep secondhand on an analog clock, or the seconds display of a digital clock), upon playback you will see the time stamp count every second, but the video of the clock will only change every 20 seconds (the reference frame update). The time stamp that allows the recorder to show a linear clock upon playback is a very small file and is considered negligible for hard drive usage. The reference frame does not trigger recording; it writes one video frame to the hard drive and it does not show up as a motion "hit" when doing a museum search.

Setting Pre/Post Alarms

NOTE: *This feature can only be carried out by directly accessing the System Settings window of the Kollector devices, not via that of the NVR/Workstation.*

The ViconNet system enables you to set pre alarms and post alarms (on Kollectors only), which instruct the system about what to do immediately before and after an alarm event occurs on any device in the system. This enables you to know what happened at a specific site immediately before and/or after an alarm event.

Post alarms are, in effect, a type of macro, but are activated only by alarm events as opposed to, for example, a user-defined time schedule.

Configuring pre alarm settings consists of determining the duration that devices record prior to the alarm and the quality of the saved data. If you configure post alarm settings, then when an alarm event occurs, the system immediately begins recording the configured devices according to the indicated post alarm duration and other settings.

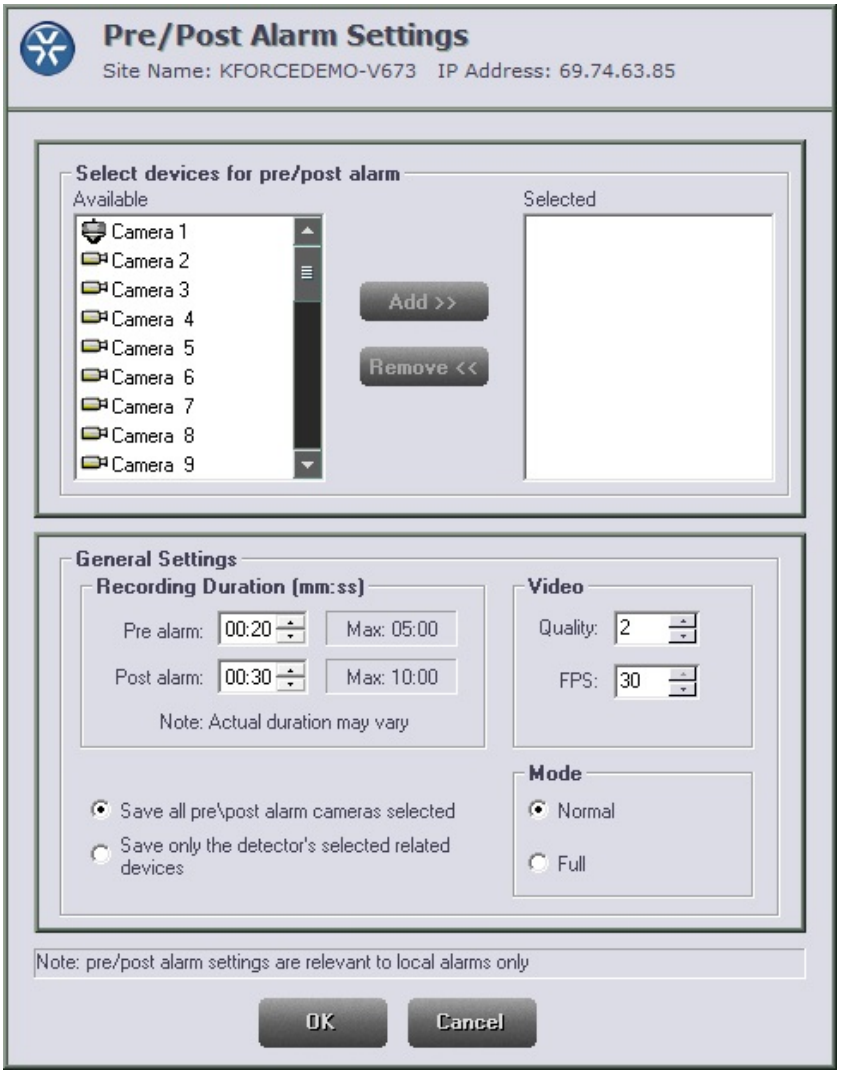
To set pre/post alarms:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.

2. Select the site (not a Workstation) for which you want to set pre/post alarms and click Select. The *System Settings* window is displayed, as shown on page 55.

> ***NOTE:*** *You can set pre/post alarms only for a Kollector. Remote setup is only possible to a Kollector.*

3. Click Pre and Post Alarm. The *Pre/Post Alarm Settings* window is displayed.



> ***NOTE:*** *You have the option to set only pre alarms, only post alarms, or both, depending on your requirements.*

4. In the **Select devices for pre/post alarm** area, select the devices from the **Available** area that you want to be affected by the pre alarm and post alarm settings and click Add >> to add them to the **Selected** area.

NOTE: *You can remove a device from the **Selected** area by selecting it and then clicking **Remove**. The device is redisplayed in the **Available** area.*

5. Select the required **Recording duration (mm:ss)** settings for the pre/post alarms, as follows:

   - **Pre alarm:** When an alarm is activated in the system, this option causes the system to immediately save the data prior to the alarm of the selected devices to the storage location. The data is saved according to the selected duration, the selected **Recording Duration** setting and the **Video** and **Mode** settings, as described in the subsequent steps in this procedure.

     Select the required time segment and then use the up/down arrows to scroll to the required value,

     -AND/OR-

     Select the required time segment (**mm** or **ss**) and then use the keyboard to type in a numerical value.

   - **Post alarm:** When an alarm is activated in the system, this option causes the system to immediately begin recording the selected devices for the selected duration.

     Select the required time segment, as described in the **Pre alarm** option above.

NOTE: *Pre alarm and post alarm settings are not directly related to macros and can run without macros being configured in the system. When different recording options are requested concurrently, the recorded Quality and FPS that applies is determined according to prioritization settings. For details, refer to the Picture Quality and FPS Priority section, page 139.*

*The **MAX** fields in the Pre/Post Alarm Settings window (page **Error! Bookmark not defined.**) are read-only fields. The maximum times are the highest possible limits. These upper limits displayed in the **MAX** fields changes according to the selected number of cameras, quality, mode, FPS and transmitter type. The actual recorded duration may differ from the duration requested. (The default MAX values are five minutes for pre alarm and ten minutes for post alarm.*

If pre\post alarm is defined in the Quality and FPS Priority window as first priority and the Pre alarm recording duration in the Pre/Post Settings window is not set to 00, the recording is performed according to the quality requested in the Pre/Post Alarm Settings window, even though no alarm occurred. If pre\post alarm is defined in the Quality and FPS Priority window as first priority and Pre alarm recording duration is set to 00 (meaning, do not save in a buffer), the recording is performed according to the second priority function selected in the Quality and FPS Priority window (either quality of recording management or user/macro) and only after an alarm occurs, the recording is performed according to the quality defined in the Pre/Post Alarm Settings window – for the duration defined in the Post alarm recording duration field.

6. If you have configured pre alarm settings in step 5, select one of the following **Upon Alarm** settings:
   - **Save all Pre/Post alarm cameras selected:** When an alarm is activated on any device in the system, this option causes the system to immediately save the pre and post alarm data of **all** the selected devices to the storage location. The data is saved according to the settings that you define in the other options in the *Pre/Post Alarm Settings* window.
   - **Save only the detector's selected related devices:** When an alarm is activated, this option causes the system to immediately save the pre and post alarm data of only the selected devices that are also listed as related devices for that alarm.

   NOTE: *Refer to Defining Alarm Setup Links, page 144, for additional details about adding related devices.*

7. Select the required **Video** settings for the alarm-activated recorded data, as follows:
   - **Quality:** The picture quality that you select determines the resolution at which the pre alarm and/or post alarm data is recorded.

     Select the required picture quality from the range of one to eight, where:
     - **1** = best picture quality, but slowest data transmission.
     - **8** = least clear picture quality, but fastest data transmission.
   - **FPS:** The rate at which the pre alarm and/or post alarm data will be recorded.

   Select the required frames per second from the available range (NTSC: 1 to 30; PAL: 1-25).

   Refer to *Chapter 2, Getting to Know ViconNet*, for additional details about picture quality and FPS.

8. Select one of the following **Mode** settings (refresh mode):
   - **Normal:** Records only changes within the frames for pre-and post alarm data.
   - **Full:** Records full frames for pre-and post alarm data.

   Refer to *Chapter 2, Getting to Know ViconNet*, for additional details about the refresh mode.

9. Click

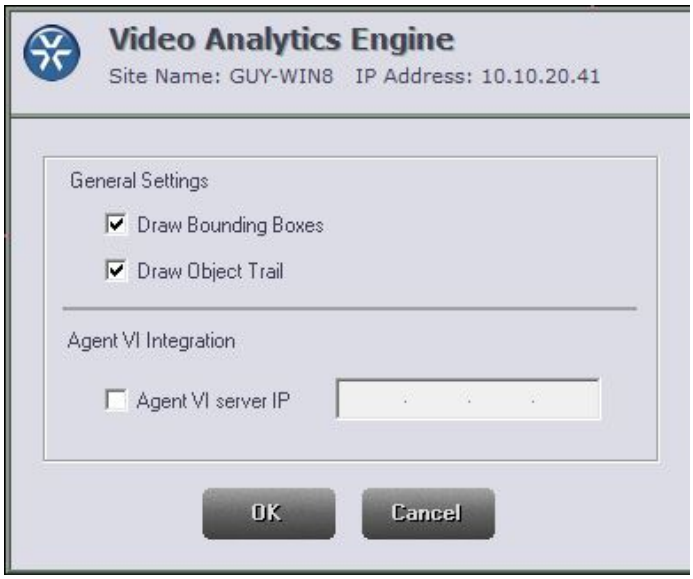
to save your settings and close the *Pre/Post Alarm Settings* window.

Note: *If automatic recording has been enabled recording is already taking place and setting pre/post alarms is not necessary.*

Video Analytics Engine

ViconNet supports both Vicon IQeye embedded analytics and integrated video intelligence (VI) used for detection of unusual and abnormal events or behavior. Vicon IQeye embedded analytics is available on all IQeye cameras using the proper firmware and is completely supported by ViconNet. Refer to the IQeye Analytics manual as needed. Before using the Agent VI, it is required that the VI software be installed in the system (refer to ViconNet VI documentation). To use VI, the user must be connected to the Nucleus as well as the VI server.

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the Workstation/VPK NVR for which you want to configure video analytics and click Select. The *System Settings* window is displayed, as shown on page 55.
3. From the *System Settings* screen, select Video Analytics Engine. The following screen will display.



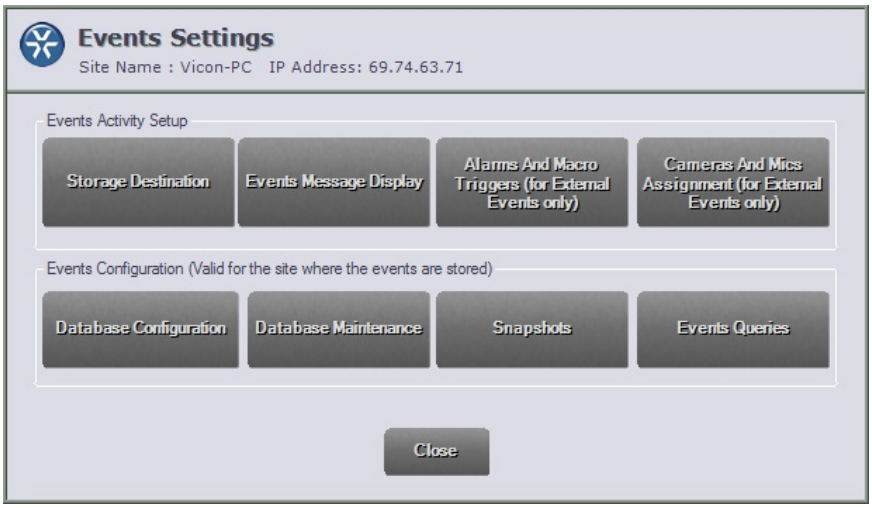
4. Under General Settings, Draw bounding boxes and Draw object tail are checked by default; they can be unchecked (disabled) if desired. These options create an area around the object that is being followed. When video with analytic behavior is displayed, the video will display polygons that outline the behavior violation according to the parameters set up in the video analytics. The “tail” shows the direction of the motion. These indicators supply details to track the behavior and follow its progression. Refer to *Appendix E, Using Video Analytics* for details. These settings are available for both IQeye Analytics and Agent VI.
5. If using Agent VI, check the Agent VI server IP box. The **AgentVI server IP address** field on the screen will become editable.
6. Enter the AgentVI server IP address.

Events Management

ViconNet provides a powerful event management system that allows integration with another control system, such as access control or license plate recognition. The event management system is designed to allow any external source to send events to it over the network. Events Management provides a wide array of options to manage, control and present information about the events generated from that control system.

Note: *The events management system uses a common SQL database installed on one of the Workstations (Vicon recommends installing the database on the Nucleus, assuming it is a PC registered as a Workstation or NVR and not a DVR). The events management system can use an existing SQL server if such exists.*

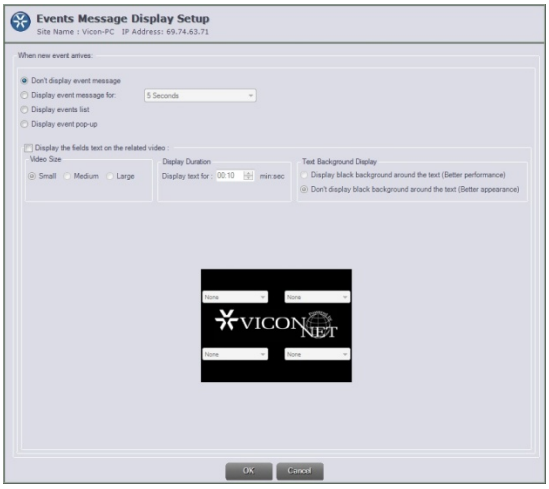
1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the Workstation/VPK NVR for which you want to configure events and click Select. The *System Settings* window is displayed, as shown on page 55.
3. From the *System Settings* screen, select Events Management. The following screen will display.



4. The top four buttons provide for local configuration of events, to customize what will happen when an event occurs. From the Events Settings screen, select Storage Destination. The following screen displays.

5. Select where to save the events, either on the local database or elsewhere, as a central database. (One shared database on the Nucleus is the preferred option.) Click OK. A **Cancel** button is provided.

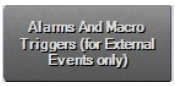
6. From the Events Settings screen, select Events Message Display. The following screen displays.



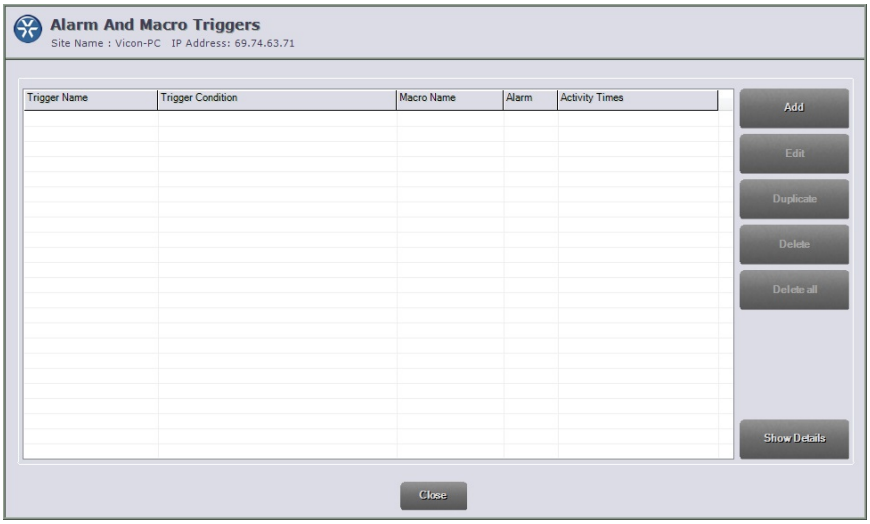
7. Select what type of message to display when an event occurs [display message for a selectable duration of 5-30 seconds, display accumulated event list, pop-up message or no display indication at all (events will only be added to the database for future use)]. Additionally, select if information (text) should display on the video for the incoming event (note that the available fields in the dropdown lists

change according to the system it is integrated with); the number of fields of text depends on the selected video size (4, 6 or 9 fields for small, medium or large, respectively). Select the time duration of the display and the type of border. Click

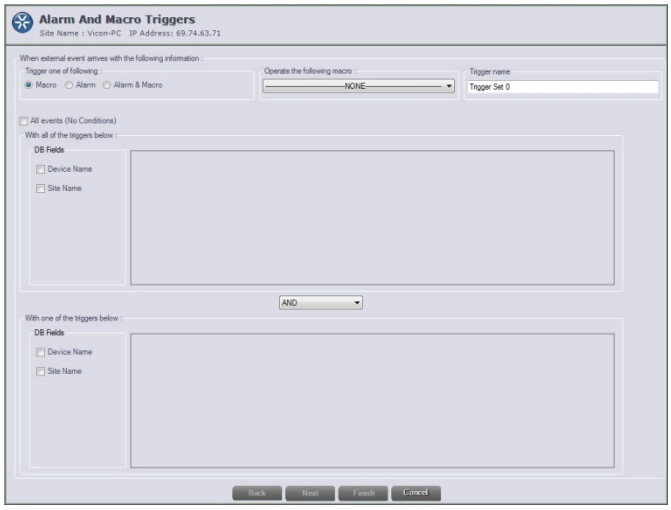
. A **Cancel** button is provided.

8. From the Events Settings screen, select 

. The following screen displays.



9. This screen defines a set of conditions for which an event will be treated as an alarm and/or activate a macro. To configure this trigger, click **Add**. The following screen displays.



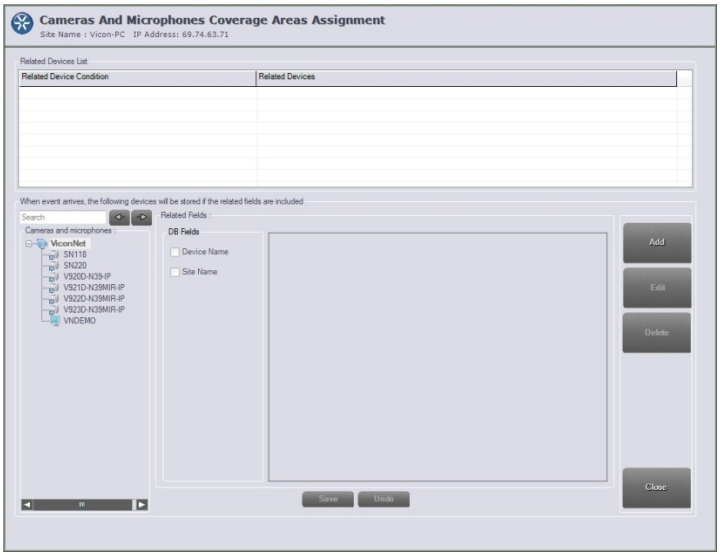
10. Select whether the event will trigger an Alarm, a Macro or an Alarm & Macro. If macro is selected, choose it from the drop down list; name the trigger. If it is required that all events trigger an alarm/macro, check that box. To choose events to be triggers, select which fields will trigger the alarm/macro and input the condition which will be used to identify the trigger; any number of database fields can be chosen from the top list. To further refine the trigger, one field of the same type can be

selected from the second list, and this second field can be in combination with the first (AND) or in addition to the first (OR).

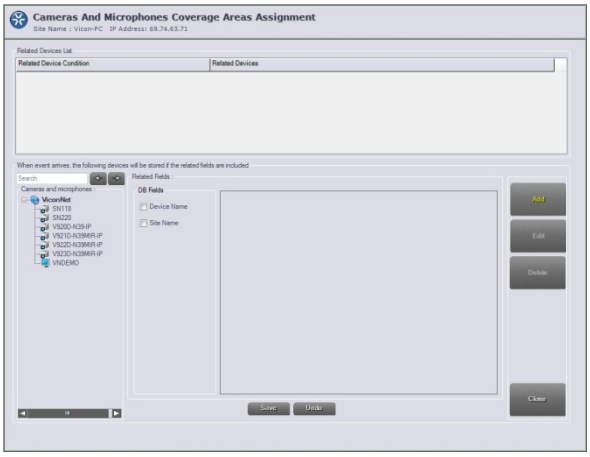
11. To modify a trigger, use the **Edit, Delete** or **Delete All** buttons to edit a selected trigger, delete a selected trigger or delete all triggers. The **Show Details** button displays a list of the specifics for the selected trigger.

12. From the Events Settings screen, select

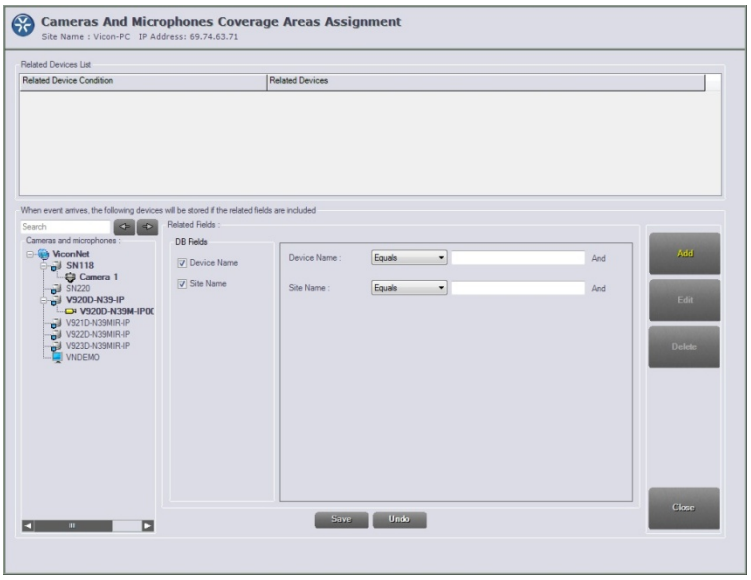
. The following screen displays.



13. This screen defines the set of conditions under which defined related devices (i.e., cameras and microphones) will be used (for recording or display) when an event occurs, linking an event to a camera condition. To configure the camera, click **Add**. The bottom portion of the screen becomes active.



14. Select cameras and microphones and the related field(s) you want to cause the camera to be stored in the database. See below.

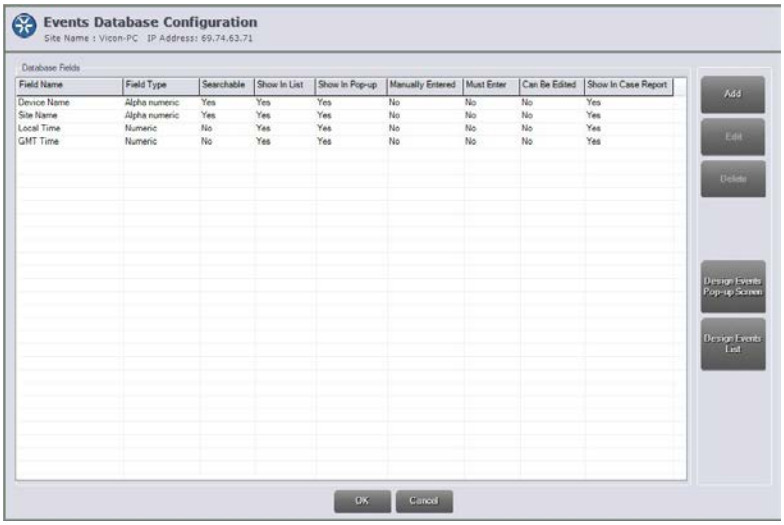


15. Define the content of the database fields that cause the camera to store the event. The selected field can Equal, Not Equal or contain specific information. Click **Save** when completed. In this way, several related devices can be linked to a specific condition in the event and used as a group for display and recording purposes to one event without creating multiple macros. An **Undo** button deletes the addition.

16. To modify previously configured cameras, select **Edit**; click **Delete** to eliminate a camera from the list.

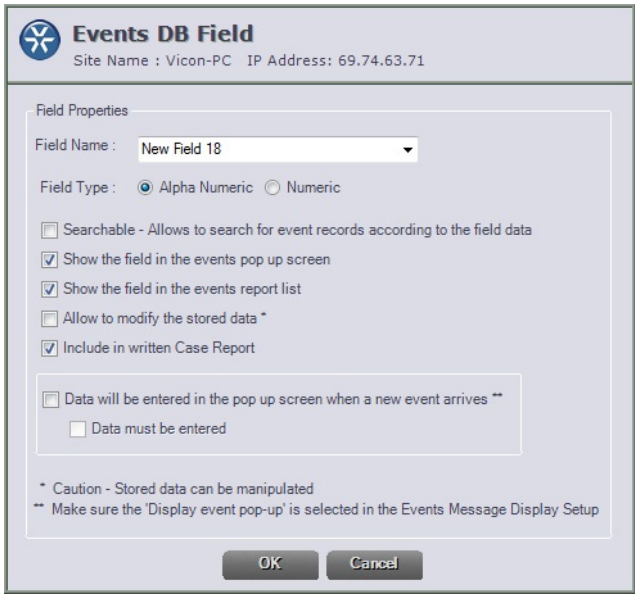
17. The bottom four buttons pertain to settings related to database configuration. From the Events Settings screen, select

. The following screen displays.



18. Depending on the system integrated with, the database field might already be populated or, in some cases, those need to be defined. Even if the integration driver is already defined, the users need to choose which of the fields available to include in the database and those not to include. The Events

Database Configuration screen allows the creation of database fields and how these fields are defined and used. Click **Add** to add a database field. The following screen displays.

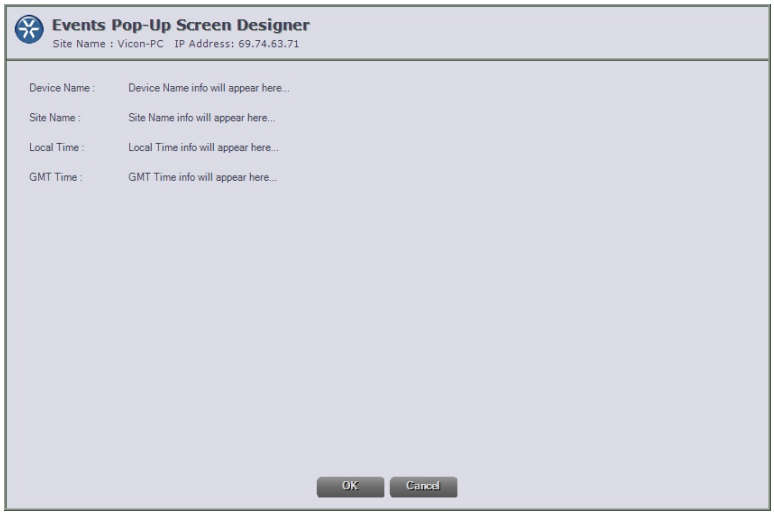


19. The drop down menu lists all the fields that are pre-defined for the specific system; for example the license plate recognition driver will list: Lane, Plate number and other fields. To create other fields that are NOT pre-defined, name the new field and define the type as Alpha Numeric or Numeric; check the radio buttons of the categories of how the field will be indexed (to be used for queries on that field).

Note that if **Allow to modify the stored data** is checked, this editing can be reviewed in the *Events History Report*. If a field is Searchable, it can be used to look for events with that field.

20. Events can be announced by pop-up screens, if selected in the **Events Message Display** screen. The pop-up screen's layout can be custom designed. Select

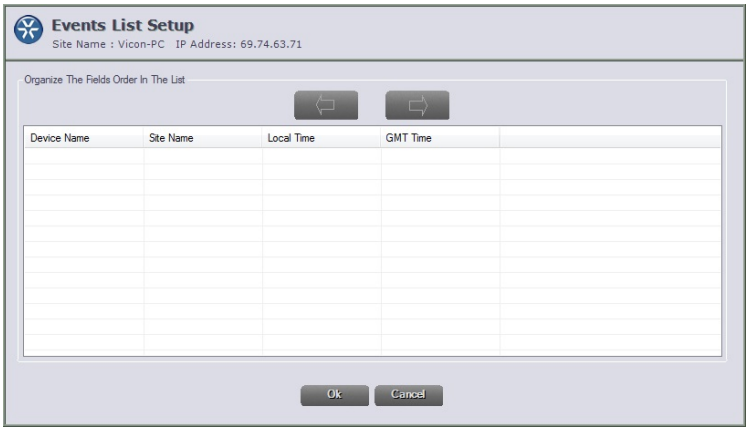
. The following screen will display.



21. Each field on the screen can be dragged to a location for a custom design. Click **OK** to save the design or **Cancel** the changes. This allows the user to design the look of a pop-up message; this should be done after all fields have been defined in the database.

22. The **Events List** can be designed to reflect customer preferences. Select

. The following screen will display.



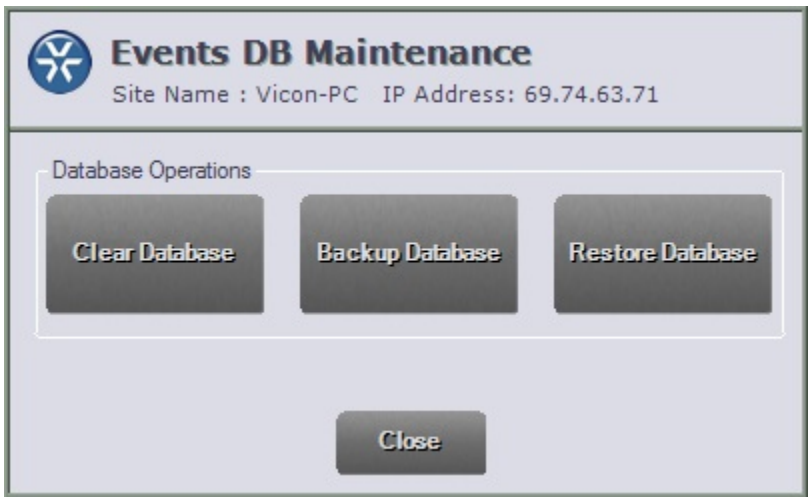
23. After selecting a field column, use arrows at top to move the column to a different location on the list. Click **OK** to save the design or **Cancel** the changes.

24. From the Events Settings screen, select

. The following screen displays.

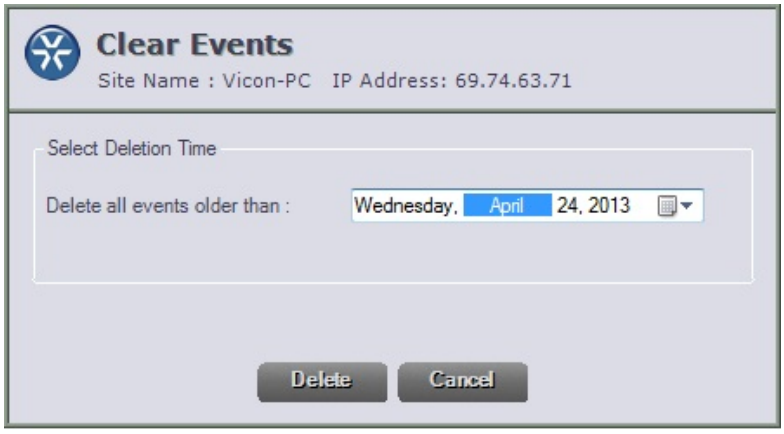
The database by nature is limited by size (4 GB with the free SQL 2005 express). This requires maintenance to make sure it is always operational. It is recommended to schedule backups for the database or to clear un-needed data.

Note. This is a different database than the video database; it contains events relevant to the event management system only and not playback video.



25. To clear all or some of the older events in the database by date, select

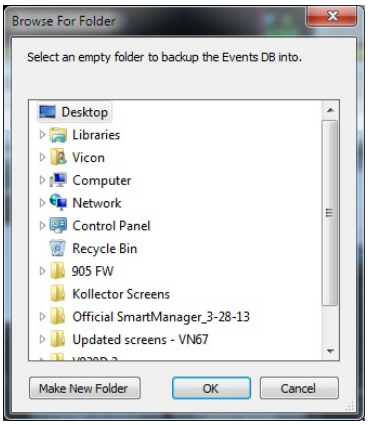
. The following screen displays.



26. From the dropdown, select the date up to which all events will be deleted. Click on **Delete** to remove these events from the database.

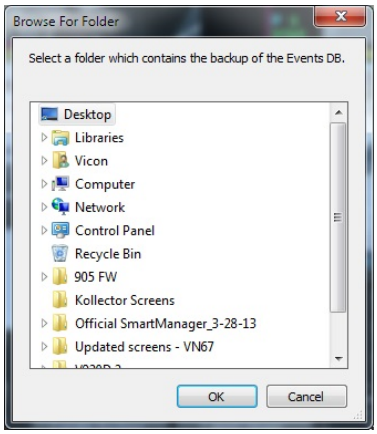
27. To backup the database, select

. The following screen displays.

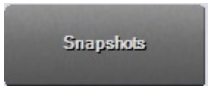


28. Select an empty folder in a location on the PC to save the backup Events database. Click **OK**.

29. To restore the database, select . The following screen displays.



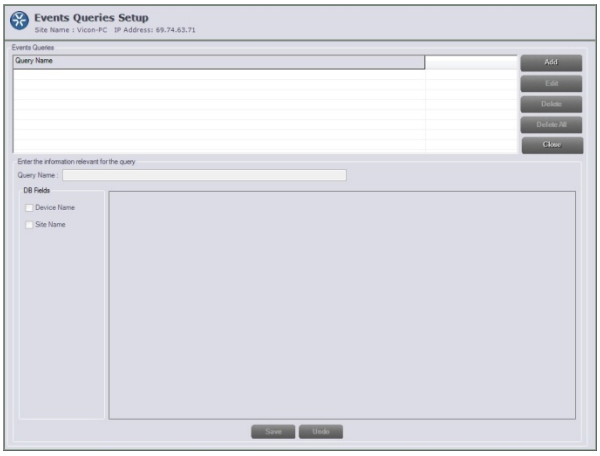
30. Select the folder that contains the backup Events database. Click **OK**. The backup database will be saved back into the database.

31. From the Events Settings screen, select  . The following screen displays.

32. Check the box to attach a snapshot to an event when it occurs. For a recorded event, a pre-event snapshot can be taken up to 59 seconds before the event occurs. The snapshot will be from the cameras related to the event as defined in step 12 and requires those cameras to be recorded if a pre-alarm snapshot is needed.

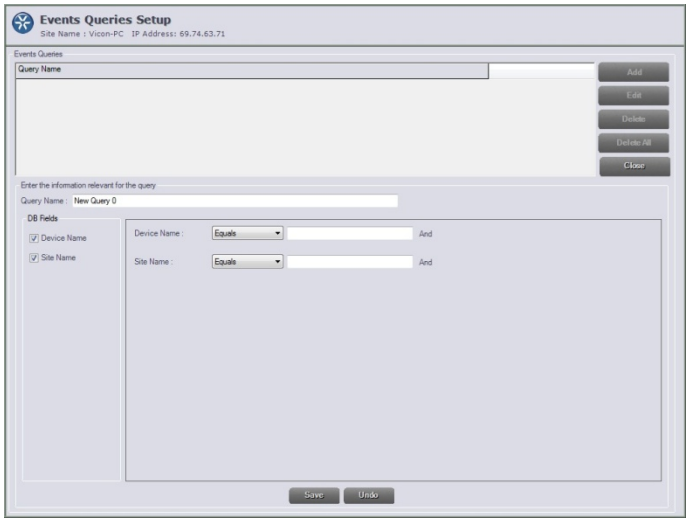
33. From the Events Settings screen, select

. The following screen displays.



34. Queries allow for easy and fast retrieval of data using the *Events History Reports*; refer to Chapter 8. This screen allows the setup of specific inquiries on events and defines which fields will be used in these queries. Any query created here is saved and can be easily run at any time, saving the need to

compose the query on-the fly. To add a query, select **Add**. The bottom of the Events Queries Setup screen becomes active.



35. Enter a name in the Query Name field. Select the DB fields to be included in the query; when database fields are defined as Alpha Numeric, define them as Equals, Not Equals or Contains and enter terminology in the field(s); Numeric fields are defined as Equals, Not Equals, Is bigger than, Is smaller than or Is within range. Select **Save** to save this query or **Undo** to cancel it.

36. Change a query by selecting the Event Query from the list and click the **Edit** button. The fields at the bottom of the screen become active to make any necessary changes. Select **Save**. To delete a query, select it from the list and click **Delete**; a **Delete All** button is provided to delete every query from the list.

Configuring Archives

ViconNet provides two methods of saving selected files in archives. The advanced method is created through the playback screen and is done directly from the *Navigation* screen. As an alternative, an Archive Wizard is available that can be accessed directly from the *Main* screen. That method is configured through the *System Settings* screen.

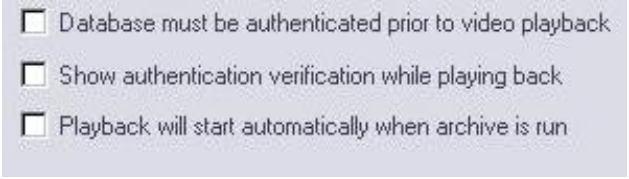
1. From the ViconNet *Main* window, click

. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the unit for which you want to configure events and click

. The *System Settings* window is displayed, as shown on page 55.
3. From the *System Settings* screen, select

. The following screen will display.

4. Select the **Use archive wizard** radio button. The area below the button will become active.
5. From the selection, check to choose any or all of the parameters as required by your system.



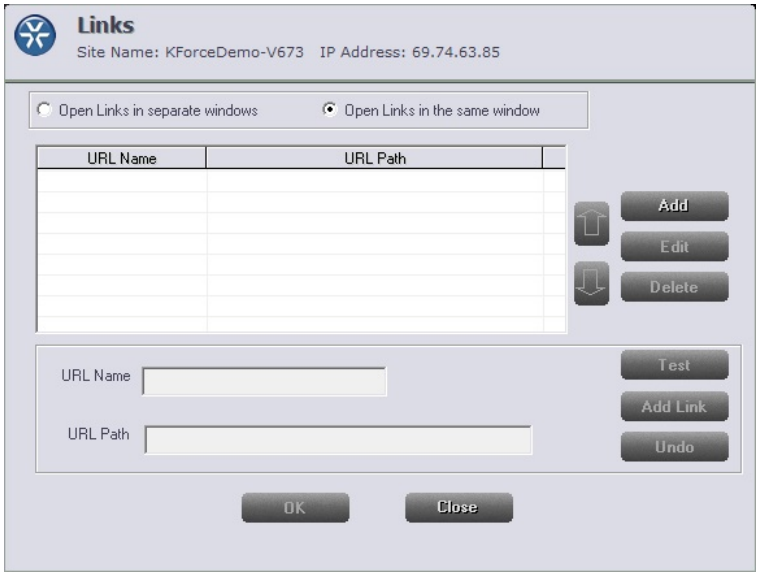
6. Choose to either **Require user login to play the archive** or allow **Login automatically using the following user credentials**. A user and password entered in this screen must be that of an existing user in the system who has playback permission in the Site Authorization list.
7. The

button on the Main screen can be used to create the archive.

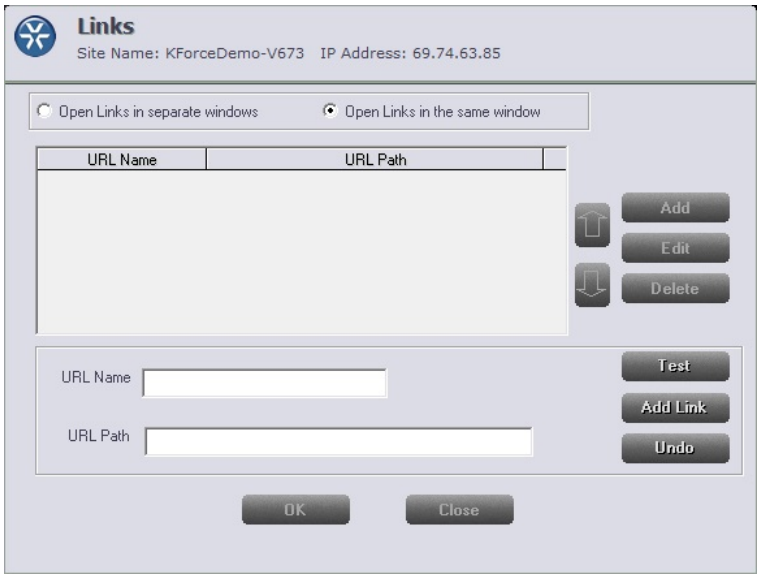
Creating Links

ViconNet offers the ability to create a list of URL links directly from the *Main* screen.

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the unit for which you want to configure events and click Select. The *System Settings* window is displayed, as shown on page 55.
3. From the *System Settings* screen, select Links. The following screen will display.



4. To add a link to the list, select **Add.** The following screen will display.



5. Fill in the fields with a URL name and a URL path. Click **Save** to save the settings.
6. An **Undo** button is provided to delete this URL from the list.
7. A URL can be changed or deleted by selecting the URL from the list. The **Edit** and **Delete** buttons will become active.

Creating Schedules

A schedule is a group of user-defined settings that cause the system to activate a selected macro during a specific time period and for a specific length of time.

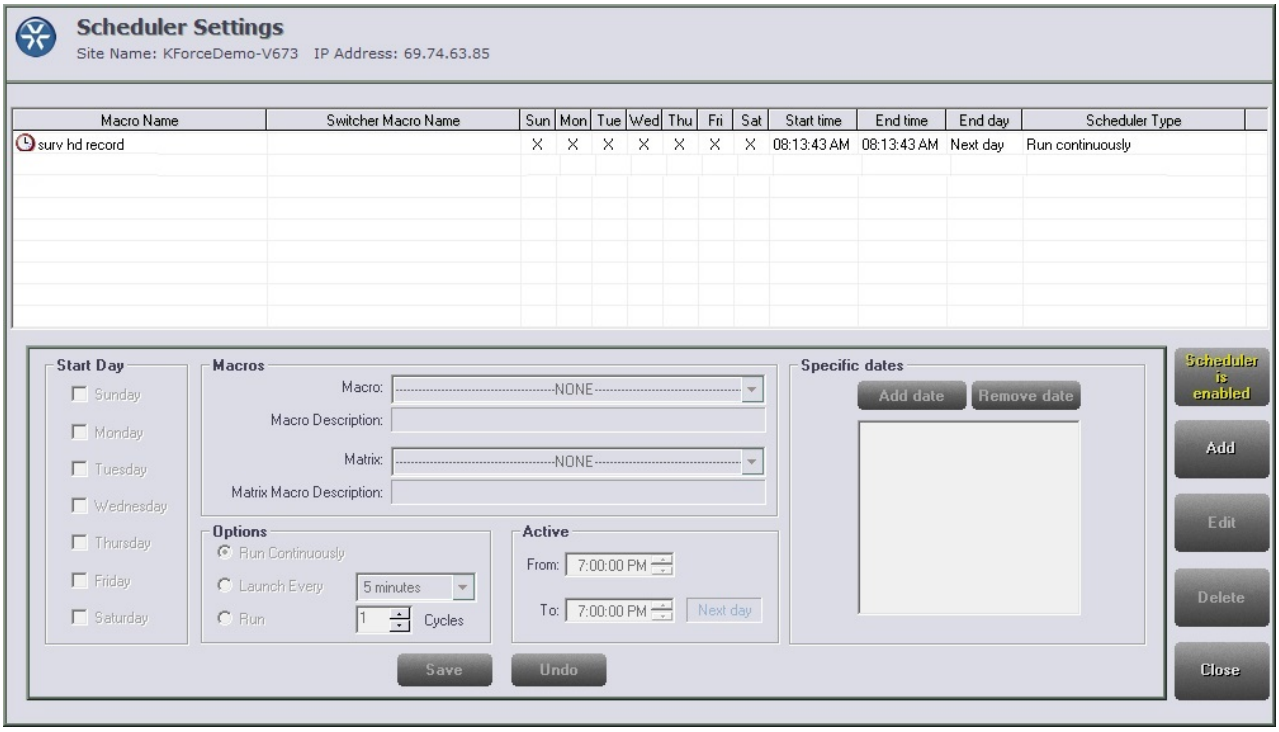
The ViconNet system enables you to use the ViconNet application to create multiple schedules, according to your requirements, which consists of selecting which macro to run on which days of the week, as well as a start time and end time for each day.

Each schedule, using its defined macro, performs the respective commands on the configured camera and microphone inputs only during the time periods defined in the schedule. The transmitter remains idle during the non-scheduled times.

During schedule configuration, you can also determine if the defined macro will run continuously during the selected time period or at specific intervals. This enables you to fine-tune your macro operations and may reduce storage space in the storage location by recording data only during the scheduled time periods. You can also modify or delete an existing schedule, if required.

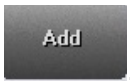
To create a schedule:

1. Ensure that you have created the required macros, as described in *Creating Macros*, page 124.
2. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
3. Select the site name for which you want to create a schedule and click Select. The *System Settings* window is displayed, as shown on page 55.
4. Click Schedule for Macros. The *Scheduler Settings* window is displayed, showing the currently defined schedules in the system, if any.

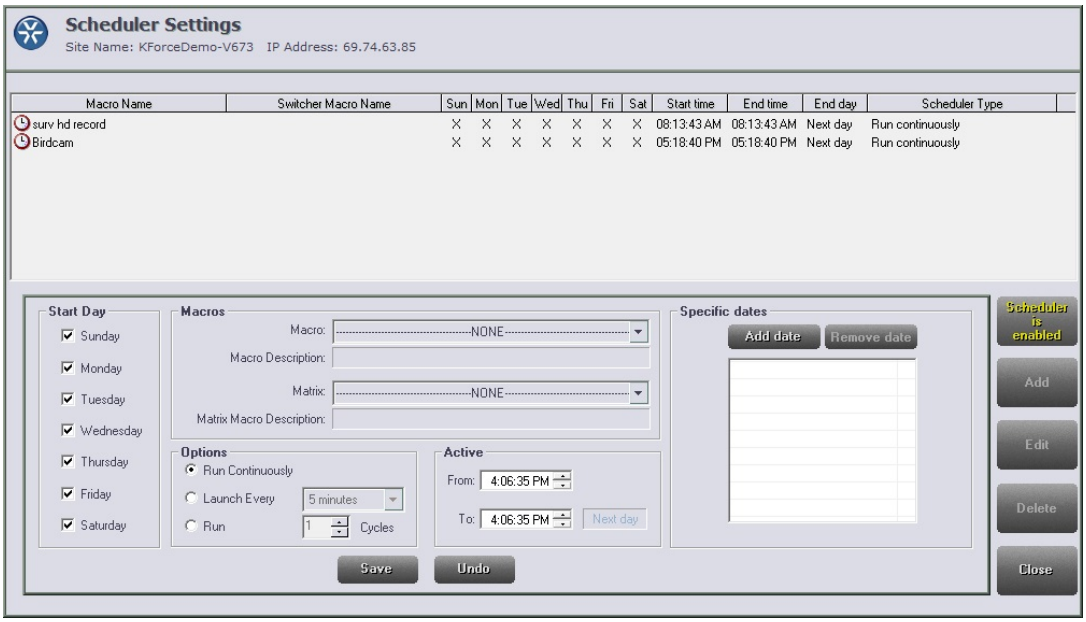


The *Scheduler Settings* window contains the following information about each schedule:

Column	Description
Macro Name	The defined macro name.
Switcher Macro Name	The defined switcher (matrix) macro name.
Sun, Mon, Tue, Wed, Thu, Fri, Sat	The days of the week that the macro is scheduled to run.
Start Time	The time that the macro is scheduled to begin running.
End Time	The time that the macro is scheduled to stop running.
End Day	The day that the macro is scheduled to stop running.
Scheduler Type	The defined run option, which determines if the macro will run continuously or only at specified intervals.

5. Click 

. The *Scheduler Settings* window is enabled.



NOTE: *When working in the Scheduler Settings* window*, you can click* ***Undo*** *to restore the last saved settings, if required.*

6. From the **Macro** or **Matrix** dropdown list, select the macro for which you want to create a schedule. The defined macro description is displayed automatically in the **Macro Description** field.

7. Select the days of the week that you want the macro to run from the **Sunday - Saturday** checkboxes.

NOTE: *Selecting days of the week refers only to the coming week. To select other future dates, select dates from the* ***Specific dates*** *area, as described in step 9, below.*

8. In the **Active From** and **To** fields, define the start and end time (in HH:MM:SS format) for the macro to run on each of the selected days, as follows:

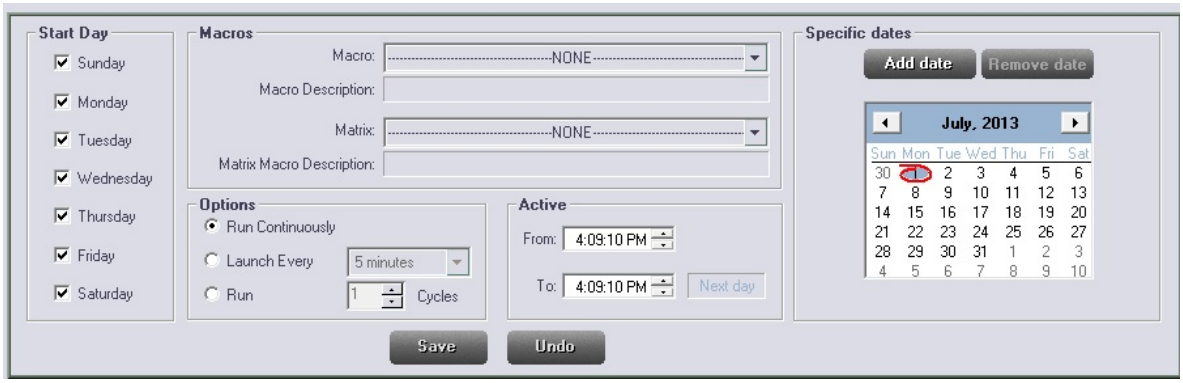
   - Select the required time segment and then use the up/down arrows to scroll to the required value,

   -OR-

   - Select the required time segment and then use the keyboard to type in a numerical value.

   If the **Active From** and **To** times are the same, the schedule will be for a 24-hour period.

9. To select a specific date for the macro to run, click Add date in the **Specific dates** area. A calendar is displayed. Select the date/s required by clicking in the calendar.



NOTES:

*Specific dates selected can be deleted by highlighting the date in the list and clicking **Remove date**.*

If the date you select is in the past, a message requesting a future date is displayed.

*If both a Start Day, and a Specific date are selected, the macro will run on both the day selected in the **Start Day** area and the date selected in the **Specific dates** area.*

10. In the **Options** area, select a run option for the macro, as follows:

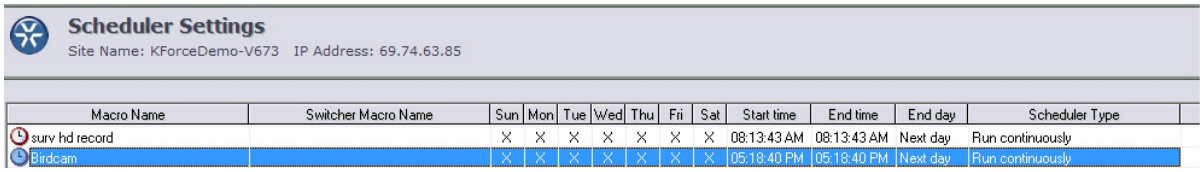
Option	Description
Run Continuously	This option causes the selected macro to run continuously, during the selected days and during the time period that you selected in the **Active From** and **To** fields.
Launch Every	This option causes the selected macro to run at regular intervals, depending on the minute/hour value that you select from the dropdown list. ***NOTE:** When an alarm event occurs, the execution of the alarm macro takes priority over the execution of the schedule macro.*
Run	This option causes the selected macro to run a specified number of cycles (from 1 to 256) from the selected start time. ***NOTE:** For scheduler to run now, ensure that **Active From** time is the current time or later.*

11. Click Save. The new schedule is added to the list at the top of the window. The ViconNet *Main* window is redisplayed.

    After creating the schedule, the system activates the relevant macro automatically according to the schedule settings that you have defined.

    You can also activate the macro manually, if required, as described in *Chapter 7, Managing Macros and Schedules*.

    If you open the *Scheduler Settings* window again as described at the beginning of this procedure), you will see the new schedule in the list.



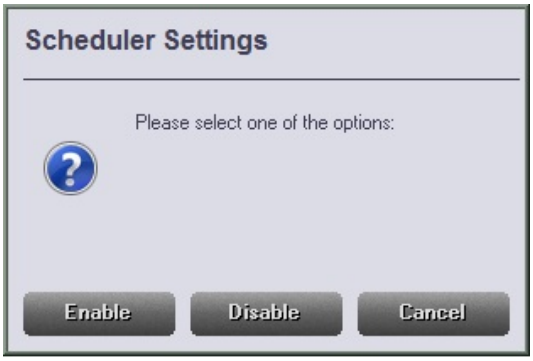
NOTES:

To edit a schedule, select the schedule from the list in the Scheduler Settings window *and click* ***Edit****. Then modify the displayed settings, as described in the procedure above and click* ***Save****.*

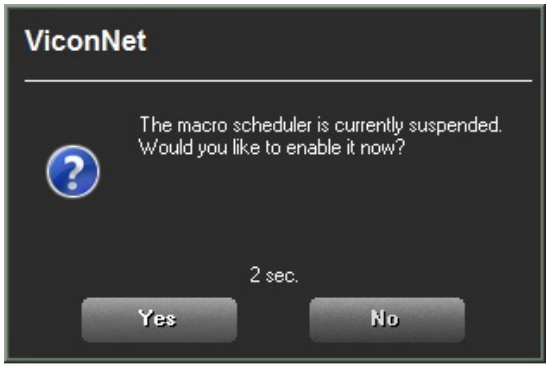
To delete a schedule, select the schedule from the list in the Scheduler Settings window and click ***Delete****.*

To disable all scheduler operations, click the ***Scheduler is enabled*** *button and then click* ***Yes*** *in the displayed message. The button then toggles to* ***Scheduler is disabled****.*

If a scheduled macro was stopped using the ***Stop Macro*** *option in the Main window, the* ***Scheduler is enabled*** *button (in the Scheduler Settings window) changes to* ***Scheduler is suspended*** *and the scheduler switches to* ***Disabled*** *mode. Clicking the* ***Scheduler is suspended*** *button displays a message that provides the option to* ***Enable*** *the scheduler,* ***Disable*** *the scheduler or* ***Cancel*** *(meaning, stay in Suspended mode).*



In Suspended mode, a message appears every five minutes asking if you want to enable the macro scheduler.



If the user does not respond (click ***Yes*** *or* ***No****) within 30 seconds of the message appearing, the macro scheduler is automatically enabled.*

If the system reboots while a macro is running or scheduled to run, on system startup, the macro resumes from the place it stopped (if it is still within its time limits).

Configuring Low Bandwidth

You can use this option to configure whether or not museum search information is to be sent over low bandwidth when the **Low Bandwidth** option is selected (in the *Main* window or in the macro settings defined in the *Macro Editor* window).

NOTE: *This feature can only be carried out by directly accessing the System Settings window of the Kollector devices, not via that of the Workstation.*

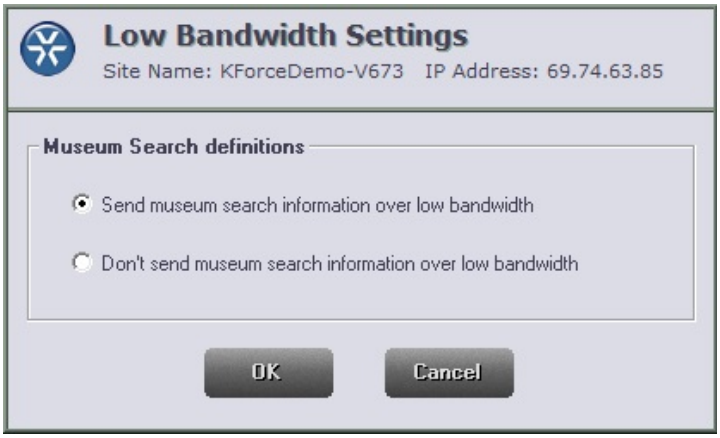
To configure low bandwidth:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.

    a. Select the required site and click Select. The *System Settings* window is displayed, as shown on page as shown on page 55.

    b. Click Low bandwidth to display the *Low Bandwidth Settings* window.

    c. Select either **Send museum search information over low bandwidth** or **Don't send museum search information over low bandwidth**, as required.



    d. Click **OK**.

Restoring and Backing Up System Settings

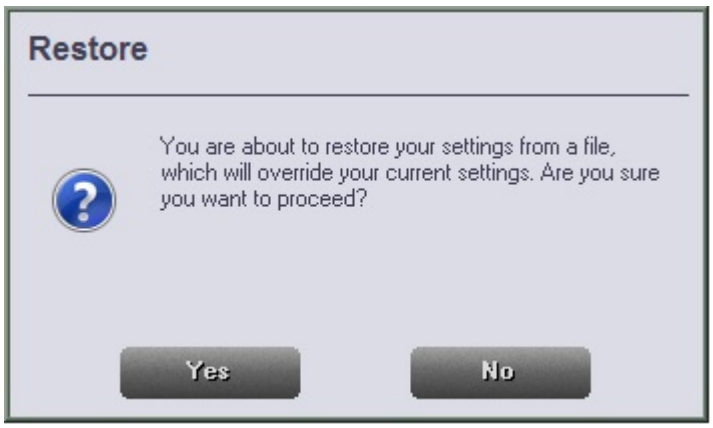
The ViconNet system automatically backs up all the system settings every time you close the ViconNet application.

In addition, you can manually back up the system settings at any time, to any network location, or restore the settings to ones that were saved previously.

Note: *Backup and Restore is typically done on the same machine/system. It is not recommended to do a Restore on a different system; loss of license and other issues may occur if a Restore is done on a different system. In the case of a unit swap that uses the original unit's settings, a re-license after the Restore process might be required.*

To manually back up or restore system settings:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to back up or restore settings and click Select. The *System Settings* window is displayed, as shown on page 55.
3. To back up settings, click Backup. A standard file browser window is displayed. Navigate to the required backup location and click **OK**. It is highly recommended that you backup the settings to a CD or a USB drive, in case the hard drive fails. After you have saved the settings to the USB or CD, label it with the name of the file and the date on which it was created.
4. To restore settings, click Restore. The following message is displayed, warning you that restoring previous settings will override your current settings.



5. To continue, click **Yes**. A standard file browser window is displayed. Navigate to the backup file that you want to restore and click **OK**.

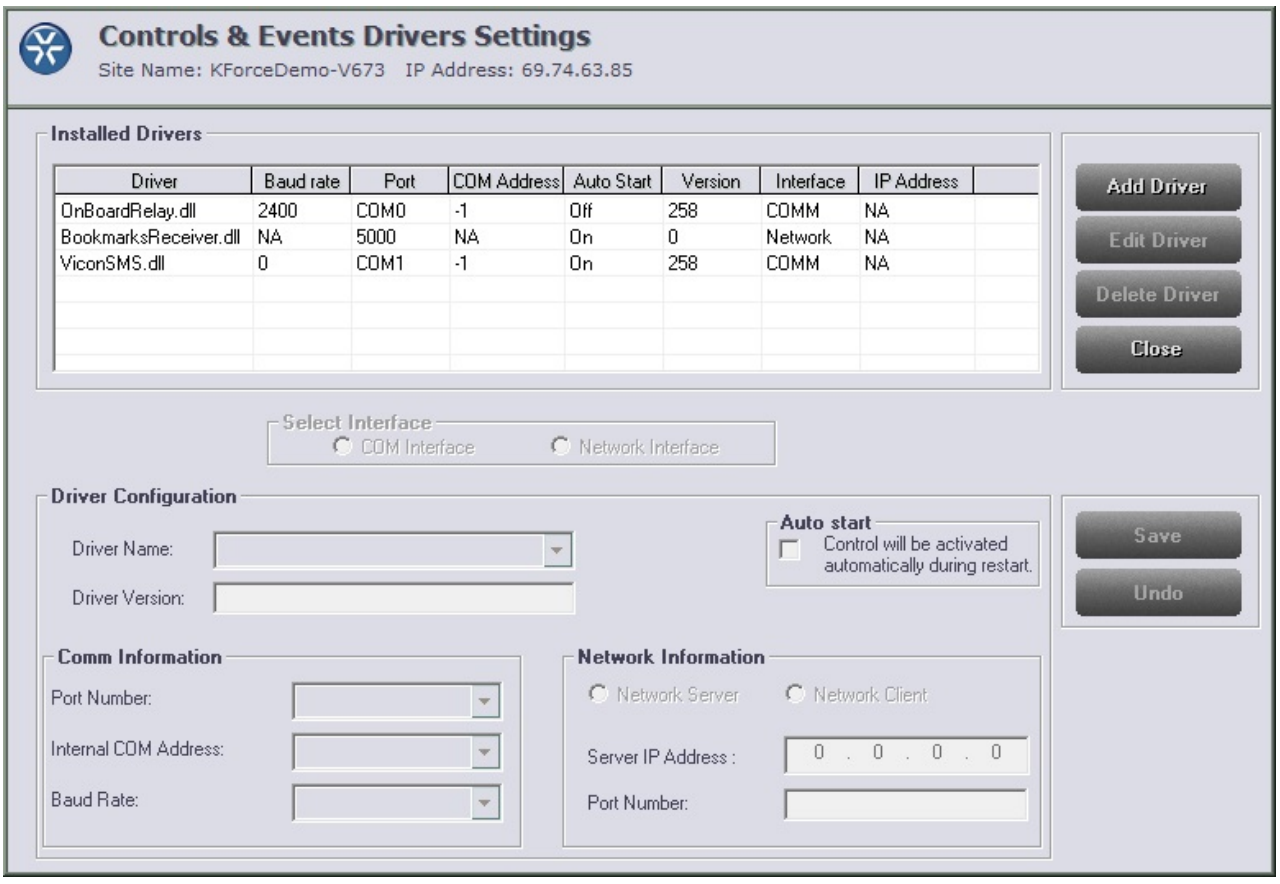
NOTE: *Remember the backup location for restoration purposes. It is important to restore system settings on the same transmitter on which the backup was performed.*

Configuring an External Control

After the appropriate driver has been installed, the controls can be configured through the **Controls & Events Drivers** option in the *System Settings* window.

To configure the control:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click the Controls & Events Drivers button. The *Controls & Events Drivers Settings* window is displayed.



NOTE: *If the relevant drivers are not installed, the following message is displayed:*

- *Click **Close** and install the relevant drivers.*

4. When the drivers are correctly installed, click the **Add Driver** button to display a list of the pre-installed drivers. The types include: PTZ joystick, relays, control panel, keypad, event and host protocol (PLC).
5. From the **Driver Name** list, select the required driver.
6. Select the **Internal COM Address** with which to communicate with the device, the **Port Number** and the **Baud Rate**.

NOTES:

*Ensure the **Internal COM Address** is different for each control driver, or the following message appears:*

*For PTZ Joystick, the **Baud Rate** must be 4800.*

7. Select/Deselect **Auto start** checkbox.
   - If selected, the control is automatically activated on system startup.
   - If not selected, the control must be activated manually in the *Main* screen, as described in the section *Activating a Control*, below.
8. Certain drivers, for example Bookmark, require that the Network Information area be completed. If these fields are not grayed out, select Network Server or Network Client and enter the required information. When using PLC-TCP there are two drivers (.dll), one to serve as a TCP/IP Client (Client.dll) and the second to serve as a TCP/IP Server (Server.dll). The choice depends on the system sending the PLC commands. For the Client.dll, set the Server's IP address and the User Port; for the Server.dll, only the Port Number is defined. For PLC-COM, no setup is required.

9. Click **Save** to save the settings.

10. Click **Close** to exit the *Controls & Events Drivers Settings* window.

NOTES:

*The **Driver Name** and **Driver Version** parameters are set automatically.*

*To edit the configuration for a control driver, select the control in the list and click **Edit Driver**. The relevant fields in the **Control Information** area are enabled.*

*To delete a control driver, select the control in the list and click **Delete Driver**.*

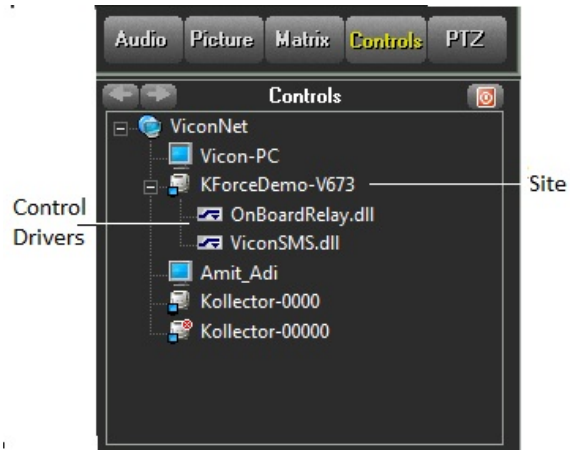
When working in the Control Settings window*, you can click **Undo** to restore the last saved settings, if required.*

Activating a Control

Controls, such as joystick, relay and so on, must be activated in order for them to function in the ViconNet system.

To activate a control:

1. In the *Main* window, click **Controls**. A list (tree) of all sites with controls configured is shown in the lower-left panel. To see the controls configured for a specific site, click on the site in the list.



2. Depending on the type of control, activate it as follows:

Control	How to Activate
Relay	• Click on the control driver in the list. The following GUI is displayed in the lower-left panel.

- Select **Activate** and the **Activation time** (duration of activation of relay in milliseconds).
- Select which relay to activate.

Activated relays appear in the controls list with a yellow icon and bold text.

> ***NOTES:***
>
> *The **Number of controls actually connected** is the number of actual physical connections. If this number is 0, a relay cannot be activated.*
>
> *The **Current state** displays the name of the last relay activated.*

Speaker This will be available in future versions.

PTZ Joystick Click on the joystick control in the list. The joystick control is activated and a GUI message appears in the lower-left panel that the control is on line. If there are no joysticks physically connected (configured), the message in the GUI is:

To deactivate the joystick control, click on it in the control list again.

Defining Site Maps and Map Sets

The Site Map feature allows you to define the location of ViconNet equipment (Kollectors, cameras, microphones and so on) on a map of their physical environment. A map can be a construction plan, building plan, plan of a room and so on. Instead of going to the **Site List** and trying to find a particular camera by name, a Site Map can be examined and the equipment's physical location and status (activated/ deactivated) can immediately be seen. Cameras can also be activated via the Site Map. If more than one map exists, map sets (groups of maps) can be defined.

Maps are added using Map Sets Management. The map files should be .jpeg type files. The optimal map size is 980 x 735 pixels. Larger and smaller size maps can be used and will occupy more or less of the full screen. Maps larger than the screen can be scrolled around to view any specific area.

Creating a Map Set

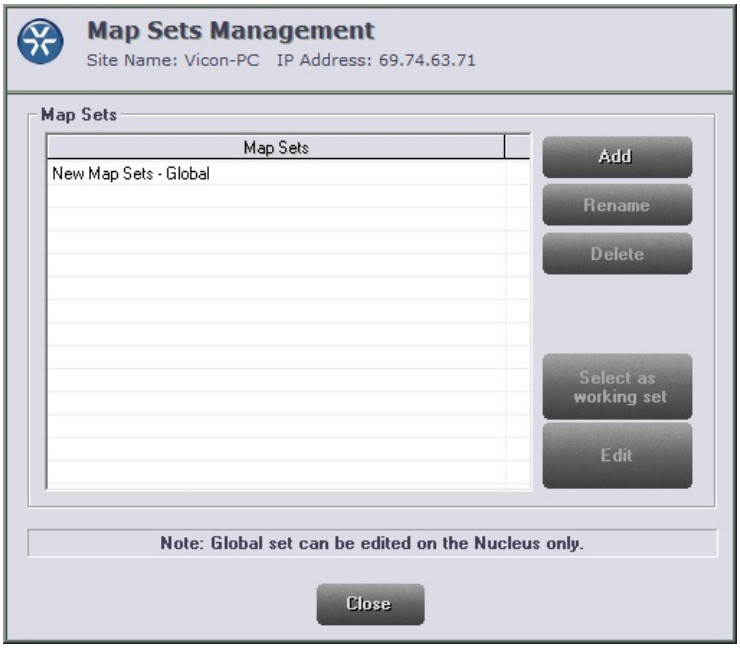
A map set usually consists of various related maps. For example, in a large company with several multi-storey buildings, there may be a map set for each building. In each map set there could be a number of maps, such as, one for each floor (that means, maps can be grouped into map sets according to your preference).

NOTE: *Before a map set can be created, ensure that the map images are copied into the system hard drive.*

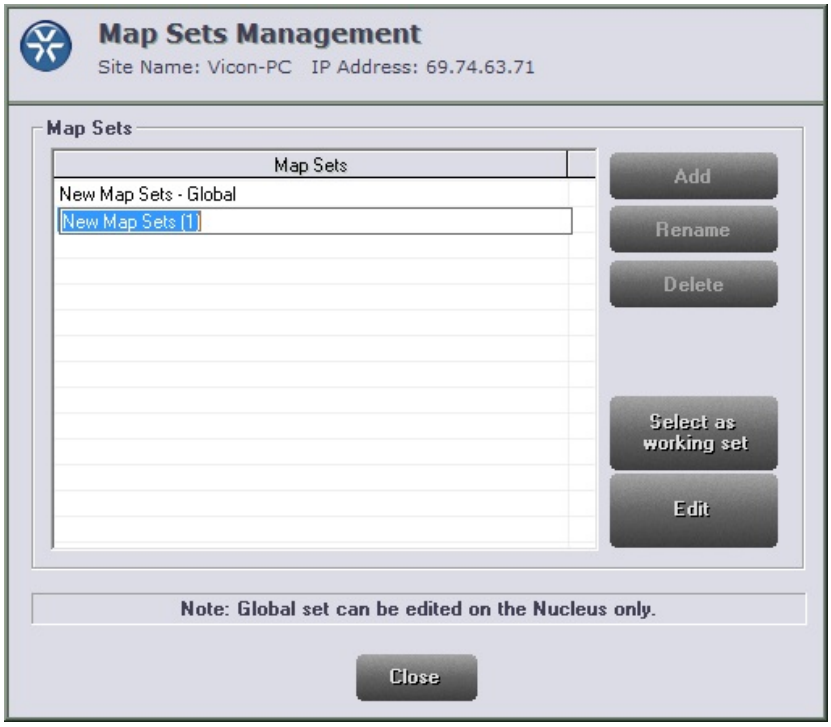
To create a map set:

1. From the *System Settings* window, select

. The *Map Sets Management* window appears.

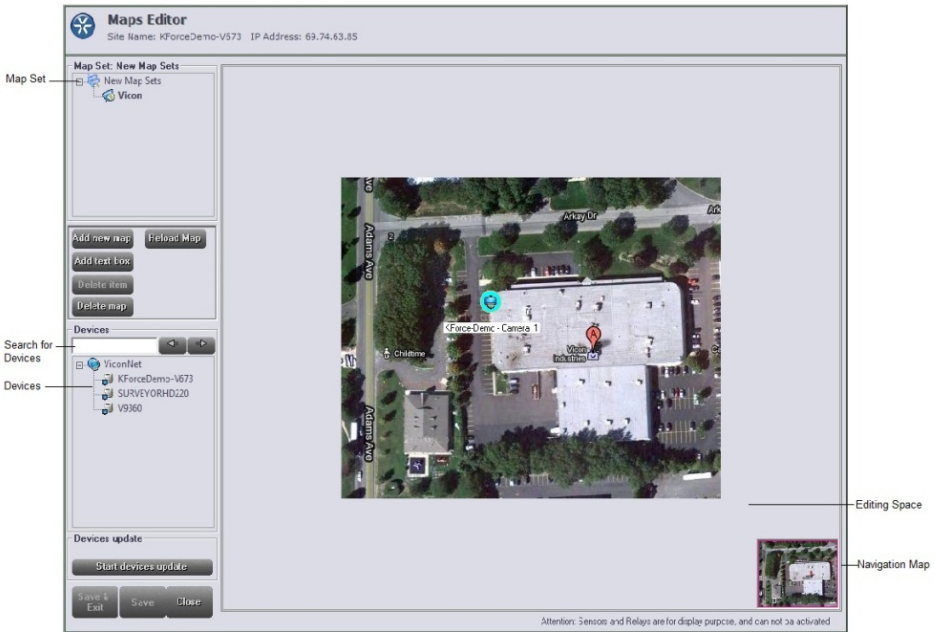


2. Click **Add**. The next blank line in the **Map Sets** area becomes editable and the text *New Map Set* appears automatically as the name of the new map set. Note that there is a Search function available that can quickly sort through the list of devices to locate the device you want to add.

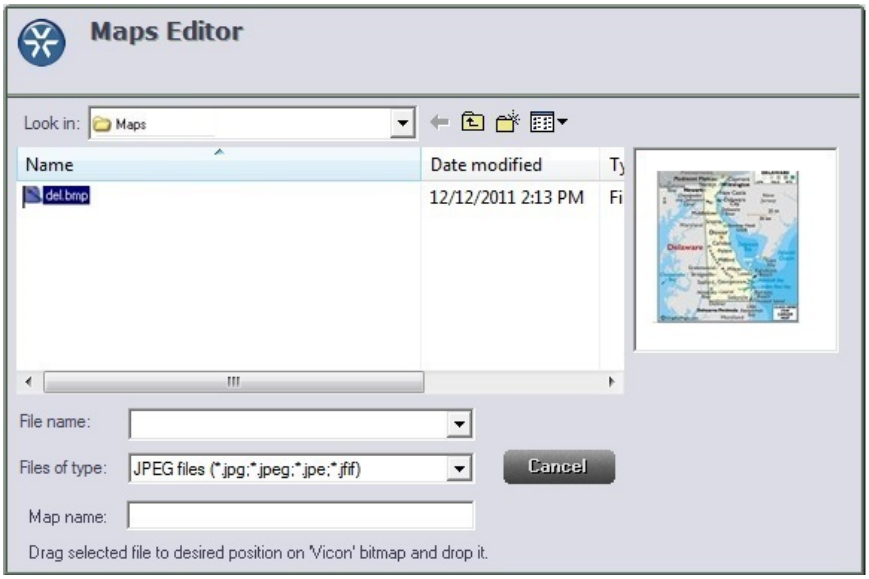


3. Enter the correct name for the new map set and press **Enter**.

4. To configure which maps to put into a map set, double-click the map set name or click **Edit** to enter the **Maps Editor** screen. The *Maps Editor* window appears with the name of the new (selected) map set at the top of the list in the upper-left panel.



5. To add maps to the map set, click **Add new map**. The *Maps Editor Browser* window appears.



Maps added to the map set retain their original size and resolution. Double click the thumbnail of the map to move it up and down to make room to add a device in that location.

6. Browse to and select the map you want to add to the map set. Once the map is highlighted and the name appears in the **File name** box, click **Open**.

NOTES:

1. *Double-clicking the map name in the browser does not add it to the map set (as it does not know where to add it).*
2. *If the map is larger than the screen, it fills the entire screen in the editing space. To navigate to another part of the map, use the navigation map in the bottom right-hand corner of the editing space.*

A map can also be dragged directly from the list onto the displayed map (in the editing space), to create a sub-map. (For example, if you have a map of a whole floor, you may want to insert a map of only one room on that floor.)

NOTE: *If a map that is dragged onto another map has sub-maps, these sub-maps are also dragged onto the map set.*

Adding Sub-maps, Text Boxes and Devices

After creating a map you can add:

- **Sub-maps:** A sub-map is a map inside a higher-level map, for example a detailed map of one room might be a sub-map of a map of a whole floor. The location of the sub-map can be moved as needed.
- **Text boxes:** A text box allows you to write a textual comment wherever you want on the map. An example is shown on the following page.
- **Devices:** Devices that can be added to a map are cameras, microphones, sensors and servers. The devices should be added to maps according to their physical location.

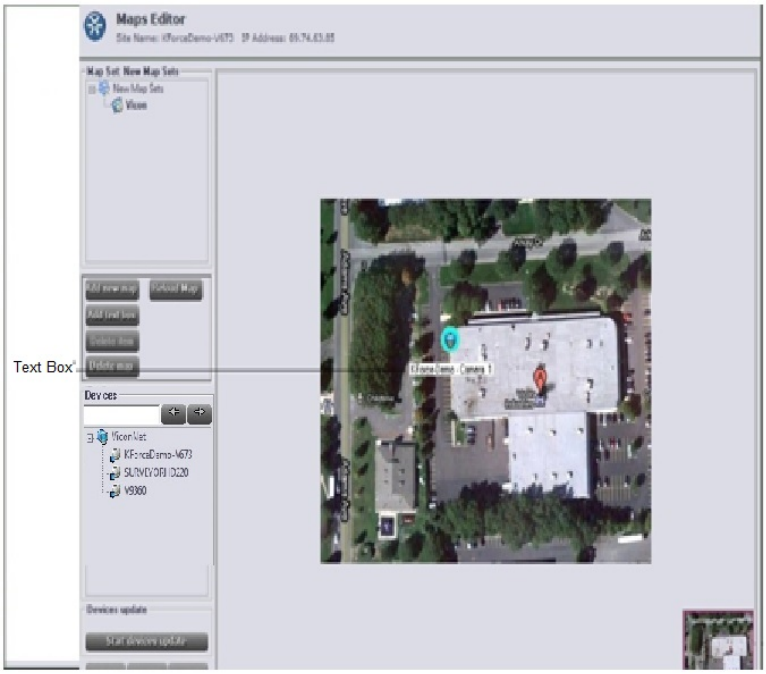
To add sub-maps, text boxes and devices to a map:

1. To add a sub-map (a map inside a map), select the parent map and click **Add new map.**
2. From the Maps Editor Browser, drag the selected map onto the higher-level map in the Map Set list or onto the higher-level map in the editing space.

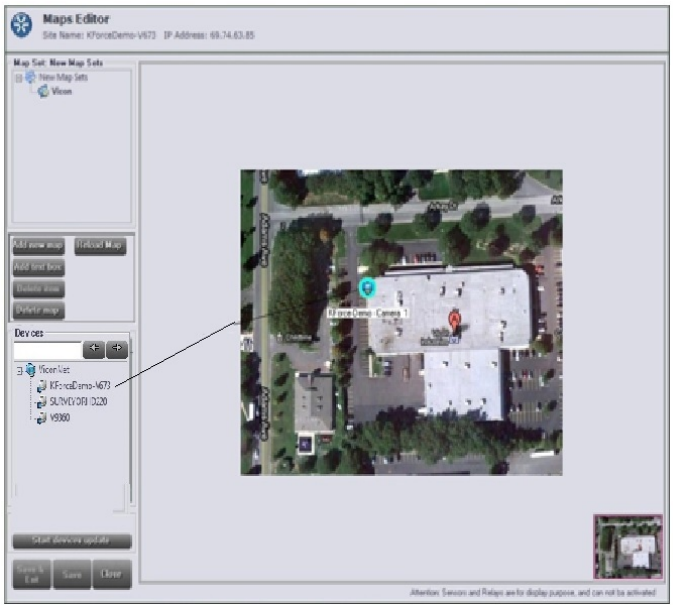
NOTES:

- *You can only access a sub-map via the Map Set list.*
- *You cannot add the same map twice in the same higher-level map, but you can drag it from the list into another map.*
- *You cannot add a higher-level map to its sub-map.*
- *Maps are not added recursively, meaning that "parent" maps must be added first.*

3. To add a text box (a comment displayed on a map) to the displayed map, click **Add text box**. Edit the text in the text box as required and drag the text box to the required location on the map in the editing space.



4. To add a device (camera, server, microphone, sensor) to the displayed map, drag the device from the **Devices** list in the left-hand panel into its required location onto the displayed map. An icon and a label are displayed on the map.



NOTE: *After you drag the device onto the map, the device and its label become two separate objects. If you move the device to another location on the map, the device icon and the label must be dragged separately.*

To activate a device, click the icon on the map. If the device is activated, the icon blinks.

To deactivate the device, click the icon again. If the device is deactivated, the icon remains steady (not blinking).

5. Use the

button load an update a map without changing the devices already placed on a previous map.

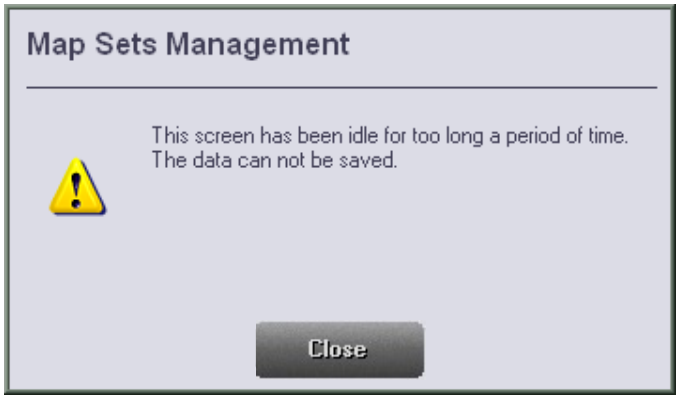
Exiting the Maps Editor Window

There are two ways to exit the *Maps Editor* window:

- To save your changes, click **Save & Exit**.
- To close the window without saving your changes, click **Close**. In this case, a confirmation message appears to verify that you do not want to save your changes.

In both cases, the *Maps Editor* window is closed.

> ***CAUTION:*** The Maps Editor window times out after 20 minutes. If you are editing maps for an extended period of time, be sure to save your changes every few minutes. If you do not save within 20 minutes, when you click Save or Save & Exit, the following message appears:



> ***CAUTION cont'd:*** *Any editing that has been done since last saving will not be retained. Additionally, when clicking on the* ***Site Map*** *tab in the Main Window, the map set that has been selected as the Working Set (see next section) will not appear. If this occurs, terminate ViconNet by clicking on* ***Exit to OS*** *in the* ***Setup*** *menu and then start ViconNet again.*

Editing a Map Set

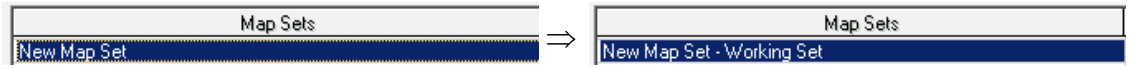
After a map set has been created, it can be edited as follows:

- **The definition of the map set:** The map set can be renamed, deleted or defined as the working set.
- **The content of the map set:** Maps, sub-maps and devices can be added to or deleted from the map set.

To edit a map set:

- In the *Map Sets Management* window, click **Edit**. The *Maps Editor* window appears. The content map set can be edited as described above.
- To rename the map set, from the *Map Sets Management* window, click **Rename.**
- To select which map set will be displayed in the *Main* window, click

. The name of the map set in the list is then automatically changed to add the suffix *"– Working Set".*

  To see the working set in the *Main* Window, click the **Site Map** tab.

Make a network global set:

A map set that can be viewed by other ViconNet devices on a network is called the *Network Global Set.* This map set is created by the following steps:

- On the Nucleus device, create a map set using *Maps Editor.*
- In the *Map Sets Management* window, select this map set and click

. This map set is the *Network Global Set* and is available to any ViconNet devices on the network. It can be viewed on this Nucleus by clicking in the **Set Map** tab on the *Main* Window.
- To choose the *Network Global Set* to be the **Site Map** on another ViconNet device, go the **Map Sets** tab in *System Settings* on that unit. The name of the map set (*Network Global Set*) that was created on the Nucleus will appear. Click

It can be viewed on this device by clicking in the **Set Map** tab on the *Main* Window.

Deleting Sub-maps, Devices and Text Boxes in Maps

Maps, sub-maps, text boxes or devices can be deleted individually or collectively from the *Maps Editor* window.

- To delete a device or a text box from a map, select the object and click **Delete item**.
- To delete a map, click (select) the map to be deleted in the list and click **Delete map**. A message appears asking you to confirm you want to delete the specific map.
- If the map to be deleted has sub-maps, text boxes or devices, they will also be deleted. Once the map is deleted, the previous map in list is selected.

Open Standard Cameras (Vicon/Other)

ViconNet allows Vicon open standard cameras, as well as cameras from other manufacturers (third party), to be used with ViconNet. The Vicon open standard cameras will not automatically show up on the site list; they must be added to the ViconNet system. For open standard cameras from other vendors, a camera license must be obtained before it can be used in the system. Vicon open standard cameras do not require a license to be used in the system. Refer to the manual for the open standard camera for details on installation and setup of the camera.

Open standard cameras from other vendors are accessed over the network, so ViconNet has no control of the initial set up and functionality of these cameras. Refer to the manufacturer's camera manual for details on these cameras.

Note: *If your system includes non-Vicon open platform camera(s), they need a license (VN-CAM-LIC) and to be registered. These licenses only need to be registered once in the Nucleus for the entire system.*

Vicon open standard cameras do not need to be registered and only need to be added once in the Nucleus for the entire system.

1. From the ViconNet *Main* window, click

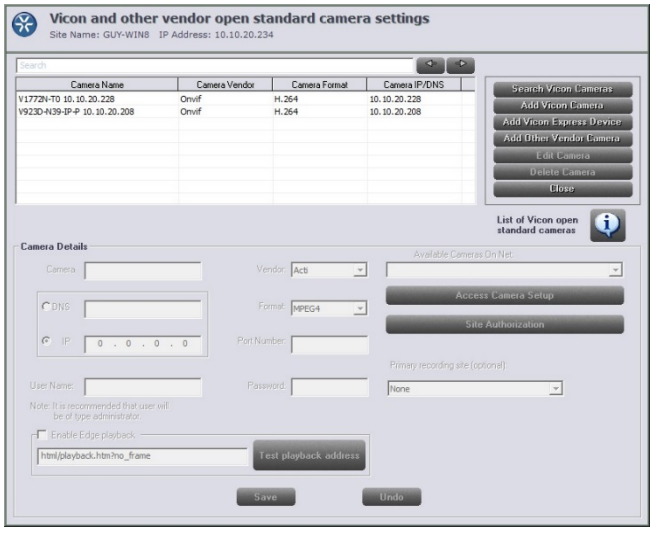
. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.

2. Select the Nucleus for which you want to configure a camera and click

. The *System Settings* window is displayed, as shown on page 55.

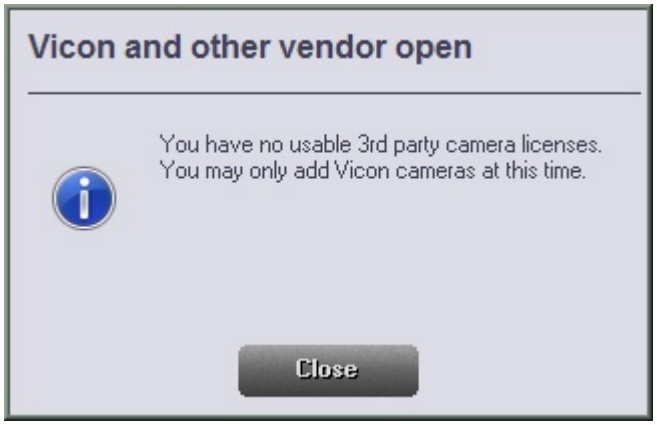
3. From the System Settings window, select the

button. The following screen will display.



This screen allows you to add a camera, edit an existing camera or delete a camera.

If the camera license has not been registered, or if the number of licenses has been exceeded, the following message will display.



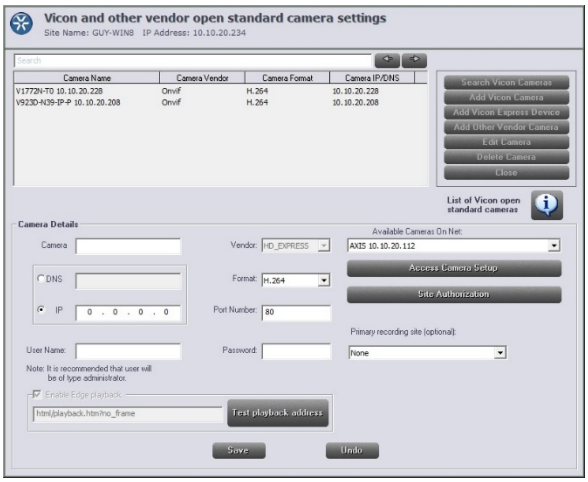
To add a camera

1. Click the Add Vicon Camera for Vicon open standard cameras, Add Vicon Express Device to add Express NVRs or DVRs or Add Other Vendor Camera button for open standard camera from other vendors, or Search Vicon Cameras for any Vicon open standard camera. If you are not sure what type of camera you have, click List of Vicon open standard cameras to access a list of Vicon cameras supported as open standard; this also explains which cameras are accessed using VNSetup.

2. For non-Vicon open standard cameras, the Camera Details area will become enabled. Select a device from the **Available Devices on Net** dropdown list; most cameras are automatically added to the list when they are on the network and the Camera Details are automatically populated. From the **Vendor** list, select the correct manufacturer. If your camera is not on the list, or you want to change the details, enter its details manually, as described in step 3 and on below.

   For Vicon open standard cameras, after the search has completed, the detected cameras are displayed and are added automatically to the list. The camera list can be sorted to display in ascending or descending order by any of the column headings to make it easier to select the desired camera in the list; simply click the camera name column to select toggle the up or down order. A message will display to add a User Name and Password for each detected camera. The User Name and Password for the camera are the camera's identity in its browser. It is recommended that the user be administrator level to be able to access all camera features. After being named, the camera can be activated. Click on the camera. Click the Edit Camera button. The Camera Details area will become enabled.

Note: *Vicon open standard cameras will only be detected if they are on the same LAN as the PC. Cameras that are not on the LAN have to be added manually. Refer to the instruction manual for the camera to add cameras manually.*



3. Enter a Camera Name for this camera and select IP or DNS. (DNS is used to add the camera by its hostname on the network instead of its IP address and is only available if the camera is registered in the DNS.)

4. For open standard cameras from other vendors, select a format for the camera. Only formats that are supported by this camera will display. The format for Vicon open standard cameras is set from the camera's Video Settings screen. Select the same format, H.264, MPEG-4 of M-JPEG.

5. The Port Number will default to 80. This is the most standard port. If you want to use another port, you must check the camera's browser to set the correct port.

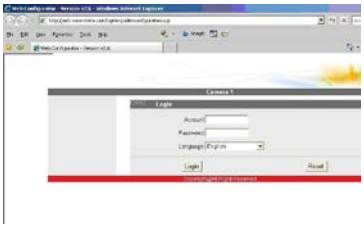
6. Enter a User Name and Password for this camera. This will be the camera's identity in its browser. It is recommended that the user be administrator level to be able to access all camera features. If you want to specify a site where the camera is recorded (instead of automatic recording search), select it from the dropdown Primary recording site list; this is an optional setting.

7. There is a checkbox to Enable Edge playback. This allows a camera to be played back directly from the camera itself, not from ViconNet (if the device allows playback capability, for example the Express line or cameras with a micro SD card). Note that for the Vendor Vicon Express, ViconNet recognizes it as an Edge device and the fields remain grayed out but Edge playback is enabled. You can test the playback address by clicking Test playback address. When Edge playback is enabled, the camera playback interface will display and playback is viewed from there. A camera can record both on ViconNet and internally to a micro SD card. The example below shows an HDExpress screen.

8. Click **Save** to save your settings. An **Undo** button is provided.

9. The

button is a direct link to the browser for that camera. Click the button to access the camera browser. Below is a Vicon camera screen and a sample non-Vicon camera screen; account is the user name in this sample. This sample screen will vary according to the camera selected.

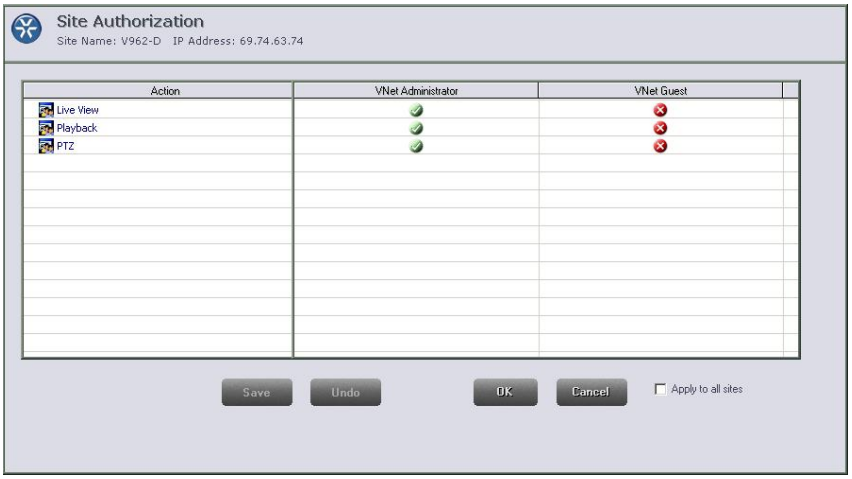


10. Click **Save** to save your settings and **Close** to exit the window. An **Undo** button is provided.

11. To use Edge or Quick Playback for these cameras, the storage location address of the camera/edge device (where the camera is being recorded, for example the SD card on a camera) must be selected. If not previously done, select from the dropdown list of available resources to record the camera.

12. Click on the

button. This opens a screen that allows setting up authorization for Live View, Playback and PTZ actions by selecting ( ) or deselecting ( ) the appropriate categories, as required. If all cameras are to have the same authorizations, check Apply to all cameras box to avoid setting up each camera individually.

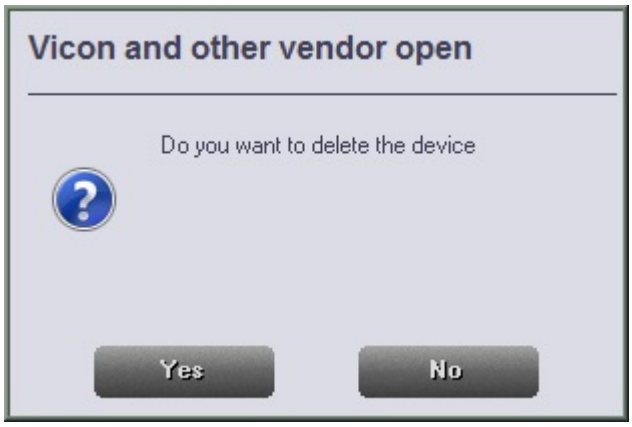


To edit a camera

1. Click the Edit Camera button on the **Open Standard Camera settings** screen.
2. Select the camera that you want to edit. The Camera Details area will become enabled.
3. Make the changes in the fields that are required.
4. Click **Save** to save your changes and **Close** to exit the window. An **Undo** button is provided.

To delete a camera

1. Click the Delete Camera button on the **Open Standard Camera settings** screen.
2. Select the camera that you want to delete. The following screen will display.



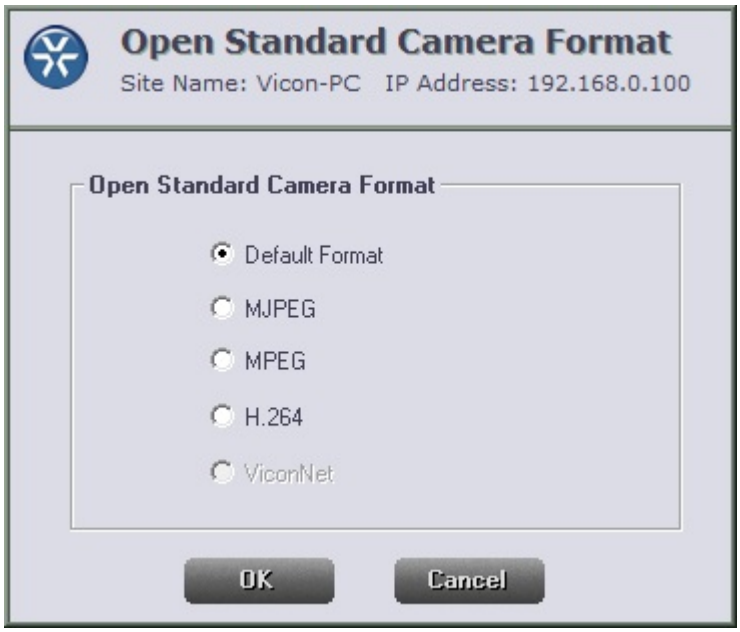
3. Select **Yes** to delete the camera. Click **Save** to save your changes and **Close** to exit the window.

Non-Vicon Open Standard Camera Format

This section pertains to certain Vicon open standard cameras from other vendors only. Vicon open standard cameras are formatted from their configuration screens. After the non-Vicon open standard cameras are defined in the **Open Standard Camera settings** screen, their format can be defined in the **Open Standard Format** screen.

Note: *The format for open standard cameras from other vendors is set up in each workstation individually; it is not a global setting for the camera(s). Therefore, if a camera can send both M-JPEG and MPEG-4 images, user can request M-JPEG on certain sites even if the camera is defined as MPEG-4. (Note: only M-JPEG is available on the VMDC.)*

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the Workstation for which you want to configure open standard camera format and click Select. The *System Settings* window is displayed, as shown on page 55.
3. From the *System Settings* window, select the Open Standard Camera Format button. The **Open Standard Format** screen displays.



4. Select the format for the non-Vicon open standard camera. The default format is the one that the camera uses according to its setup; selecting one of the other options will request this video format from the cameras. If the camera doesn't support the selected format, the default format will be used.
5. Click **OK** to save your settings or **Cancel**.

Using the Language Translation Utility (LTU)

The LTU enables the translation of the ViconNet user interface (for example, buttons, labels, messages, dialogue boxes and so on) to any language.

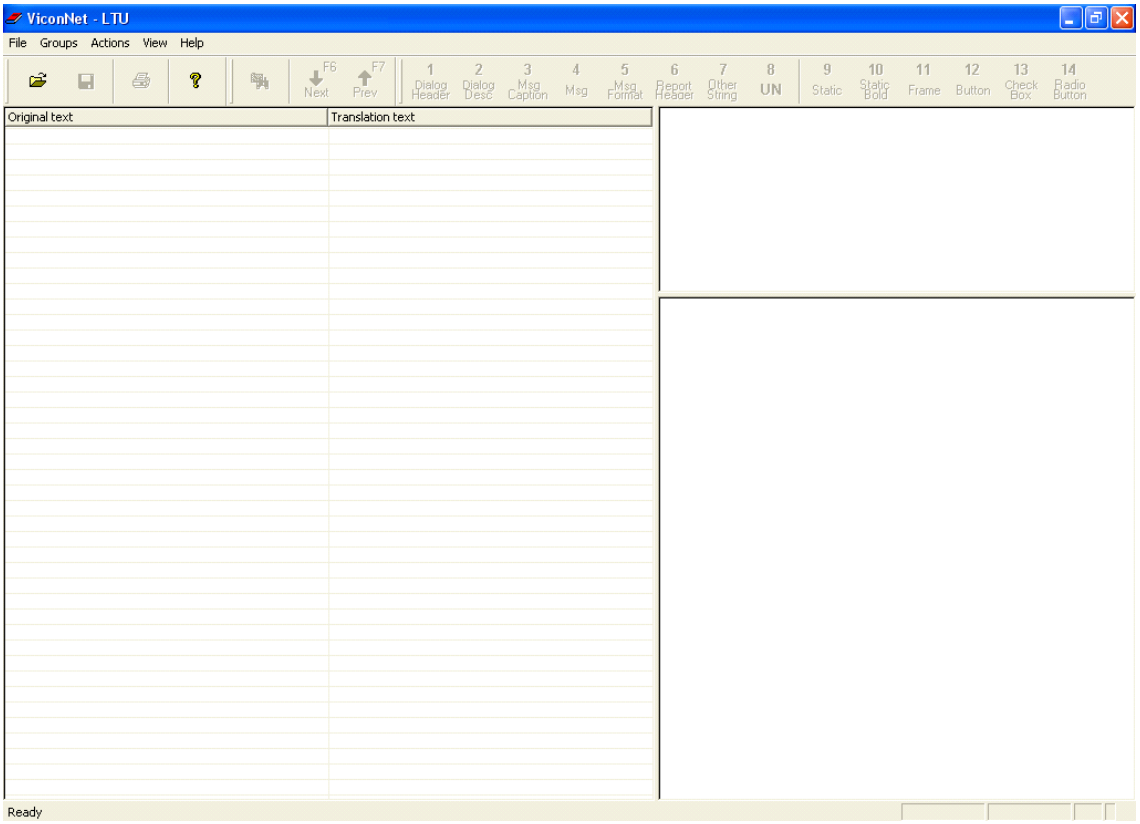
The utility imports all buttons, labels, messages and dialog boxes from the ViconNet application, enabling the translation of all terminology used in the user interface into the local or any other language as required.

Creating a Library File

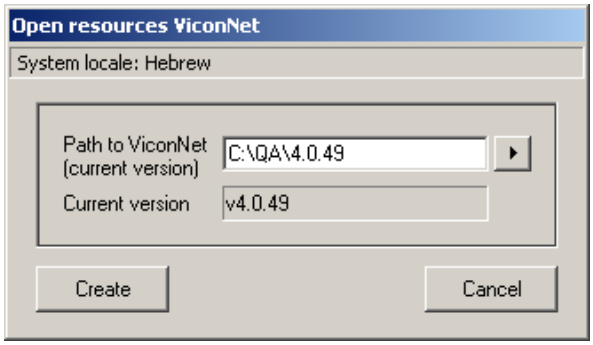
To change the language of the user interface in a specific site in the ViconNet system, first a library file must be created. The library file contains a "database" of all the terms, their translations and a reference to the location of the term in the ViconNet system.

To create a translation library file:

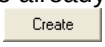
1. Open Windows Explorer and navigate to **C:\ViconNet\VNVer\BinRelease** and double-click **LTU.exe**. The *LTU* is opened and the empty translation window is displayed.

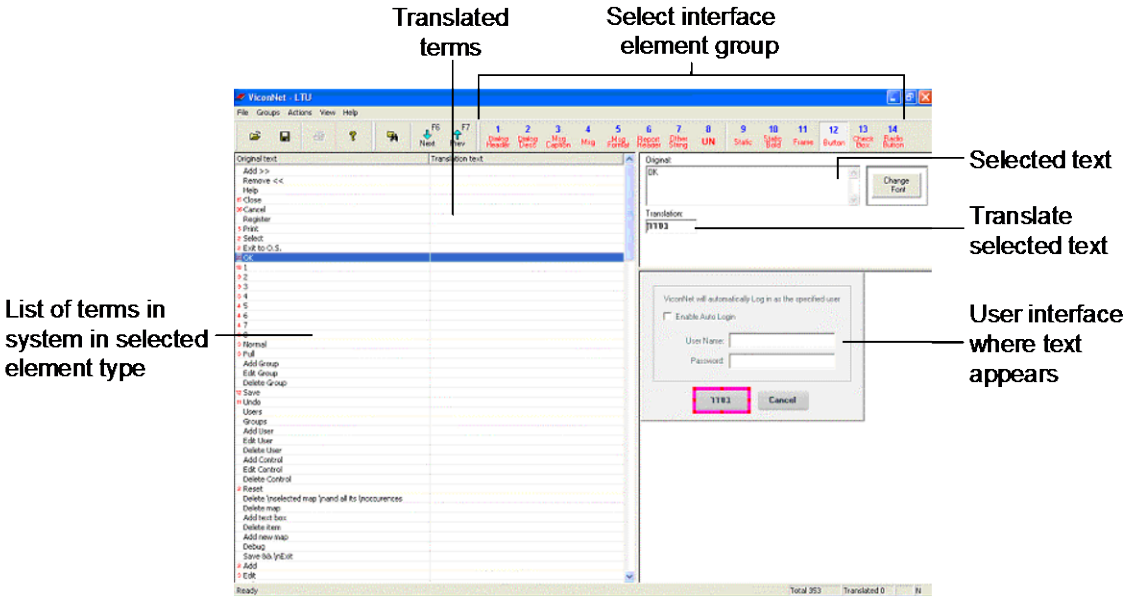


2. Click or select **Open** from the **File** menu. The *Open resources ViconNet* window is displayed with the default path and current version (read-only) showing.



3. (Optional) To change the location where the translated file will be saved, open the browser by clicking on the arrow next to the path text box and browse to the required location. (For example, if you want to open a file from another version of the ViconNet application.)

4. If a library file already exists, browse to it in the Translated file text box and click Open. To create a new library, click  . The LTU application window is displayed with a list of buttons, messages and so on.



5. (Optional) Select an interface element group from the options in the toolbar or from the **Groups** menu. All the terms which appear in that element group are displayed in the list in the left-hand panel.

6. Click on the row to be translated. The user interface where the selected term appears in the system is displayed in the lower right-hand panel and the selected term appears with a text box to translate it in the top right-hand panel.

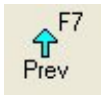
7. Type the translation in the **Translation** text box in the top right-hand panel.

8. Repeat steps 8 to 10 above until all the terms required have been translated. The translations are saved automatically the selected path.

> ***NOTE:*** *As long as the LTU remains open, the individual translated terms are saved while you translate/navigate to other terms.*

9. To save the library, click or select **Save** from the **File** menu. Enter filename of your choice and click **OK**. It is saved in default location.

   The following is a list of additional options in the LTU:

Option	Description
	Enables you to change font, font size and font style of the translated term.
	Enables navigation to the next term in the list of terms. You can also navigate to the next term by selecting **Next** in the **Actions** menu.
	Enables navigation to the previous term in the list of terms. You can also navigate to the previous term by selecting **Prev** in the **Actions** menu.
	Enables you to search for a specific term that appears in the system (button text, label, message and so on). You can also search for a term by selecting **Find…** or **Find in all groups…** in the **Actions** menu.
	Provides information about the LTU.
Sort	You can sort the list of terms alphabetically by clicking the **Original text** column header or by selecting **Sort by** in the Actions menu.
Show identical name	You can show other terms with identical name by selecting **Show identical name** in the Actions menu.

Implementing the Translation in the ViconNet Application

Once one or more library files have been created and terms appearing in the user interface have been translated, the LTU feature in the ViconNet system enables a translation to be selected and implemented,

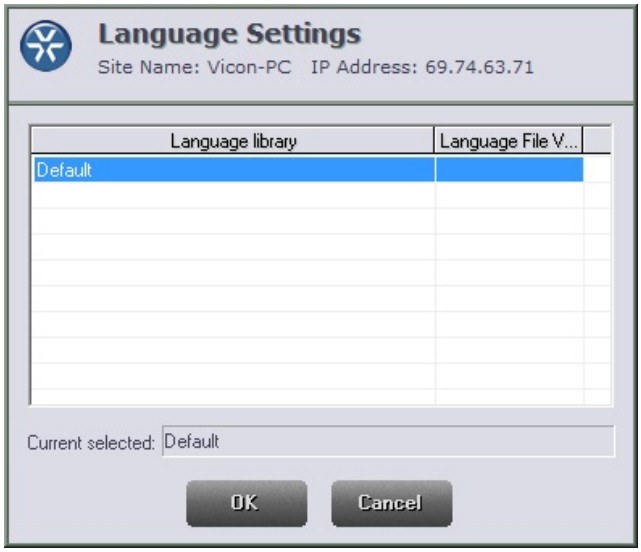
To implement the translation in the ViconNet site:

1. From the ViconNet *Main* window, click . The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.

2. Select the site name for which you want to implement the translation and click . The *System Settings* window is displayed, as shown on page 55.

3. Click the

button. The *LTU Settings* window is displayed.



4. If an LTU library has already been created, highlight it and click **OK**. The translation is immediately implemented and all the translated terms appear in the site's user interface.

   Example:

   Original Text:

   Translated Text:

   If an LTU library has not been created, follow the procedure *To create a translation library file* procedure, page 202.

NOTES:

Terms that were not translated remain in the default language.

*To implement the translation on another site, the .ltu file must be saved on that site in **../ViconNet/VnData/Settings**. The file then appears in the **LTU library** list in the LTU Settings window and can be implemented as described in step 4 above.*

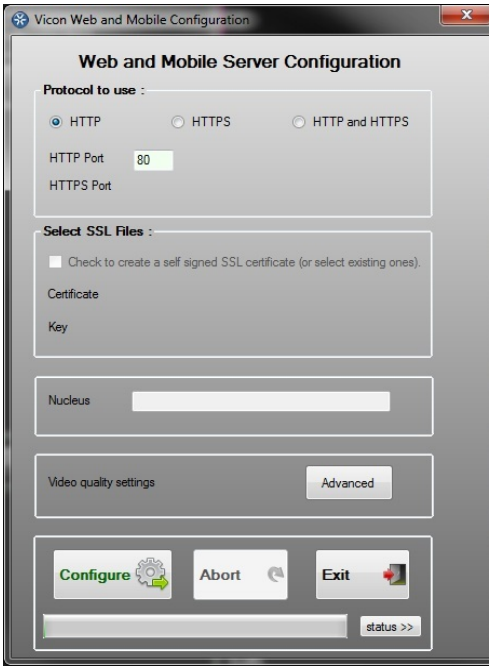
Web Server

Using the Web Server screen allows ViconNet to open as a web-based viewer. The Web Server must be setup from the Nucleus. From the Nucleus, select the Nucleus to be setup as the server. Note that there are limits to how much can be run on the server and that there are certain performance criteria required.

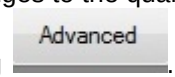
1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site name for which you want to configure the web server and click Select. The System Settings window is displayed, as shown on page 55.
3. On the Nucleus, click Web Server (this cannot be done from a remote unit). The *Web Server activation* window is displayed, as shown below.

   Note: The Configure button is not available if *Do not run Web Server/Stop running Web Server* is selected. This is the default setting when ViconNet is first installed.

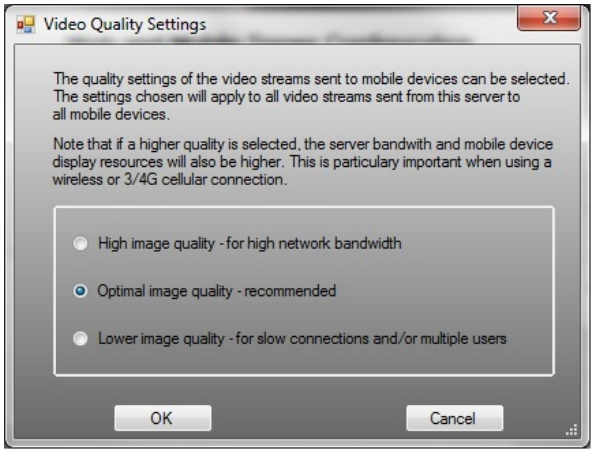
4. The Nucleus can run the server either as a Web Server or Load Balancer. Select how you want to run the server.
5. The default settings for running as a Web Server are HTTP and Port 80. If these selections are acceptable, click OK. If changes to the default settings are required, click Configure. The following configuration screen displays.



- HTTP is the standard communication protocol for the web and mobile viewers.
- If added security is required, select HTTPS or both HTTP and HTTPS. If HTTPS is selected, the SSL encryption fields will display to enter the certificate and key for communication with the web server. Either a self signed can be selected by checking the box or an official certificate issued by a CA (Certificate Authority) must be uploaded from your PC. Provide the path to the certificate directly, or use the **Browse** button to locate it.
- It is not necessary to enter the Nucleus IP since the server is on the Nucleus.

6. The system is set for Optimal image quality by default; it is recommended to keep this setting and no further action is necessary. If changes to the quality settings on the Video Quality Screen are required, this can be is accessed by clicking 

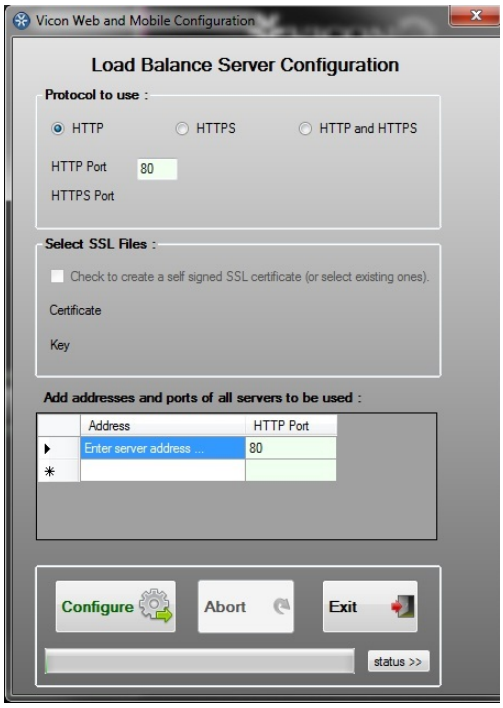
. The following screen displays.



Consider changing this selection carefully. The selected Video Quality Setting applies to *all* video streams sent from this server and the selection does impact on the server and mobile device resources. Click OK if any change was made.

7. The default settings for running as a Load Balancer *a*re HTTP and Port 80. If these selections are acceptable, click OK. If changes to the default settings are required, click

. The following configuration screen displays.



The Load Balancer distributes the web and mobile viewers across the available servers to optimize the load on the system. It is recommended to make the Nucleus into the Load Balancer. Using Load Balancer is only relevant when using multiple web servers.

On a system running a Load Balancer, all communication is directed to it. The only address to browse to or connect to from a mobile device is this server's IP address.

- HTTP is the standard communication protocol for the web and mobile viewers.
- If added security is required, select HTTPS (default port is 443) or both HTTP and HTTPS. If HTTPS is selected, the SSL encryption fields will display to enter the certificate and key for communication with the web server. Either a self signed can be selected by checking the box or an official certificate issued by a CA (Certificate Authority) must be uploaded from your PC. Provide the path to the certificate directly, or use the **Browse** button to locate it.

8. Enter the IP addresses and ports of all web servers to be used in the fields. Adding a server address will automatically add another line for another address. If any information is incorrect, an error message will display. To delete a server, click in the leftmost column to highlight the line and use the delete key on the keyboard.

9. After configuration is complete, from the buttons at the bottom

, select Configure to start the configuration; select Abort to if the changes should not be saved. Exit will bring you back to the Web Server window.

10. A status button is available that, when clicked, opens a window that displays the status of the configuration. Click hide to close this window

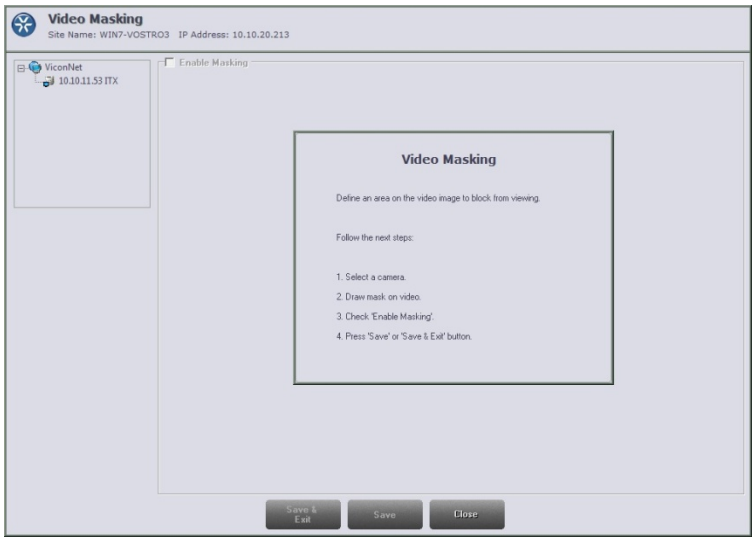
11. After the Web Server is activated, the ViconNet application will restart.

Video Masking

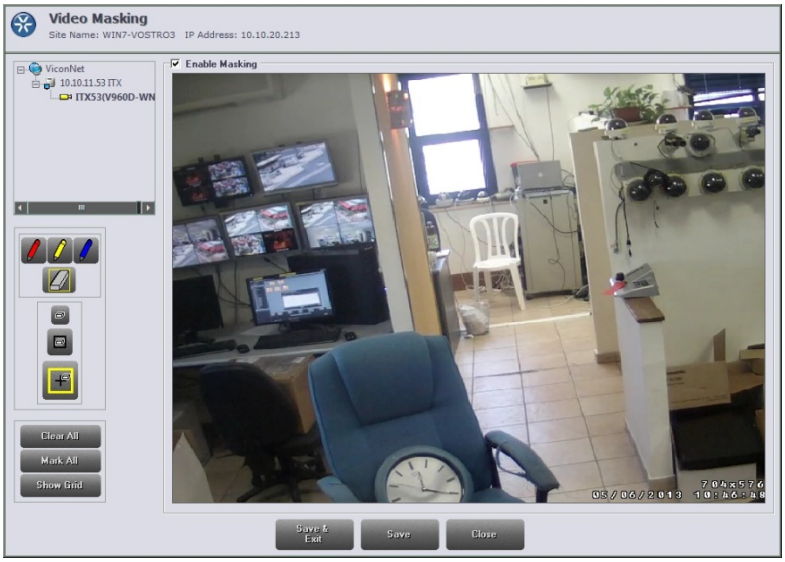
In certain situations, it may be necessary to block selected areas in the video from view, both on live viewing and playback. Video Masking must be setup from the Nucleus.

Note: You must be authorized in the Site Authorization screen to perform masking.

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the Nucleus site name for which you want to configure video masking and click Select. The System Settings window is displayed, as shown on page 55.
3. On the Nucleus, click Video Masking. The *Video Masking* window is displayed, as shown below. The screen will outline the steps to creating a video mask.



4. Select the camera from the list on the left side for which you want to create the video masks. The video mask setup screen is displayed, as shown below.

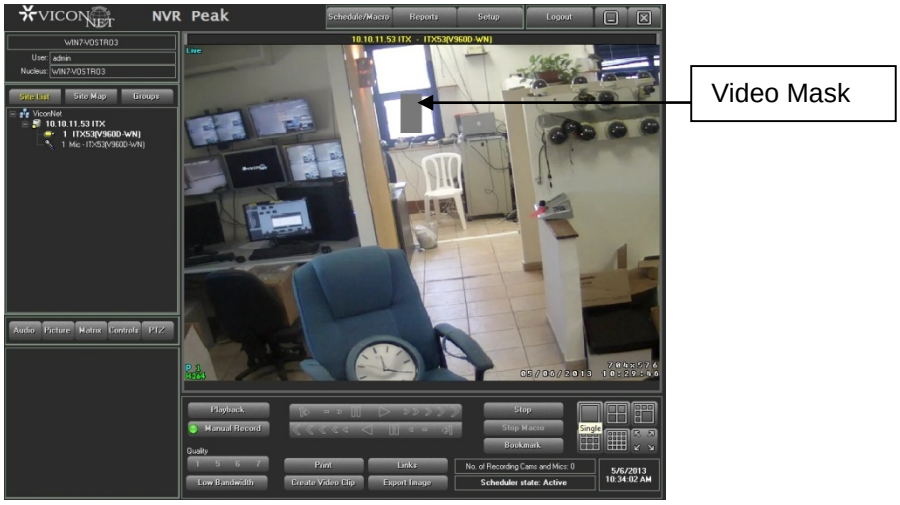


5. Check the Enable Masking box to allow you to create the video masks. The tools on the left are used to create the video mask. The following options are provided:

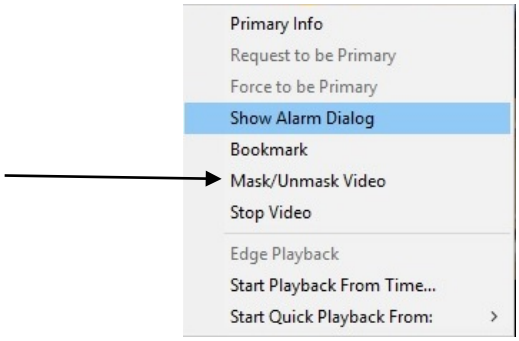
Option	Description
Mark All	This button marks colored grid blocks over the entire window area, meaning that the entire camera view will be masked. Then use the Eraser tool to remove specific grid blocks.
	When the **Pencil** tool is selected, the cursor becomes a pencil icon. Create the masking area by clicking on the required view area to be blocked, thereby drawing an arrays of red, blue or yellow grid blocks (according to which pencil is selected). The size of the area is determined by the option below. The **Tool Size Selector** area includes buttons for three pencil sizes. According to the selected size, the cursor draws a small (single block), medium (4-block) or large (16-block) width of grid blocks per sweep.
	When the Eraser tool is selected, the cursor becomes an eraser icon. You can erase masked areas by clicking over selected grid blocks, thereby erasing them. The **Tool Size Selector** area includes buttons for three eraser sizes. According to the selected size, the cursor will erase a small (single block), medium (4-block) or large (16-block) width of surface blocks per sweep.

6. After all masked areas on the camera have been created and positioned, click Save or Save & Exit to exit the setup screen. Click Close to exit the setup screen without saving any changes.

7. The live video now displays with the masked area grayed out, as shown in the display below. Any video playback also displays the mask.



8. The masks can be turned on and off from the live video display. Right click on the video; a dialog box displays. Click on Mask/Unmask Video to remove or display the configured masks.



***Notes**: The system saves the mask as it is currently defined. A mask can then be changed, but that change to the mask will also be changed in playback.*

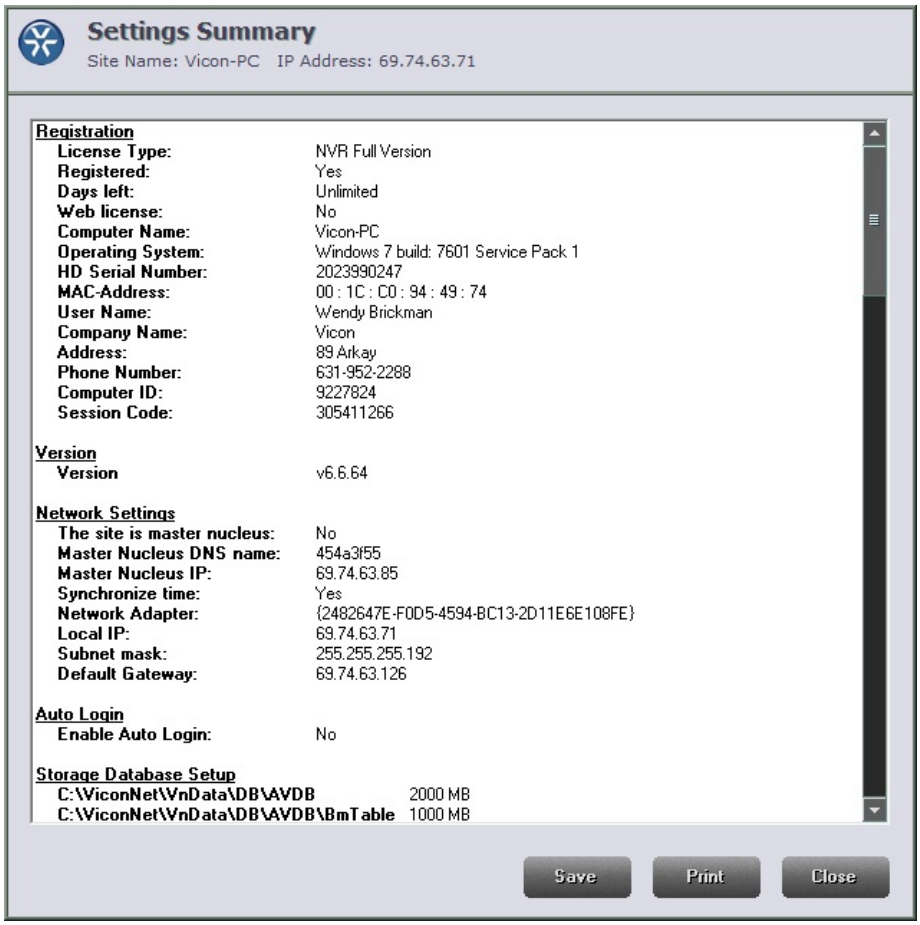
When video is played back and then paused, an attempt to mask or unmask the image will not change the mask. Click on the next or previous frame buttons to refresh the image.

Viewing the Settings Summary

The *Settings Summary* window displays all the system settings for a specified site. This enables the user to view all the settings for a remote site without having to navigate through all the available windows for that site one-by-one (for example, macros, authorizations, schedules and so on).

To view the settings summary:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected transmitters and Workstations, as shown on page 55.
2. Select the site for which you want to view the settings summary and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click the Settings Summary button. The *Settings Summary* window is displayed. An example is shown below.



4. (Optional) Click **Print** to print the full list of settings for the selected site.
5. (Optional) Click **Save** to save the settings to a rich text file (.rtf).

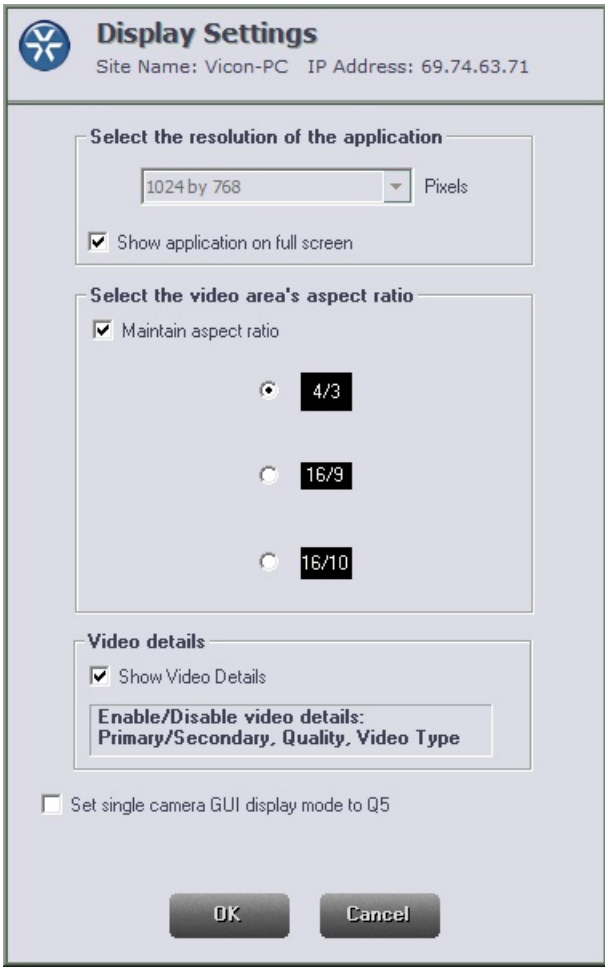
Display Settings

The *Display Settings* window enables you to change the screen resolution of the application.

NOTE: *This feature can only be carried out by directly accessing the System Settings window of the Kollector or Workstation/NVR devices, not remotely from the Workstation, and the display settings selected are only applied to that site.*

To change the display settings:

1. From the ViconNet *Main* window, click Setup. The *Setup Site Selection* window is displayed, showing a list of all currently connected sites, as shown on page 55.
2. Select the required site and click Select. The *System Settings* window is displayed, as shown on page 55.
3. Click the Display Settings button. The *Display Settings* window is displayed.



- Select the screen resolution required. A variety of resolutions are provided, dependant on the video adapter on your PC.
- There is a checkbox to **Show application on full screen**. When this is checked, ViconNet will automatically switch to the full resolution on the monitor. If the application is moved to a different monitor, it will adjust to that monitor and continue to display at full resolution.
- Select the aspect ratio required. This selection is made dependant on the video coming from the cameras.
- Checking the **Maintain aspect ratio** box will cause to video to fit and therefore may be distorted or stretched.
- Checking **Show Video Details** allows certain information to be visible on the video displaying; to prevent this information from displaying do not check.

NOTE: *The ViconNet application always opens with the resolution defined in the Display Settings window, regardless of the resolution settings defined for the PC on which the application is running.*

4. Click **OK**.

Note: This setup is not available for remote setup!

Chapter 4
Viewing and Listening to Live Video/Audio

This chapter includes the following sections:

- **Overview,** page 216, provides an overview of the viewing and listening process, which also includes some optional tasks that can be performed, as required.
- **Viewing and Listening Workflow,** page 217, illustrates the main steps for viewing and listening to live video and audio.
- **Step 1: Selecting the Display Mode,** page 218, describes how to select the required number of video display locations.
- **Step 2: Selecting Cameras and Microphones,** page 220, describes how to select and control devices in order to view and listen to their live video and audio.
- **Step 3: Controlling the Picture,** page 223, describes how to control the contrast and brightness of the live video display.
- **Step 4: Zooming the Video Display,** page 225, describes how to zoom in or out from a live video display.
- **Step 5: Operating a PTZ Camera,** page 225, describes how to view and listen to video from a PTZ camera.

Overview

The ViconNet system enables you to monitor live video and audio using the cameras and microphones configured in the ViconNet system. The live video pictures and audio segments are sent by the transmitter to the relevant Workstation displays via the network. The cameras and microphones available for viewing live video and audio on each Workstation are configured during system setup, as described in *Chapter 3, Configuring the ViconNet System*.

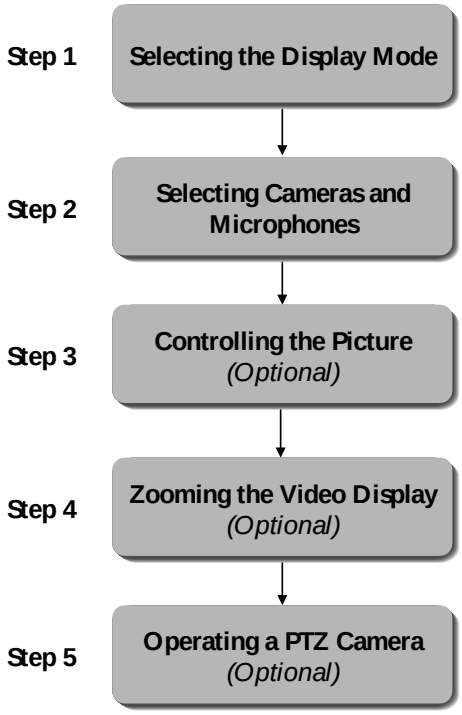
In order to view live video and audio, you must select the display mode (the number of display locations in the ViconNet application that is sufficient for the number of cameras that you want to monitor). Then you can select the devices using the **Site List**.

When you have selected the required devices, you can select the picture quality (if the **Quality** buttons in the *Main* window **Function Controls** area are enabled - refer to the *Configuring Manual Recording and Video Quality* section in *Chapter 3, Configuring the ViconNet System*), the refresh mode, and additional picture settings that determine how the live video and audio is displayed on the connected Workstation. The selections that you make also affect the data during recording and playing back operations, as described in *Chapter 5, Recording Live Video/Audio*, and *Chapter 6, Playing Back Recorded Video/Audio*.

The ViconNet system also provides some optional functions that can be used when viewing and listening to live video and audio. These include the ability to zoom in on a specific video display to view it in more detail and to use a PTZ camera.

Viewing and Listening Workflow

The following workflow illustrates how to view and listen to live video and audio using the ViconNet system. Each step is described in the sections that follow.



NOTE: *The workflow shown above is performed after you have already logged in to the ViconNet application, as described in Chapter 2, Getting to Know ViconNet.*

Step 1: Selecting the Display Mode

Selecting the display mode enables you to determine the maximum number of video display locations for viewing and listening to live video and audio at one time in the **Video Display** area of the *Main* window.

Various display modes are provided to accommodate your viewing and listening requirements, as described in the selection procedure, below.

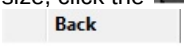
You can modify the display mode after beginning to view and listen to the live video and audio, if required. For example, if you determine that you want to view additional devices, you can select a display mode with more video display locations without affecting the current video and audio that you are currently viewing and listening to.

In addition, you can determine which camera is represented in each video display location, as described in *Step 2: Selecting Cameras and Microphones*, page 220.

You can choose the display mode from either the *Main* window or the *Navigator* window.

To select the display mode from the Main window:

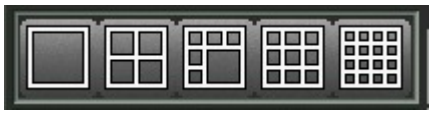
- In the *Main* window, select the required option from the *Display Mode* controls at the bottom right of the window, as follows:

Display Mode	Description
	Single: Provides a **single** video display location in the **Video Display** area. (Quality 1)
	Quad: Provides **four** individual video display locations simultaneously in the **Video Display** area. (Quality 5)
	Six: Provides **six** individual video display locations simultaneously in the **Video Display** area. (Quality 5)
	Nine: Provides **nine** individual video display locations simultaneously in the **Video Display** area. (Quality 6)
	Sixteen: Provides **sixteen** individual video display locations simultaneously in the **Video Display** area. (Quality 7)
	Full Screen: Maximizes a selected video display location to fit the entire screen (including the **Site List**). (Quality 1) To restore the maximized screen to its previous size, click the icon in the top right corner or right-click in the screen and click  . You may also click **<ESC>**.

NOTE: *In order to improve transmission speed, the quality of live images is set automatically for each display mode selection (for example, Quality 1 for the **Single** mode, as mentioned above). For information about display mode quality, refer to the About Picture Quality and Refresh Mode section in Chapter 2, Getting to Know ViconNet.*

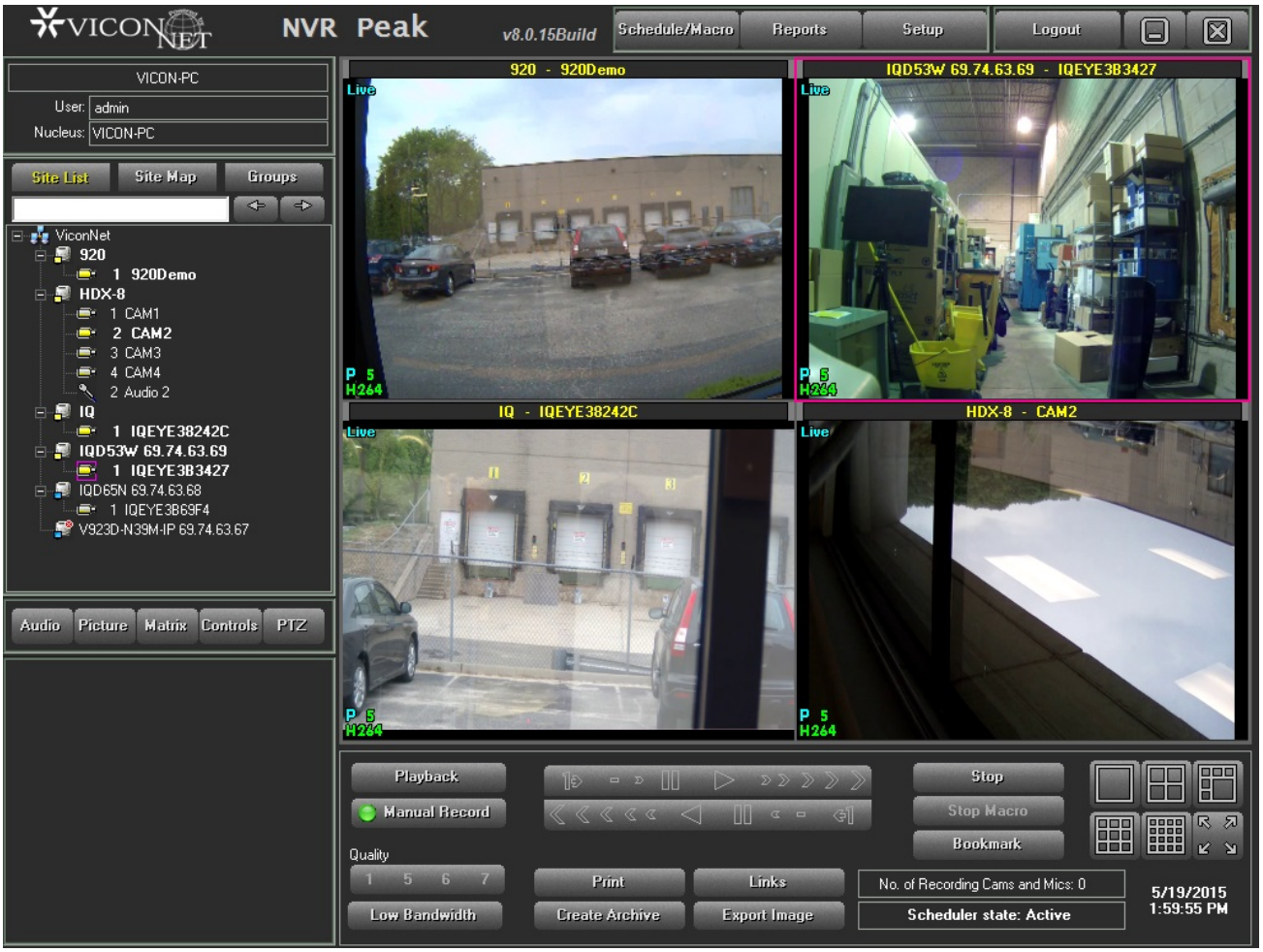
To select the display mode from the Navigator window:

- In the *Navigator* window, select the required **Display Mode** icon (located below the *Main* window **Display Location** area).



Thereafter, when the **Play** button is selected, the devices in the *Main* window **Display Location** area are displayed in their respective locations in the *Main* window, ready for viewing and playing back.

The following example shows the **Video Display** area after the **Four** display mode has been selected.



TIP: *You can maximize an individual video display location in the **Video Display** area by double-clicking the required location. Double-clicking again reverts back to the previous view.*

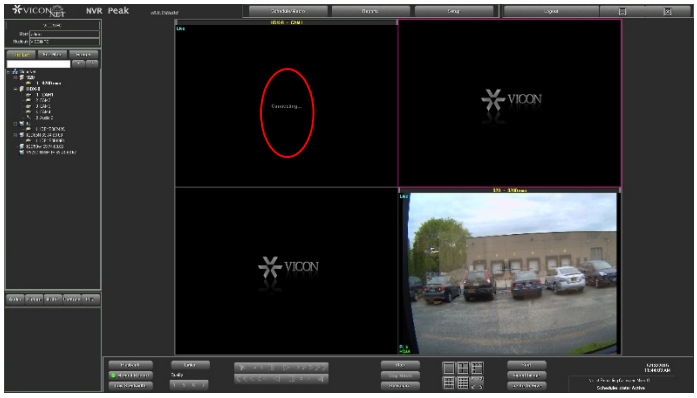
Step 2: Selecting Cameras and Microphones

When you launch the ViconNet application, the **Video Display** area of the *Main* window is initially empty, as there is no automatic display of live video and audio. In order to view live video and audio in the **Video Display** area, you must first select the device (camera or microphone) that transmits the required data.

When you select a device, the video is then streamed into the selected video display location in the **Video Display** area, and the audio is heard via the PC's speakers.

The ViconNet **Site List** enables you to select devices for viewing and listening to live video and audio by navigating through the list and selecting first the required recorder/transmitter and then the required devices. The available devices in the **Site List** are configured during system setup, as described in *Chapter 3, Configuring the ViconNet System*.

Selecting a device from the list automatically begins the device operation (video and audio transmission) in the selected video display location in the *Main* window. A *Connecting* indication displays when ViconNet is connecting to a video stream. If the video is disconnected for any reason, the system will keep trying to reconnect to the camera and the *Connecting* indication will display to distinguish between a vacant tile and one that is in the connection process.



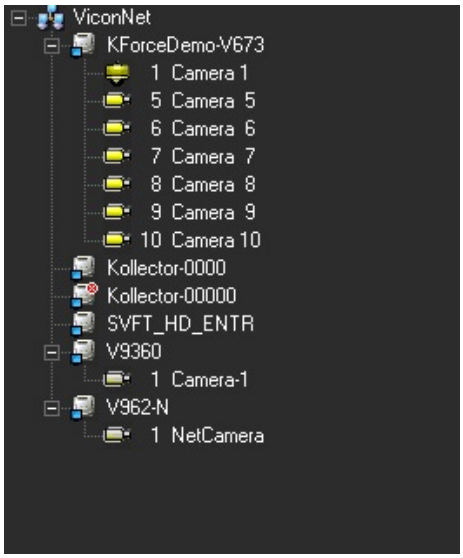
As transmission begins, the appropriate controls for the specific type of device that you selected become active in the **Control Dialog Display** area, which enables you to modify the live video and audio, as described in the subsequent sections in this chapter.

The maximum number of cameras that can be selected simultaneously is sixteen, depending on the current display mode. If all display locations are in use, and you select another camera, the selected camera replaces one of the previously displayed cameras.

To select a device from the Site List:

1. In the *Main* window, ensure that you have selected the appropriate display mode for the total number of devices that you want to select, as described in *Step 1: Selecting the Display Mode*, page 218.

2. Expand the required transmitter to display a list of the currently connected devices (cameras and microphones), as shown below:



NOTES:

*The cameras that appear in the **Site List** are automatically detected by the system during startup. If a camera is not physically connected to the system, it will not appear in the list. If the camera is disconnected after startup, it is removed from the list. If a camera is disconnected while it is active (meaning being displayed or recorded), a red **X** icon ( ) is displayed next to the relevant camera in the **Site List**, and a blank screen appears in the **Video Display** area.*

The microphone nodes that are displayed will correspond with the detected microphones. Each site can have up to 16 cameras, microphones and detectors connected to it.

3. Select the required device from the **Site List** in one of the following ways:

   - In the **Video Display** area, select a video display location (indicated by the pink border) and then select the required camera from the list. The live video transmission is displayed automatically in the selected location, and the camera or microphone icon appears highlighted, as shown in the example on page 222.

     A microphone is selected by clicking its icon in the list.

NOTES:

If you select a video display location that is currently active:

- *The live video and audio transmission for the new device that you select will override the current one.*
- *A pink border is displayed around the relevant device in the **Site List**.*

In addition, if no empty video display locations are available when you select a device, the video and audio transmission for the new device will override the next default video display location, starting with the location at the top left.

-OR-

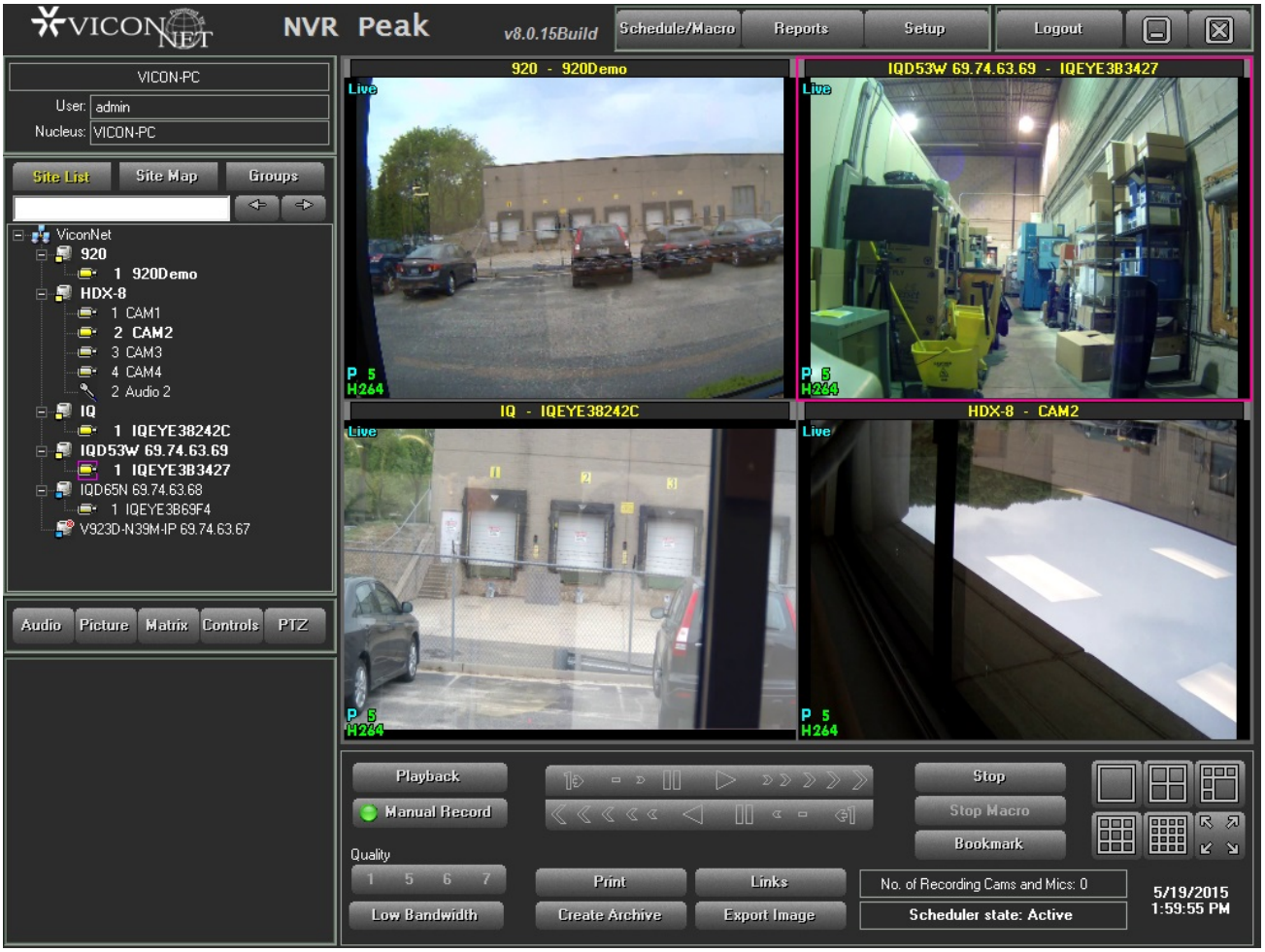
- Drag and drop a camera from the list onto the required video display location. As you drag the camera, the mouse cursor changes to a camera icon, and then the live video transmission is displayed as you drop the camera into the required video display location, as shown in the example on page 222.

-OR-

- Select a recorder/transmitter and drag and drop it anywhere in the **Video Display** area. Live video transmission from all the connected cameras are displayed in the current video display locations.

NOTE: *The number of devices that can be displayed at one time in the **Video Display** area is dependent on the number of video display locations in the currently selected display mode. Refer to Step 1: Selecting the Display Mode, page 218, for additional details about changing the display mode, if required.*

The following example shows four live video transmissions displayed in the **Video Display** area. The name of each camera is located in the top of each video display location.



NOTES:

*You can manually stop the transmission at any time by clicking **STOP**.*

*The name of the currently logged in user and the master Nucleus are displayed in the **Current Details** area (upper left corner).*

When a macro is running as a result of an alarm event, the following is applicable:

- *If the macro is performing **display operations**, all functions in the ViconNet Main window, except for the **Stop Macro**, **Schedule/Macro**, **Logout**, and exit* *buttons, are disabled.*
- *If the macro is performing **all other recording operations**, except display, all functions in the ViconNet Main window remain operational.*

Refer to Chapter 3, Configuring the ViconNet System for additional details about macros.

4. To display live video and audio from additional devices, repeat step 3, as required.

***TIP:** To reverse a device selection, click the required device in the **Site List** again. The live video and audio transmission for the deselected device is stopped.*

5. Proceed to the relevant steps in this chapter to modify the live video and audio display that you have selected, such as the picture quality and refresh mode.

Note About Picture Quality and Refresh Mode:

The view image quality is set automatically according to the selected display mode. The Single mode is assigned the highest quality. Other modes are assigned lesser qualities, in proportion to their number of views.

The view image is automatically refreshed according to the refresh mode in which it was recorded.

For more information about image quality and refresh modes, refer to the About Picture Quality and Refresh Mode section in Chapter 2, Getting to Know ViconNet.

Note About Listening to Audio:

You can select a number of microphones for listening. However, selecting more than one microphone simultaneously may create noise distortion.

Step 3: Controlling the Picture

The ViconNet system enables you to control and change the settings of the current live pictures displayed in the *Main* window, such as the brightness and contrast. Any changes that you make to the picture settings affect the data that is currently being viewed or recorded on all connected Workstations and recorders displays.

As well, you can manually override the display mode-determined live picture quality for the currently selected camera using the **Quality**

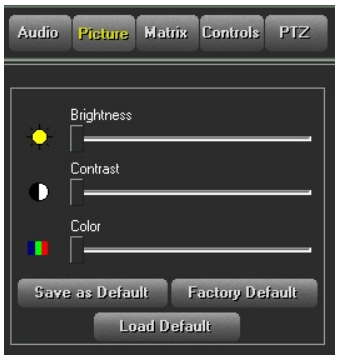
buttons.

Changing the picture settings is irreversible (meaning that after the settings have been changed, the previous settings are lost).

To control the picture brightness, contrast and color for a specific camera:

1. Select the required camera from the **Site List**/**Site Map**/ **Groups** list or in the **Video Display** area.
2. Click

. The picture controls are displayed in the **Control Dialog Display** area with the transmitter and device name shown above them.



3. Select the required picture settings. Either:
    - Move the sliders to adjust the picture, as follows:

Option	Description
Brightness	Adjusts the light level on the display screen.
Contrast	Adjusts the difference between the lightest and darkest areas on the display screen.
Color	Adjusts the color intensity (amount of white contained in the basic colors) on the display screen. For example, a fully saturated red would be pure red. The less saturated the color, the more pastel the appearance.

    - OR -
    - Select **Factory Default** to load the original settings
    - OR -
    - Select **Load Default** to load the picture settings you last saved (by clicking **Save as Default**).
4. To save your changes, click **Save as Default**.

To control the live picture quality:

- In order to improve transmission speed, the maximum quality of live images is set automatically according to the selected display mode, as follows:

Display Mode	Max Display Quality
Single	1
Two-by-two matrix	5
Hexa (Six)	5
Three-by-three matrix (Nine)	6

Four-by-four matrix (Sixteen)	7

The Single mode is assigned the highest available resolution, while other modes are assigned lesser resolutions, in proportion to their number of views. This is because the smaller views (for example, 3x3 or 4x4) generally do not benefit from higher resolutions and are equally legible in a lower resolution. When the **Quality**

buttons in the *Main* window **Function Controls** area are enabled, you can manually override the display mode-determined live picture quality for the currently selected camera. The qualities 1, 5, 6 and 7 are available for this purpose. The quality and refresh mode of the Live video is displayed during the first five seconds following the manual Quality change. (For information about enabling the buttons, refer to the *Configuring Manual Recording and Video Quality* section in *Chapter 3, Configuring the ViconNet System*.)

Step 4: Zooming the Video Display

The ViconNet system enables you to digitally zoom in on a specific video display location in the *Main* window in order to view the video in more detail.

Zooming in or out from the video display consists of selecting the required video display location with the left mouse button and then using the mouse roller to increase or decrease the degree of zoom. When the video display is zoomed, one click on the mouse roller returns the display to its original size.

The zoom function can be used on all types of video (live, recorded, and playback).

Refer to the *Zoom Controls* section in *Chapter 2, Getting to Know ViconNet*, for more information about how to use the Zoom feature.

Step 5: Operating a PTZ Camera

The ViconNet system enables you to easily operate and control any PTZ camera configured in your system. See *Configuring/Modifying PTZ Controls* in *Chapter 3*. All PTZ functions are performed in the *Main* window and are available only for one selected PTZ camera at a time.

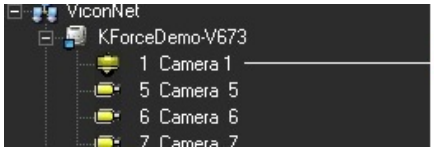
The video from the selected PTZ camera is displayed in the **Video Display** area. The driver-specific interface for PTZ-enabled cameras is also displayed in the **Control Dialog Display** area and on the screen.

Note: *You must have permission to use the PTZ and Set Preset controls in the Site Authorization list to use the controls. A preset can be recalled but cannot be set without authorization. If not, the following screen will display:*

To operate a PTZ camera:

1. Ensure that the PTZ camera has been configured in the system, as described in *Chapter 3, Configuring the ViconNet System*.

2. Select the required PTZ camera from the **Site List**.



3. Click the

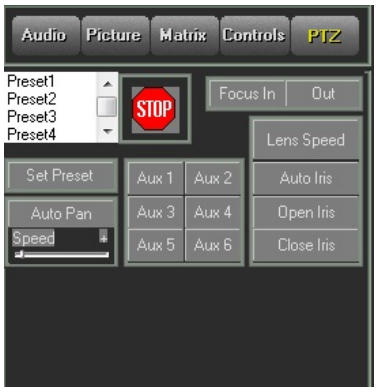
button. The live video from the selected camera is displayed in the **Video Display** area, as follows:

The yellow arrow directional markers and the icon in the displayed image will be described in the following steps.

4. Use the PTZ controls in the video display location, as follows:

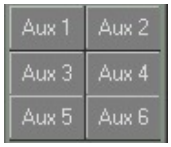
Option	Description
Yellow Direction Arrows	These arrows serve only as direction markers. Clicking anywhere in the video display will cause the camera to move in that direction. If you move the mouse (while still holding down the mouse button), the camera will follow the mouse. When using the mouse, the speed of the camera movement is directly related to the distance of the mouse from the center of the picture. This means that the closer the mouse is to the center, the slower the camera movement, and the farther away from the center, the faster the camera movement.
Optical Zoom	Click the plus (**+**) or minus (**-**) symbols of the icon with the mouse to zoom in or out from the center of the displayed video.

5. Click the icon at the center of the image. The following PTZ controls are displayed in the **Control Dialog Display** area.



NOTE: *This area may vary depending on the PTZ type.*

Option	Description
	You can define the "preset" choices in the preset scroll list to represent fixed location-and-zoom points in the video display. Then, when a preset (for example, **preset1**) is clicked, the view automatically focuses on the associated view area. You can define (or reassign) a preset, as follows: • Select the required preset from the scroll list. • Move to the required specific area/zoom using the window navigation functions. • Click to lock that preset to the current location/zoom. ***NOTE:*** *Up to 99 presets (depending on the camera's model) may be defined. Presets can be selected either manually, as described above, or automatically, as part of a macro process.*

Option	Description
	These options affect the ability to observe objects in the video display location in relation to one another (proximity) by controlling the amount of light entering behind the PTZ lens, as follows: Clicking automatically adjusts the amount of light in the displayed video. Clicking adds more light to the displayed video. Clicking reduces the amount of light in the displayed video.
	Sets the PTZ camera to automatically rotate around 360° while displaying the video.
	Stops uncontrolled directional movement of the video display in the case of a malfunction.
	Moves the PTZ camera lens to focus in and out (near and far).
	Auxiliary buttons for configuring internal PTZ settings, used in accordance with the PTZ camera operating manual instructions. (This applies only to Vicon PTZ cameras.)
	Determines the speed of the autopan.

NOTE: *Live video and audio can also be selected from the Alarm History Report.*

Chapter 5
Recording Live Video/Audio

This chapter includes the following sections:

- **Overview,** page 230, provides a general overview of the manual and automatic recording processes.
- **Recording Live Video/Audio (On-Demand),** page 231, describes how to manually record live video and audio without the use of configured macros and schedules.
- **Recording Management,** page 234, describes how to setup 24/7 recording or boosting recording parameters upon motion.
- **Automatic Scheduled Recording,** page 235, describes how to automatically record live video and audio according to a pre-configured time schedule.
- **Alarm Recording,** page 236, describes how to automatically record live video and audio in response to an alarm event.

Note: *Recording capability is only available when using VPK-SW or VPK-NVR series workstations.*

Overview

The ViconNet system enables you to perform recording operations using several types of recording modes to accommodate individual and organizational requirements, including:

- On-demand recording, which records inputs from selected cameras and microphones, and saves the data to a selected storage location.
- Automatic recording, which uses preconfigured recording settings to record all currently connected cameras and/or microphones when the ViconNet application starts.
- Automatic scheduled recording, which uses preconfigured macros to record specific cameras and microphones according to a preconfigured time schedule without user intervention.
- Alarm-only recording, which uses preconfigured macros to record specific cameras and microphones when an alarm event occurs in the system.

All recording modes require you to pre-configure the recording settings, which include selecting which devices to record, the recording duration and quality, as well as the required macro and time schedule where relevant.

Note About Picture Quality, Frames per Second (FPS) and Refresh Mode:

The picture quality, FPS and refresh modes for recording purposes are set in the Automatic Recording, Macro Creation and Pre/Post-Alarm Configuration procedures. For additional details, refer to the relevant sections in Chapter 3, Configuring the ViconNet System.

When different recording options are requested concurrently, the picture quality and FPS that applies is determined according to prioritization settings. For details, refer to the Picture Quality and FPS Priority section in Chapter 3, Configuring the ViconNet System.

When the

buttons in the Main window ***Function Controls*** *area are enabled, you can manually override the recording picture quality for the currently selected camera, as required. The qualities 1, 5, 6 and 7 are available for this purpose. (For information about enabling the buttons, refer to the Configuring Manual Recording and Video Quality section in Chapter 3, Configuring the ViconNet System.)*

Recording operations can be performed simultaneously on both local and remote sites. Recording operations can also be performed on specific cameras and microphones at the same time that you are viewing live video and audio from other selected cameras and microphones in the ViconNet system, as described in *Chapter 4, Viewing Live Video/Audio*.

Recording Live Video/Audio (On-Demand)

The ViconNet system enables you to perform on-demand recording, which is a manual method for recording live video and audio, either locally or remotely, from one or multiple cameras and the microphone in the system.

The on-demand recording method requires that the devices be configured in the system, as described in *Chapter 3, Configuring the ViconNet System*. Then you can manually start and stop the recording for multiple cameras and microphones individually or simultaneously, as required.

Performing on-demand recording consists of:

- Selecting a site, which is a transmitter physically connected to the cameras and microphones you want to record.
- Selecting the cameras and microphones that you want to record. The selection of each camera and microphone automatically starts the live video and audio transmission and displays it in the selected video display locations.
- Recording the live video and audio, which stores the data for playback purposes in a predefined storage location.

Note About Picture Quality and Refresh Mode

The ViconNet system enables you to control the quality (resolution) of the picture being recorded and to specify the refresh mode of the video display.

The picture quality that you select determines the resolution at which you record the images. The picture quality range is from 1 to 8, where:

- 1 = best picture quality, but slowest data transmission.
- 8 = least clear picture quality, but fastest data transmission.

The selections between 1 and 8 provide varying degrees of image compression, resulting in varying degrees of system resources use and data transmission.

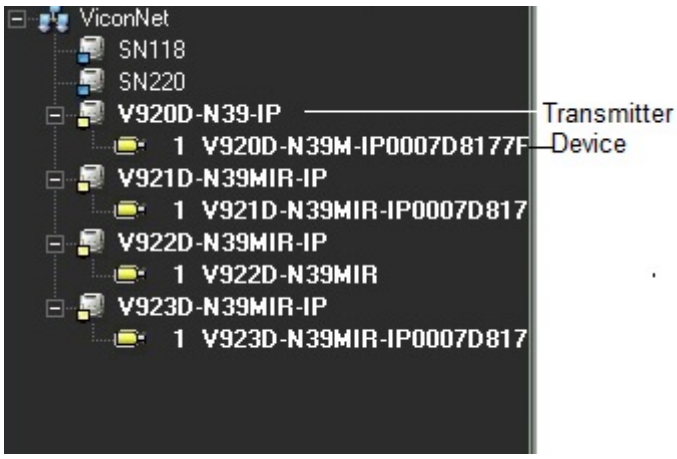
The refresh mode determines whether you record the full frames for the live video or only the changes within the frames.

NOTE: *Both the picture quality (resolution) and the refresh mode affect the recording in all current video display locations simultaneously.*

To record live video/audio (on-demand):

1. From the **Site List** in the *Main* window, select the required transmitter.

2. Expand the branch of the required transmitter to display a list of currently connected cameras and microphones, as shown below:



3. Select the required camera or microphone that you want to record in one of the following ways:

   - In the **Video Display** area, select a video display location (indicated by the pink border), and then select a camera from the list. (A microphone is selected by clicking its icon.) The live video and audio transmission is displayed automatically in the selected location, and the camera or microphone icon appears highlighted, as shown in the example on page 233.

   > ***NOTE:*** *If you select a video display location that is currently active:*
   >
   > - *The live video and audio transmission for the new camera or microphone that you select will override the current one.*
   > - *A pink border is displayed around the relevant camera in the* ***Site List****.*

   -OR-

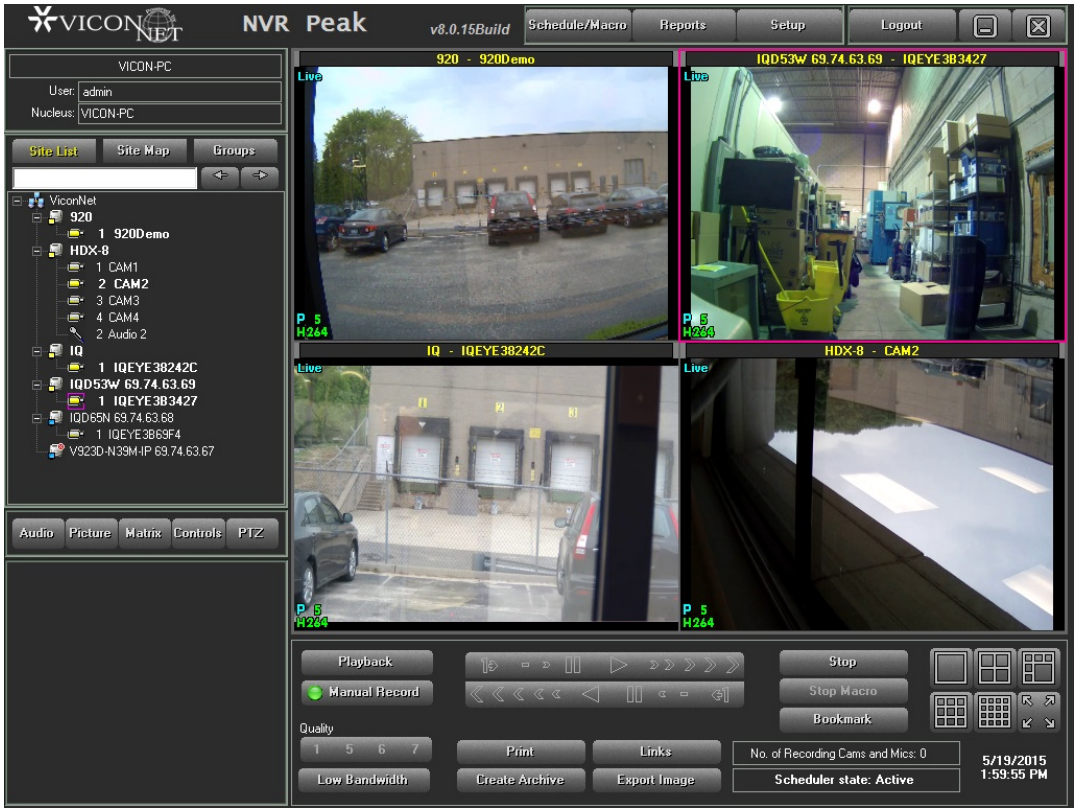
   - Drag and drop a camera from the list to the required video display location. As you drag the camera, the mouse cursor changes to a camera icon, and then the live video and audio transmission is displayed as you drop the camera into the required video display location, as shown in the example below.

   -OR-

   - Select a transmitter and drag and drop it anywhere in the **Video Display** area. Live video transmission for all the connected cameras are displayed in the current video display locations.

> ***NOTE:*** *The number of cameras that can be displayed at one time in the* ***Video Display*** *area is dependent on the number of video display locations in the currently selected display mode. Refer to Chapter 4, Viewing and Listening to Live Video/Audio, for additional details about changing the display mode.*

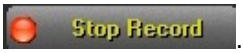
The following example shows four live cameras displayed and ready for recording in the **Video Display** area, with the name of each camera located at the top of each video display location.



4. To display live video and audio from additional cameras, repeat step 3, as required.

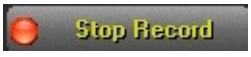
> ***TIP:*** *To reverse a selection, click the required camera or microphone in the list again. The live video and audio transmission for the deselected camera or microphone is stopped.*
>
> ***NOTE:*** *You can change the picture quality and refresh rate settings for manual recording. Refer to the Configuring Manual Recording and Video Quality section in Chapter 3, Configuring the ViconNet System.*

5. Click

. The following occurs:
   - The button changes to 

.
   - The currently active cameras and microphones begin recording live video and audio simultaneously.
   - The recorded data is loaded and stored into the predefined storage location.

> ***NOTE:*** *When the storage location is full, older files are automatically emptied chronologically to make room for newer files.*

6. To stop recording, click the 

button. It changes back to

. The active cameras and microphones stop recording, but the live video and audio continues to be displayed.

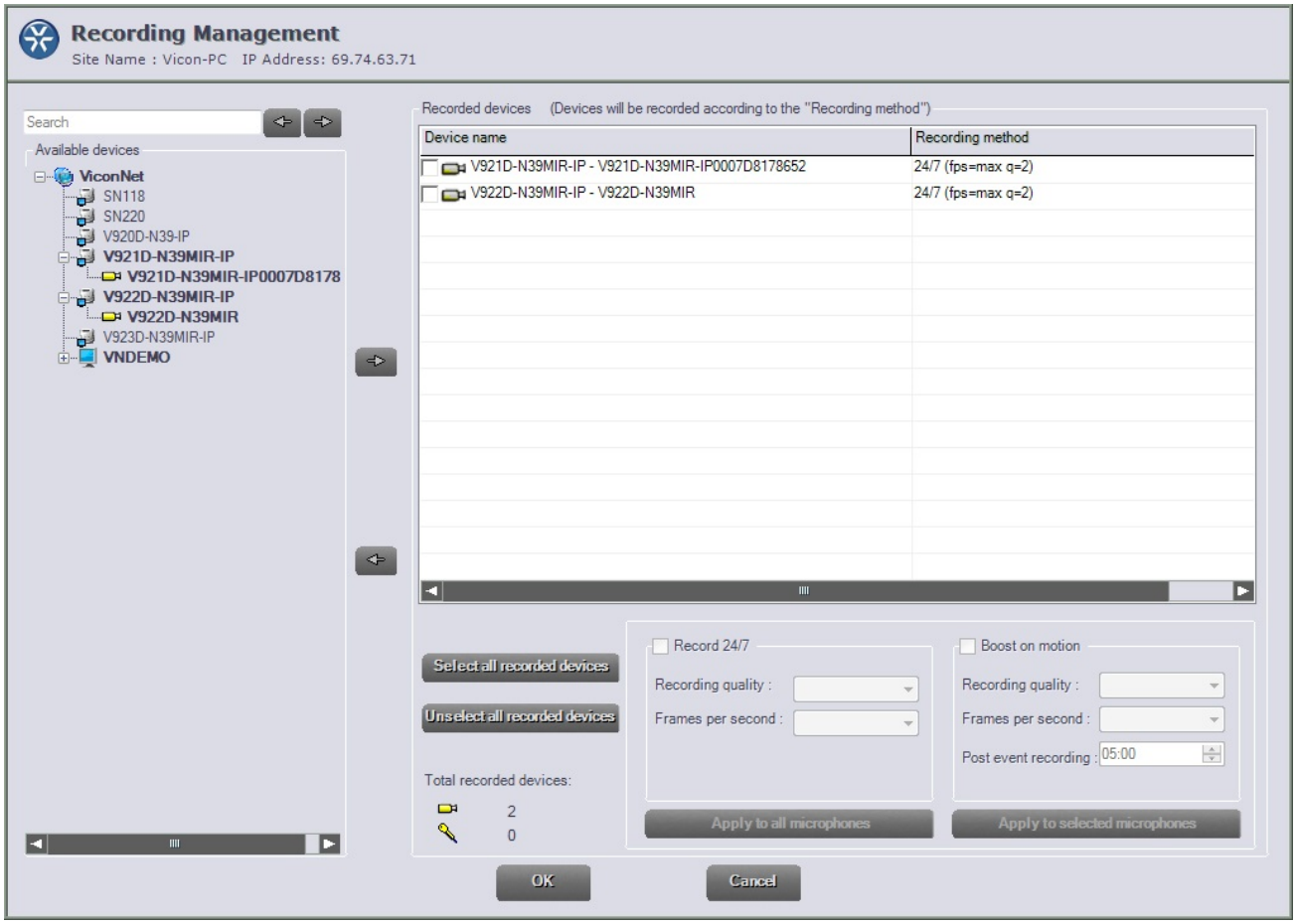
> ***NOTE:*** *Clicking **Stop** turns off all cameras and microphones.*

Recording Management

The ViconNet system enables you to configure recording management, which allows the system to record the selected connected cameras and/or microphones continuously (24/7), to boost recording upon motion, to record 24/7 and then boost upon motion, or to record only upon motion.

Configuring recording management consists of selecting the cameras and/or microphones that will be recorded and selecting the recording settings. Refer to *Chapter 3, Configuring the ViconNet System*, for additional details.

Note: When recording on motion or boosting on motion, the motion settings must be done from the camera browser.



Automatic Scheduled Recording

The ViconNet automatic scheduled recording capability enables you to configure the system to automatically record and display camera and microphone inputs according to specific time schedules without user intervention. This consists of first configuring macros in the system for the devices you want to record with automatically. Each macro is made up of user-defined commands that instruct the system about which devices to record, how long to record, recording quality, and so on. Refer to the *Creating Macros* section of *Chapter 3, Configuring the ViconNet System*, for additional details.

After you have created the required macros, you can create a schedule for each macro. This consists of configuring the days of the week, the start and stop time, and the run option for the specific macro. The run option enables you to configure the macro to run continuously during the selected time period or only at selected intervals. Refer to the *Creating Schedules* section of *Chapter 3, Configuring the ViconNet System*, for additional details.

The combination of the two configurations described above (macro and schedule) causes the system to record the devices defined in the macro at the times configured in its associated schedule (thus automatic scheduled recording).

For example, you can configure a schedule to run the macro that has been configured to record **Device A** seven days a week from midnight to midnight (using continuous running or run cycles), or you can select a run option to run the macro only once an hour instead of continuously during the defined time period.

To perform automatic scheduled recording:

1. Create one or multiple macros, according to your requirements, as described in the *Creating Macros* section of *Chapter 3, Configuring the ViconNet System*.
2. Create one or multiple schedules, according to the macros that you created, as described in the *Creating Schedules* section of *Chapter 3, Configuring the ViconNet System.*

   When you launch the ViconNet application, all devices configured to perform automatic scheduled recording (according to the configured macros and schedules) will be activated at the configured times.

Alarm Recording

The ViconNet alarm recording capability enables you to configure the system to automatically record and/or display camera and microphone inputs when an alarm event occurs in the system by:

- Defining alarm setup links.
- Setting pre/post-alarms.

> ***NOTE:*** *Pre/Post Alarms can only be configured by accessing the System Settings of a Kollector device, not for the Workstation.*

Defining alarm setup links consists of first configuring macros in the system for the devices you want to activate when an alarm event occurs and then linking the macro to a specific alarm type. Each macro is made up of user-defined commands that instruct the system about which devices to activate, for how long, in what order, and so on.

When you link the macro to an alarm type, you can also configure it so that the system will activate the macro only if the defined alarm conditions are met during a specific time period, for example, at night and on the weekends.

Setting pre/post-alarms consists of configuring a pre-alarm and post-alarm duration and the recording settings and then configuring which devices will be affected by the settings. When an alarm event occurs in the system, the following actions take place:

- If you have configured a post-alarm, when an alarm event occurs in the system, the system immediately begins recording the configured devices according to the post-alarm settings. This enables you to know what happened immediately after the alarm event occurred.
- If you have configured a pre-alarm, when an alarm event occurs in the system, the data for the configured devices for the pre-alarm duration is saved immediately to the storage location according to the pre-alarm settings. This enables you to know what happened immediately before an alarm event occurred.

To perform alarm recording by defining alarm setup links:

1. Create one or multiple macros, according to your requirements, as described in the *Creating Macros* section of *Chapter 3, Configuring the ViconNet System*.
2. Link each macro to the device that you want to act as the trigger, as described in the *Defining Alarm Setup Links* section of *Chapter 3, Configuring the ViconNet System*.

   When the configured alarm conditions are met on the configured devices, the system will activate the linked macro.

To perform alarm recording by setting pre/post-alarms:

- Set the pre-alarm and/or post-alarm settings, according to your requirements, as described in the *Setting Pre/Post-Alarms* section of *Chapter 3, Configuring the ViconNet System*.

  When an alarm event occurs on any device, the system will activate the configured devices and automatically save the pre-alarm and/or post-alarm data to the appropriate storage location.

Chapter 6
Playing Back Recorded Video/Audio

This chapter includes the following sections:

- **Overview,** page 240, provides a general overview of the playback process.
- **Playback Workflow,** page 241, illustrates the main steps for playing back recorded video and audio segments.
- **Step 1: Selecting Recorded Video/Audio,** page 242, describes how to select the initial parameters in the *Navigator* window for the recorded video and audio that you want to play back.
- **Step 2: Changing the Main Window Display Location,** page 246, describes how to change the location where the recorded video and audio is displayed in the *Main* window, if required.
- **Step 3: Selecting the Playback Time Interval,** page 247, describes how to select the start and end playback time for the recorded video and audio segment.
- **Step 4: Selecting the Playback Start Time,** page 249, describes how to select a specific point in a recorded video and audio segment at which playback will begin.
- **Step 5: Displaying Recorded Video/Audio Content,** page 252, describes how to view a recorded video and audio segment in the *Main* window.
- **Step 6: Playing Back from a Selected Camera/Microphone,** page 254, describes how to play back recorded segments from one or all cameras and a selected microphone displayed in the *Main* window and discusses the Quick Playback feature, which enables you to play back video from a camera that is currently recording (in an adjacent camera display location), without interrupting the recording process.
- **Thumbnails Search,** page 258, describes how to search for a specific open platform camera's data within a defined region of the database.
- **Museum Search,** page 260, describes how to search for a specific camera's data within a defined region of the database.
- **Video Analytics,** page 265, describes how to view a specific camera's detected suspicious activity collected from a specific time period.
- **Creating Archives,** page 267, describes how to create archive databases that contain specific recorded data for use at a later time.

Overview

The ViconNet system enables you to select and play back recorded video and audio segments that have been stored in defined storage locations. You can play back data that has been recorded either on your local Workstation or on other remote Workstations or recorders in your ViconNet system. In addition, you can play back data that was recorded manually or that was recorded automatically as a result of an alarm event or a preconfigured schedule.

In order to play back recorded video and audio, in the *Navigator* window, you must select the devices that you want to play back according to the corresponding number of display locations. Then you can select the playback time interval and start time according to the recorded segments that you want to play back.

When you have synchronized all the options in the *Navigator* window, you can display and play back the selected segments simultaneously or individually in the *Main* window, as required.

Picture quality (resolution) refers to the compression level of the video images. The quality of the recorded image is determined according to configuration settings, with eight degrees of quality that can be assigned. The following settings are for ViconNet cameras only using ViconNet compression method (open platform cameras from other vendors may vary); this does not pertain when the system is being run in H.264 mode:

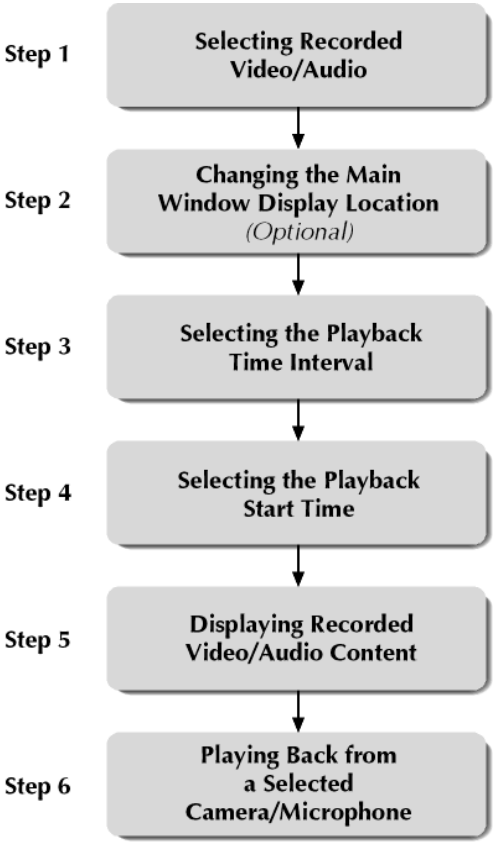
<table>
<tr><th>Quality</th><th>Type</th><th>Properties</th></tr>
<tr><td>1</td><td rowspan="2">4 CIF</td><td rowspan="4">Better picture quality, but slower data transmission.</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="2">2 CIF</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td><td rowspan="2">CIF</td><td rowspan="4">Less clear picture quality, faster data transmission.</td></tr>
<tr><td>6</td></tr>
<tr><td>7</td><td rowspan="2">HCIF</td></tr>
<tr><td>8</td></tr>
</table>

The view image quality is also a function of the selected display mode. The Single mode is automatically assigned the highest resolution available. In order to improve transmission speed, other modes are automatically assigned lesser resolutions, in proportion to the number of views selected. In general, the smaller views (for example, 9 or 16) do not benefit from higher resolutions and are equally legible in a lower resolution.)

The ViconNet system also provides some optional functions that can be used when playing back recorded video and audio. These include viewing alarmed segments of recorded data and creating archives that contain specific recorded data, if required.

Playback Workflow

The following workflow illustrates how to play back recorded video and audio segments using ViconNet. Each step is described in the sections that follow.



NOTE: *The workflow shown above is performed after you have already logged in to the ViconNet application, as described in Chapter 2, Getting to Know ViconNet.*

Additional procedures are provided for performing the following (optional) functions:

- **Quick Playback,** described on page 255
- **Thumbnail Search,** described on page 258.
- **Museum Search,** described on page 258
- **Creating Archives,** described on page 267

Step 1: Selecting Recorded Video/Audio

The first step for playing back recorded video and audio consists of selecting a:

- **Storage source,** which is a predefined storage location (located on a local or remote Workstation or recorder) that contains the contents of all recorded devices available for viewing and playing back recorded video and audio segments.

  The storage locations, transmitters and devices in the system can be viewed in a hierarchical list in the *Navigator* window. Each transmitter and device list is correlated to a specific storage location.

- **Site,** which is a transmitter physically connected to the recording cameras and microphones.

  -OR-

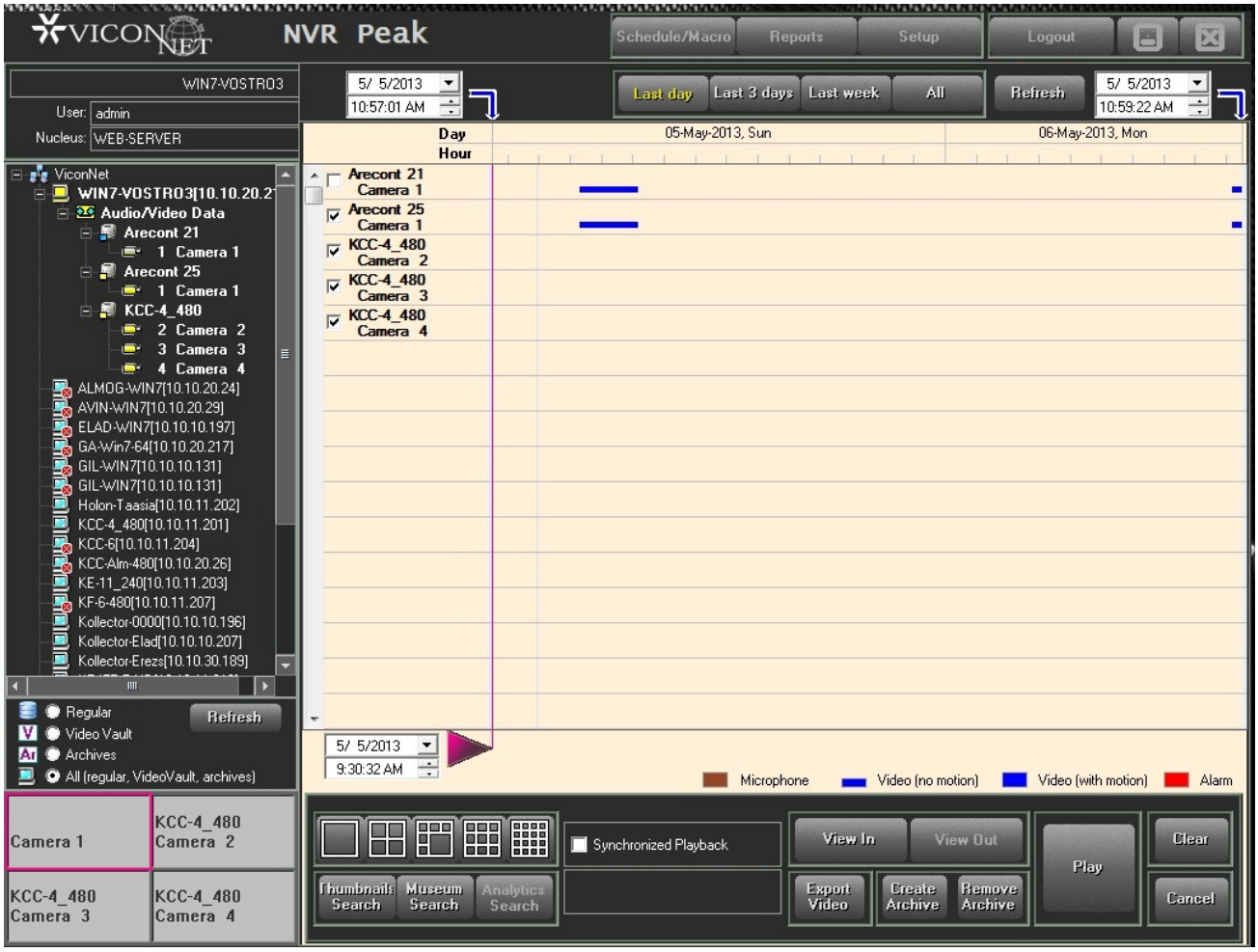
  Archive, which is a previously defined database that contains specific recorded data from specific devices.

- **Recorded camera or microphone,** which is the device that has recorded the data that you want to view and play back.

  Cameras can be selected either from the Navigator list or by using standard drag and drop functionality. (A microphone is selected by clicking its list icon.) When you select a camera or microphone for viewing and playback using either selection method, a scan of the storage location is performed for that device's recorded data, which is then displayed.

To select recorded video/audio:

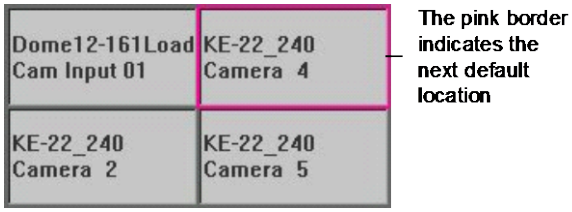
1. From the *Main* window, click Playback The *Navigator* window is displayed, as follows:



> ***NOTE:*** *Refer to Chapter 2, Getting to Know ViconNet, for a description of each area in the Navigator window.*

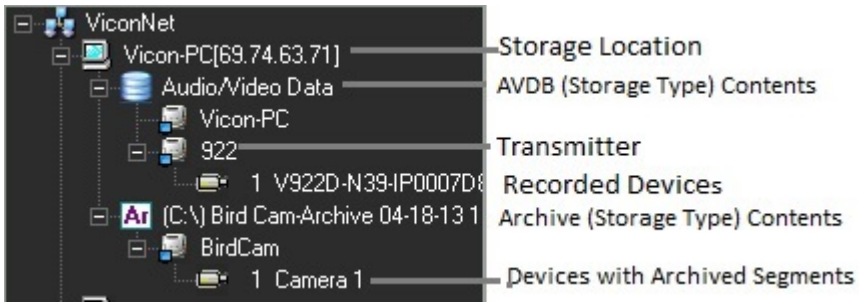
The first time you access the *Navigator* window, the *Main* window display location **Quad** is displayed (as long as you did not change the view in the *Main* window). You can change this depending on how many cameras you want to select, as described in *Step 1: Selecting the Display Mode* in *Chapter 4, Viewing and Listening to Live Video/Audio*.

If you change the display mode in the *Main* window, the **Main Window Display Location** area changes automatically according to your selection, as shown in the following example:



> ***NOTE:*** *The next time the Navigator window is accessed, the display mode that was last selected will be displayed in the* ***Main Window Display Location*** *area.*

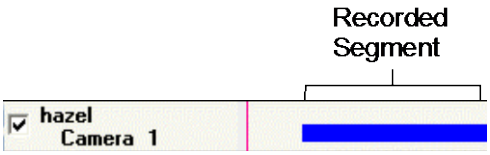
2. Expand the Navigator list to display a list of the system's available storage locations and archives, if any.
3. Expand the required storage location to display a list of the currently connected transmitters. Transmitters that have related recorded devices are displayed.
4. (Optional) Select the required viewing option from the Navigator List Controls (**Regular**, **Archives**, or **Both**). The *Navigator* list is updated depending on your selection.
5. Expand the required transmitter to display a list of currently recorded cameras and microphones and/or expand the required archive to display its contents, as shown below:



6. From the Navigator list, select the camera or microphone with the recorded segment(s) that you want to view or listen to.

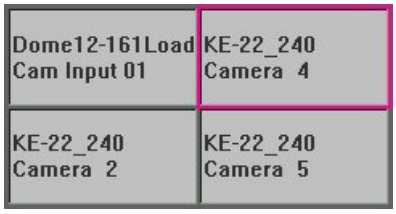
   The following details are displayed:

   - The name of the selected camera or microphone appears on the left side of the **Recorded Device Contents** area, with the checkbox automatically selected. (See the picture shown below.)
   - The recorded video and audio segments contained in the storage location for the selected camera or microphone appear in blue in the middle of the **Recorded Device Contents** area, as shown below:



> ***NOTE:*** *The recorded video and audio segments that are displayed also depend on the currently selected time interval. The default time interval is* ***Last Day****. Refer to Step 3: Selecting the Playback Time Interval, page 247, for additional details about changing the time interval.*

   - The name of the selected camera also appears in the **Main Window Display Location** area in the location marked with the pink border, as shown below:



The default display location for the pink border is the top left or the first empty location. As you select additional cameras, the pink border automatically moves to the next display location, indicating the new default position for the next recorded camera that you select.

NOTE: *You can change the position of the pink border by clicking in an empty display location or dragging and dropping it from one location to another. Refer to Step 2: Changing the Main Window Display Location, page 246, for additional details.*

TIP: *You can also select a camera by dragging and dropping it from the Navigator list:*

- *To the required display location in the **Main Window Display Location** area.*

-OR-

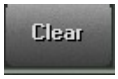
- *To the **Recorded Device Contents** area.*

*As you perform this action, the mouse cursor changes to a camera icon and then the camera or microphone name appears in the relevant location in the **Main Window Display Location** area (as shown above).*

7. To select additional recorded cameras or the microphone, repeat step 6, as required. Each device you select appears in both the **Recorded Device Contents** area and in the **Main Window Display Location** area, as described above.

NOTES:

The recorded devices that you select can be displayed simultaneously with live video and audio in the Main window.

The 

button clears the current Navigator window settings.

The

button closes the Navigator window and reinstates the Main window.

Step 2: Changing the Main Window Display Location

The ViconNet system provides you with the option to change the *Main* window display location for each camera that you select in the *Navigator* window, if required.

As described in the previous step, when you select a camera, it is automatically assigned to the next available display location. You can change the display location by:

- Selecting an unused display location.
- Overriding a used display location.
- Removing a camera from a display location and reassigning a different camera to that location.

Any of these methods enable you to determine the exact display location that each camera will be displayed and available for playback in the *Main* window.

To change the Main window display location:

- In the **Main Window Display Location** area, move the pink border to the required display location by clicking on the new location and then select the required camera from either the **Recorded Device Contents** area (after first deselecting the device) or from the *Navigator* list.

  The new camera name appears automatically in the display location that you selected (as shown in the example on page 244).

  -OR-

  Add or remove cameras from the **Main Window Display Location** area by selecting or deselecting the appropriate checkbox (☑) in the Recorded Device Contents area.

  When you select a checkbox (☑), the name of the selected camera appears in the **Main Window Display Location** area in the display location indicated by the pink border.

NOTE: *The number of cameras that can be viewed at one time is dependent on the number of display locations in the currently selected display mode (up to 16 cameras). Refer to Step 1: Selecting Recorded Video/Audio, page 242, for additional details.*

Step 3: Selecting the Playback Time Interval

The playback time interval is the range of time for the recorded video and audio segment you want to view and play back. This means that you can select a specific time period, defined by its start and end time, for the recorded segment(s) by:

- Using one of the time interval tabs, which enable you to select a range of time, as described below.

  -OR-

- Using the time interval controls, which enable you to specify an exact date and time, as described on page 248.

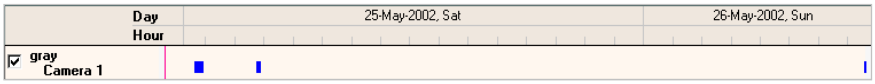
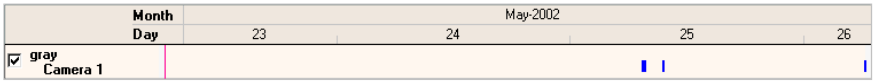
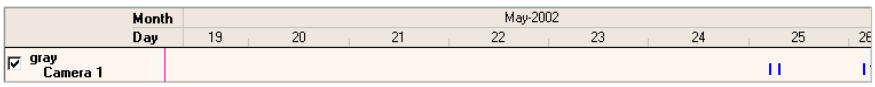
The time interval option enables you to fine-tune the time interval period by date, hours, minutes and seconds. For example, you may want to view recorded segments for Camera 1 and Camera 2 only between the hours of 12:00 PM and 1:00 PM, or you may want to view recorded segments for the same cameras for the previous 24 hours.

You can also select, for example, only a date and later zoom in on the recorded segment, as described in the next step.

To select the playback time interval using the time interval tabs:

1. In the *Navigator* window, ensure that the required camera(s) and/or microphone(s) are selected (☑) in the **Recorded Device Contents** area, as described in *Step 1: Selecting Recorded Video/Audio*, page 242.

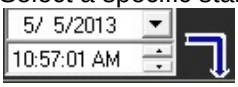
2. In the **Recorded Device Contents** area, select the time interval of the recorded segment that you want to view from the following time interval tabs:

Tab	Description
Last day	Displays all recorded segments during the **last 24 hours** (from the current time), as shown in this example:  ***NOTE:*** *This option is the default.*
Last 3 days	Displays all recorded segments during the **last 72 hours** (from the current time), as shown in this example: 
Last week	Displays all recorded segments during the **last 7 days** (from the current time), as shown in this example: 
All	Displays all recorded segments for the selected cameras and microphones regardless of when the recording occurred.

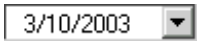
As you select a time interval tab, the recorded segments displayed in the **Recorded Device Contents** area is updated automatically.

To select the playback time interval using the time interval controls:

1. In the *Navigator* window, ensure that the required camera(s) and/or microphone(s) are selected (☑) in the **Recorded Device Contents** area, as described in *Step 1: Selecting Recorded Video/Audio*, page 242.

2. Select a specific starting (**From**) date and time of the recorded segment, using the time interval controls 

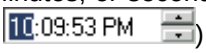
on the **top-left** side of the window, as follows:

   - **To select the date:**
     - Select the arrow next to the date field 

to display the popup calendar:

     - Select a date from the displayed month or use the previous and next arrows to select another month and day.

> ***NOTES:***
>
> *The date that you select appears shaded in blue (for example,) and the current date is circled in red (for example,) as well as displayed at the bottom of the calendar.*
>
> *You can also select the **Today** caption to set the date to the present day.*

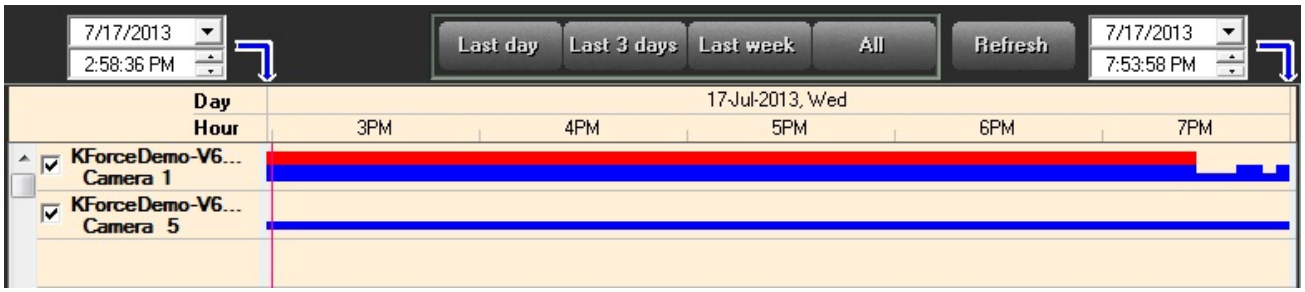
   - **To select the time:**
     - Click the hour, minutes, or seconds portion of the **From** or **To** time field to select it (for example, select the hours 

).
     - Select the up/down arrows to change the selected portion of time or type in the required time using the number and arrow keys.
     - Repeat the previous two sub-steps (click and select) for the other time elements (for example, minutes and seconds), as required.

3. Select a specific ending (**To**) date and time of the recorded segment, using the time interval controls on the **top-right** side of the window. This is done in the same way as described in step 2.

4. Click

. The **Recorded Device Contents** area is updated with the recording date/time interval that you selected.



NOTES:

*The **Recorded Device Contents** area is refreshed when you switch to the Main window and then switch back to the Navigator window.*

In addition, changing the playback time interval can take a couple of seconds if the video storage location is considerably large.

Step 4: Selecting the Playback Start Time

The ViconNet system provides an option to select the playback start time of a recorded segment, which includes:

- Zooming in on a specific recorded segment in order to fine-tune the selection capability (optional).
- Selecting the exact playback point in the recorded segment, including hour, minute and second, if required.

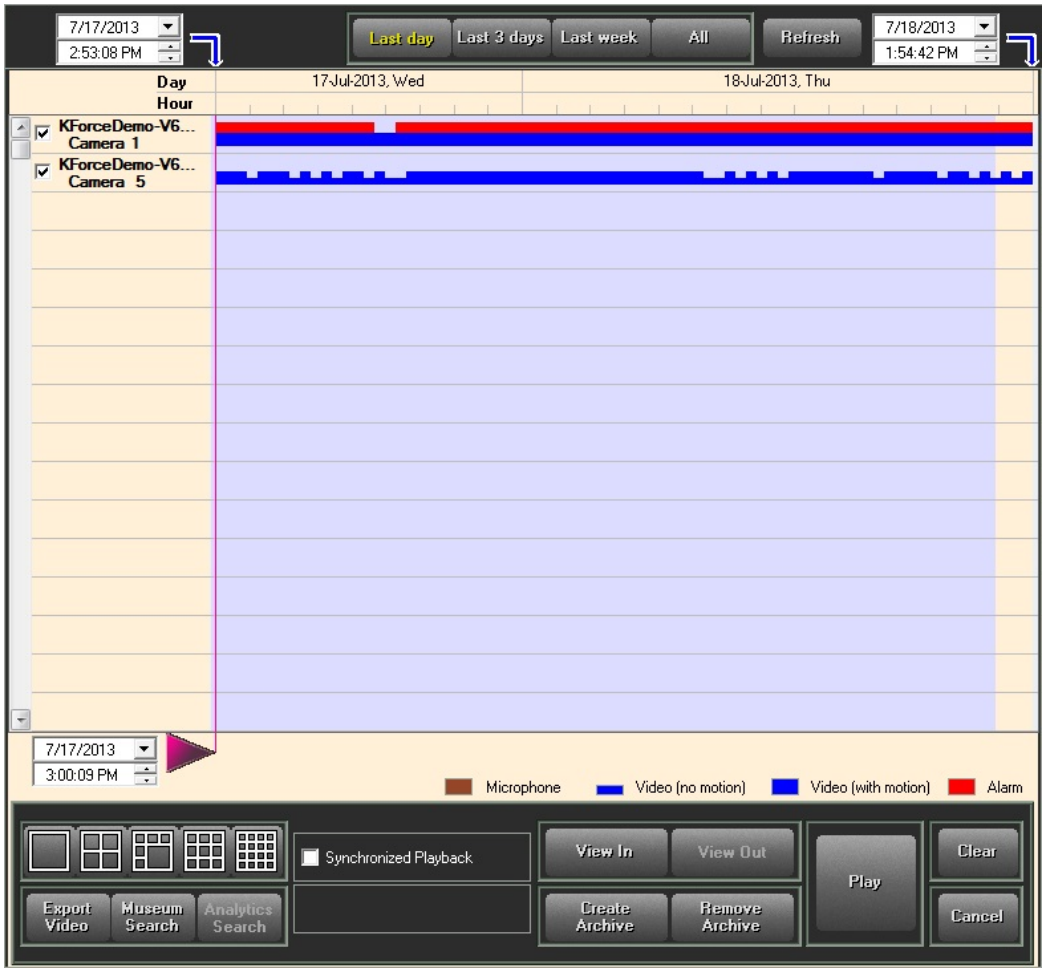
This option enables you to play back only the required portion of the recorded segment instead of having to play the entire segment.

When you select multiple devices in the **Recorded Device Contents** area, the playback start time applies to all currently selected devices. For example, if you have selected Camera 1 and Camera 2 and you select a playback start time of 12:00 PM on May 9, the recorded segments beginning at the selected playback time for both cameras will be available for playback in the *Main* window.

NOTE: *If you do not select a playback start time, as described in this procedure, all recorded segments for the selected cameras and microphone will begin playing back according to the start time of the first available frame.*

To select the playback start time:

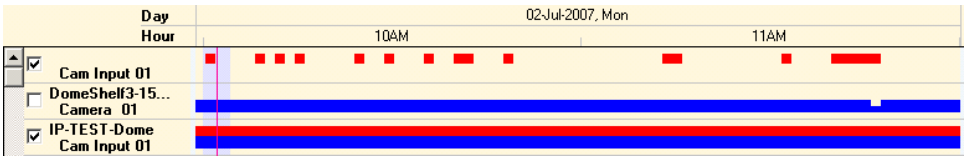
1. (Optional) Zoom in on a specific recorded segment, as follows:
   - In the **Recorded Device Contents** area, position the mouse pointer to the left or right of the recorded segment that you want to zoom in on.
   - Mark the recorded segment by holding down the left mouse button and dragging the mouse pointer over the recorded segment until the blue shading covers the entire recorded segment, as follows:



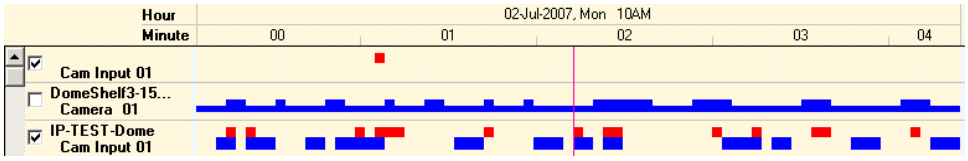
   - Click

to zoom in on the marked recorded segment.
   - Repeat the previous two sub-steps (mark and zoom) to zoom in further on the selected recorded segment, if required.

   The following example shows a recorded segment that has been zoomed in to show the hours between 10:00 AM and 12:00 PM:

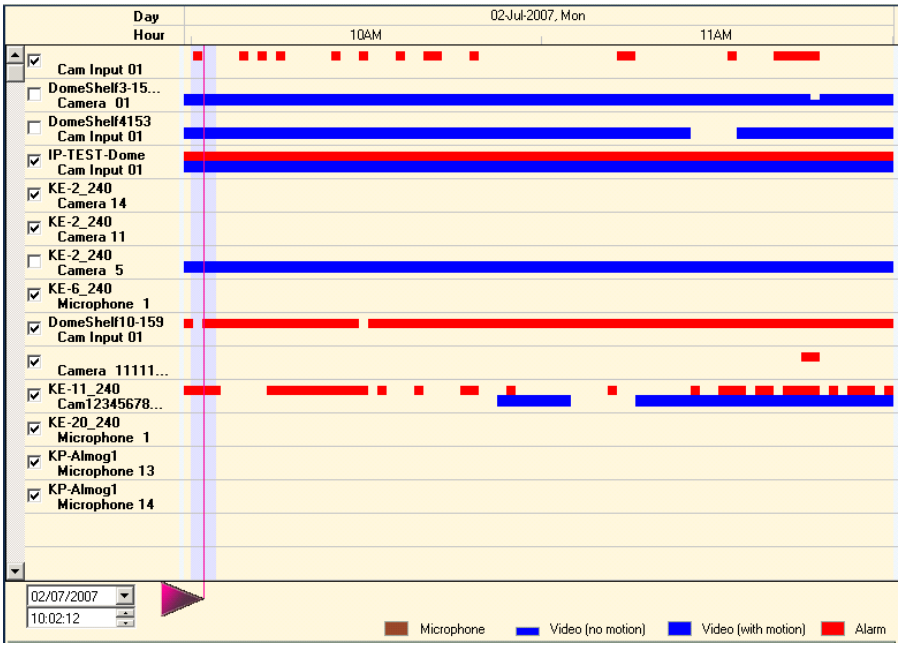


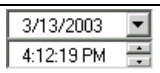
The following example shows the same recorded segments zoomed in further to show the minutes between 10:00 AM and 10:04 AM.



NOTE: *If you have selected more than one device in the Recorded Device Contents area, all recorded segments for all devices in the marked (shaded) area will be zoomed in on simultaneously.*

2. Select the playback start time by using the mouse pointer to click and scroll the pink arrow to the exact location (including the hour, minute and second) in the recorded segment, as follows:



TIP: *You can also set the playback start time by using the time interval controls*  *on the bottom-left side of the window. The time and date are selected in the same way as described for the From time and date selection in Step 3: Selecting the Playback Time Interval, starting on page 247.*

NOTE: *When you click on the pink arrow, a tooltip appears, displaying the date and time of its current location in the recorded segment(s). This enables you to pinpoint the exact playback start time, if required. Refer to Chapter 2, Getting to Know ViconNet, for additional details.*

Step 5: Displaying Recorded Video/Audio Content

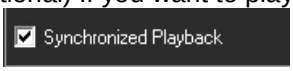
The next step after selecting all the parameters for the recorded video and audio segments of the required cameras and microphones is to view the actual recorded segments in the *Main* window. Each recorded video segment is displayed in a video display location according to the display mode and the playback start time that you selected in the previous steps.

Once the recorded segments have been displayed in the *Main* window, you can then play them back, as described below.

To display recorded video/audio content:

1. In the *Navigator* window, ensure that the pink arrow is positioned at the required playback start time for the selected cameras, as described in the previous step.

   NOTE: *If you do not need to play back from a specific start time, ensure that the pink arrow is to the far left of the* ***Recorded Device Contents*** *area.*

2. (Optional) If you want to play the recorded segments for **all** the selected devices **simultaneously**, select the 

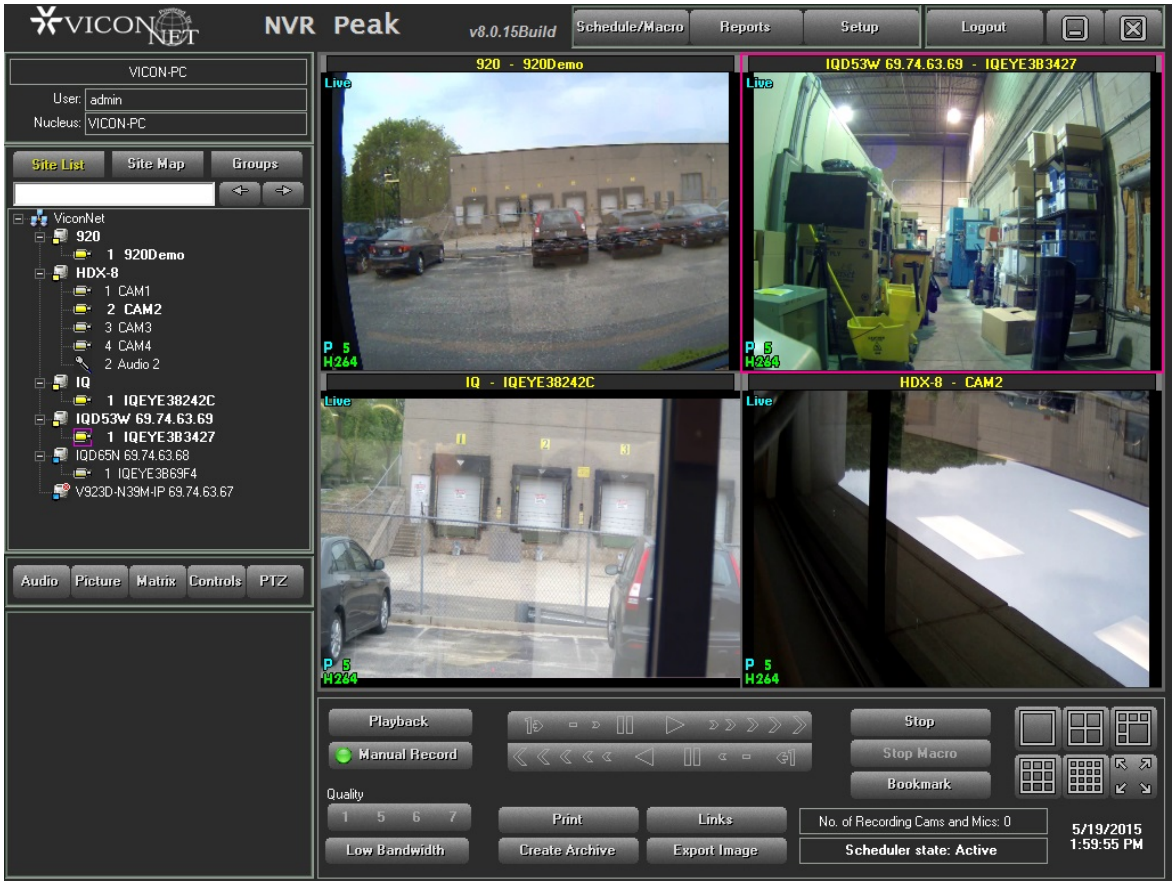
checkbox.

   If this option is **not selected**, then the playback controls will apply to only one selected camera or microphone at a time. That device is selected by clicking its block in the **Main Window Display Location** area. (The selected block has a pink border.) The *Main* window playback controls then apply only to the selected video display location.

   NOTE: *The* ***Synchronized Playback*** *checkbox is selected automatically whenever a microphone is selected. Refer to the Synchronized Playback section in Chapter 2, Getting to Know ViconNet for further information.*

3. Click

. The *Navigator* window closes and the first frame of the recorded segment(s) for each selected camera and microphone is displayed in the *Main* window in its selected display location, as shown below:



Each recorded segment appears in its selected display location with its camera source information (date, time and camera name).

Step 6: Playing Back from a Selected Camera/Microphone

The ViconNet system enables you to play back recorded video and audio segments in the *Main* window from either:

- A single currently displayed recorded camera or microphone at a time.

  -OR-

- All the currently displayed cameras and all microphones at the same time.

The ability to play back from one camera or microphone at a time or all cameras simultaneously depends on the selection you made in *Step 5: Displaying Recorded Video/Audio Content*, page 252, as follows:

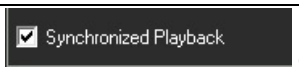
- If you chose to play back video and audio from all currently displayed recorded devices, then the playback controls in the *Main* window apply simultaneously to all video display locations (and microphone) that contain recorded data.
- If you chose to play back video and audio from one recorded device at a time, then you can select the video display location (indicated by the pink border) for any of the recorded cameras in the *Main* window, or select any microphone by clicking its list icon. The playback controls in the *Main* window then become active only for the selected device.

During playback, the recorded segment(s) plays from the selected playback start time.

You can also navigate through the recorded segment using standard playback controls such as fast forward and rewind.

To play back from a selected camera/microphone:

1. In the *Main* window, select the video display location that contains the recorded segment that you want to play back. The pink border indicates the currently selected video display location.

   NOTE: *If you selected the* 

   checkbox in Step 5: Displaying Recorded Video/Audio Content, page 252, you do not need to perform this step.

2. Click the **Forward** button . The selected recorded segment plays and the camera source details change accordingly.

   If you selected the **Synchronized Playback** checkbox, all the video and audio segments for the displayed cameras/microphone play simultaneously. (The checkbox is automatically selected whenever a microphone is selected.)

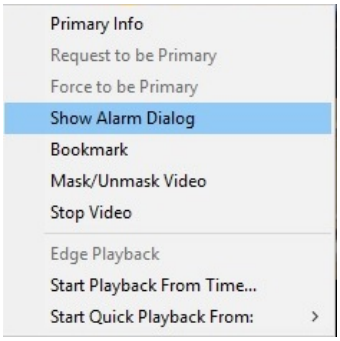
3. (Optional) Use the following buttons to navigate through the recorded segment(s) during playback, as required:

Button	Description
	Fast Forward: Fast-forwards the recorded segment at the following speeds (related to the normal speed): 1/4, 1/2, x2, x5, x10, x50 and x100.
	Backward: Rewinds the recorded video and audio segment.
	Fast Rewind: Fast rewinds the recorded segment at the following speeds (related to the normal speed): 1/4, 1/2, x2, x5, x10, x50 and x100.
	NOTE: *Place the mouse cursor over a button to view its related fast forward speed.*
	Stop/Pause: Stops/pauses the current playback of the recorded segment.
	Prev: Displays the previous frame in the recorded segment.
	Next: Displays the next frame in the recorded segment.

Quick Playback

The following options are available for quick playback of videos:

- Edge Playback
- Start Playback From Time
- Start Quick Playback From
- Move Playback to Time
- Cancel Playback



Edge Playback

The Edge Playback option allows you to playback video from any edge device that is currently recording, as long as the device has been configured to allow it. Refer to chapter 3, *Configuring ViconNet*. The playback

video will display directly from the devices interface, not on ViconNet. Refer to the documentation for the edge device for details on playback. **Edge Playback** can be selected by clicking the live camera in the site list or by clicking the display area while the camera is recording.

Start Quick Playback From and Start Playback From Time

The **Start Quick Playback From** option and the **Start Playback From Time** option enable you to play back video from a camera that is currently recording (in an adjacent camera display location), without interrupting the recording process. This avoids having to remove one's eyes from the current live video while playing back to investigate suspicious activity, as would be the case if playback is initiated from the *Navigator* window.

Start Playback From Time and **Start Quick Playback From** can both be selected by clicking the live camera in the site list or by clicking the display area while the camera is recording.

The difference between the **Start Playback From Time** option and the **Start Quick Playback From** option is that the **Start Playback From Time** option enables you to select a date as well as time (a calendar is displayed for selecting the date). For further details, see chapter 2, *Getting to Know ViconNet*.

Move Playback To Time

While playback is being performed, right-clicking the video or icon of the camera playing provides the additional option **Move Playback To Time**. This option enables you to stop the current playback and select a new date and time to playback the video.

NOTE: *After being moved to another time, the playback is in the same display rectangle, not the adjacent one.*

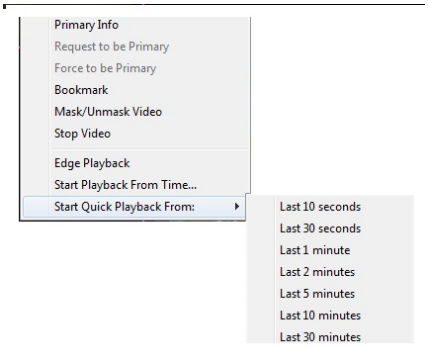
Cancel Playback

While playback is being performed, you have the option to stop the playback by right-clicking the camera icon and selecting **Cancel Playback**.

NOTE: *Quick Playback provides a special-purpose subset of the total playback options. The other Playback options (for example, selecting video/audio segments for play back, viewing video from an Archive, or Museum Search) are accessed from the Navigator window. Quick Playback operates only with local (not remote) databases.*

To perform quick playback options (Start Quick Playback From, Start Playback From time):

1. In the *Main* window, right-click in the required camera display location.
2. Select **Start Quick Playback From** and the number of seconds from the current moment from which you want to play back. For example, you can play back starting from what was recorded one minute ago.



-OR-

Select **Start Playback From Time** and a calendar is displayed to select the date to playback the video.

The playback is shown in the adjacent video display location. For example, if **Start Quick Playback From** is selected from camera1, the camera1 playback appears in the camera 2 video display location, temporarily overriding the live video from that camera. (Live video continues on camera1. While this is happening, recording continues uninterrupted on both cameras.)

During the playback, the regular Playback Controls (described on page 255) are available, enabling you, for example, to fast forward or rewind the playback, exactly as if the camera was selected from the Navigator.

If no recording is associated with the selected time (for example, the current recording started more recently than one minute ago, or the most updated video is 30 minutes old), the following warning is displayed.

(Optional) To playback currently playing video at another time, select **Move Playback To Time** and a calendar is displayed to select the date to playback the video.

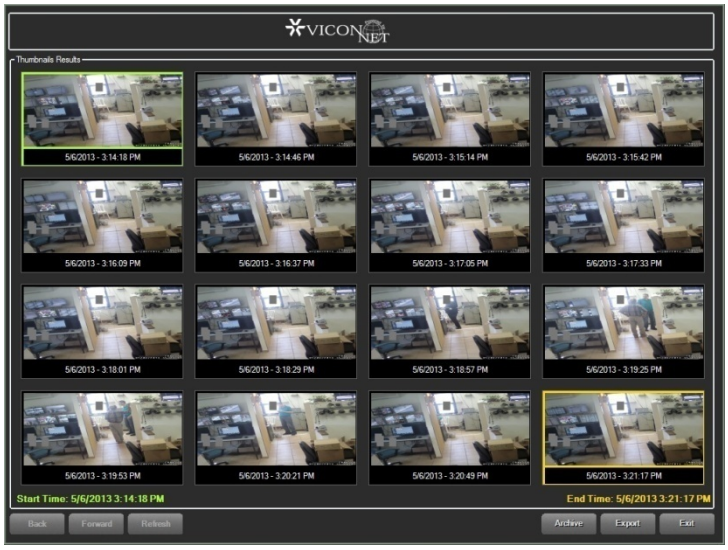
3. To stop the quick playback, click the **Stop** button or right-click the camera icon in the site list or the display area and select **Cancel Playback**. Live video returns to the adjacent video display location.

Thumbnails Search

The

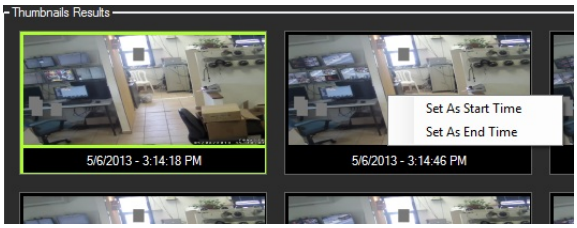
button enables you to search a selected video segment on open platform cameras for the exact video required. For details, refer to *Chapter 6, Playing Back Recorded Video/Audio* and *Chapter 9, Printing/Exporting Frames and Creating Export Video Files*.

4. From the Navigator screen, select a camera and the time interval you want to search. Then click Thumbnail Search. The following screen displays.



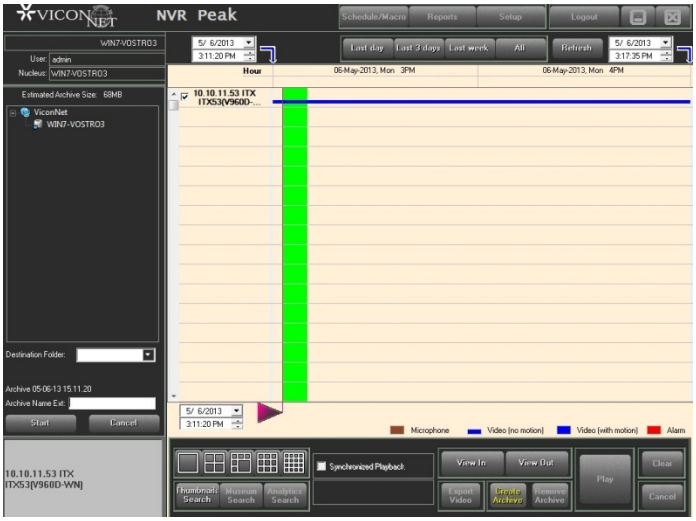
5. This screen displays 16 frames of video from the first display in the time interval selected, outlined in green, to the last, outlined in yellow; the time interval is divided into 16 equal segments of the time interval.

6. The search can be narrowed down by changing the start and end times. Right click on the thumbnail that is to be the new start time. Select *Set As Start Time*; that thumbnail will now be outlined in green. Repeat the procedure for the thumbnail that is to be the new end time and select *Set As End Time*; that thumbnail is not outlined in yellow. Additionally, the end time thumbnail can be selected by holding the Control key on the keyboard and clicking the desired thumbnail. Click the *Refresh* button to distribute this new time interval across the 16 frames. To go back to the previous settings, click the *Back* button; to return to the newer time interval, click the *Forward* button.



7. When the time interval has been fine tuned to the exact times required, the video can be archived or exported.

8. To archive the video, select the Archive button. The screen will return to the Navigator screen with the time interval shown in green and the Create Archive button highlighted. Select the storage location from the left list and the archive process will start. Refer to the section on the Archive Wizard for details.



9. To export a video clip, click the Export Video button. The screen will return to the Navigator screen and the Video Clip Exporter screen will display. Follow the prompts on the wizard; refer to the section on exporting video clips in Chapter 9.

Museum Search

The **Museum Search** option enables you to search for a specific camera's data within a defined region of the database, saving you from having to review the entire database. You can locate all the video segments that include a specific difference, for example, a main door opening or a car being moved.

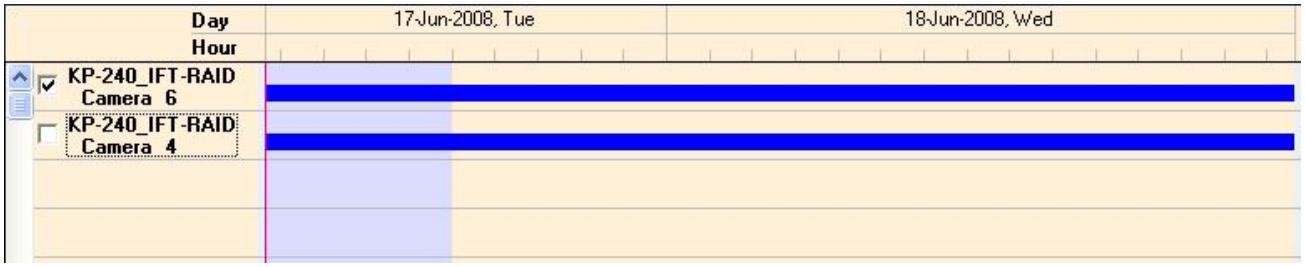
The **Museum Search** option enables you to locate the following types change entities:

- **Detections**: Specific frames where significant changes occurred.
- **Episodes**: Sets of consecutive frames in which significant changes that determine a unique event are detected.

Viewing the unique recorded segments described above consists of selecting the required device(s) in the **Recorded Device Contents** area and then selecting the **Museum Search** option. You can then search in the storage location for one or all of the unique segments and play them back in the *Main* window, as described in the previous steps in this chapter.

To perform a museum search:

1. In the *Navigator* window, ensure that the required camera is selected. (Only one camera can be selected at a time.)
2. In the **Recorded Devices Content** area, select the required time interval by clicking and dragging, as described in the *Selected Time Interval* section in *Chapter 2, Getting to Know ViconNet*.



Blue shading indicates selected Time Interval

3. Click the

button. The *Museum Search* window is displayed.

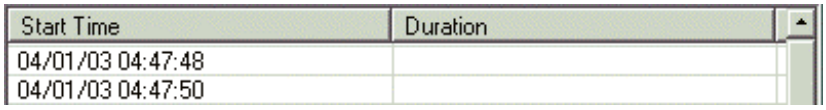
4. The **Video Display** area shows the first frame of the time interval that was selected in step 2. (The **Time Range** area shows the selected time interval start and end times.) If required, navigate to a relevant frame in the segment using the playback controls. These are used in the same way as the playback controls of the ViconNet *Main* window, described in *Chapter 2, Getting to Know ViconNet*.

5. In the current frame, define the following:

   - The ROIs relevant for the current search procedures. This is done using the Grid Definition tools.
   - The sensitivity of the detection mechanism: how many blocks of the colored grid arrays must be simultaneously involved in the change before a detection is recognized. This selection is made from the **Minimum Number of Blocks** selector.

A description of how to perform these definitions is provided in the *Defining ROIs* section, page 263.

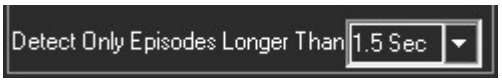
6. If you want to find specific frames where changes occurred in already defined ROIs, use the **Detector Control** functions, as follows:

Option	Description
List + Pictures	This button starts a search, from the current frame forward, for any frames in which significant differences in ROIs (based on the **Minimum Number of Blocks** selection) are detected. The start time of each detected frame is listed in the **Start Time** column in window's Detector List.  As each difference frame is detected, the frame image is displayed in the **Video Display** area. The process continues until the end of the time interval is reached, or until the **Stop** button is clicked.
List Only	This button performs the same actions as the **List + Pictures** button, but does not display the frame images. The process continues until the end of the time interval is reached, or until the **Stop** button is clicked.
Next Detection	This button can be used to search for each next frame (one frame each time the button is clicked) in which there is an applicable difference. The frame image is displayed in the **Video Display** area.

You can view selected frames by clicking their start times in the Detector List. The detected differences in the frame are indicated by light blue blocks.

You can clear the Detector list by clicking the Clear List button.

7. If you want to find "episodes" (sets of consecutive frames in which a significant difference in ROIs is detected), do the following:
   - From the **Detect only episode longer than** dropdown list, select the length of time over which changes must continuously occur.



> ***NOTE:*** *The default duration is 1.5 seconds. Values from 0.1 seconds to 5.0 seconds can be selected. In general, the shorter the duration, the more easily episodes will be detected.*

- Use the **Episode Control** functions, as follows:

Option	Description
List + Pictures	This button starts a search for episodes, from the current frame forward. The methodology by which the episode start and end frames are determined is described in the *How Episodes are Determined* section, page 264. The start time and duration of each episode is listed in the **Start Time** and **Duration** columns in the window's Detector List. As each episode is detected, its first frame image is displayed in the **Video Display** area. The process continues until the end of the time interval is reached, or until the **Stop** button is clicked.
Next Episode	This button can be used to search for each next episode (one episode each time the button is clicked).

You can run the frames of an episode by clicking on its entry in the Detector List. Light blue blocks indicate the detected differences in the frame.

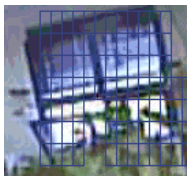
You can clear the Detector list by clicking the Clear List button.

Defining ROIs

When the *Museum Search* window is opened, blue-colored grid blocks cover the entire frame in the **Video Display** area, indicating that the change detection mechanism currently applies to the entire frame area.

You can focus the change detection mechanism on security-sensitive objects in the frame space by using the window functions to vary the coverage of the colored grid blocks. (Only the segments covered by colored grid blocks are considered for change detection purposes.)

For example, you can focus on windows or doors (as shown in the picture opposite) to monitor opening/closing events.



The following options are provided:

Option	Description
Clear All	This button clears all the current colored grid blocks in the view. You can then use the **Pencil** tool to define grid blocks for specific ROIs within the view surface. ***NOTE:*** *Change detection does not function unless ROIs are identified by colored grid blocks.*
Mark All	This button marks colored grid blocks over the entire window surface, meaning that change detection will apply to the entire camera view. You can then use the **Eraser** tool to remove specific grid blocks.

Option	Description
	When the **Pencil** tool is selected, the cursor becomes a pencil icon. You can define ROIs by clicking and dragging over the required view area segments, thereby drawing arrays of colored grid blocks. The **Tool Size Selector** area includes buttons for three pencil sizes. According to the selected size, the cursor draws a small (single block), medium (4-block) or large (16-block) width of grid blocks per sweep.
	When the **Eraser** tool is selected, the cursor becomes an eraser icon. You can erase ROI segments by clicking and dragging over selected grid blocks, thereby erasing them. The **Tool Size Selector** area includes buttons for three eraser sizes. According to the selected size, the cursor erases a small (single block), medium (4-block) or large (16-block) width of surface blocks per sweep.
	The **Minimum Number of Blocks** selector enables you to define how many blocks of the colored grid arrays must be simultaneously involved in the change, compared to the reference frame, before a detection is recognized. For example: • **1** (the most sensitive setting) – indicates that a detection should be recognized if a change is detected in even one block amongst all the defined ROIs (that is, the triggering is unlimited). • **16** (the least sensitive setting) – indicates that the change must be simultaneously detected in at least 16 blocks within the entire view area. The blocks do not have to be contiguous. ***NOTE:*** *The selected minimum cannot exceed the total number of blocks defined in ROIs.*
 	The **Show Grid** button applies a gray planning grid to the parts of the window where no ROIs (colored grid blocks) are defined. The gray grid is only for purposes of viewing where ROIs may potentially be defined and does not affect the change-detection process. When selected, the button changes into a **Hide Grid** button by which the planning grid can be suppressed, making only the "active" colored grid blocks visible.

How Episodes Are Determined

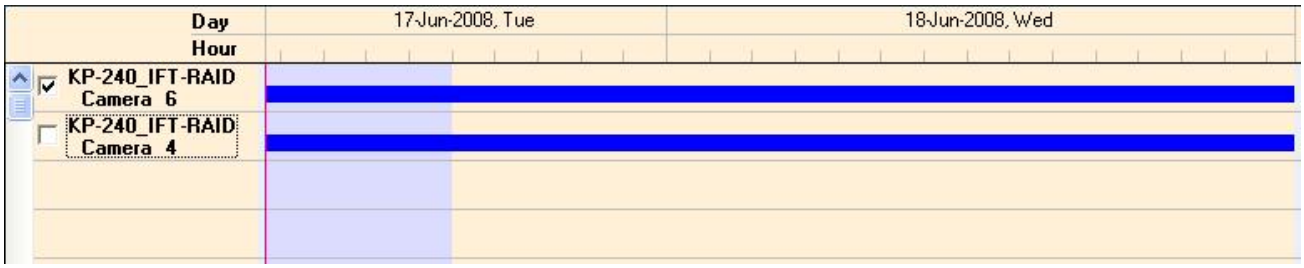
Episodes are sequences of consecutive frames in which significant differences in ROIs are detected. An episode includes all the frames related to a unique event for which the minimum event duration is determined by the **Detect only episode longer than** criteria and the required amount of changes of most frames is determined by the **Minimum Number of Blocks** criteria.

Video Analytics

The **Analytics Search** option enables you to view a specific camera's detected suspicious activity collected from a specific time period (ViconNet VI must be part of the system). This search button does NOT work with Vicon IQeye embedded analytics.

1. In the *Navigator* window, ensure that the required camera is selected. (Only one camera can be selected at a time.)

2. In the **Recorded Devices Content** area, select the required time interval by clicking and dragging, as described in the *Selected Time Interval* section in *Chapter 2, Getting to Know ViconNet*.



Blue shading indicates selected Time Interval

3. Click the

button. The *Analytics Search* window is displayed.

4. From the list provided, select which behaviors are to be searched for (All Analytics will automatically check all behaviors).

5. Click the
button. A list of behavior violations will display at the bottom of the screen.

6. Click the event you want to display. A slider visually represents at what point in the selected time span each behavior violation occurred. Click **Next Event** to view the next violation in the list or select another one from the list. **Playback Controls** are displayed and can be used as needed.

7. Click **Exit** to exit the screen.

Note: Video Analytics Engine *must be set for this utility to function.*

Creating Archives

The ViconNet system enables you to optionally create archives, which contain selected recorded data from a video database. This consists of selecting the specific devices, the specific recorded data and the destination location for where you want to save the data. You can then view it at a later time, for example, on another user's Kollector.

The archives are included in the *Navigator* site list together with other databases and can be selected for viewing, or any other file operations, as required. As an alternative, archives can be created from the *Main* screen using the

to open the Archive Wizard.

All playback functions can be performed on the archived data in the same way as regular recorded data, as described beginning from the *Selecting Recorded Video/Audio* section in *Chapter 6, Playing Back Recorded Video/Audio*.

You can archive directly to a CD, DVD, USB, local or remote drive. CD or DVD archives can be played on any PC, from an automatically started "Player" version of the ViconNet application. (For playing CD and DVD archives, the ViconNet application does not have to be installed on the PC.)

The ViconNet system can be set to automatically verify that ViconNet-produced archive was not tampered with. Activating the display of system authentication results for play back can be done in the same way as for a regular database. For more details, refer to the *Configuring System Authentication* section in *Chapter 3, Configuring the ViconNet System*.

Selected archives can also be removed from the network or another PC.

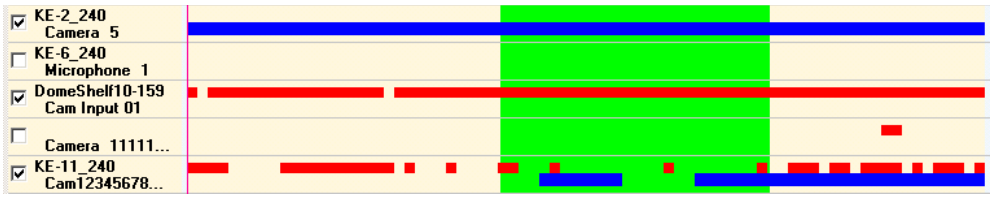
NOTE: *After creating an archive, you can perform all playback functions on the archived data in the same way that you can with regular recorded data, as described beginning from the Selecting Recorded Video/Audio section, page 242.*

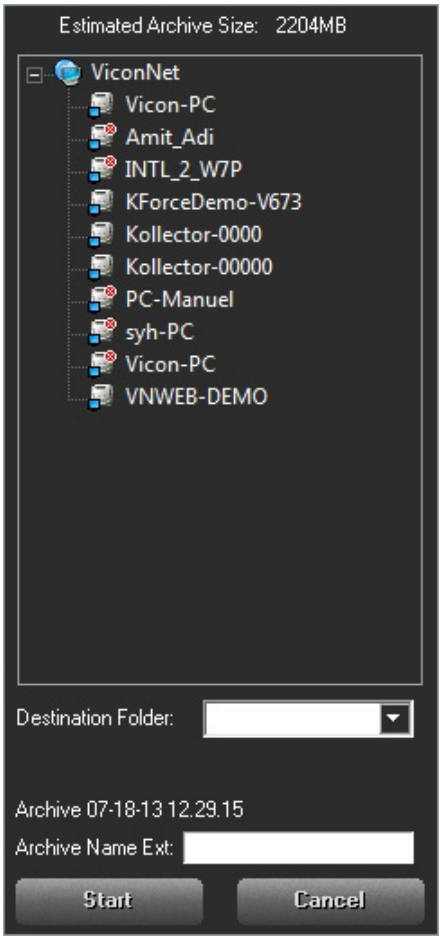
To create an archive from Navigator screen:

1. From the *Navigator* list, select the camera(s) and/or microphone(s) that contain the recorded data that you want to archive. The recorded contents are displayed in the **Recorded Devices Content** area and the names of the selected devices are displayed in the **Main Window Display Location** area.
2. In the **Recorded Device Contents** area, mark the recorded segments that you want to archive by holding down the left mouse button and dragging the mouse pointer over the required segments.
3. Click

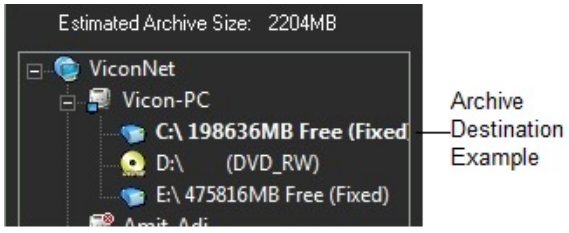
. The *Navigator* list is replaced by an **Archive** area, which automatically displays the archive date and time at the bottom.

   The selection area is indicated with a lime green shading and the size of the selected contents is displayed at the top of the **Archive** area in the **Estimated archive size** field (in MB).





4. In the **Archive** area, navigate to the required archive destination (network path, CD-ROM or DVD device).



The destination details are displayed automatically at the bottom of the **Archive** area.

5. In the **Archive Name Ext** field, enter a logical archive name. The archive name is automatically added to the archive date and time details.

6. Click

. The following confirmation message is displayed.

7. Click

. A progress bar in the **Archive Controls** area indicates that the archive creation is in process.

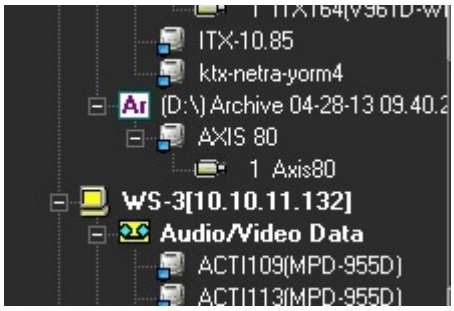
8. (Optional) To view additional details during the archive creation process, click

. The relevant details are displayed in the **Control Dialog Display** area, as shown in the following example:

NOTE: *If required, you can stop the archive creation process by clicking* ***Stop Archive****.*

9. When the **Archive completed successfully** message is displayed, as shown below, click Close.

The new archive is displayed in the *Navigator* list with an **Archive** icon (instead of a database icon), as well as a list of its contents.



You can now select the devices in the archive and perform all required playback functions, as described in the previous sections in this chapter.

To remove an archive:

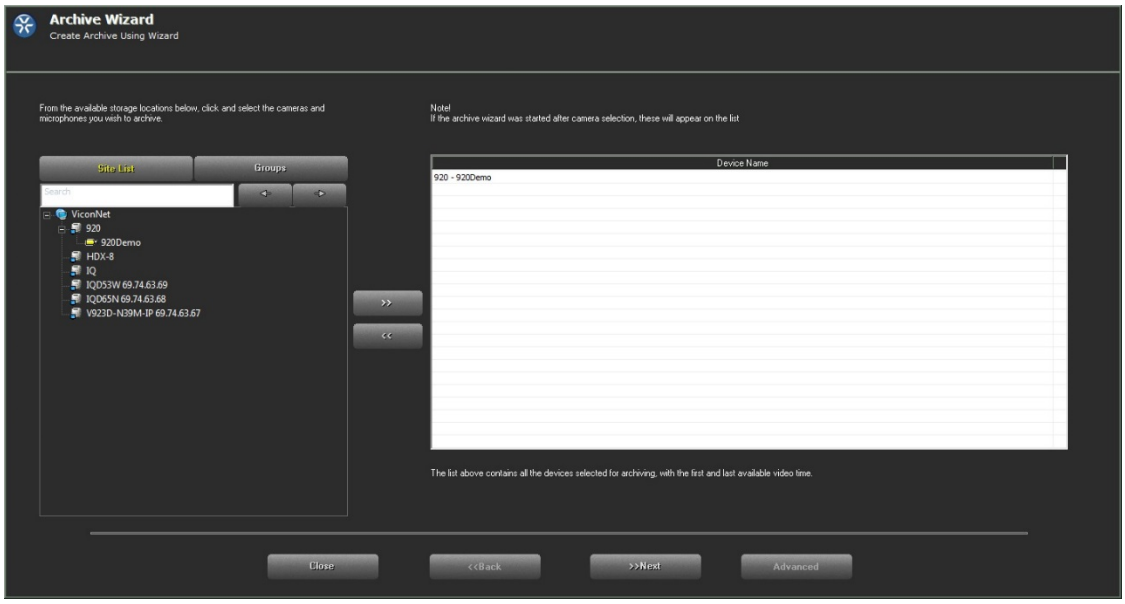
1. From the *Navigator* list, select the required archive.
2. Click Remove Archive. A confirmation prompt is displayed.
3. Click **Yes** to confirm the action. The archive is deleted from the database.

NOTE: *Recorded video and audio can also be played back from the Alarm History Report.*

To create an archive from the Main screen:

1. To create an archive from the *Main* screen, click

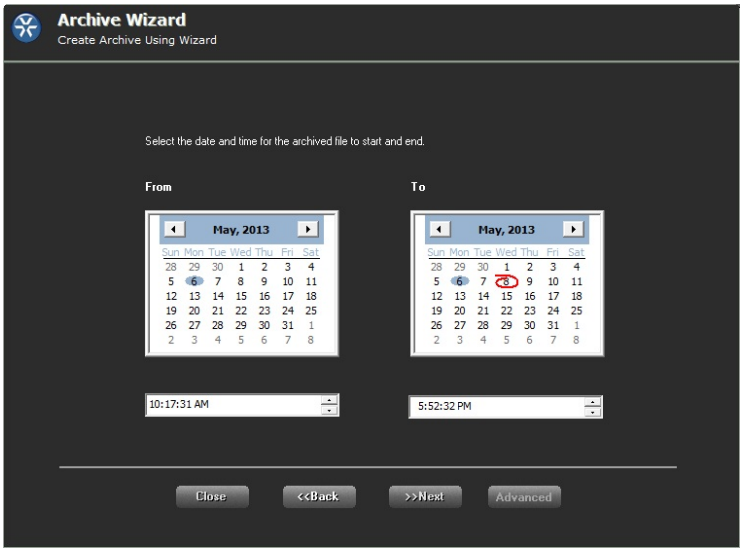
.The Archive Wizard screen will display. ViconNet allows you to directly select the camera from which you want to archive video.



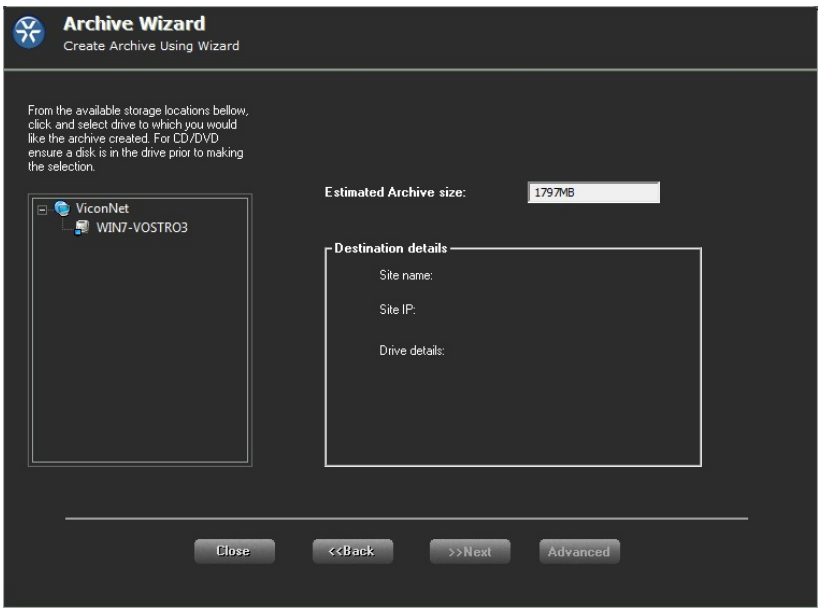
2. Select the camera from the list and click

to move it to the list; devices can be removed from the list using the

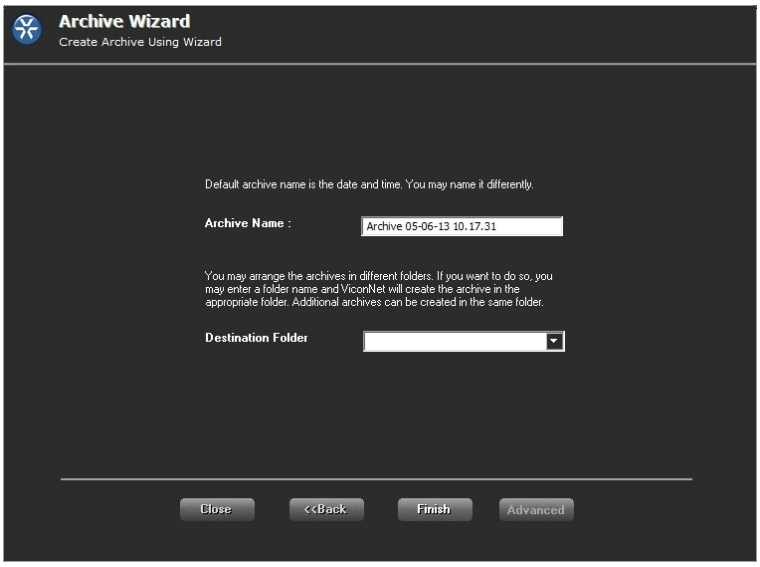
. If there is no video from that camera, a message will be displayed. Click **Next**. The following screen will display.



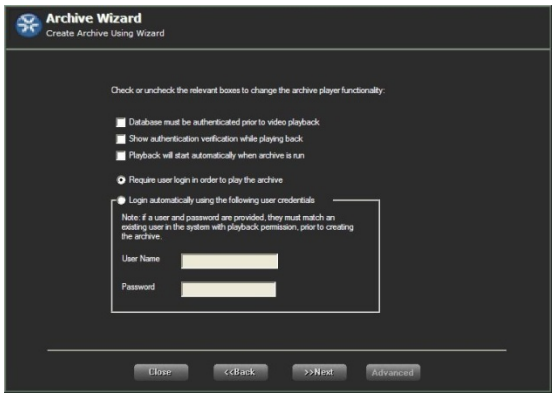
3. Select the time and date for the archive file to begin and end. Click **Next**. The system will retrieve the data and the following screen will display.



4. Select a storage location for the archive. The estimated file size and detail will display. Click **Next**. The following screen will display.



Name the archive and, if required, a destination folder within the storage location. Click **Finish.** An **Advanced** button is enabled only if archiving to a CD/DVD or thumb drive is selected as the storage location. When Advanced is selected, the following screen will display.



5. Check a box as required for the Archive Player functionality. Select to use autologin or require a user to login to play the archive. Click **Next**.

6. The screen will return to the Main ViconNet screen and show the progress of the archiving.

7. When the **Archive completed successfully** message is displayed, as shown, click

.

Archive Player

If an archive is saved to a CD or DVD, it can be run like on a player. All the ViconNet files necessary to do this are saved to the CD with the archive.

1. The CD is formatted to autorun. When it displays, the following login screen will display:

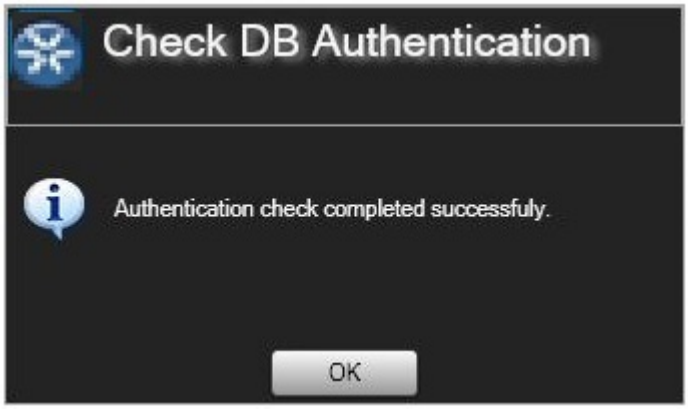
Notes:

If the login user was unauthorized to playback in the system that the archive was taken from, playing back the archive will be denied.

Login of a user who belongs to another ViconNet network (different Nucleus) will fail.

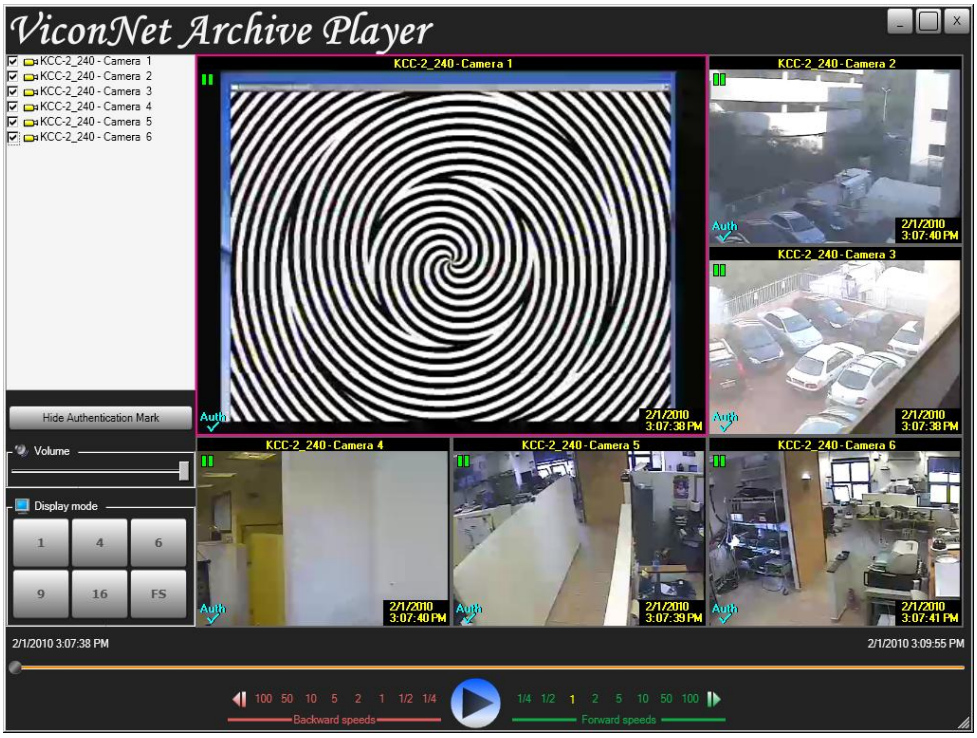
2. Enter the **User Name** and **Password** and select **Login**. The following screen will display about Authentication.

3. If you click **Yes**, the following screens will display:



4. Select **OK**. The Archive Player *Main* screen displays:

5. Select a **Display mode** of 1, 4, 6, 9, 16 or Full Screen (FS). Then check the box next to the camera name for each camera's archive video to display. When the camera(s) is selected, it will display as below and the Forward and Backward play bar will become active.



You can select to hide the authentication symbol by selecting the

. The

will be removed from the display and the button will change to **Show Authentication Mark**.

6. Using the play bar, select the speed to play back the video, in forward and reverse.

Chapter 7
Managing Macros and Schedules

This chapter describes how to manage and work with macros and schedules in the ViconNet system and contains the following sections:

- **Creating Macros and Schedules,** page 278, provides a brief description of the process for creating macros and schedules.
- **Working with Macros,** page 278, describes how to manually start and stop macros that have been created in the system, as well as view macro details and status information.

Creating Macros and Schedules

Macros are sets of user-defined commands that give instructions to the system about what tasks to perform at a specified time and in a specified order. After creating a macro, you can then create a schedule for the macro, which is a group of user-defined settings that cause the system to activate the specific macro during a specific time period.

Detailed procedures for creating macros and for creating the schedules that can activate the macros are described in the *Creating Macros* and *Creating Schedules* sections of *Chapter 3, Configuring the ViconNet System*. Basic information about working with and managing the configured macros and schedules in your ViconNet system is described in the following section.

Working with Macros

After creating macros in the ViconNet system according to your requirements, you can use the ViconNet application to work with and manage the macros during system operation, as required, which includes:

- Viewing the current run status of all configured macros.
- Activating a macro to run immediately, independent of an alarm event or schedule.
- Stopping a macro that is currently running, if required.
- Stopping and/or restarting all macros that are currently running in the system due to the scheduler.
- Displaying or hiding the macro script, which contains all the macro commands and their settings.
- Refreshing the list of macros currently configured in the system.

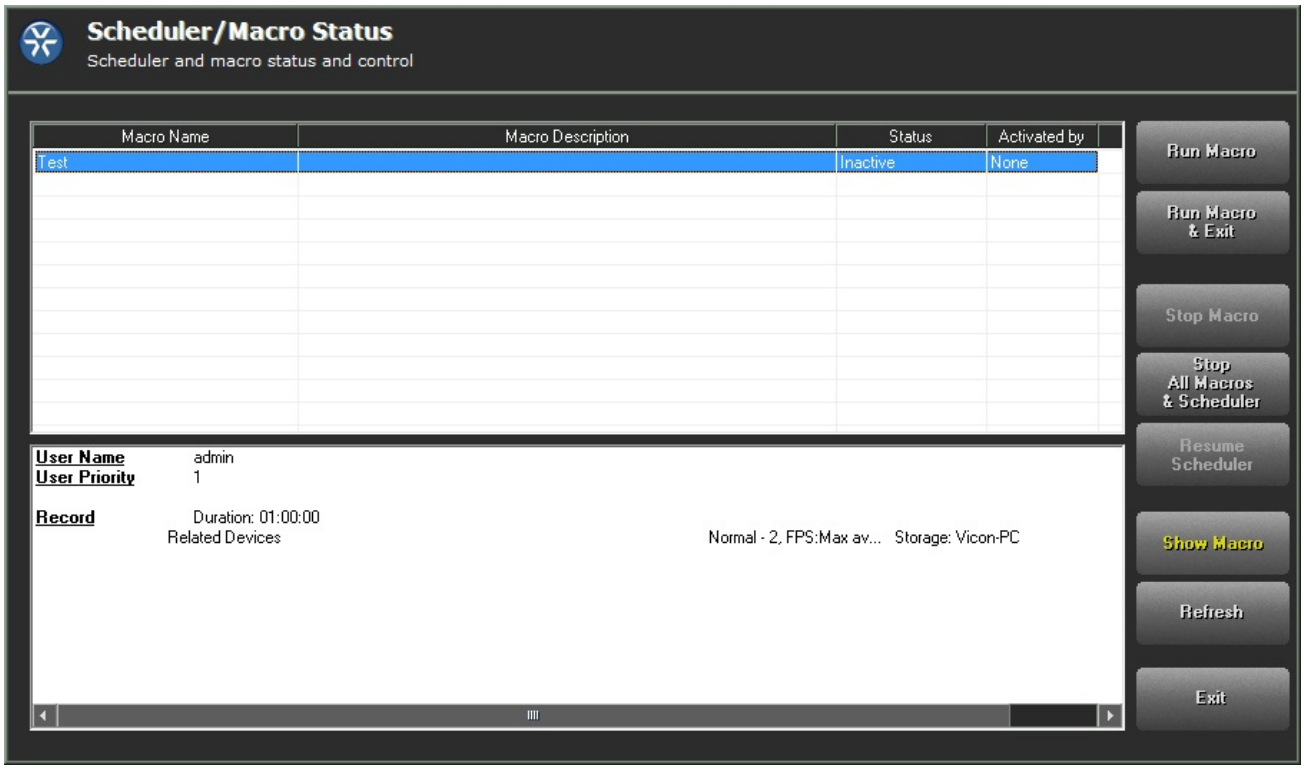
You can also edit and delete macros that are configured in the system, if required, as described in the *Creating Macros* section of *Chapter 3, Configuring the ViconNet System*.

NOTE: *When a macro is running as a result of an alarm event, the following is applicable:*

- *If the macro is performing* ***display operations****, all functions in the ViconNet Main window, except for the* ***Stop Macro****,* ***Schedule/Macro****,* ***Logout****,* ***exit*** *and* ***minimize*** *buttons, are disabled.*
- *If the macro is performing* ***all other recording operations****, all functions in the ViconNet Main window remain operational.*

To work with macros:

1. From the ViconNet *Main* window toolbar, select Schedule/Macro. The *Scheduler/Macro Status* window appears, displaying a list of all macros currently configured in the system.

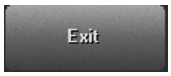


NOTE: *The above example shows how the macro script is displayed in the bottom of the Scheduler/Macro Status window when you select the* ***Show Macro*** *option.*

The *Scheduler/Macro Status* window contains the following information about each macro:

Column	Description
Macro Name	The defined macro name.
Macro Description	The defined macro description, if any.
Status	The current run status of the macro (**Running** or **Inactive**).
Activated by	How the macro was activated (**User**, **Alarm**, or **Scheduler**).

2. Select the appropriate macro in the list and then select the required option, as follows:

Option	Description
	Runs the selected macro immediately.
	Runs the selected macro immediately and closes the *Macro Status* window.
	Stops the selected macro immediately.
	Stops all macros currently running in the system that are running independently or as a result of the scheduler.
	Resumes all stopped macros that had been running as a result of the scheduler before they were stopped. This option does not affect any macros that are configured to use the scheduler in the future, meaning they will be activated as configured.
	Displays/hides the macro script in the bottom of the window (as shown in the example on page 279).
	Updates the list of macros currently configured in the system.
	Exits the *Scheduler/Macro Status* window.

Chapter 8
Generating Reports

This chapter describes the various types of reports that can be generated using the ViconNet system and contains the following sections:

- **Overview,** page 282, provides a brief description of the ViconNet system report generation capabilities, how to access the *Reports* window and a brief description of the option to save logs to files.
- **Opening the *Reports* Window,** page 285, describes how to open the *Reports* Window.
- **Generating Device Status Reports,** page 286, describes how to generate reports that show status information about each device in the system.
- **Generating Alarm History Reports,** page 287, describes how to generate reports that show information about each alarm that occurs in the system, for both live and playback video.
- **Generating Recording Status Reports,** page 291, describes how to view information about devices that are currently recording.
- **Generating Audit Log Reports,** page 292, provides basic log information for debugging and history purposes.
- **Generating CFN Log Reports,** page 294, provides basic log information describing all system failures that generated a CFN.
- **Generating Event History Reports,** page 295, describes how to generate reports that show information about each event that occurs in the system, for both live and playback video.

Overview

The ViconNet system enables you to generate various reports that each contain a specific type of information, including:

- **Device Status Reports:** Reports the current status of devices
- **Alarm History Reports:** Provides details of all alarms that have occurred in the system, according to the selected criteria
- **Recording Status Reports:** Provides a summary of the devices that are currently recording
- **Audit Log Reports:** Provides a list of all actions performed in the system, according to the selected criteria
- **RVS Log:** Provides a basic history of all RVS messages from all verified (monitored) sites
- **CFN Log:** Reports ALL the failures for a specific site or fall sites

Each type of report can be used for analysis of system operations. In addition to easy access to specific information, you can sort and search through the report information, as required.

Saving Logs

In addition, each report tab provides the option to save the log files, enabling us to retrieve logs from IP and other products that do not have a hard drive (and therefore save their logs in the Nucleus), or from remote sites that are connected to the same Nucleus, yet are not physically reachable (such as a unit that is located in a closet, or where the USB is behind the unit and cannot be reached, and so on). This feature enables browsing and selection of a destination folder to save a log.

There are three saving options:

Option	Description
Save logs from the following site only	Select to save the logs/reports from a site listed in the dropdown site list to a file. The sites listed in the dropdown list will be either the local site (the site selected in the *Reports Site Selection* window), or if you are in the Nucleus, the local site and IP products connected to the same Nucleus.
Save all the logs, stored on this site and belong to remote site	When connected to a Nucleus (Workstation or Kollector), the IP products send updates of their logs to be stored on the Nucleus. This save option allows you to save the remote site logs that are stored on the Nucleus hard drive. This option will only be enabled in the Nucleus and only if IP products are connected.
Save all logs from the remote sites and the logs of this site	Saves all logs.

NOTE: *To save logs from an IP product, select the Nucleus in the Report Site Selection window and select the relevant IP product from the dropdown list in the Save Logs window.*

The **Save Software Logs** option is available in all of the report windows.

To save the log to a file:

1. From the ViconNet *Main* window, click

. Select your site and click

. Click **Save Software Logs**. If one of the devices connected to the selected site is active, the following message is displayed:

2. Click **OK** to continue to the *Save Software Logs* window or **Cancel** to return to the *Report* window.

3. Select the location in which to save the report file as follows:

   - Type the path in the **Destination Folder** text box

   - OR –

   - Click **Browse** and browse to the required location. Then click **OK** to return to the *Save Software Logs* window.

4. Select the required save option and select the site whose report you want to save (if the **Save logs from the following site only** option is selected).

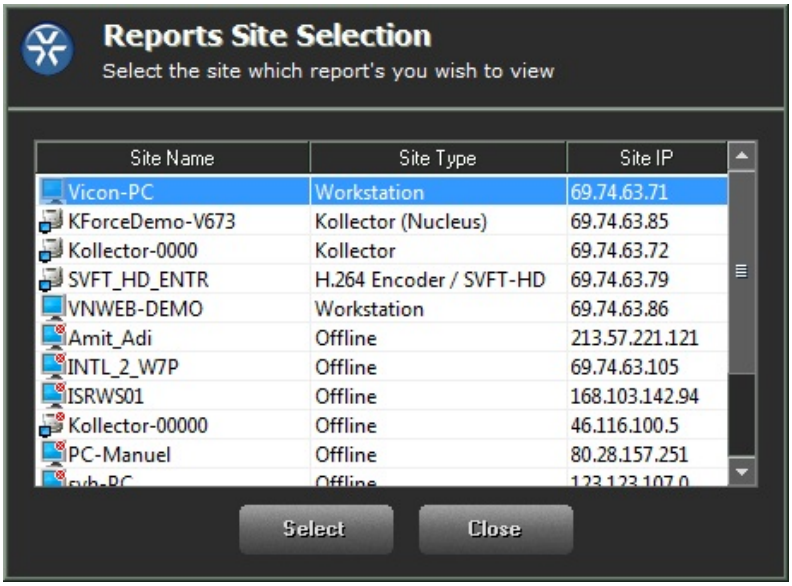
5. Click **Save**. If the logs are saved successfully, the following message is displayed.

Opening the Reports Window

For all the reports available, the relevant site must first be selected from the *Reports Site Selection* window.

To open the Reports window:

1. From the ViconNet Main window, click Reports. The following dialog appears, displaying the currently connected site:



2. Select the site for which you want to generate a report and click Select. The *Reports* window is displayed with the Device Status option selected by default, as shown on page 286.

Generating Device Status Reports

If you access a Kollector through the *Reports Site Selection* window, the Device Status report enables you to view system information about the site, such as whether the device is connected and whether it is currently active or not. If a Workstation is selected, this report cannot be generated, as the Workstation does not have devices connected to it.

Device Status reports can be generated only when remote sites (meaning, not the Workstation) are selected in the *Report Site Selection* window as the Workstation does not have devices connected to it.

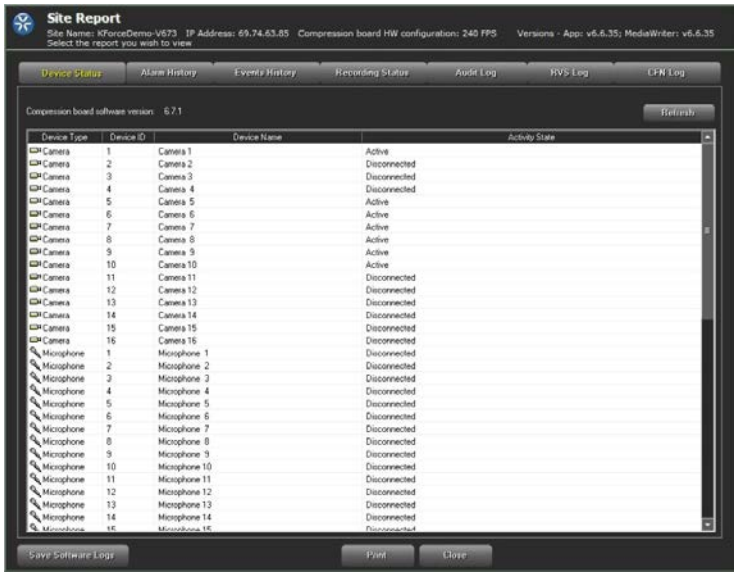
To generate Device Status reports:

1. Display the *Reports* window for a selected site, as described on page 285. The *Reports* window opens with the

option selected by default.

NOTE: *If a Workstation site is selected, the Device Status option is disabled and the Alarm History option is selected by default.*

Device Status Disabled



This report contains the following device status information about each device:

Column	Description
Device Type	The type of device (**Camera**, **Microphone**, **Sensor**, **Relay**, or **Speaker**).
Device ID	The numerical index number that was automatically assigned to the device during system setup.
Device	The name of the device that was assigned during system setup.
Activity State	Indicates the current operation state of the device (**Opening**, **Closed**, **Starting**, **Activate**, **Stopping**, **Closing, Ready or Disconnected**).

NOTE: *Refer to Chapter 3, Configuring the ViconNet System, for additional details about the device type, device ID, and device name.*

Generating Alarm History Reports

The Alarm History report enables you to view all information related to each alarm that occurs in the system, including the alarm type and the date and time of occurrence.

You can use filters to show a timed range of alarms, from/to either specified dates/times or the earliest/latest detected alarms in the database.

In addition, you can start live video or select to playback video related to a specific alarm.

NOTE: *This is only available for the activity detection alarm type.*

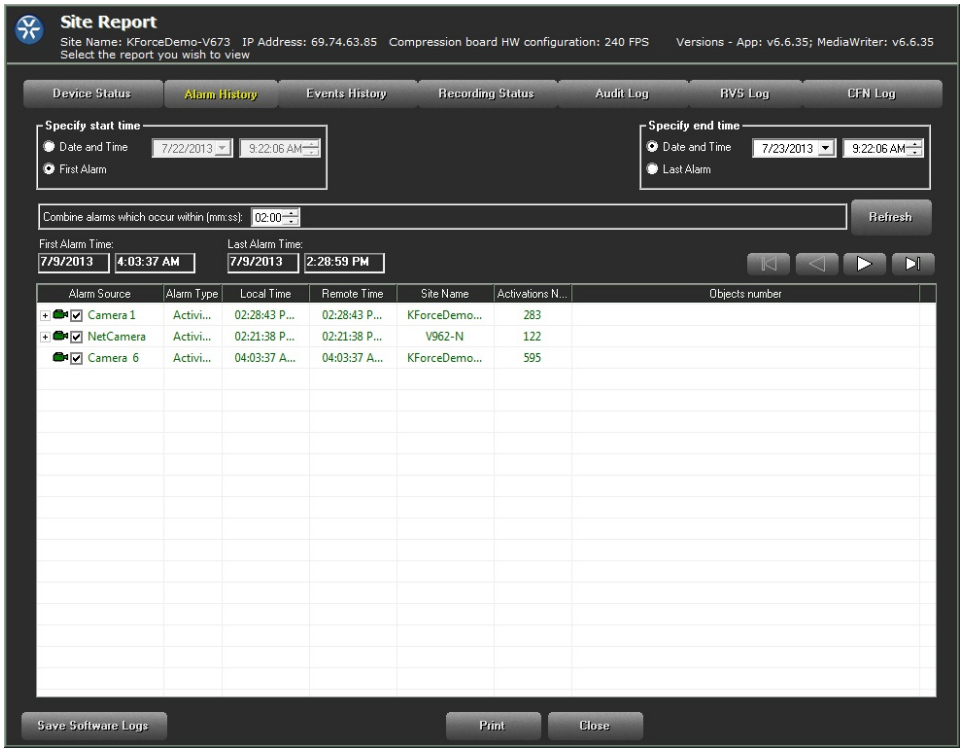
For more details on alarms, refer also to the *Alarm Window* section in *Chapter 2, Getting to Know ViconNet*.

To generate an Alarm History report:

2. Display the *Reports* window for a selected site, as described on page 285.

3. Click

. The *Alarms History* window is displayed.



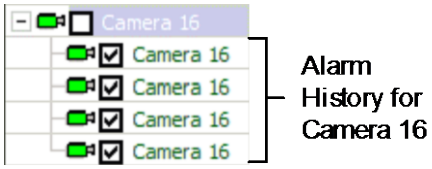
4. Specify the report content time frame:

   - In the **Start time** area, either:
     - Click the **Specify time and date** radio button and select a start date and start time from the dropdown lists.
     - **-OR-**
     - Click the **First alarm** radio button to list the alarms starting from earliest detected alarm in the database.
   - In the **End time** area, either:
     - Click the **Specify time and date** radio button and select an ending date and ending time from the dropdown lists.
     - **-OR-**
     - Click the **Last alarm** radio button to list the alarms up to and including the latest detected alarm in the database.

     -OR-
   - Select the arrows to page through the alarms listed, as follows:

Button	Description
	Go to last page of alarm
	Jump back 1000 alarms
	Jump forward 1000 alarms
	Go to first page of alarms

5. Click the **Refresh** button. The following history information about each alarm event is displayed:

Column	Description
Alarm source	The name of the device on which the alarm event occurred. When you click the device's icon, the alarm history for that device is displayed.  ***NOTE:*** *The ☑ checkbox is provided for your optional use, for example, to remind you which alarms you have already viewed.*
Alarm Type	The type of alarm.
Local time	Time zone translation to local time.

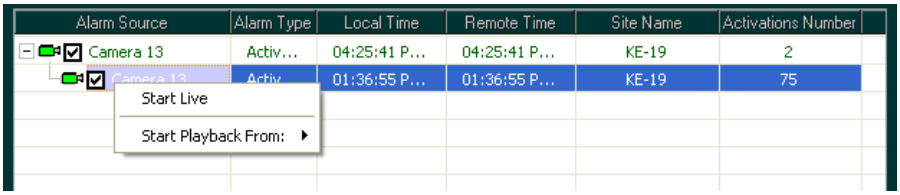
Column	Description
Remote time	Time and date the alarm event occurred.
Site Name	The name of the site.
Number of Activations	Indicates the number of times an alarm has been activated on the specific device within a specific time period. Each time the alarm is activated, another alarm event line is added to the alarm history for that device (except in the case of a re-activation, as described below). When an alarm was activated and then re-activated within a very short period of time, the re-activation of the alarm is **not** displayed in the alarm history. The time interval that passes after an initial alarm, in which movement will not trigger a new alarm, but will cause an increment of +1 in the **Number of Activations** field, is defined in the **Combine Alarms which occur within…** field in the *Alarm* window.
Object Number	Used for a video analytics alarm, indicates the number of objects (people, cars, etc.) that were detected, as specified by the rule set for the alarm.

In addition, the time of the first and last alarms in the period selected is displayed (read only) in the *Alarm History Site Report* window.

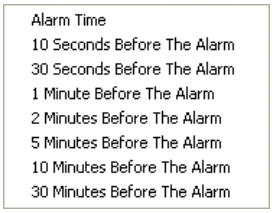
NOTE: *You can combine similar alarms that occur within a specified period of time as a single record by entering a time period in the* ***Combine alarms which occur within (mm:ss)*** *field.*

To playback video for a related to a specific alarm:

- In the list displayed in the Alarm History report, right-click the alarm for which you want to playback the video and select **Start Live** or **Start Playback From**.



If you selected **Start Playback From**, select the time to start the playback from (relative to the alarm) from the list displayed.



The video is displayed in the **Video Display** area in the *Main* window. The

button is displayed in the bottom-left corner of the *Main* window.

- To return to the *Alarm History Report* window, click the

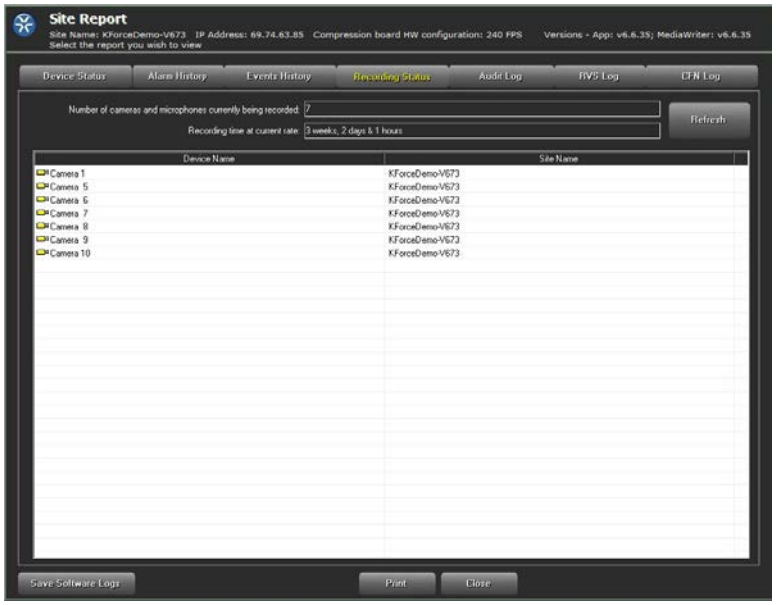
button.

Generating Recording Status Reports

The Recording Status report enables you to view a summary of devices that are currently recording.

To generate a recording status report:

1. Display the *Reports* window for a selected site, as described on page 285.
2. Click Recording Status. The *Recording Status* window is displayed.



The **Recording Status** report contains the following summary information about devices that are currently recording:

- **Recording time at current rate**: An estimate of the recording time remaining, according to the database capacity and current data rate (Bytes/Sec), before already recorded content will be overwritten. The overwriting takes place on a FIFO (first in first out) basis.
- **Number of cameras and microphones currently being recorded:** The combined total of devices that are currently recording.

> ***NOTE:*** *This information is also provided in the ViconNet Main window* ***Device Status*** *area. Refer to Chapter 2, Getting to Know ViconNet.*

The following detailed information is provided about each camera and microphone that is currently recording:

Column	Description
Device Name	The name of the device.
Site Name	The name of the site at which the device is recording.

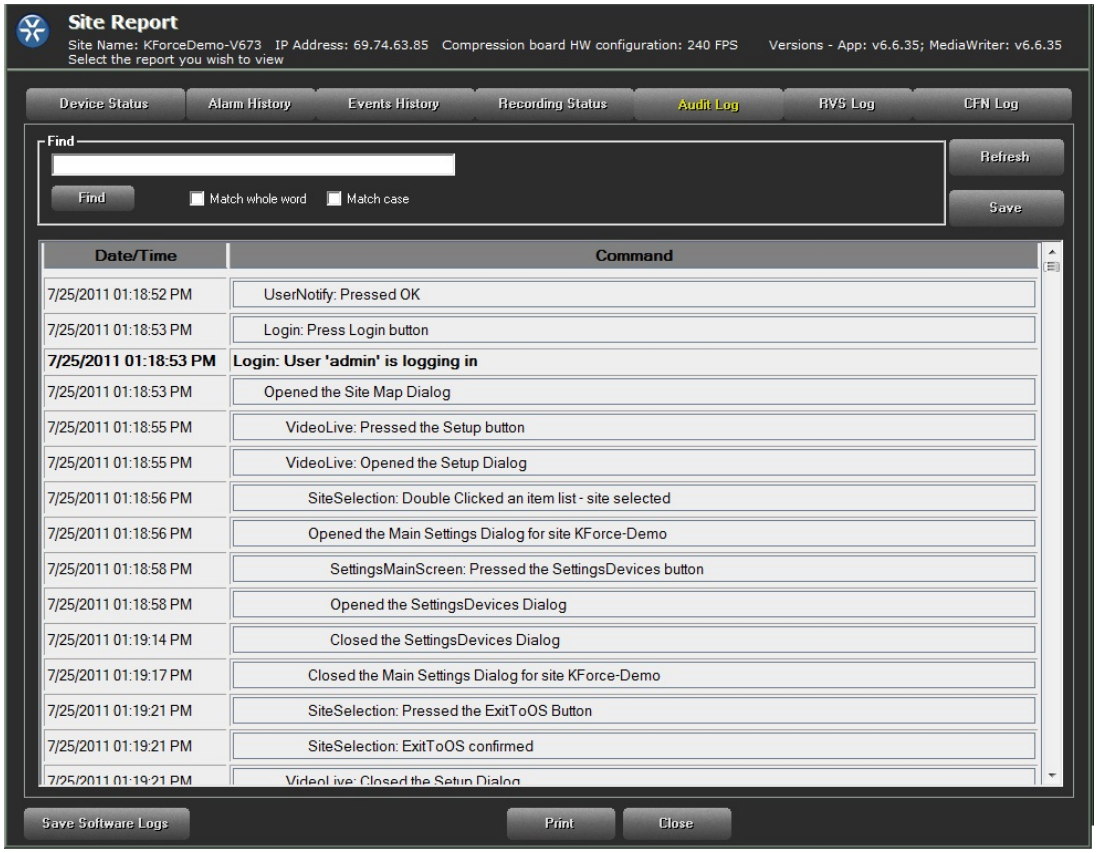
Generating Audit Log Reports

The Audit Log report provides basic log of operations performed in the system, useful for history and debugging purposes. Information is accumulated continuously. 8,000 record lines can be accumulated, removed thereafter on a first-in-first-out basis. The table display can be updated using the **Refresh** button.

To generate an audit log report:

1. Display the *Reports* window for a selected site, as described on page 285.
2. Click

. The *Audit Log* window is displayed.



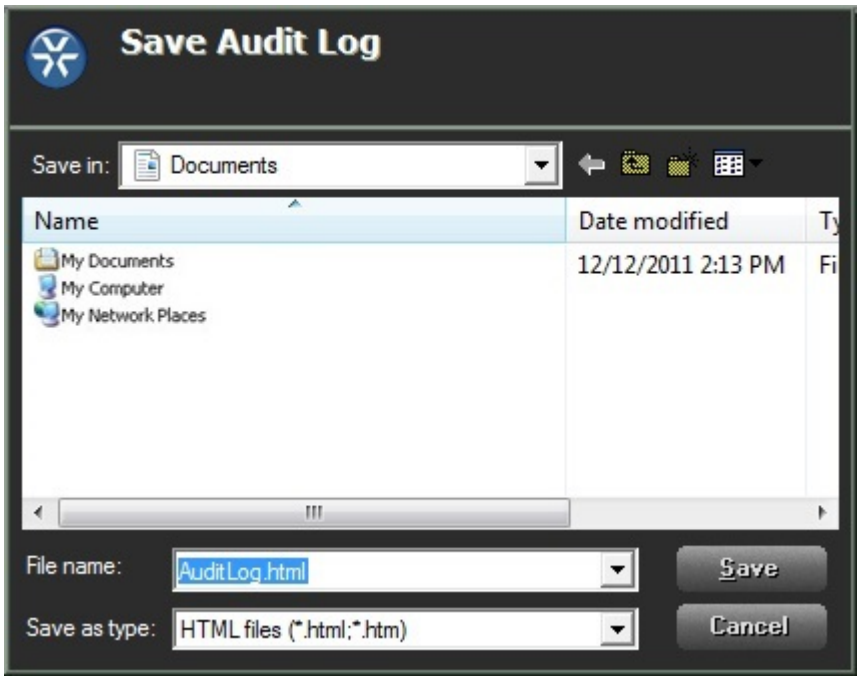
3. Search for events of interest using the Find panel:

    - Enter a string to the input field.
    - Specify whether the search should **Match Whole Word** and/or **Match Case**.
    - Click **Find**.

    The **Audit Log** report contains the following information about each event that is found:

Column	Description
Date/Time	The date and time that the operation was performed.
Command	The name of the operation.

4. If required, you can click **Save** to save the result of your search in an HTML format, using the *Save Audit Log* window, which is a standard *Save As* window.



Generating CFN Log Reports

The CFN (Central Failure Notification) mechanism enables NVR/Workstations and transmitter sites connected to the same Nucleus to receive notifications indicating that certain applications have failed, for example, macro, recording and database failures.

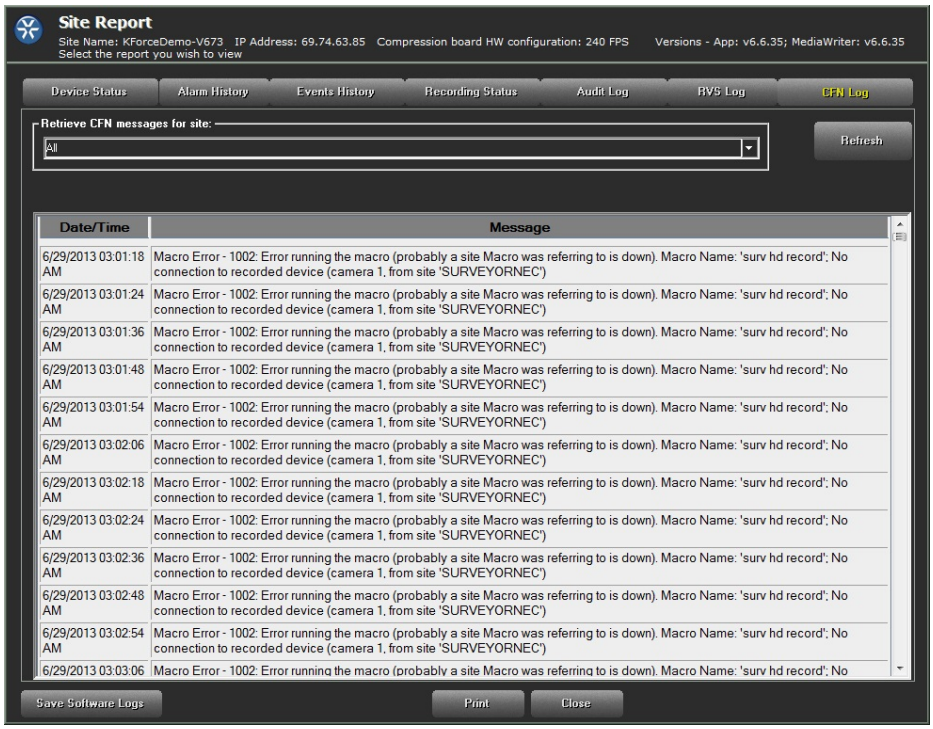
The CFN Log report provides a report of ALL the failures for a specific site (or all sites).

The CFN report can only be viewed from the Nucleus. This is the central site that gathers information from all the sites and spreads necessary information to the sites. If something happens to a connected site, the notification is also sent to the Nucleus. The Nucleus decides whether other sites should be notified. Each site keeps a log of its own failures.

The table display can be updated using the **Refresh** button.

To generate a CFN log report:

1. Display the *Reports* window for a selected site, as described on page 285.
2. Click CFN Log. The *CFN Log* window is displayed.



3. From the dropdown list, select the site (or all sites) for which you want to see the CFN log (default=**All**).

NOTE: *The differences between the RVS Log and the CFN Log are:*

1. *The RVS Log includes errors related to recording only, whereas the CFN log reports ALL failures, see explanation at end of RVS Report Log section.*
2. *The CFN Log is only available from the Nucleus.*

Generating Events History Reports

The Events History report enables you to view all information related to each event that occurs in the system, including the device and site names (and other fields as set up in Events Management) and the date and time of occurrence.

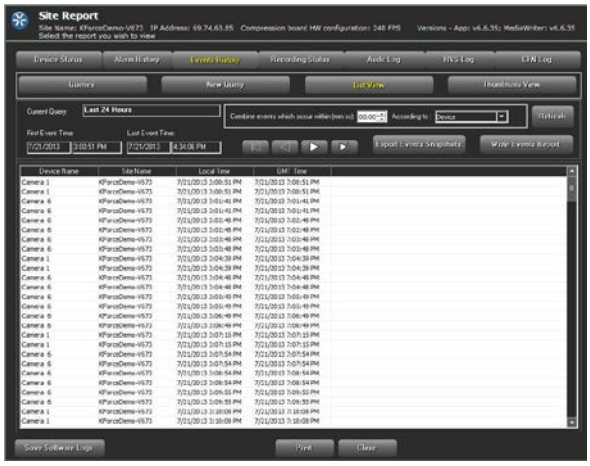
You can use view events in list format or in a thumbnail view. The date and time of the first and last events are displayed (read only), as is the current query. Event snapshots can be exported and event reports written.

In addition, you can start live video or select to playback video related to a specific event.

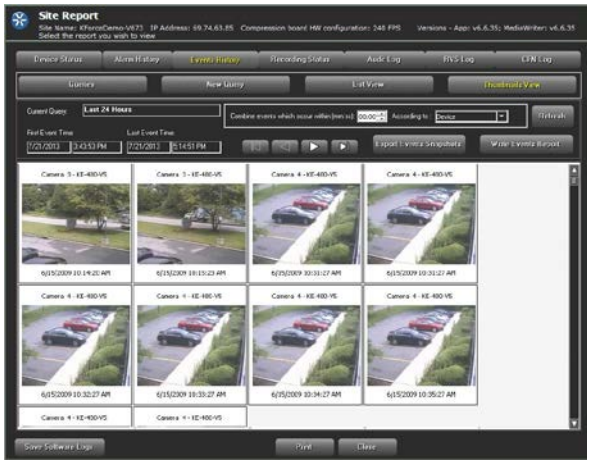
To generate an Events History report:

1. Display the *Reports* window for a selected site, as described on page 285.
2. Click Events History. The *Events History* window is displayed.

Note: *By default, events are cleared from the display list after 24 hours. To view events in a later time period, click* ***Queries*** *and change the time filter to include the time and dates required.*



List View



Thumbnails View

3. Specify the report format by selecting List View to display the events in a list; to view the events as small pictures, select Thumbnails View.

- Select the arrows to page through the events listed, as follows:

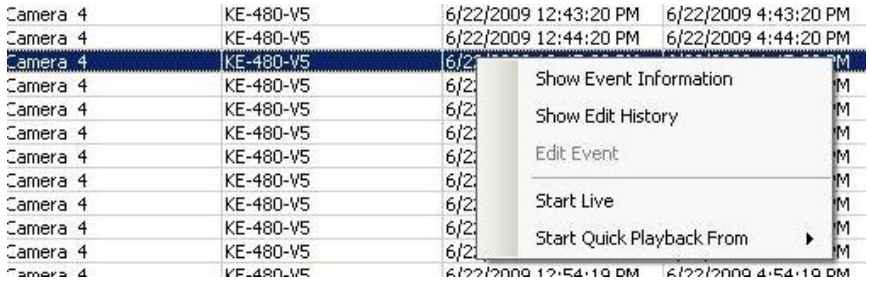
Button	Description
	Go to last page of event
	Jump back 1000 events
	Jump forward 1000 events
	Go to first page of events

4. Click the **Refresh** button to update the events history list.

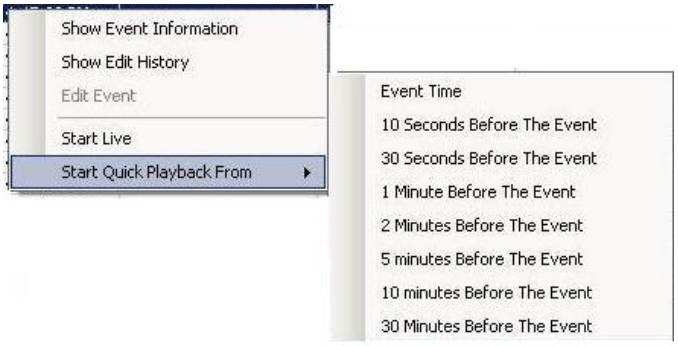
NOTE: *You can combine similar events that occur within a specified period of time as a single record by entering a time period in the* ***Combine events which occur within (mm:ss)*** *field; these can be further sorted by any defined field in the database.*

To playback video for a specific event:

1. Right-click the event for which you want to playback the video and select **Start Live** or **Start Quick Playback From**. This can be done in either List or Thumbnails View.

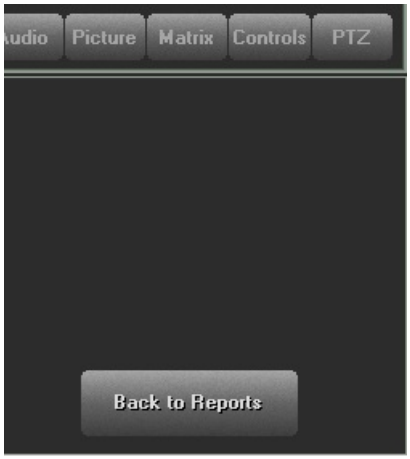


- If you selected **Start Quick Playback From**, select the time to start the playback from (relative to the event) from the list displayed.



- The video is displayed in the **Video Display** area in the *Main* window. The

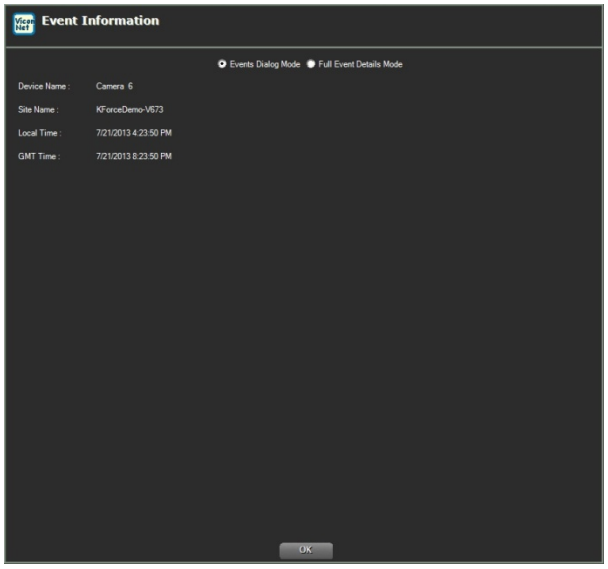
button is displayed in the bottom-left corner of the *Main* window.



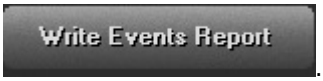
2. To return to the *Events History Report* window, click the

button.

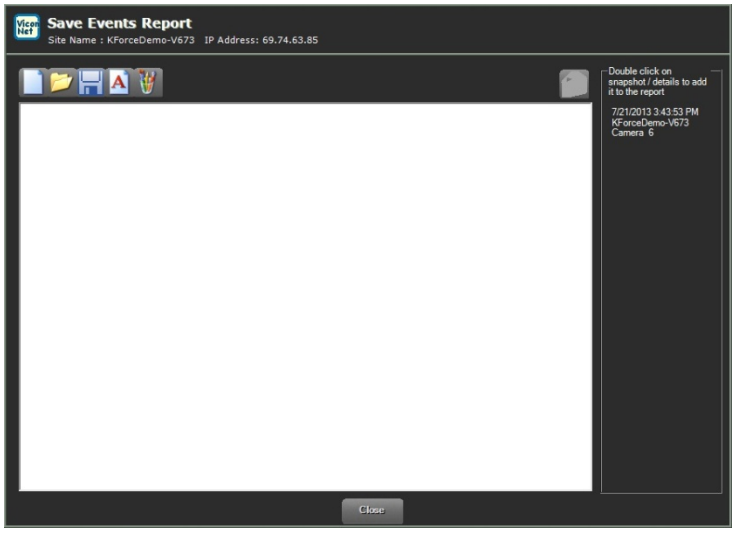
3. If **Show Event Information** is selected, the following screen displays with details on that specific event. The information on this screen can be displayed in either of two formats, by selecting **Event Dialog Mode** or **Full Event Details Mode** at the top of the screen. Similarly, if **Show Edit History** is selected, a screen displays to indicate if any of the details of an event have been changed. If **Allow to modify the stored data** has been checked in the **Database Configuration** setup, **Edit History** will be active and an edit history will display.



To write a report for a specific event:

1. Click 

. The following will display.



- This screen provides a space to write in any pertinent information about the event. The tools at the top of the screen provide for selection of font, color and where the report will be saved. Double click the snapshots and event details on the right of the screen to include them in the report. The report is saved as an .rtf file. A previously written report can also be accessed through this screen.

To save a snapshot of a specific event:

1. Click

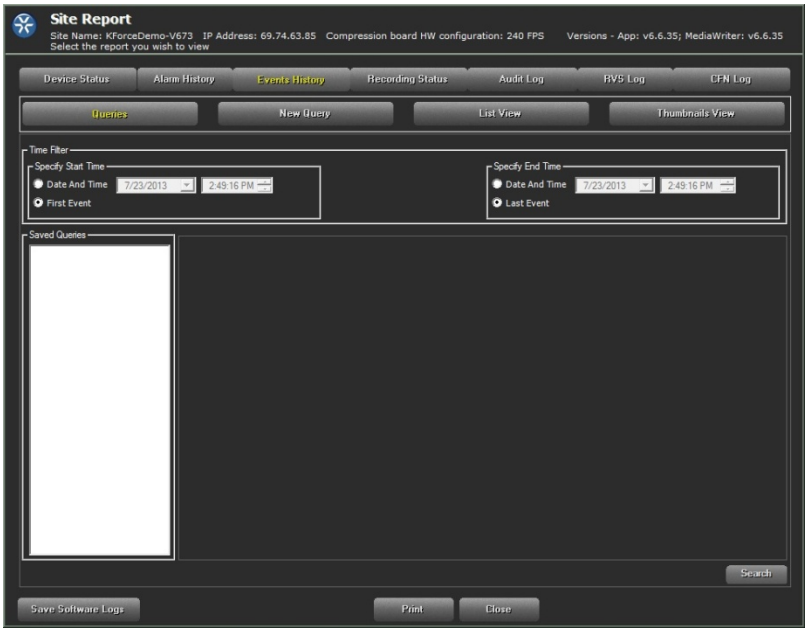
. The following will display.

2. Select a location where to export the snapshot. The snapshot will be saved as a .jpg file.

To perform queries of a specific event:

1. Click

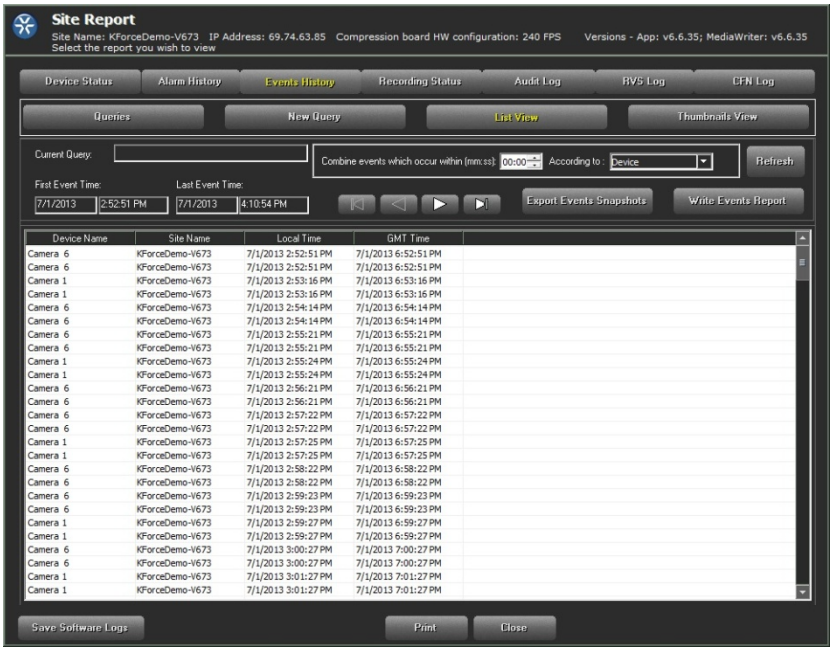
. The following screen displays.



2. The screen displays a list of the current queries configured in the setup. Specify the report content time frame:

   - In the **Specify Start Time** area, either:
     - Click the **Date And Time** radio button and select a start date and start time from the dropdown lists.
     - **-OR-**
     - Click the **First Event** radio button to list the events starting from earliest event in the database.
   - In the **Specify End Time** area, either:
     - Click the **Date And Time** radio button and select an ending date and ending time from the dropdown lists.
     - **-OR-**
     - Click the **Last Event** radio button to list the events up to and including the latest event in the database.

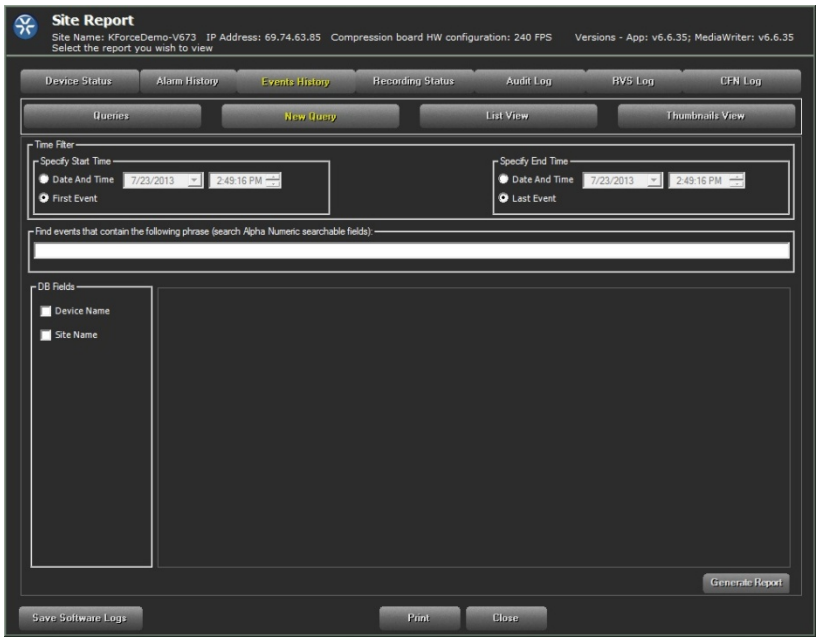
3. Click the **Search** button at the bottom of the screen. A list of events that matches the query will display.



4. Right click an event in the list to **Show Event Information**, **Show Edit History**, **Edit Event** (if enabled), **Start Live** (video) or **Start Quick Playback From**. These all function in the same manner as in the *Events History List*; see instructions above.

5. Click

to create a new query. This is used to create a query not in the current list without going back into setup. The following screen displays.



6. Enter information, either a word or phrase in the field provided or in the DB Fields below. If the field has been defined as searchable in the *Events Database Configuration*, it can be looked for.

7. Click **Generate Report** at the bottom of the screen. A list of events that include the specific query parameters displays.

Chapter 9

Printing/Exporting Frames and Creating Video Clips

This chapter describes how to print out or export selected frames, and to create video files from selected playback segments. This chapter contains the following sections:

- **Printing Frames,** page 304, describes how to print any frame being viewed in the *Main* window (live or playback).
- **Exporting Frames,** page 305, describes how to save a selected single frame or group of consecutive frames being viewed in playback to any network destination as JPEG images.
- **Creating Video Clips,** page 306, describes how to create a video file from a selected playback segment, which can then be viewed using any standard video viewer.

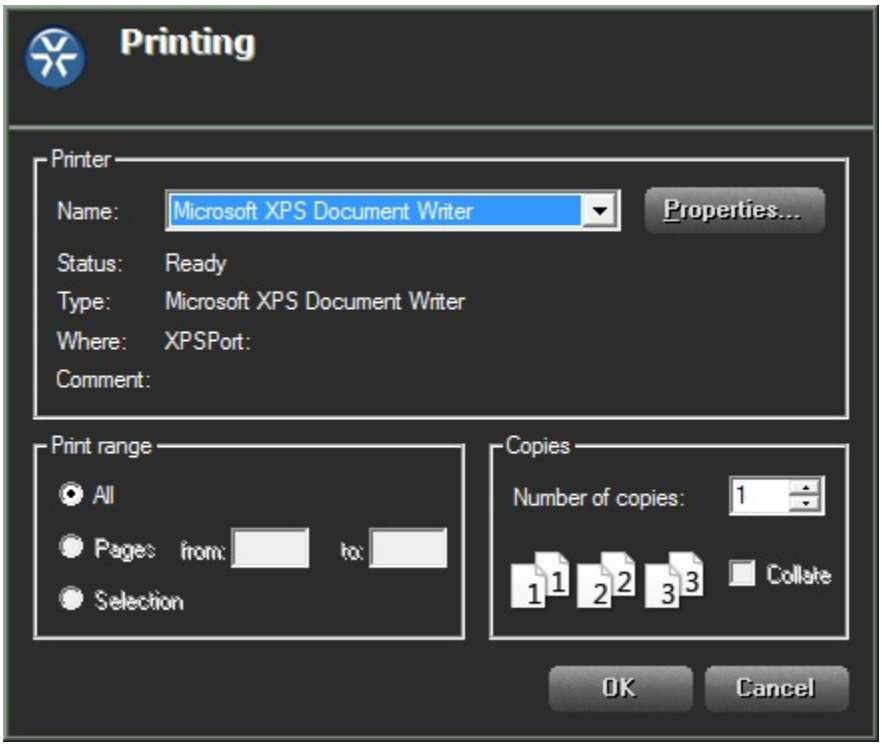
Printing Frames

You can print out the *Main* window **Video Display** area panel, showing the frames currently being displayed in Live or Playback mode.

To print a selected frame:

1. Display live video (as described in *Chapter 4, Viewing and Listening to Live Video/Audio*) and/or play back the required cameras (as described in *Chapter 6, Playing Back Recorded Video/Audio*).
2. If you require a specific frame from a Playback camera, navigate to the required frame using the playback controls and freeze the view on that frame using the **Stop/Pause** button.
3. Click the

button. A standard *Print* window is displayed.



4. Select the printer and settings.
5. Click **OK** to print out the **Video Display** area panel with its current contents.

Exporting Frames

You can save selected single frames or groups of consecutive frames being viewed in playback to any network destination as JPEG images.

To export a selected frame:

1. Play back the required camera, as described in *Chapter 6, Playing Back Recorded Video/Audio*.
2. In the ViconNet *Main* window, navigate to the required frame using the playback controls and freeze the view on that frame using the **Stop/Pause** button.
3. Click the

button. The *Export Pictures* window is displayed.

4. Enter the required destination path on your network, either directly or using the standard browser window that is displayed by clicking the

button.
5. Specify the number of consecutive frames, including the current frame, from which JPEG images should be created (up to 9999). You can enter this either directly in the **Number of Consecutive Pictures** field, or using the **Up/Down** buttons.
6. Enter a base file name in the **File Name** field. (Do not include the file extension. The requested files are automatically named using the base name plus a suffix to denote the applicable frame number.)
7. Click **Save** to save the requested images to the selected location.

NOTE: *If **Cancel** is clicked while the Export is in process, the frames that were already exported up to that point will not be removed from the destination folder.*

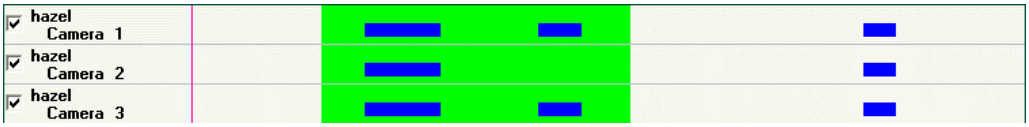
Creating Video Clips

You can create short videos using various video formats from selected playback segments, which can then be viewed using Windows Media Player. The video screen converter utility allows conversion of any video/audio data into a standard/common format, enabling you to view/listen to the data with standard video/audio tools.

To create a video clip:

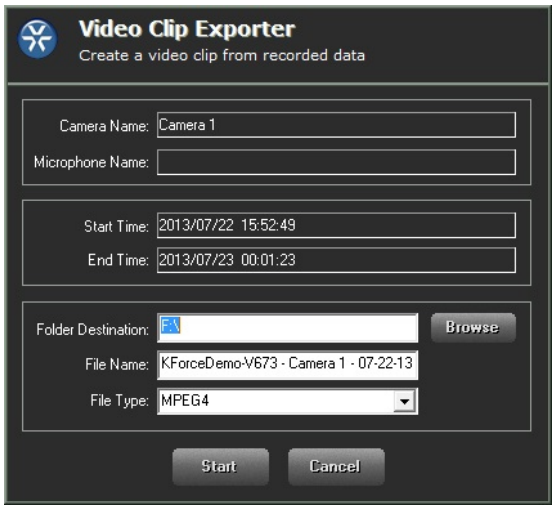
1. In the *Navigator* window, select a **single** camera and/or microphone and the required playback time interval from which the video clip will be created, as described in the workflow steps of *Chapter 6, Playing Back Recorded Video/Audio*. (Only one camera in the **Recorded Device Contents** area should have a checkmark.)
2. In the **Recorded Device Contents** area, mark the recorded segments that you want to create a video clip for by holding down the left mouse button and dragging the mouse pointer over the required segments.

   The selection area is indicated by lime green shading when working with an archive, or blue shading when working with a selection which is not an archive.



3. Click the

button. The *Video Clip Exporter* window is displayed.



   Your camera, microphone and time interval selections are shown in read-only fields.

4. Enter the required destination path on your network, either directly or using the standard browser window that is displayed by clicking the

button. You *cannot* save directly to a CD/DVD.
5. Enter a base file name in the **File Name** field. (Do not include the file extension.)
6. Select the File Type from the dropdown list: AVI, MPEG-4, DivX (requires codec installation) or xVid. *Note: Video recorded in MPEG-4 and H.264 compression can only be exported to MPEG-4 or Xvid. Video created from ViconNet compression or a JPEG recording (i.e., open standard cameras, Vicon and those for other manufacturers) can also create AVI files as well as MPEG-4 or Xvid.*
7. Click **Start** to create the video file at the selected location in the selected format.

Appendix A
Installation

For novice or first-time installers, these steps provide the most thorough and accurate instructions for installing the Workstation hardware.

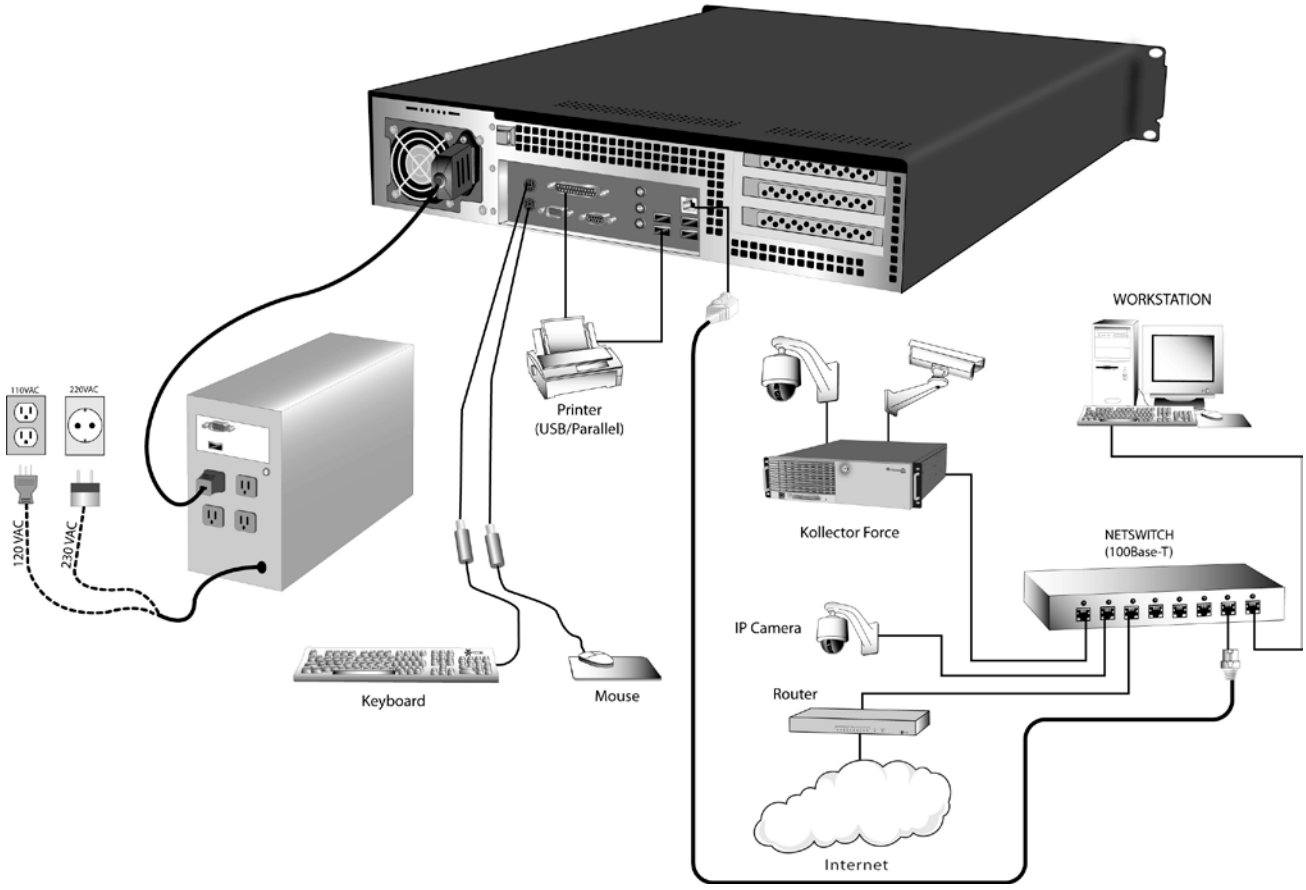
About This Appendix

This appendix details the complete installation of the Workstation. The following sections provide information as follows:

- ***NVR/Workstation Quick Installation*** provides a graphical representation of the connections to the Workstation.
- ***Unpacking the NVR/Workstation*** defines how to remove the unit and accessories from the box.
- ***Required Items for Installation*** defines items needed for installation.
- ***Unit Components*** defines all connections on the front and rear panels and their use.
- ***Mounting*** defines all methods of securing the recorder for permanent use.
- ***Installing the NVR/Workstation*** describes how to install all necessary peripheral devices directly to the Workstation.

NVR/Workstation Quick Installation

The diagram below illustrates the connections to the Workstation, as described in this Appendix. The rear panel on your unit may be different but the connections are similar. This example shows a rack-mount version.



Unpacking the NVR/Workstation

Carefully open the carton. Remove the Accessory Kit and the Workstation from the box and place them on a large, flat working surface.

Required Items for Installation

To properly install the Workstation there must be simple hand tools available such as a screwdriver, wrenches, pliers and wire cutters/strippers. To setup the Workstation for operation, there must be a keyboard and a mouse available to operate the GUI.

Unit Components

This section describes the Workstation unit's front and rear panels.

Front Panel Controls and Connections

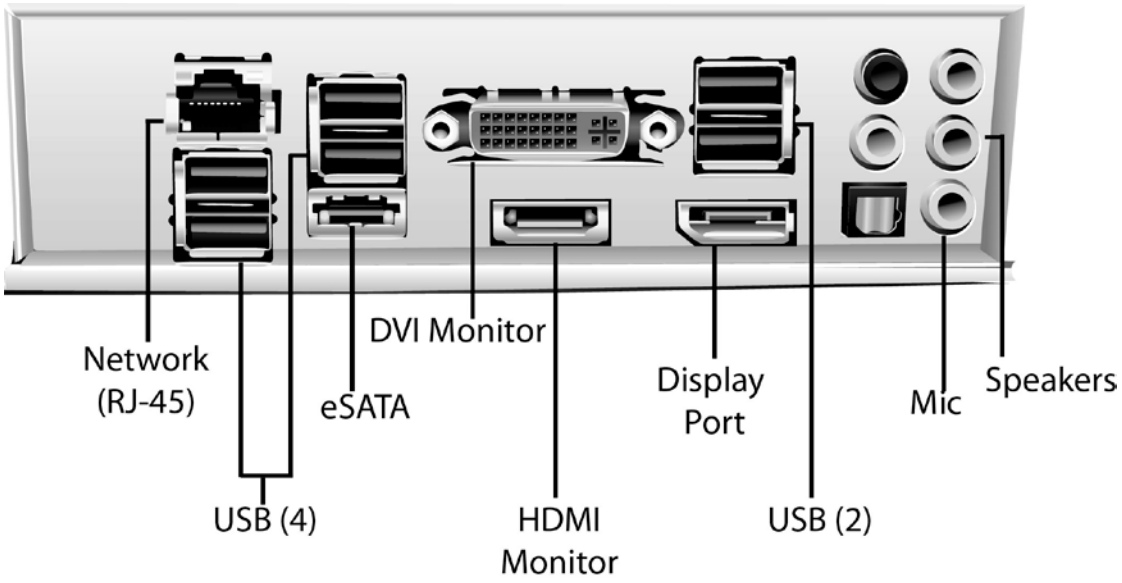
The front panel is supplied with a key lock. The USB and LEDs are visible when the front cover is closed. Use the key to unlock the cover and access other controls.

- **Power Switch:** Used to power on the unit.
- **Power LED Indicator:** Blue LED used to display the power status (ON means recorder on and OFF means recorder off).
- **LED Viewing Holes:** Used to view the status of the LEDs without opening the front cover.
- **Front Cover:** Used to protect the front panel from unauthorized use.
- **Keyed Lock:** Used with the provided key to lock the cover door.
- **LAN LED:** Red LED, blinks when there is network data activity.
- **USB Ports:** Used for optional devices.

Rear Panel Controls and Connections

Note: Ports may vary subject to variations in hardware, but will be similar in function.

Below is a diagram showing the rear panel of the ViconNet NVRs and Workstations (WS).



The Workstation's rear panel contains the following components:

- Network Port: A standard RJ-45 connector used to connect to a LAN/WAN.
- USB Ports (6): Used to connect to USB devices such as a mouse, keyboard, printer, flash drive, etc.
- eSATA Port (1): Used to connect to an external SATA device.
- DVI: Connect to a monitor with a DVI connection.
- HDMI: Connect to a monitor with a HDMI connection.
- Display Port: Used to connect a video source to a display source.
- Speaker Out, Mic In Jacks: Used to connect audio devices and microphones.
- Power Receptacle: Used to connect the provided power cable.
- Display Port: For monitors supporting the Display Port interface.

***NOTE:** Connector locations may vary in different Workstation models.*

Mounting

There are two types of mounting configurations for the NVR/Workstation, either desktop or rack.

Desktop

The desk or table must provide a surface of suitable strength for the Workstation's weight. In addition, there must be area left around the cabinet to provide suitable airflow for cooling. Do not place heavy items on the cover.

Rack

The rack-mount model is designed to be mounted in a standard 19-inch (483 mm) wide vertical rack. Use the provided rack mount ears to connect the Workstation to the rack using hardware provided with the rack.

A rail bracket kit is included to provide extra support for the unit when it is installed into the rack.

There are two adjustable rail brackets (right and left) provided. Adjust the length of the brackets so they can be secured to the front (1 screw) and rear (2 screws) on each side of the rack cage with hardware appropriate for the rack.

Slide the NVR/WS into the rack on the brackets and secure with two screws on each side through the rack-mounting ears.

It is recommended that at least 1 RU of space [1.75 in. (44.45 mm)] be left in between multiple recorders mounted in the same rack for cooling purposes.

> ⚠ ***WARNING**: Failure to leave space for cooling between recorders may result in malfunctioning and possible failure of the Workstation.*

Installing the NVR/Workstation

After the VPK NVR or Workstation is permanently mounted, the connections are made. Refer to Rear Panel diagram as needed.

- **Step 1: Connecting the Hardware**, below
- **Step 2: Connecting the Uninterruptible Power Supply**, page 312

IMPORTANT NOTES:

The connection of external hardware may require simple hand tools. Do not apply power or plug-in the unit to any outlet until instructed to do so.

Disable the AC power to prevent installer injury and damage to the unit.

Before beginning the hardware installation, ensure that the following environmental conditions have been met:

- *The surface on which the NVR/WS hardware is to be placed must be level.*
- *The room or area designated for the NVR/WS hardware installation must be well ventilated.*

Step 1: Connecting the Hardware

This procedure describes the various hardware connections that must be performed in order to operate the system.

To connect the NVR/Workstation hardware:

1. Perform the following connections: (refer to the rear panel on page 309. A mouse and keyboard are required for setup
   - Position the monitor(s) in a permanent fixed location. Connect the monitor to the appropriate connector, DVI or HDMI (a DVI-VGA adapter can be used if required).
   - Insert one side of a standard LAN cable to the Network Port's RJ-45 connector. Insert the other RJ-45 connector into the LAN side of the network.
   - Insert the connector of the provided power supply into the NVR/WS's **power receptacle**. Do not connect the remaining end to a power receptacle until instructed.
   - Connect the monitor(s) to the power source and switch on.

Step 2: Connecting the Uninterruptible Power Supply

To ensure that the Workstation is protected during a power failure and that no important data is lost, it must be connected to an uninterruptible power source (UPS) before use.

To connect the UPS:

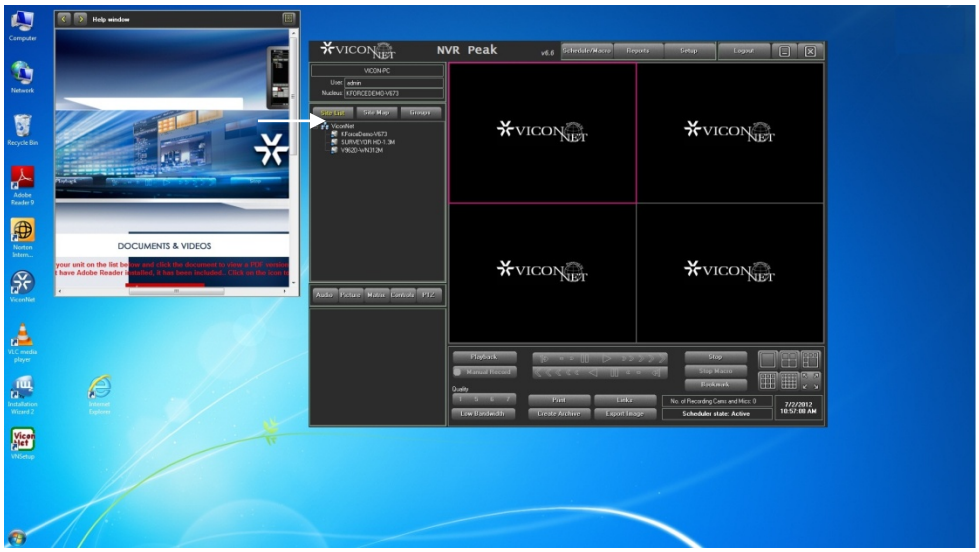
To ensure that the NVR/WS is protected during a power failure and that no important data is lost, it must be connected to an uninterruptible power source (UPS) before use.

- Connect the NVR/WS's power supply to the UPS power receptacle.
- Connect the UPS power cord to the wall outlet.
- Power on the UPS and ensure that it is working properly.
- Power on the NVR/WS.

***NOTE:** Refer to your UPS device's User Manual for a more detailed explanation of how to connect it properly.*

Help

ViconNet provides an integrated Help window. Press the F1 key and a popup window will display; expand the window to find links to all relevant ViconNet documentation and tutorial videos.



Appendix B
Configuring the Personal Firewall

Due to various security risks, Vicon recommends opening only the specific ViconNet application ports, while fully closing and protecting all others. To do this, Microsoft's Personal Firewall feature, which exists in every Windows operating system, is used.

The following table lists all ports per protocol used by the ViconNet application, version 4 and higher. All other ports should be kept closed in order to protect the system from future security breaches. If other ports are open from an earlier version of ViconNet, they will be closed automatically, to match the list of required open ports, as shown below.

Open Ports	Closed Ports
TCP: 4354, 4355, 4356, 4357, 4358.4359	All other Windows ports
UDP: 4354, 4355, 4356, 4357, 4358,4359	All other Windows ports

NOTE: *The Personal Firewall feature is configured by default in Vicon's Embedded revisions higher than D.*

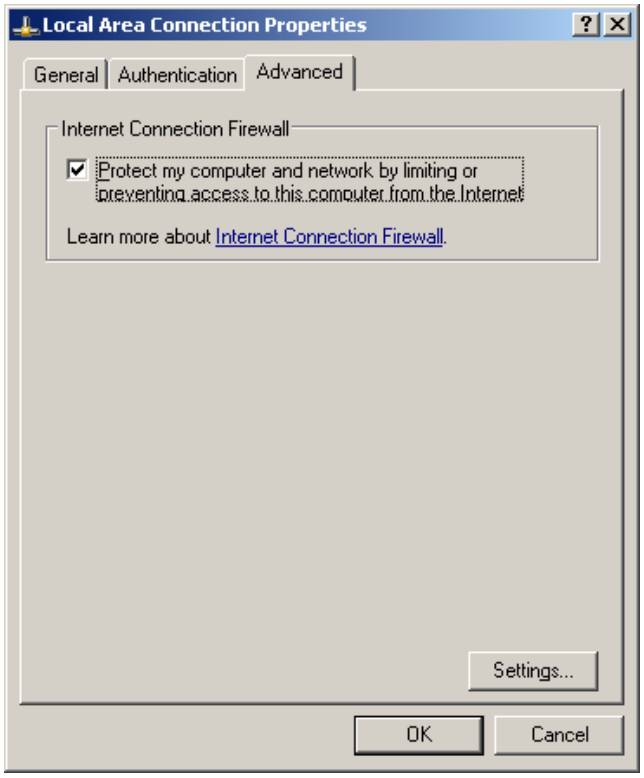
Vicon recommends using the Microsoft Personal Firewall feature, especially in the following cases:

- The NVR/Workstation is connected directly to the Internet.
- The NVR/Workstation is connected indirectly through a network that has at least one computer connected to the Internet.

To configure the firewall:

1. Open Windows Explorer by right-clicking the **Start** button and selecting **Explore**.
2. Double-click **My Computer** in the left pane and then double-click **Control Panel** in the right pane.
3. Click **Network and Internet Connections** and then click **Network Connections**.
4. Double-click **Local Area Connection**. The *Local Area Connection Status* window appears.
5. Click the **Properties** button. The *Local Area Connection Properties* window appears.

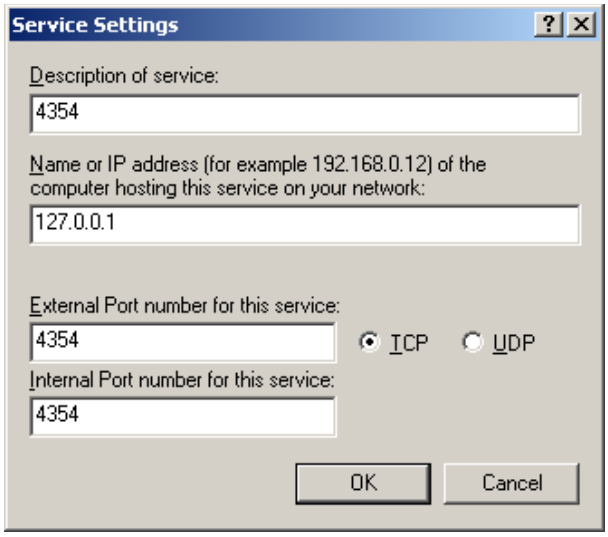
6. Click the **Advanced** tab and select the checkbox in the **Internet Connection Firewall** area.



7. Click the **Settings** button. The *Advanced Settings* window appears.

8. In the **Services** tab, click **Add**. The *Service Settings* window appears.

9. Enter the required information in the appropriate fields, as shown in the example below, and then click **OK**.

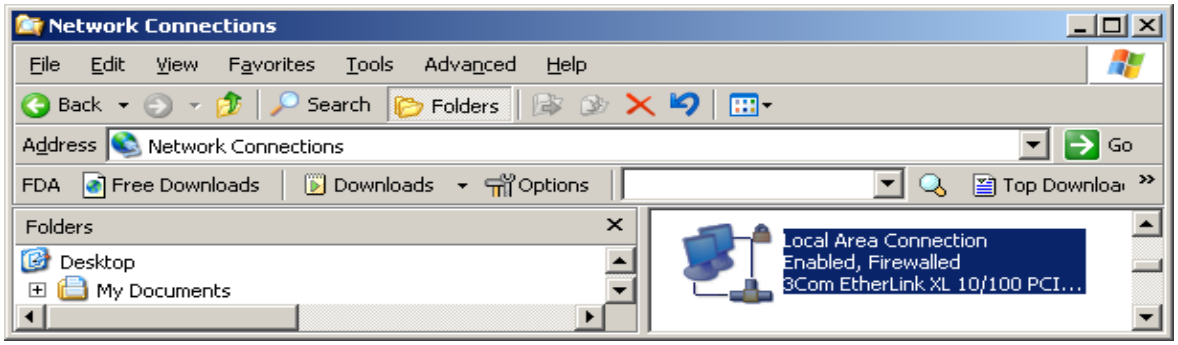


10. Repeat steps 8 and 9 for each port, as follows:

Description of Service	IP Address	External Port	Protocol	Internal Port	IP Address
4354	127.0.0.1	4354	TCP	4354	127.0.0.1
4355	127.0.0.1	4355	TCP	4355	127.0.0.1
4356	127.0.0.1	4356	TCP	4356	127.0.0.1
4357	127.0.0.1	4357	TCP	4357	127.0.0.1
4358	127.0.0.1	4358	TCP	4358	127.0.0.1
4359	127.0.0.1	4359	TCP	4359	127.0.0.1
4354	127.0.0.1	4354	UDP	4354	127.0.0.1
4355	127.0.0.1	4355	UDP	4355	127.0.0.1
4356	127.0.0.1	4356	UDP	4356	127.0.0.1
4357	127.0.0.1	4357	UDP	4357	127.0.0.1
4358	127.0.0.1	4358	UDP	4358	127.0.0.1
4359	127.0.0.1	4359	UDP	4359	127.0.0.1
80(web service)	127.0.0.1	80	HTTP	80	127.0.0.1

11. When you have finished configuring all of the ports, click **OK** twice to close all the windows and then click **Close** to close the *Local Area Connection Status* window.

12. The **Local Area Connection** icon now displays a lock, as shown below.



Disabling the Personal Firewall

In general, Vicon does not recommend disabling the Personal Firewall feature, as this may leave the operating system vulnerable and exposed to various security risks that can attack through the network. Vicon supports only ViconNet application ports and recommends that customers **not** change any of the default

settings. Vicon takes no responsibility if customers change any of the default settings or disable this feature completely.

There are, however, a few circumstances where the Personal Firewall configuration must be either extended or disabled completely to enable additional communication channels between the Workstation and other devices/computers over the network, for example:

- When working in the Windows NT domain network environment
- When using the Microsoft RDP protocol for remote control support (Remote Desktop Connection)

NOTE: *This option can be opened separately without disabling the Personal Firewall completely, as described below.*

- When debugging communication using the Ping protocol

To disable the firewall:

1. Repeat steps 1 through 5 in the *To configure the firewall* procedure on page 315.
2. Click the **Advanced** tab and deselect the checkbox in the **Internet Connection Firewall** area.
3. Click **OK** and then click **Close** to close the *Local Area Connection Status* window.

Appendix C
Configuring the Network

This appendix describes certain aspects of configuring the ViconNet network. It contains the following sections:

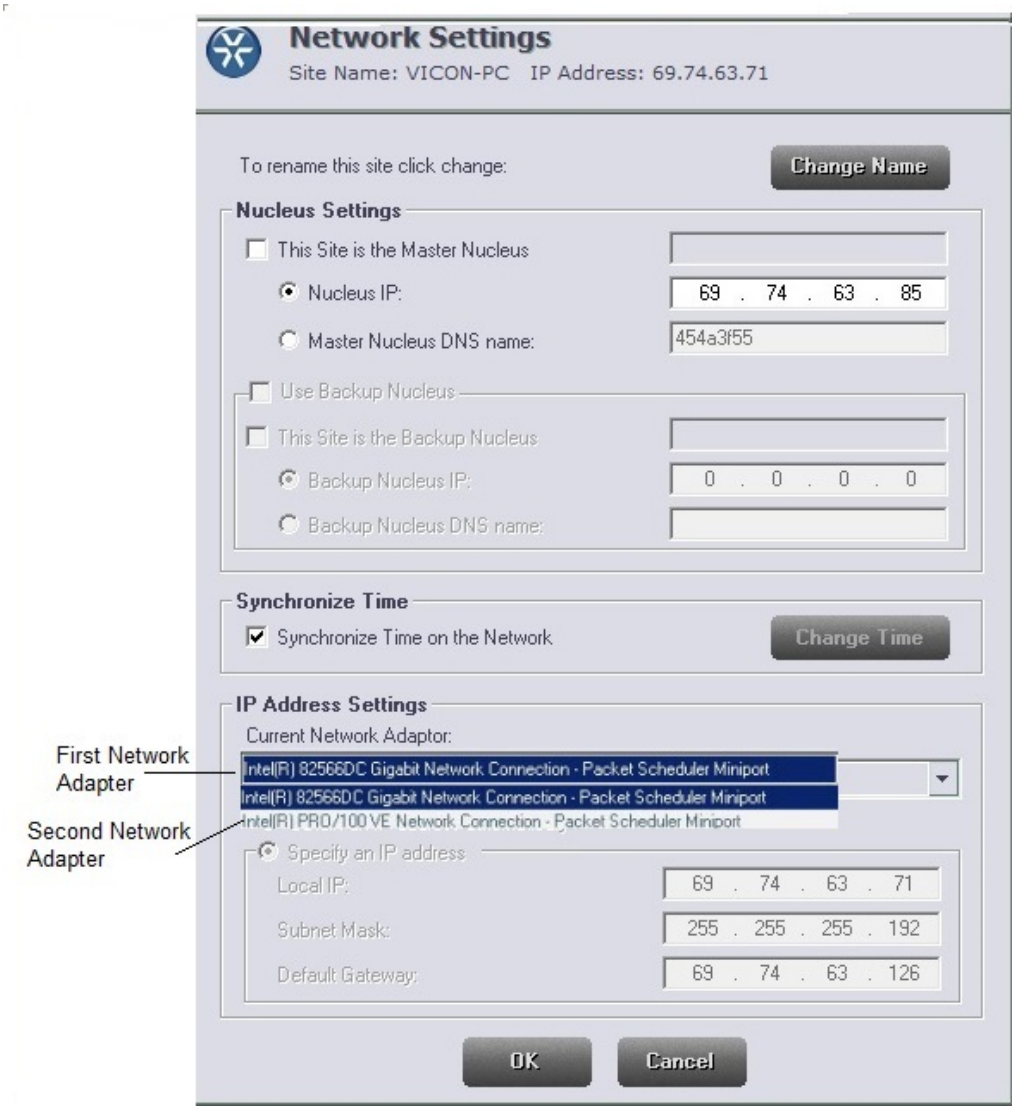
- **Configuring the Network Adapter,** page 320, describes how to configure a network adapter when the Workstation has more than one.
- **Configuring a Network with DHCP,** page 321, describes how ViconNet uses networking, in particular the use of the Dynamic Host Configuration Protocol (DHCP).

Configuring the Network Adapter

When the Workstation has multiple network adapters (cards), meaning multiple IPs, the ViconNet application enables you to select which network adapter to load (the required IP address).

To select a specific network adapter:

1. From the *Network Settings* window (click Setup; from *System Settings* window, select Network Settings and Site Name), select the correct adapter (the required IP) from the **IP Address Settings** list.



2. Click **OK**. The application at the current site requests to be restarted in order to work with the new settings.

NOTE: *If a virtual connection (VPN) is also defined, the virtual adapter IP address is also displayed in the list of options (providing it was previously connected) and the user can choose to work with it.*

Configuring a Network with DHCP

This section describes how ViconNet uses networking, in particular the use of the Dynamic Host Configuration Protocol (DHCP), and assumes some knowledge of networking and assigning IP addresses in a Windows environment. Adherence to this setup will ensure stable ViconNet network connectivity. It is very important to remember that IP addresses **must** be assigned within the ViconNet application. Never assign an IP address, either statically or dynamically, in Windows unless otherwise noted.

If you do not have not enough IP addresses for all your sites, a DHCP server can be used. The DHCP server switches dynamically between IP addresses, so that all sites may have varying IP addresses.

ViconNet manages its network elements within itself. It is **strongly** advised to manually assign IP addresses to each ViconNet networked device, avoiding DHCP. However, if DHCP must be used, the procedures in this section must be followed.

The Nucleus and backup Nucleus should never have their IP addresses assigned by DHCP, as these are ViconNet's core networking components. Furthermore, these IP addresses should never be changed, as all other ViconNet transmitters and Workstations refer to them. (An IT administrator can reserve (set) IP addresses on the DHCP server for the Nucleus and backup Nucleus units.)

To set up a Workstation with DHCP:

NOTE: *A DHCP server **must** be connected to the system prior to and during the DHCP setup phase of the ViconNet software.*

1. Turn the Workstation on by pressing its ON button. The ViconNet *Login* window is displayed, showing the name of the last logged in user.

NOTE: *If you restart your site, you will be logged in automatically to the ViconNet application (if the **Auto Login** setup is active, as described in the Configuring Auto Login section in Chapter 3, Configuring the ViconNet System.*

2. In the **User Name** field, enter your assigned user name. If you are an administrator entering for the first time, enter **admin**.

3. In the **Password** field, enter your assigned password.

> ***NOTE:*** *If you are an administrator entering the application for the first time, you do not need a password. After logging in as **admin**, it is recommended to assign yourself a password, as described in the Defining Users section in Chapter 3, Configuring the ViconNet System.*

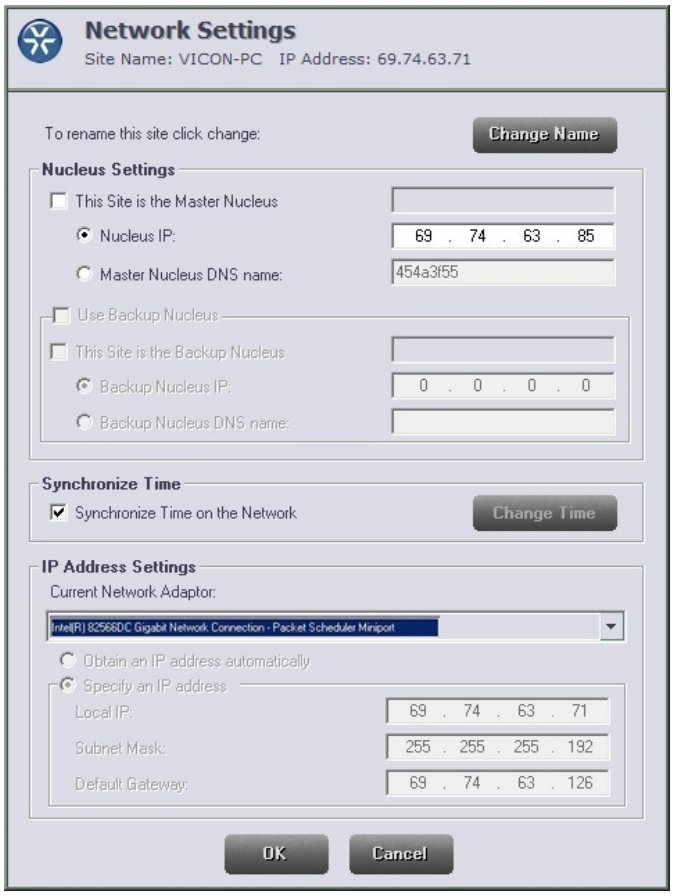
4. Click Login. The ViconNet *Main* window is displayed.

5. To open the *Network Settings* window, follow steps 1 through 3 in *Step 1: Setting the Site IP Addresses*, in the *Creating a New Network* section in *Chapter 3, Configuring the ViconNet System*.

6. In the **IP Address Settings** area, select the **Obtain an IP address automatically** radio button.

7. Click OK. The application will reboot.

8. Repeat steps 1 through 5 to reopen the *Network Settings* window. The completed DHCP setup should look as shown below, with the IP address displayed in the **Network Settings** area.



> ***NOTE:*** *Once ViconNet has an IP address, it will no longer use one assigned by Windows or by the DHCP server (meaning, it will change the windows IP address according to the ViconNet settings for the specific network adaptor). Forcing a new DHCP detection of the Workstation requires first manually setting the IP address, so that it starts with the new manual address. To obtain a new address, repeat the steps in this procedure.*

Appendix D
Setting Up a VPN Service

This appendix presents an example of how to setup a Virtual Private Network (VPN) service (server and client) for the ViconNet application. Configuring the system to work this way is performed by changing the network settings in the ViconNet application setup, as described in the procedure below.

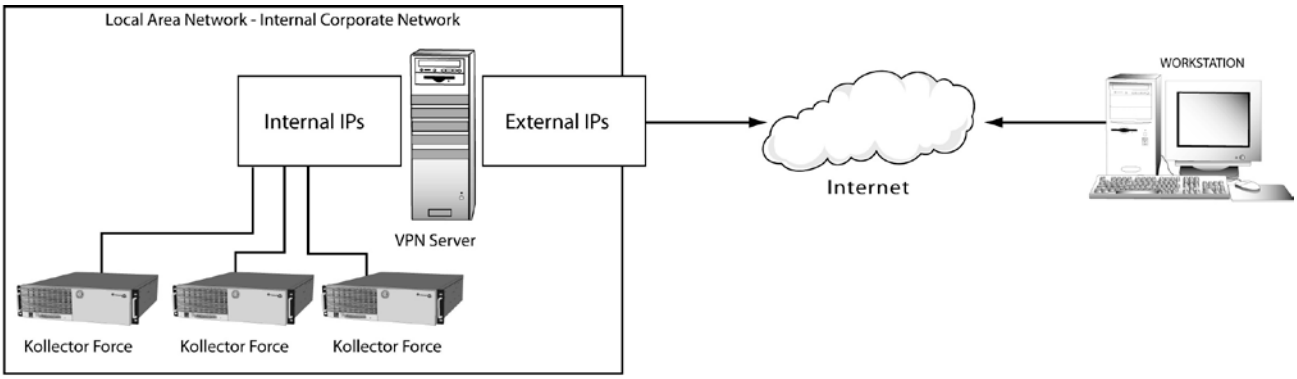
The VPN server in this example is a Windows XP Professional Workstation with two network interface cards (NICs). The VPN server should be assigned to a separate Workstation; the VPN client can be assigned to the ViconNet Workstation or Viewer.

NOTE: *While the example presented here uses Windows XP Professional, other VPN servers can be used as well.*

The VPN setup consists of four steps:

- **Step 1: Setting Up the VPN Server,** page 325
- **Step 2: Setting Up the Dialup Connection,** page 328
- **Step 3: Selecting the VPN Network Adapter,** page 331
- **Step 4: Setting Up the VPN Network,** page 332

In this example, a number of cameras are connected to Kollector Forces under an internal/corporate network for security purposes, as shown below. When users outside the office wish to view the cameras over the Internet, the VPN server in the office serves as a “bridge” between the external world and the internal network. The remote machine creates a VPN tunnel with the VPN server and allows users to connect to the Kollectors Forces as if they were under the same internal network in the office.



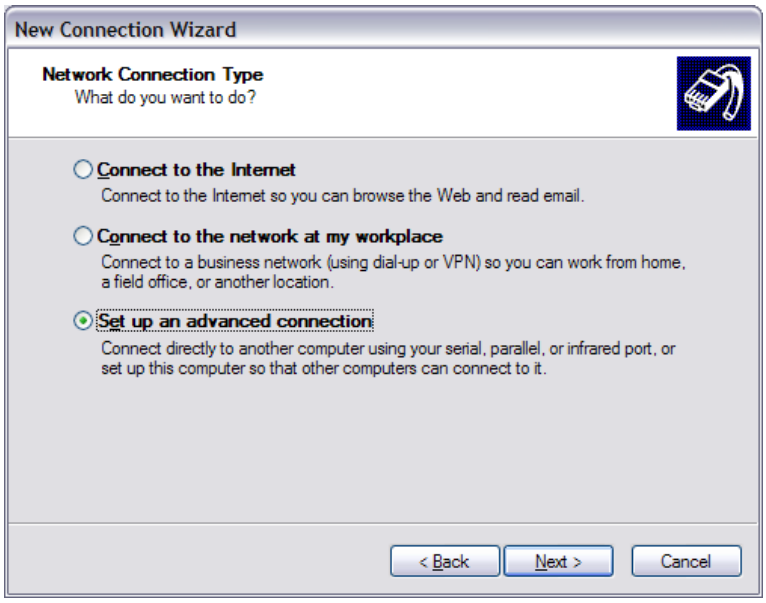
Step 1: Setting Up the VPN Server

To communicate over the Internet with an internal Kollector using an internal IP address, you must first set up a Windows Workstation on your local network to be a VPN server and then set up the IP address you want to assign upon connection. The Workstation should have two NICs (network cards), one for the external world (public IP address) and one for the internal network (internal IP address).

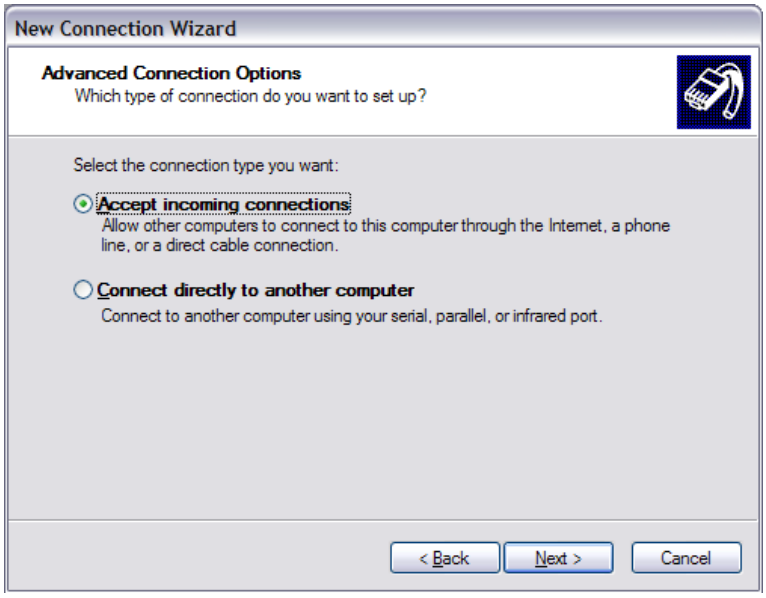
***NOTE:** The Workstation's operating system **must** be Windows 8/Windows 7/Server 2003, 2008, 2012*

To set up the VPN server:

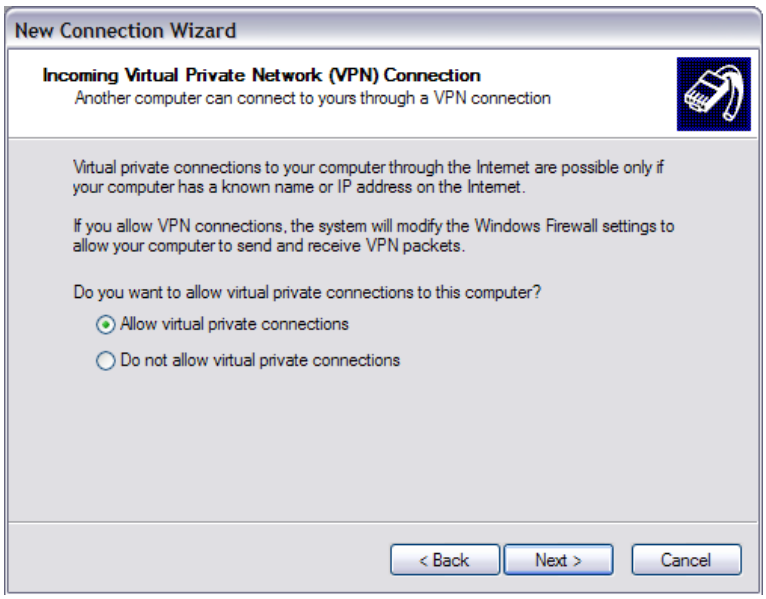
1. Open Windows Explorer by right-clicking the **Start** button and selecting **Explore**.
2. Double-click **My Computer** in the left pane and then double-click **Control Panel** in the right pane.
3. Click **Network and Internet Connections** and then click **Network Connections**.
4. From the *File* menu, select **New Connection**. When the *Welcome to the New Connection Wizard* appears, click Next >.
5. Select the **Set up an advanced connection** radio button and then click Next >.



6. Select the **Accept incoming connections** radio button, and then click Next >.



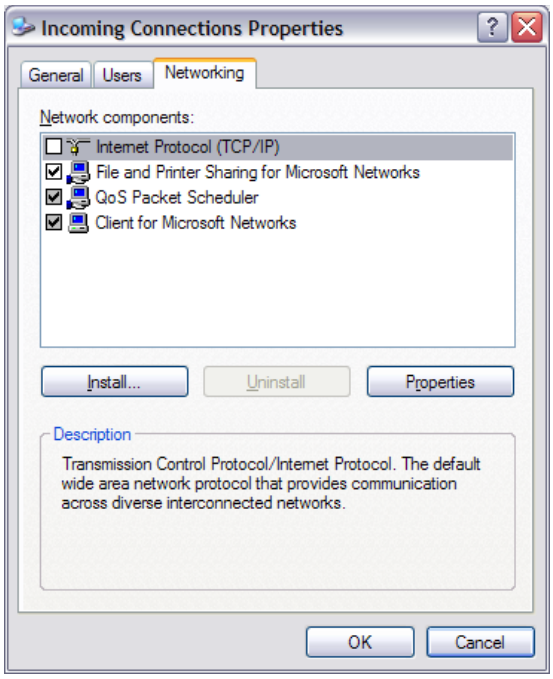
7. In the screen that appears, make sure that no checkboxes have been selected and then click Next >.
8. Select the **Allow virtual private connections** radio button and then click Next >.



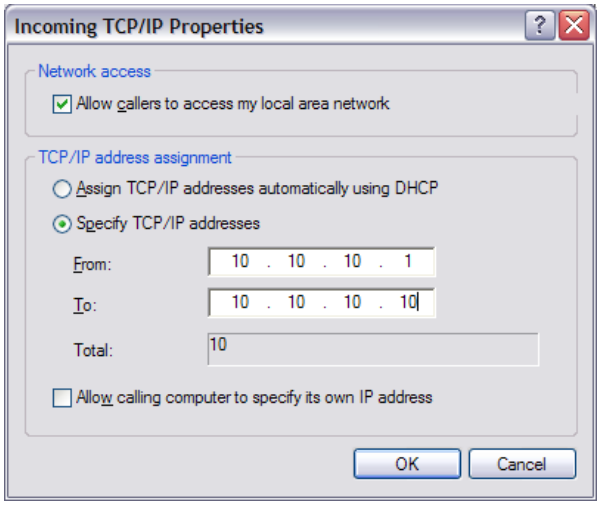
9. Use any existing user name or create a new user name for the new connection and then click Next >.
10. Select the **Internet Protocol (TCP/IP)** checkbox and then click Next >.
11. Click Finish to close the wizard. The VPN server is now installed.

To set up the IP address:

1. Repeat steps 1 through 3 in the previous procedure to open the *Network Connections* window.
2. Right-click **Incoming Connection** and select **Properties** from the shortcut menu. The *Incoming Connection Properties* window is displayed:



3. Select the **Networking** tab, select the **Internet Protocol (TCP/IP)** checkbox and then click Properties. The *Incoming TCP/IP Properties* window is displayed:

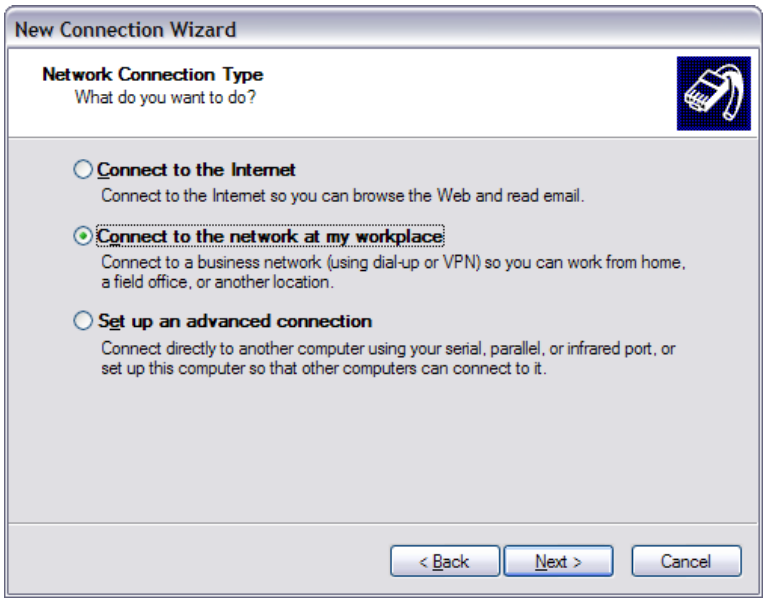


4. Select the **Specify TCP/IP addresses** radio button and in the **From** and **To** fields, enter the range of IP addresses. It is important to ensure that you do not use IP addresses that are already in use in your network and that they are under the same network as the Kollectors/Workstation.
5. When you have finished, click OK. The IP addresses you specified are assigned.

Step 2: Setting Up the Dialup Connection

After you have configured the computer as the VPN server, you must create a VPN dialup connection.

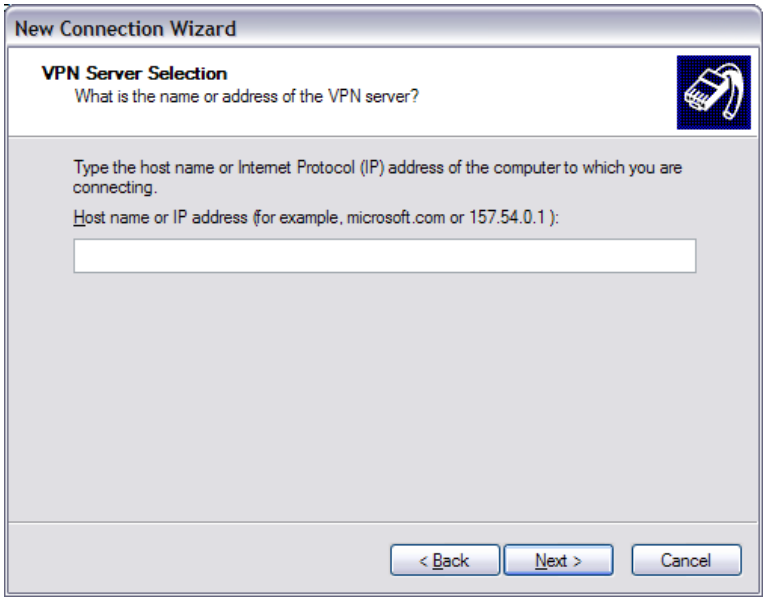
1. On the computer that is running the ViconNet application, create a VPN dialup connection following steps 1 through 4 in the *To set up the VPN server* procedure, page 325.
2. Select the **Connect to the network at my workplace** radio button and then click Next >.



3. Select the **Virtual Private Network connection** radio button and then click Next >.

4. In the **Company Name** field, enter the name of the connection, as you want it to appear in the network and then click Next > .

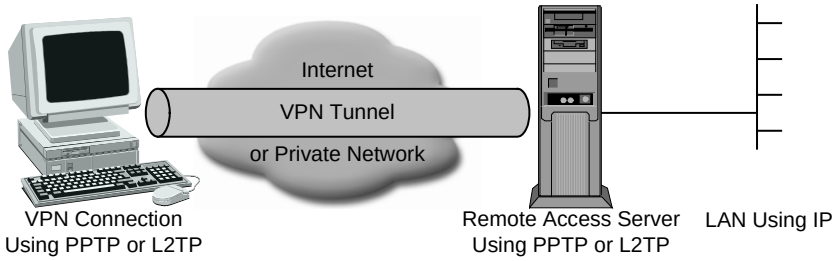
5. Enter the external IP address of the Workstation serving as the VPN server (as described in, page 325) and then click Next > .



6. Select the **My use only** radio button and then click Next >.

7. Click Finish to close the wizard. The VPN client is now installed.

8. Dialup from the Workstation to the VPN server to get an IP address from the IP address pool defined there. Both sides must be connected to the Internet.

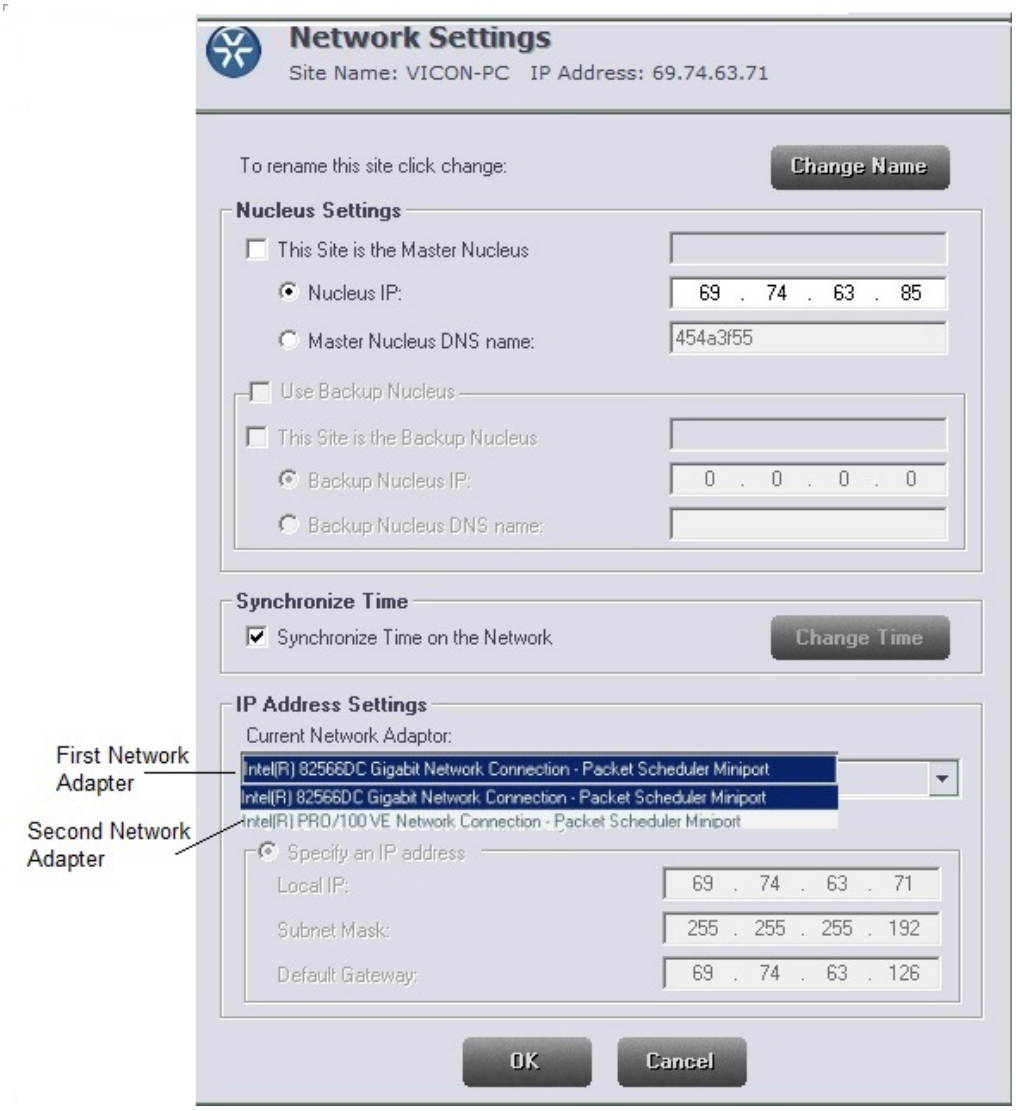


NOTE: *Contact your system administrator if you need help with these steps.*

9. After the VPN connection is established between the Workstation and the VPN server, an additional IP address will be created for use by the ViconNet application.

Step 3: Selecting the VPN Network Adapter

1. From the *Network Settings* window, select the correct adapter (the VPN adapter) from the **IP Address Settings** list [the VPN adapter will appear as a WAN (PPP/SLIP].



2. Deselect the **This Site is the Master Nucleus** checkbox and enter the IP address of the site that handles the Nucleus on your network in the **Nucleus IP** field.

3. Click

. The new settings are saved and the application reboots. On the top-left side of the *Main* window, the site name displayed next to the word **Nucleus:** should be your system's Nucleus.

Step 4: Setting Up the VPN Network

Follow the procedure here to setup the ViconNet application over a VPN network.

To set up the VPN Network:

1. Set one of the Workstations in the internal network to be the master Nucleus, as shown in *Chapter 3, Configuring the ViconNet System*.
2. Make sure to select the VPN adapter in the current network configuration settings selected in **Step 1**,
3. Run the VPN client and enter the username and password you set previously into the appropriate fields, as required.

4. Click to connect to the VPN server and make sure the application is established.
5. Start the ViconNet application on the Workstation and set the Nucleus IP address to that defined in step 1.
6. In the **Site List**, make sure you can see the cameras over the network and that the list is updated.

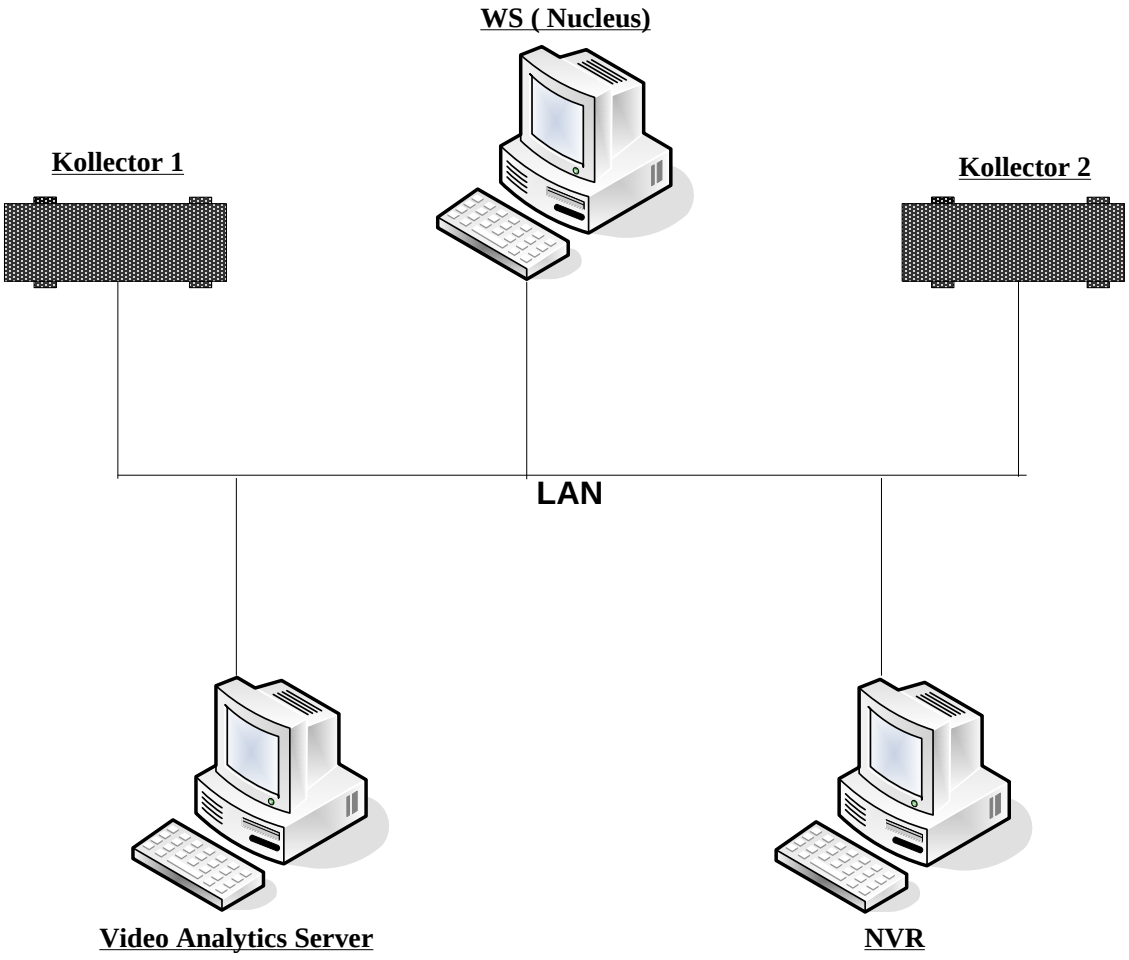
Troubleshooting

If the application suddenly gets disconnected from the Nucleus machine, you should try the following:

- Check that the VPN connection between the Workstation and the VPN server is still connected.
- Check that the IP address you have received from the VPN server is compatible with the list of addresses defined on your local network.

Appendix E
Using Video Analytics

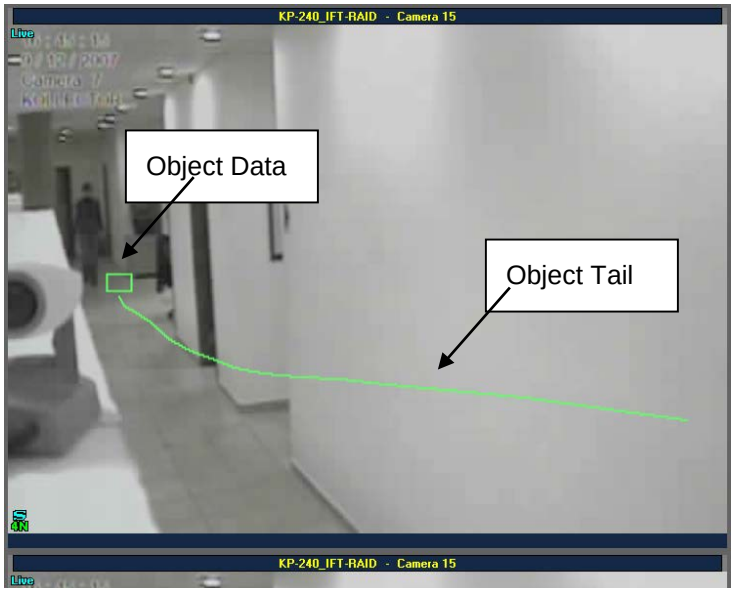
This appendix explains how to use the Vicon IQeye embedded analytics and the integrated ViconNet VI video analytics with the ViconNet system. Vicon IQeye embedded analytics is available on all IQeye cameras using the proper firmware and is completely supported by ViconNet. Refer to the IQeye Analytics manual as needed. Before the VI feature can be used, be sure that the video analytics server is installed on a designated PC and it's configured properly to function in ViconNet environment. The figure below illustrates a typical installation. Refer to the documentation for the video analytic software for details, instruction manual XX180 series.



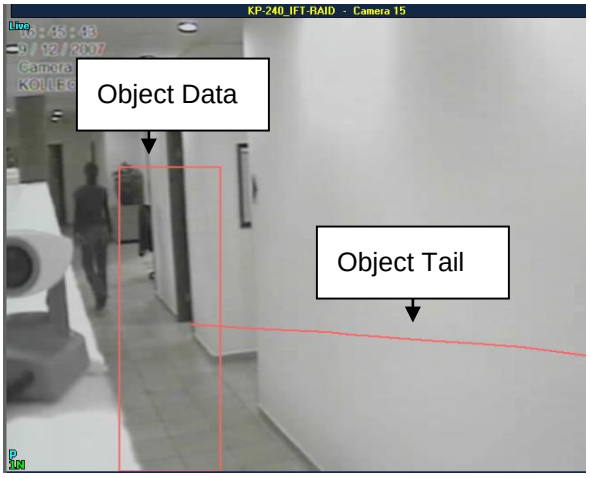
The Video Analytics must be set up on the ViconNet system. Refer to *Chapter 3, Configuring the ViconNet System, Video Analytics Engine* and *Configuring Alarm Events*, for detailed instructions. After the video

analytics is set up, video can be played back from the *Navigator* window. Refer to *Chapter 6, Playing Back Recorder Video/Audio*.

When video with analytic behavior is displayed, the video will display polygons that outline the behavior violation according to the parameters set up in the video analytics. Refer to the documentation for the video analytic software for details. The screen below is an example of live video.



The Object Bounding Box creates an area around the object that is being followed. The Object Tail shows the direction of the motion



Appendix F
Running ViconNet as a Service

Starting at version 5, ViconNet can be run as a standard Windows service.

A Windows service is a process controlled by the operating system and is independent of user login or a graphical user interface. This option is sometime required by IT managers who are used to running Windows service applications on their system.

How does it work?

By default, the ViconNet application runs with its fully featured graphical user interface (GUI) on the computer (Viewer, NVR and Workstation). Choosing to run the application as a Windows service will load ViconNet on the PC, but it will not be running the GUI at all.

The ViconNet application will be controlled by the operating system and any service tool used by the system administrator. Access for configuration and setup of the system operating in service mode can be done remotely from any ViconNet workstation, NVR or Kollector exactly as ViconNet allows today.

Where will this be usually required?

Running as a service is usually required for those systems running behind the scenes, such as an NVR and DVR. Because running as a service disables the GUI, running Viewers and Workstations that usually view and control video in this mode does not make sense.

Advantages

For those who prefer running as a service in general (usually IT personnel), this option is now provided. It also offers the following:

- Service will start automatically after system reboot, even if there is no user to log into Windows (on PCs where login is required)
- Service can be remotely restarted using IT tools, if needed
- PC screen has no GUI

It’s important to remember that ViconNet still works and runs its tasks.

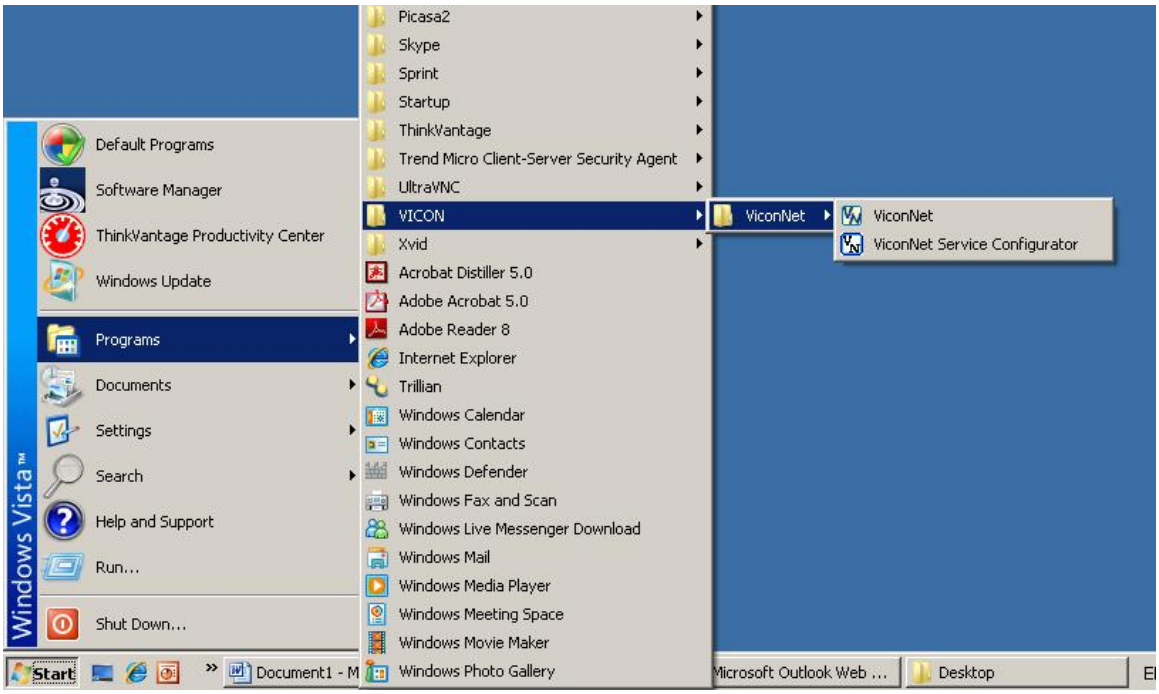
System Default

When installing ViconNet version 6 and above, the service option is automatically added to the computer. By ***default***, ViconNet is installed in non-service mode and will have to be configured to run in service mode if required.

Note: *Exit the ViconNet application before using the ViconNet Service Configurator.*

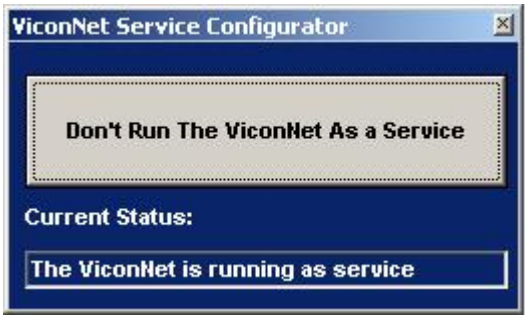
To access the ViconNet Service Configurator, click on the **Start** button and go to **Programs** -> **Vicon** -> **ViconNet**.

Click on **ViconNet Service Configurator** to run



By ***default***, after installation, ViconNet will not be set to run as a service and will show the following:

If you want to have ViconNet run as a service, click the button “Run The ViconNet As a Service”. The Configurator will change:



Clicking the button again will switch back to non-service mode (always showing the latest state).

Once running as a service, you will be able to connect to the system from other ViconNet devices in the same way you would when running the full application.

You can close the ViconNet Service Configurator at any time by clicking the X on the top right corner.

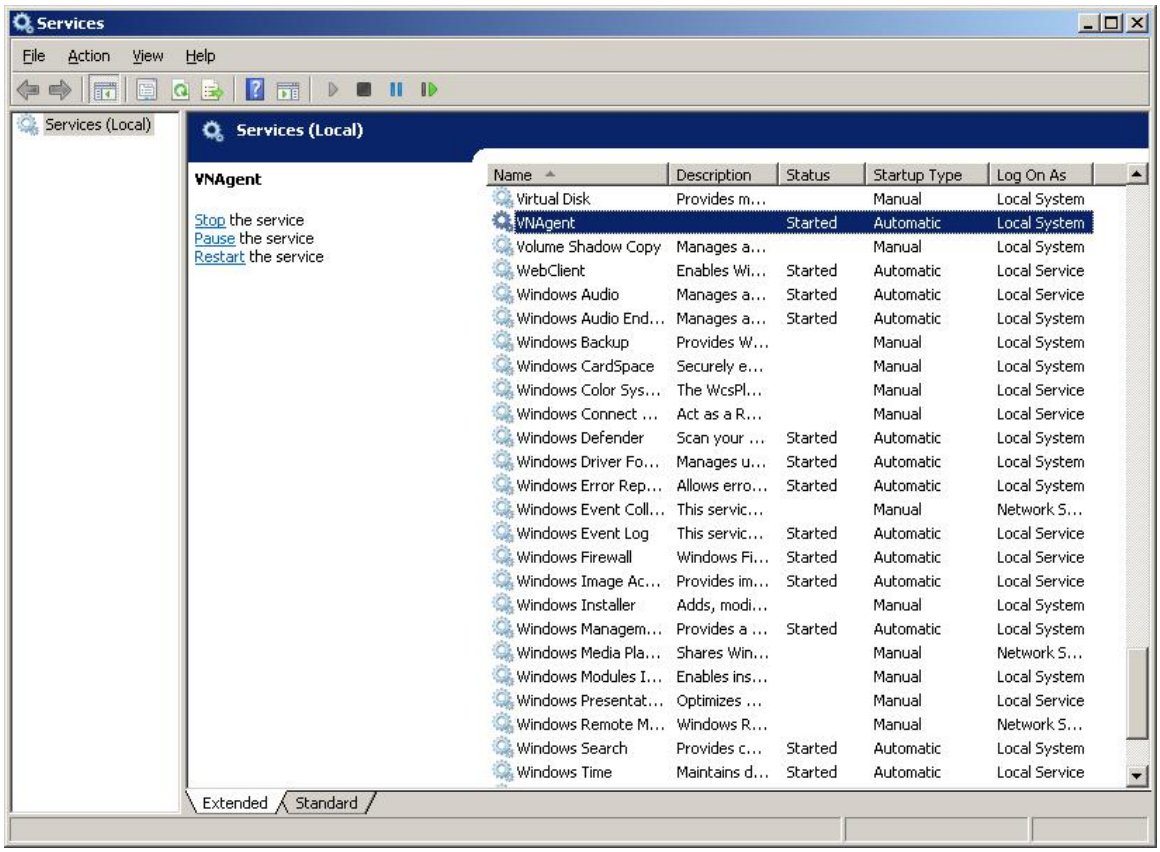
Running ViconNet

If ViconNet is configured to run as a service, any attempt to run it manually (by clicking the ViconNet shortcut) will result with the following error message:

If you need to run ViconNet manually, first make sure to stop the service using the ViconNet Service Configurator as described above and only then running the application manually.

Advanced Notes

The actual service running the ViconNet application is called VNAgent and can be found in the Windows service manager, if needed.



Shipping Instructions

Use the following procedure when returning a unit to the factory:

1. Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

   Vicon Industries Inc.
   135 Fell Court
   Hauppauge, NY 11788
   Phone: 631-952-2288; Toll-Free: 1-800-645-9116; Fax: 631-951-2288

   For service or returns from countries in Europe, contact:
   Vicon Industries (U.K.) Ltd
   Unit 4, Nelson Industrial Park
   Hedge End, Southampton
   SO30 2JH, United Kingdom
   Phone: +44 (0)1489/566300; Fax: +44 (0)1489/566322

2. Attach a sheet of paper to the unit with the following information:

   a. Name and address of the company returning the unit
   b. Name of the Vicon employee who issued the R.A.
   c. R. A. number
   d. Brief description of the installation
   e. Complete description of the problem and circumstances under which it occurs
   f. Unit's original date of purchase, if still under warranty

3. Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.
4. Mark the R.A. number on the outside of the carton on the shipping label.

Vicon Standard Equipment Warranty

Vicon Industries Inc. (the "Company") warrants your equipment to be free from defects in material and workmanship under Normal Use from the date of original retail purchase for a period of three years, with the following exceptions:

1. All IQEYE Cameras: Two years if purchased before 1/1/2011.
2. Alliance-mini (IQD3xx), Alliance-mx (IQMxxx) and 3 Series (IQ03xx): Five years if purchased between 1/2/2011 – 12/31/2014.
3. Alliance-pro (IQA3xx): Five years if purchased between 3/2/2012 – 12/31/2014. Three years if the motorized lens (IQA3xx-A3) option.
4. Uninterruptible Power Supplies: Two years from date of original retail purchase.
5. VDR-700 Recorder Series: One year from date of original retail purchase.
6. V5616MUX: One year from date of original retail purchase.
7. Arecont Cameras: One year from date of original retail purchase.
8. FMC series fiber-optic media converters and associated accessories: Lifetime warranty.
9. For PTZ cameras, "Normal Use" excludes prolonged use of lens and pan-and-tilt motors, gear heads, and gears due to continuous use of "autopan" or "tour" modes of operation. Such continuous operation is outside the scope of this warranty.
10. Any product sold as "special" or not listed in Vicon's commercial price list: One year from date of original retail purchase.

NOTE:

- If the product is to be used outdoors or in dusty, humid, or other hostile environments, it must be suitably protected.
- Camera products must be protected, whether in use or not, from exposure to direct sunlight or halogen light as the light may damage the camera image sensor. This applies to both indoor and outdoor use of the cameras.
- For camera products supplied without a lens, extreme care should be used when mounting a lens on these products. Damage to the product due to incorrectly mounted lenses will invalidate this limited hardware warranty.
- Failure to comply with any of the aforementioned requirements will invalidate this Limited Hardware Warranty.

Date of retail purchase is the date original end-user takes possession of the equipment, or, at the sole discretion of the Company, the date the equipment first becomes operational by the original end-user.

The sole remedy under this Warranty is that defective equipment be repaired or (at the Company's option) replaced, at Company repair centers, provided the equipment has been authorized for return by the Company, and the return shipment is prepaid in accordance with policy. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer. When a product or part is exchanged the replacement hardware becomes the property of the original purchaser and all hardware or part thereof that is replaced shall become the property of Vicon.

The warranty does not apply (a) to faulty and improper installation, maintenance, service, repair and/or alteration in any way that is not contemplated in the documentation for the product or carried out with Vicon consent in writing, operation adjustments covered in the operating manual for the product or normal maintenance, (b) to cosmetic damages, (c) if the product is modified or tampered with, (d) if the product is damaged by acts of God, misuse, abuse, negligence, accident, normal wear and tear and deterioration, improper environmental conditions (including, but not limited to, electrical surges, water damage, chemical exposure, an/or heat/cold exposure) or lack of responsible care, (e) if the product has had the model or serial number altered, defaced or removed, (f) to consumables (such as storage media or batteries) (g) to products that have been purchased "as is" and Vicon the seller or the liquidator expressly disclaim their warranty obligation pertaining to the product, (h) to any non-Vicon hardware product or any software (irrespective of packaged or sold with Vicon hardware product) and Vicon products purchased from an unauthorized distributor/reseller, (i) to damage that occurs in shipment or (j) to damages by any other causes not related to defective design, workmanship and/or materials.

The warranty for the products shall run from Vicon to End User customers only (including product purchased through authorized partners and resellers). Vicon is not obligated under any circumstances to honor warranties on product(s) purchases from internet auction sites including eBay, uBid or from any other unauthorized resellers. Except as explicitly provided herein, Vicon disclaims all other warranties, including the implied warranties of fitness for a particular purpose and merchantability.

Software supplied either separately or in hardware is furnished on an "As Is" basis. Vicon does not warrant that such software shall be error (bug) free. Software support via telephone, if provided at no cost, may be discontinued at any time without notice at Vicon's sole discretion. Vicon reserves the right to make changes to its software in any of its products at any time and without notice.

The Warranty and remedies provided above are exclusive and in lieu of all other express or implied warranties including, but not limited to, the implied warranties of merchantability or fitness for a particular purpose. Certain jurisdictions do not allow the exclusion of implied warranties. If laws under such jurisdictions apply, then all express and implied warranties are limited to the warranty period identified above. Unless provided herein, any

statements or representations made by any other person or firm are void. Except as provided in this written warranty and to the extent permitted by law, neither Vicon nor any affiliated shall be liable for any loss, (including loss of data and information), inconvenience, or damage, including, but not limited to, direct, special, incidental or consequential damages, resulting from the use or inability to use the Vicon product, whether resulting from breach of warranty or any other legal theory. Notwithstanding the foregoing, Vicon total liability for all claims under this warranty shall not exceed the price paid for the product. These limitations on potential liabilities have been an essential condition in setting the product.

No one is authorized to assume any liability on behalf of the Company, or impose any obligations on it in connection with the sale of any Goods, other than that which is specified above. In no event will the Company be liable for indirect, special, incidental, consequential, or other damages, whether arising from interrupted equipment operation, loss of data, replacement of equipment or software, costs or repairs undertaken by the Purchaser, or other causes.

This warranty applies to all sales made by the Company or its dealers and shall be governed by the laws of New York State without regard to its conflict of laws principles. This Warranty shall be enforceable against the Company only in the courts located in the State of New York.

The form of this Warranty is effective February 1, 2015.

THE TERMS OF THIS WARRANTY APPLY ONLY TO SALES MADE WHILE THIS WARRANTY IS IN EFFECT. THIS WARRANTY SHALL BE OF NO EFFECT IF AT THE TIME OF SALE A DIFFERENT WARRANTY IS POSTED ON THE COMPANY'S WEBSITE, *WWW.VICON-SECURITY.COM*. IN THAT EVENT, THE TERMS OF THE POSTED WARRANTY SHALL APPLY EXCLUSIVELY.

Vicon Industries Inc.

For office locations, visit the website:

www.vicon-security.com