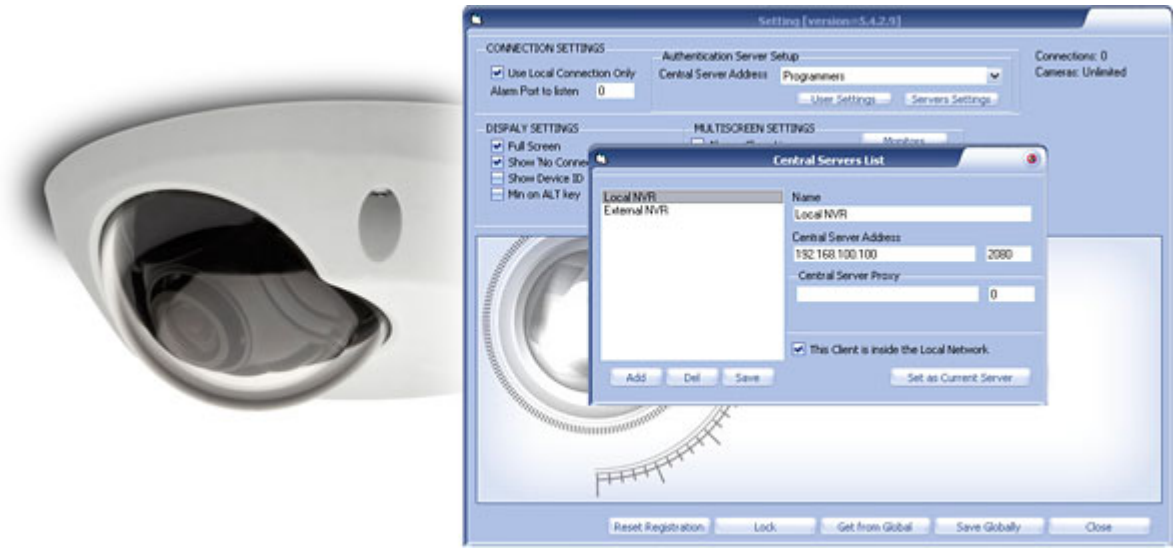
DETEXI Basic Configuration

SETUP A FUNCTIONING DETEXI NVR / CLIENT

It is important to know how to properly setup the DETEXI software components and what functionality could be achieved.

DETEXI Basic Configuration



What is DETEXI?

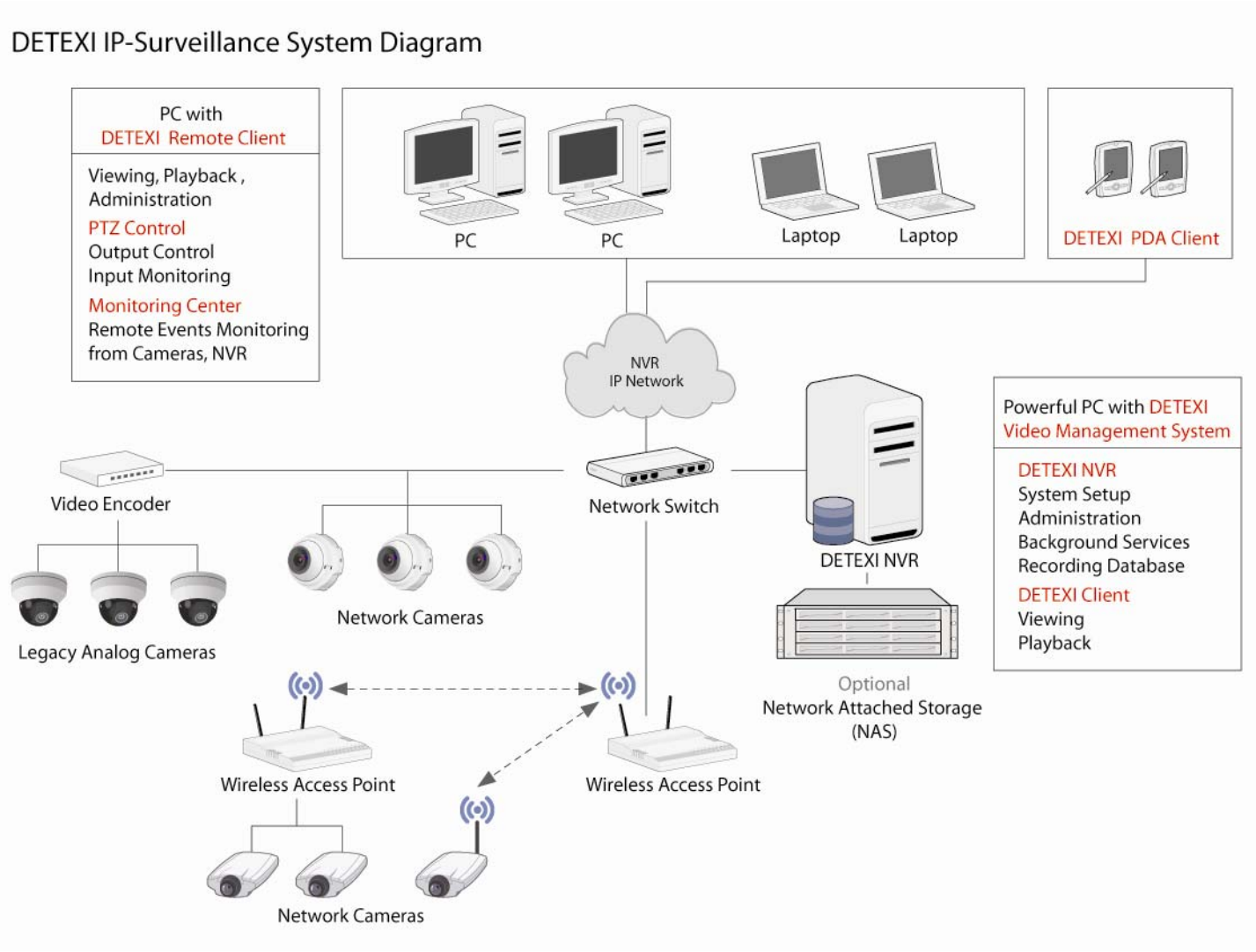
The DETEXI Network Video Management system gives users the ability to monitor and record video and/or audio over an IP (Internet Protocol based) computer network such as a local area network (LAN) or the Internet. In a simple IP-surveillance system, this involves the use of a network camera (or an analog camera with a video encoder), a network switch, and PC with DETEXI software for viewing, managing and storing video.

In between the fully analog and the fully digital systems, DETEXI software allows solutions which are **partly digital**. These solutions include a number of digital components but do not represent fully digital systems. A video encoders (also called a video servers) make it possible to move toward a network video system without having to discard existing analog equipment.

DETEXI is an advanced client/server-based software that provides support for multiple, simultaneous users and thousands of cameras. The hardware requirements of the DETEXI NVR are not complex — use standard components found in the IT industry.

DETEXI IP-Surveillance installation can be as simple or as sophisticated as your needs require. Cameras and licenses can be added one by one and the system hardware can be expanded to meet increased performance requirements.

DETEXI IP-Surveillance System Diagram



DETEXI software supports a wide range of network cameras from the world's leading manufacturers and continues to expand the list. Video Motion Detection (VMD) residing in the DETEXI software **provides VMD functionality** to network cameras or video encoders that do not originally embed this feature. This alleviates the workload for any recording devices in the system and makes **event-driven surveillance** possible.

DETEXI is an open platform system and has another advantage in that it can be more easily integrated with access control devices, building management systems, industrial control systems and audio. This allows users to manage video and other building controls through a single program and interface.

The DETEXI Network Video Management System has the ability to complete different kind of actions at many different stages of video recording and viewing. This allows for **immediate response** to things that occur — turn on/off lights, start recording alarm video, close security gates, and even inform personnel via phone or other means. These and other capabilities of the DETEXI system make it more than just a video recording tool. Software motion detection, alarm detection, other events, and the actions that can be taken on these alarms and events make the DETEXI an **Intelligent** Network Video Management System.

Setup a Functioning DETEXI NVR / Client

After installing the DETEXI software, it **must be configured** for your cameras and video encoders. There are minimum DETEXI NVR and Remote DETEXI Client configurations necessary to have a functioning DETEXI NVR with live video. The recording, motion detection, and alarms also should be setup. It is important to know how to properly setup the DETEXI software components and what functionality could be achieved. The Basic Configuration section will guide you through the necessary steps.

DETEXI Basic Configuration Steps

	DETEXI NVR	Local DETEXI Client	Remote DETEXI Client	DETEXI Archive Viewer
General Settings	Start/Stop the NVR Setup Recording Storage Define Camera/Connection Test Camera/Connection Define User Information NVR Services Services Health Monitoring			
		Test — Camera Connection Driver Selection PTZ functioning		
			Setup NVR for the Client Setup Authentication	
Recording Settings	24/7 Recording Schedule Scheduled Recording with Motion Detection Multiple Recording Schedules Motion Only recording Setup Alarm on Motion Adjust Motion Settings Check Recording Status			
			View/Monitor Cameras, Alarm Notifications	
		Access/View/Export Recorded Video	Access/View/Export Recorded Video	Access/View/Export Recorded Video

- ✓ Refer to the DETEXI Software Components to learn the difference between **Local** and **Remote DETEXI Client**.
- ✓ Although the DETEXI Client **Archive Tool** and the DETEXI **Archive Viewer** have very similar capabilities, they access the archives in very different ways allowing for both tools to excel in different environments and for different needs. There are a few unique features in each as well.

DETEXI Software Components

When the DETEXI software is installed, several applications are placed on the server PC, each with their own responsibility.

NVR Control Center

DETEXI NVR Control Center —

The DETEXI NVR handles all communication with the cameras/video servers that are included in the system. It also handles recordings, events and user management in the system. The underlying structure of the DETEXI NVR consists of individual services, registered as Windows Services which allow to execute and organize all the tasks it is responsible for. DETEXI NVR Control Center is the DETEXI NVR GUI (Graphical User Interface) and serves as a tool for communication between administrator and the DETEXI NVR. Once the DETEXI NVR has been installed on your computer, the NVR Control Center allows you to start/stop services as well as modify settings if needed. Some of the services are configured as automatic by default. If DETEXI NVR and any camera in the system are separated by a proxy server, you may need to enter appropriate proxy settings.

DETEXI

Local DETEXI Client —

Installed automatically along with the DETEXI NVR is a useful system administrator tool for testing user configuration and basic functionality. It only connects to the local DETEXI NVR, does not require the NVR services to be running, and does **not require authentication** *(authentication features are disabled)*.

Remote DETEXI Client

Remote DETEXI Client —

Installed stand-alone on any PC, or/and included automatically with the DETEXI NVR installation enables connection to any **authorized** DETEXI NVR available anywhere on the Internet or corporate network for remote viewing and control. Requires NVR settings configuration and authentication.

Archive Viewer

DETEXI Archive Viewer —

Included automatically with the DETEXI NVR and Remote DETEXI Client installation connects local and/or remote users to the DETEXI NVR recorded video (NVR archive) for video retrieval and export. For remote users permission/authentication is required.

DETEXI NVR General Settings

Launch DETEXI NVR Control Center

When the DETEXI software is installed, several applications are placed on the server PC, each with their own responsibility.

NVR Control Center

DETEXI NVR Control Center —

Open DETEXI NVR Control Center from the **Start — All Programs** or click the program icon on your desktop.

Default Opening Location —

When the NVR Control Center is launched **General — Global Settings** is the default opening location (Fig 1). Some settings have default values at first, but before the NVR is used for recording, these settings will need to be tailored to the specific application needs based on recording specifications and resources available.

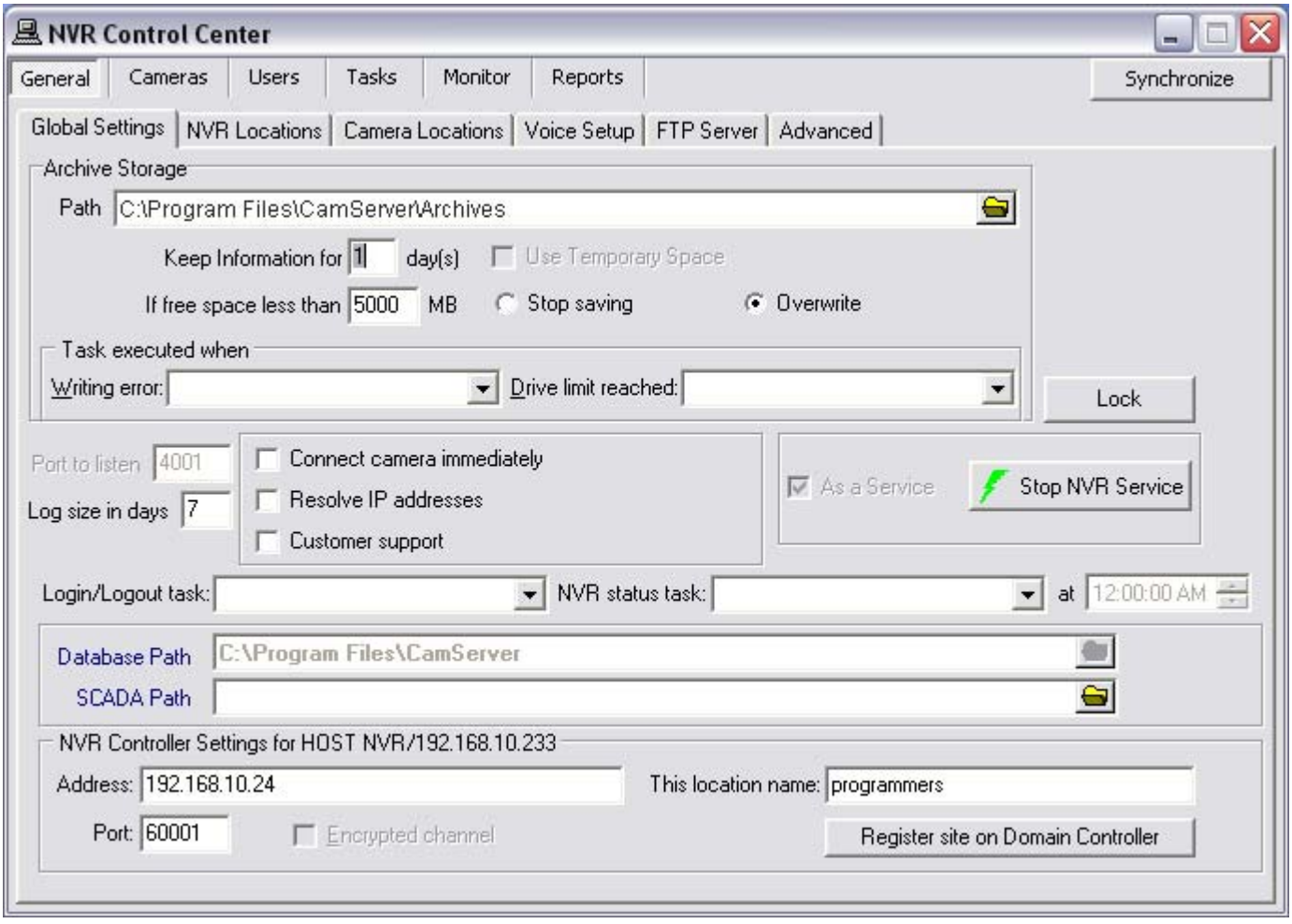


Fig 1. NVR Control Center — General — Global Settings

Start/Stop the NVR

When the NVR Control Center is launched **General — Global Settings** (Fig 2) is the default opening location. Some NVR settings, including the **Archive Storage — Path**, cannot be set or changed while the NVR is running *(fields are grey and not accessible)*. If the NVR is running, you **must** first stop the services with the **Start/Stop NVR Service** toggle button on the right. When the settings are done start NVR again.

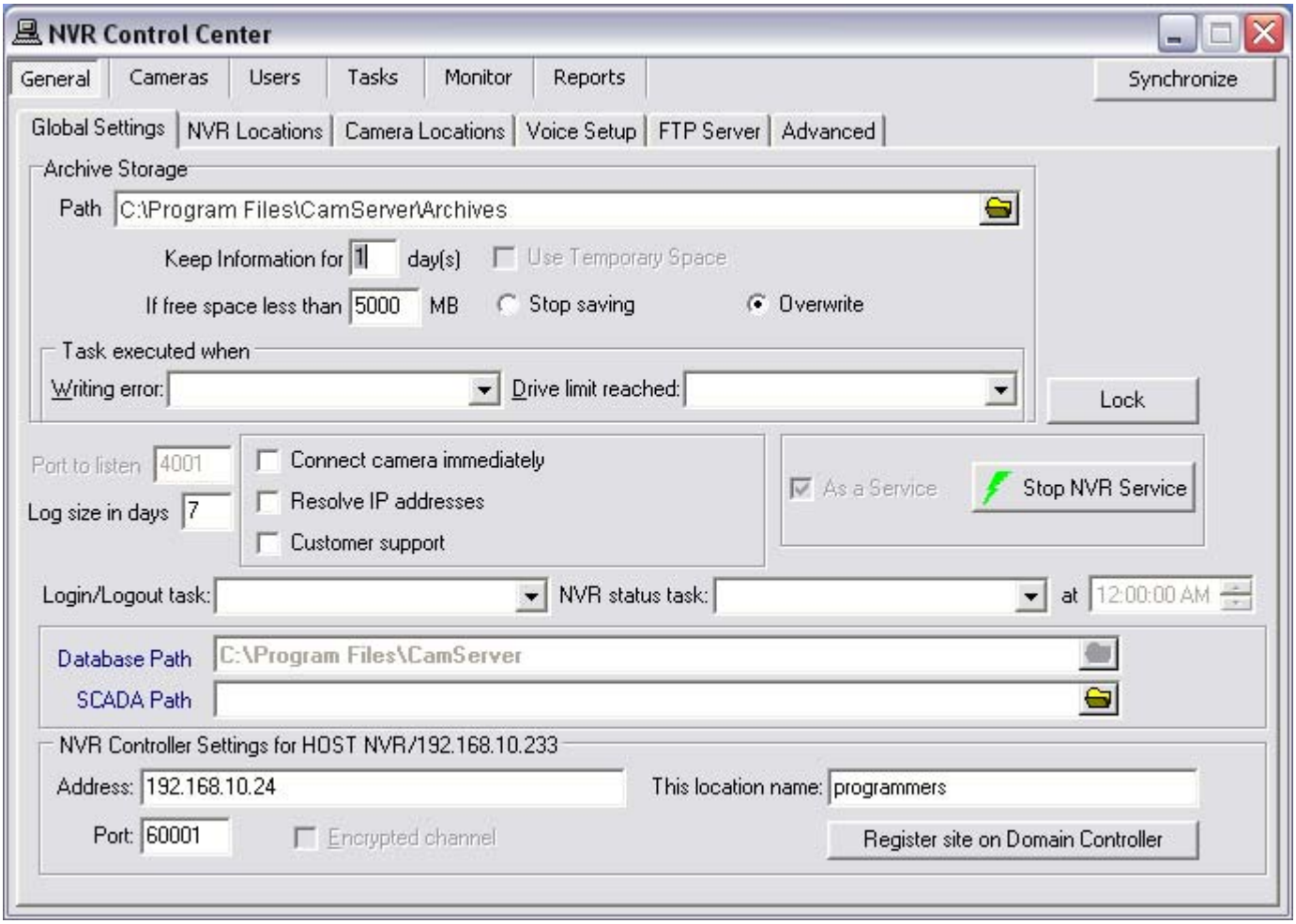


Fig 2. NVR Control Center — General — Global Settings
(Start/Stop NVR Service.)

- ✓ The underlying structure of the DETEXI NVR software consists of many individual services, which allow execute and organize all the tasks it is responsible for. The services are registered with Windows as Services; some are configured as automatic by default.
- ✓ All services are visible and configurable in the **NVR Control Center — Monitor**.

Setup Recording Storage (Archive)

Specify where to store the images. Recordings **will be deleted** when the reserved hard disc space is full, or when the recording is older than the amount of days specified in Keep Information for [ ] day(s). To prevent the hard drive from becoming full If free space is less than and Stop Saving/Overwrite should be set.

1. In the **NVR Control Center** switch to the **General — Global Settings** (Fig 3).
2. Under the **Archive Storage — Path** specify local or network location for the NVR recording storage by clicking on the browse button. The directory must be empty when chosen.
3. Specify **Keep Information for [ ] day(s)**.
4. Set **If free space is less than** with a **Stop saving** or **Overwrite** option chosen.
5. Check **Use Temporary Space** checkbox if the archive is stored on a network device for more effective recording.

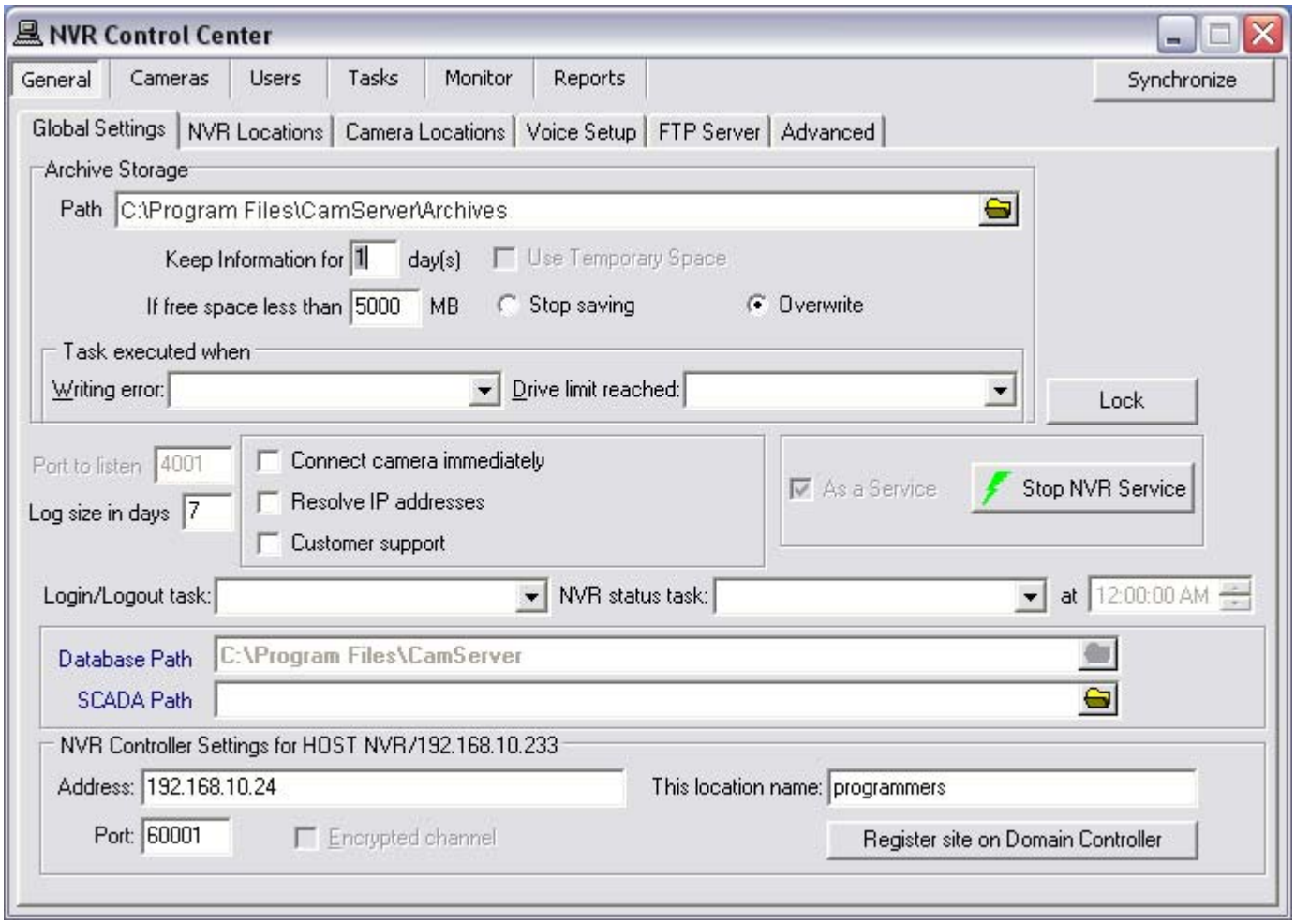


Fig 3. NVR Control Center — General — Global Settings *(Specify recording storage.)*

- ✓ With proper planning, the configured data retention time should not allow the drive limit to be reached, and will act only as a safety net. If data is continuously overwritten based on the drive limit, unnecessary strain is placed on the processor and hard drive.
- ✓ The Archive Storage settings **cannot be set** or **changed** while the NVR is running. If the NVR is running, you **must** first stop the services with the **Start / Stop NVR Service** toggle button. Than start NVR again.

Define Camera/Connection

The DETEXI NVR supports most network cameras as well as analog to IP video servers (encoders). Before recording can occur or live video can be viewed in the DETEXI Client network camera **must** be defined in the NVR Control Center.

1. In the **NVR Control Center** switch to the **Cameras — Cameras Settings** (Fig 4).
2. Below the **Cameras List** make sure that **Video Server** is chosen as add type from the drop-down list next to **Add** button, then click **Add** button to open blank **Cameras Settings** dialog;
   — or —
   Click **Dup** button to open a copy of selected camera settings for editing.
3. Enter a descriptive name for the camera/video server into the **Name** input field.
4. From the **Type** drop-down list, choose camera type.
5. Type camera IP address and port number into **Address** input fields.
6. If camera is already installed, click **Determine camera driver** button to allow the NVR auto-configure the driver to be used for communication.
7. If camera has Pan/Tilt/Zoom capabilities, **With PTZ** checkbox **must** be checked to enable them in the NVR and Client.
8. Switch to the **Security & Alarm** to setup security settings.
9. Click **Save** button to save camera settings.

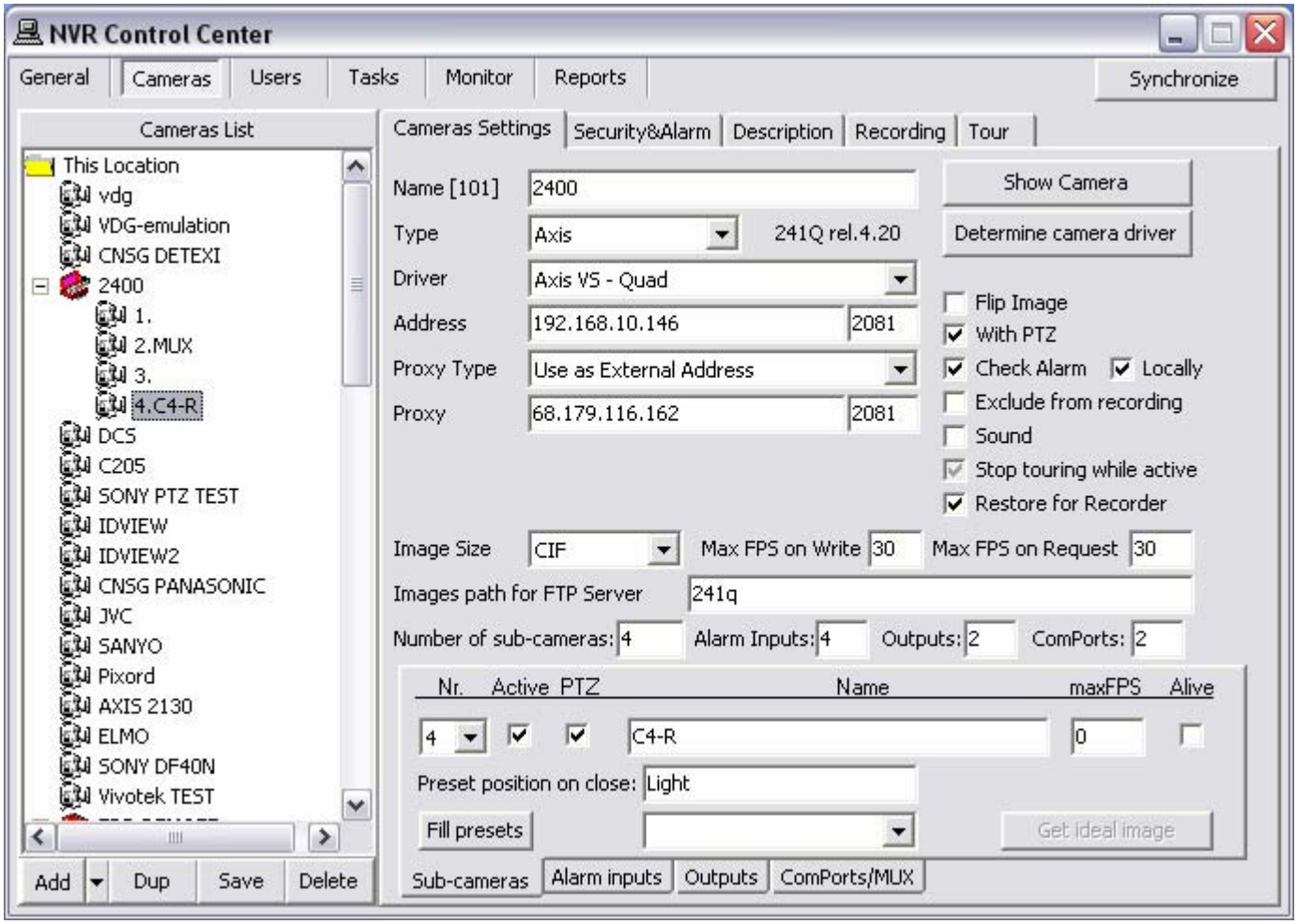


Fig 4. NVR Control Center — Cameras — Cameras Settings
(Define camera/connection in the DETEXI NVR.)

- ✓ Auto-configured camera driver gives the NVR **more specific** information about the camera enabling better resolution and bandwidth control. If you choose the driver from **Type** drop-down list, the resolution information will be more generic and bandwidth control will not be as efficient.
- ✓ There **must** be direct access to the network camera IP Address and Port from the NVR. Make sure any personal and hardware firewalls between them allow for **bi-directional** communications for this IP Address and Port.

Camera Security Settings

10. With the camera selected switch to the **Cameras — Security & Alarm** (Fig 5).
11. Under the **Names and Passwords** enter usernames and passwords. They should match the users that are defined within the camera.
12. In most cases, camera will only have one username and password by default, with administrative privileges; in this case enter **Adm name** and **Adm pwd** accordingly.
13. Click **Save** button to save settings under the **Cameras List**.

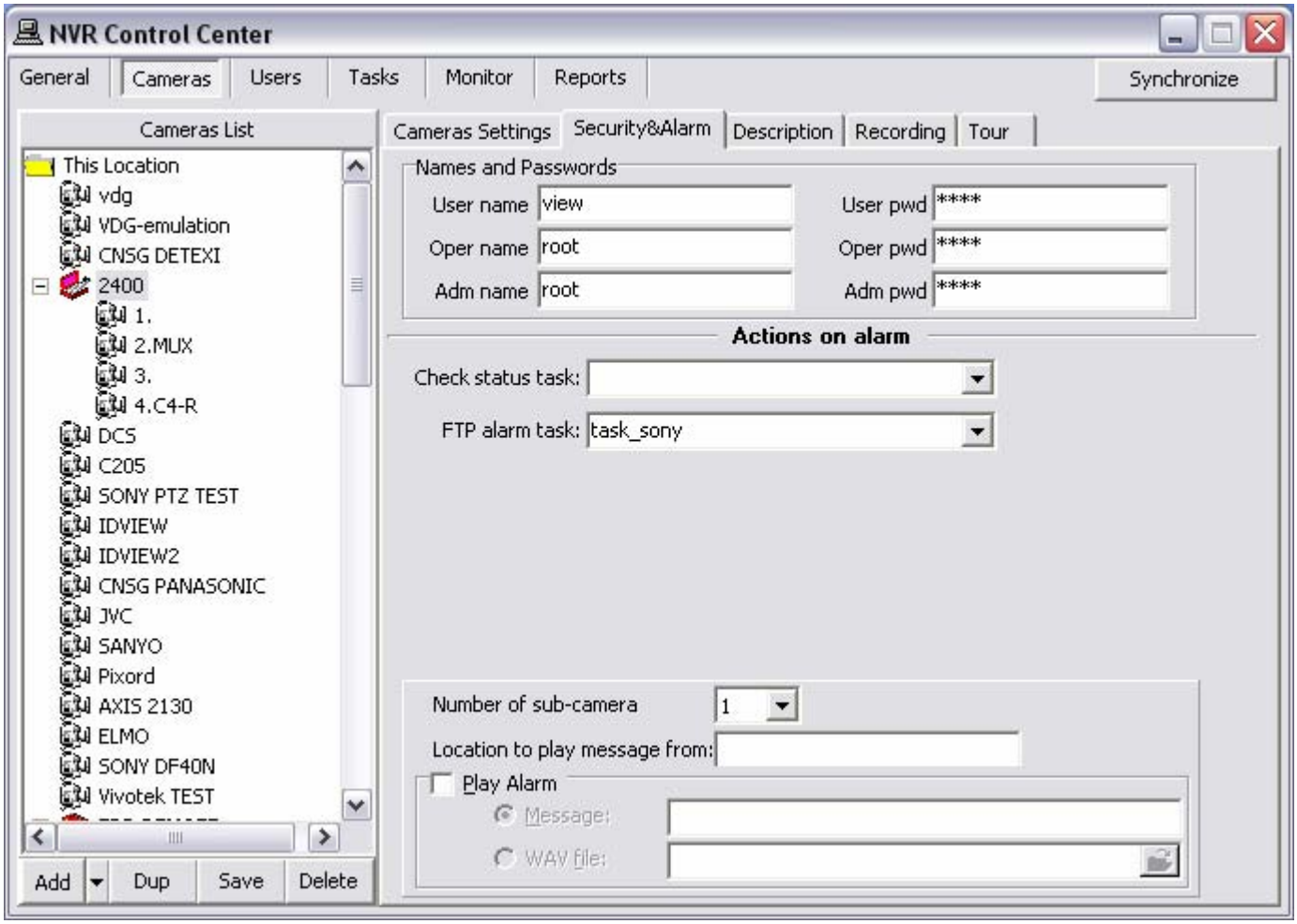


Fig 5. NVR Control Center — Cameras — Security & Alarm
(Camera security settings.)

Test Camera/Connection

When the camera is installed and setup you can quickly test the camera definition/connection directly from the NVR Control Center.

14. In the **NVR Control Center — Cameras** (Fig 6) choose camera from the **Cameras List**.
15. In the **Cameras Settings** click **Show Camera** button — a test window pops up. It should show live video from the camera.
16. Close the test window when finished.

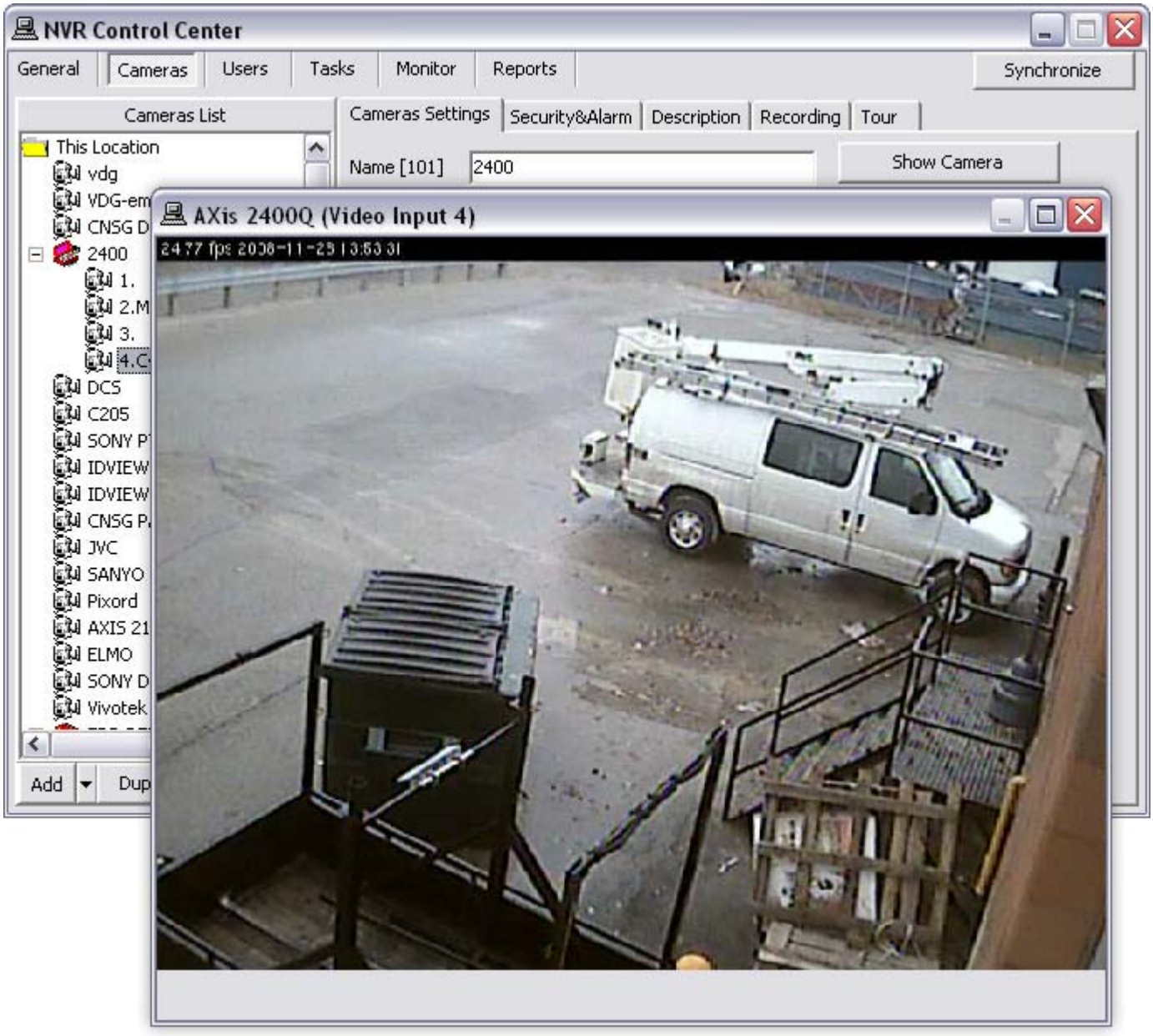


Fig 6. NVR Control Center — Cameras — Cameras Settings
(Test camera connection.)

✓ Test window doesn't show a high resolution image; it simply **proves** a connection to the camera.

Define User Information

1. User Login Settings

When users connect to the NVR from Remote DETEXI Clients, they will be required to authenticate with user settings defined in the NVR. The DETEXI NVR has the ability to provide different lists of cameras to different users, only allowing users to see and interact with the cameras they have privileges for. In addition, permissions such as PTZ control, maximum connection time, task control, etc. are configurable on a per-user basis.

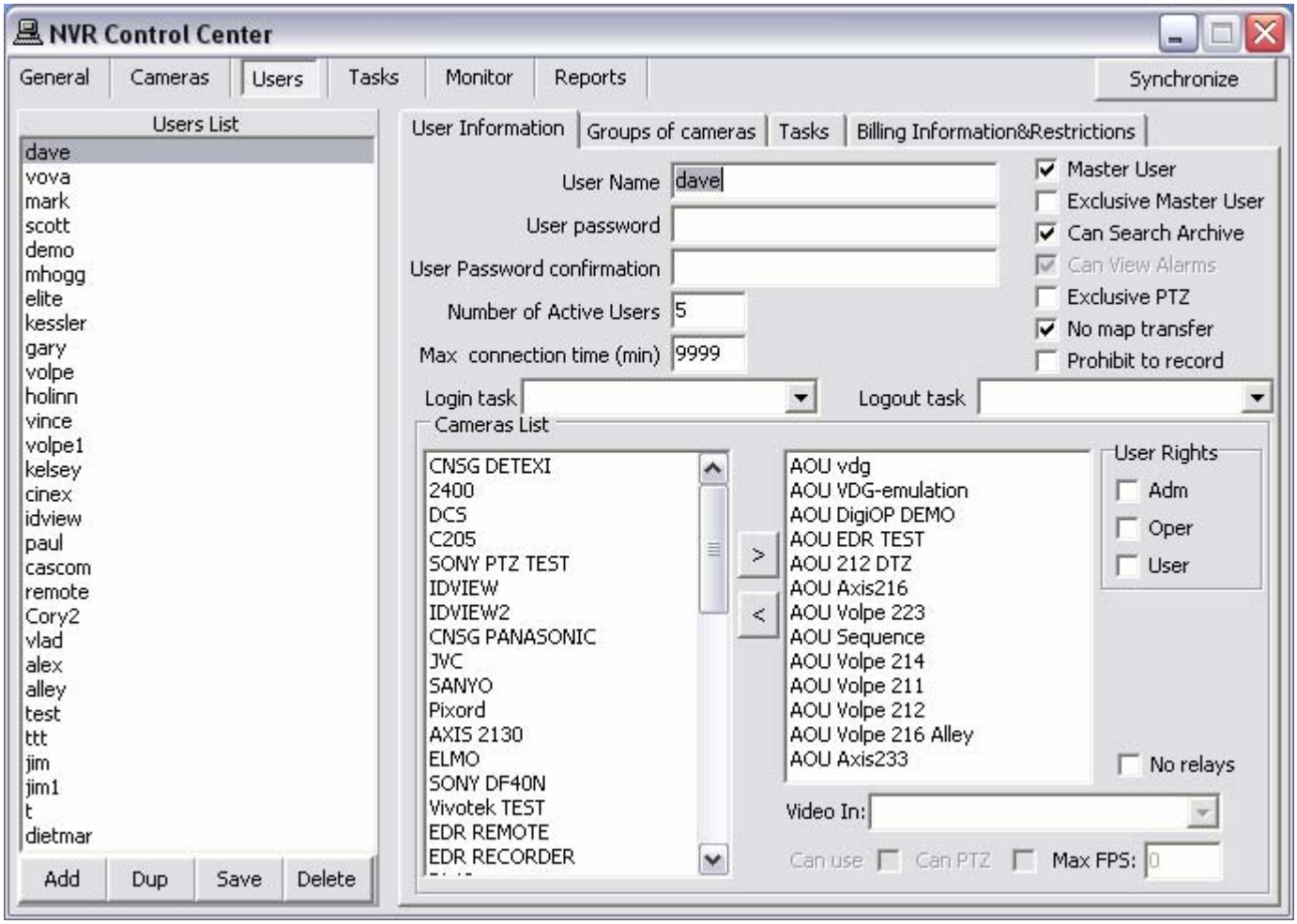


Fig 7. NVR Control Center — Users — User Information
(User login settings.)

1. To create a user with specific rights — in the **NVR Control Center** switch to **Users — User Information** (Fig 7).
2. Below the **Users List** click **Add** button to open blank **User Information** dialog
   — or —
   Click **Dup** button to open a copy of selected user settings for editing.
3. Enter a single word, case-sensitive, alphanumeric **User Name** to use to login to the NVR.
4. Enter a single word, case-sensitive, alphanumeric **User Password** and re-type it to the **User Password Confirmation** to be sure it is typed as desired.
5. Enter the **Number of Active Users** to define the number of Client instances the user can be signed into simultaneously.

6. Enter **Max connection time** to define the number of minutes user can be continuously connected to the NVR before the connection will be terminated. User may login again if desired. A value of **9999** designates **no time limit**.
7. Check **Master User** checkbox to give the user permission to terminate other user sessions from the **Client — Get Users**.
8. Check **Can Search Archive** checkbox to give the user permission to view/search NVR archive.
9. Continue to User Cameras to Interact.

- ✓ Usernames and passwords are case sensitive!
- ✓ Unless otherwise configured for security reasons, it is recommended to have at least **two Number of Active Users** allowed per user. In the event that a user's session is not logged out properly, this ensures that they can log in again without intervention from a Master User or NVR Administrator.

2. User Cameras to Interact

The next step is to define which of the available cameras the user has access to. And also assign the level of authentication allowed from this user to the camera defined in the NVR Control Center — Cameras — Security & Alarm.
In most cases, the camera has only one username and password, with administrative privileges. Be sure that User Rights (Adm/Oper/User) settings make sense considering the authentication settings in the Security & Alarm.

10. Select the camera from the **Cameras List** (Fig 7) at the left and click **">"** button to add the camera permission to the user — the camera name appears in the selected cameras list at the right.
11. Select the camera name in the selected cameras list at the right.
12. Check proper checkbox under the **User Rights** to pass the previously configured camera authentication settings — **Adm**, **Oper** or **User**.
13. Check **Can PTZ** checkbox below the selected cameras list to give the user PTZ permission on the selected camera. This setting is enabled by default if the camera has PTZ capabilities when assigned to the user.
14. Repeat steps 11-14 to add more camera permissions.
15. Click **Save** button below the Users List to save user settings.

- ✓ Be sure that User Rights (Adm/Oper/User) settings make sense considering the authentication settings in the **Security & Alarm**.
- ✓ The User Rights chosen for the first camera configured will automatically be assigned to each camera after that unless manually changed.
- ✓ PTZ permission is defined on a per-camera basis, and is enabled by default if the camera has PTZ capabilities when assigned to the user.

1. Service Responsibilities

The underlying structure of the DETEXI NVR software consists of many individual services, which allow execute and organize all the tasks it is responsible for. All services are visible and configurable in the NVR Control Center — Monitor (Fig 8).

Knowing the responsibility of each service is important. This allows users to make sure the necessary services for the given application are running and controlled properly, while unnecessary services should be **turned off** to preserve system resources.

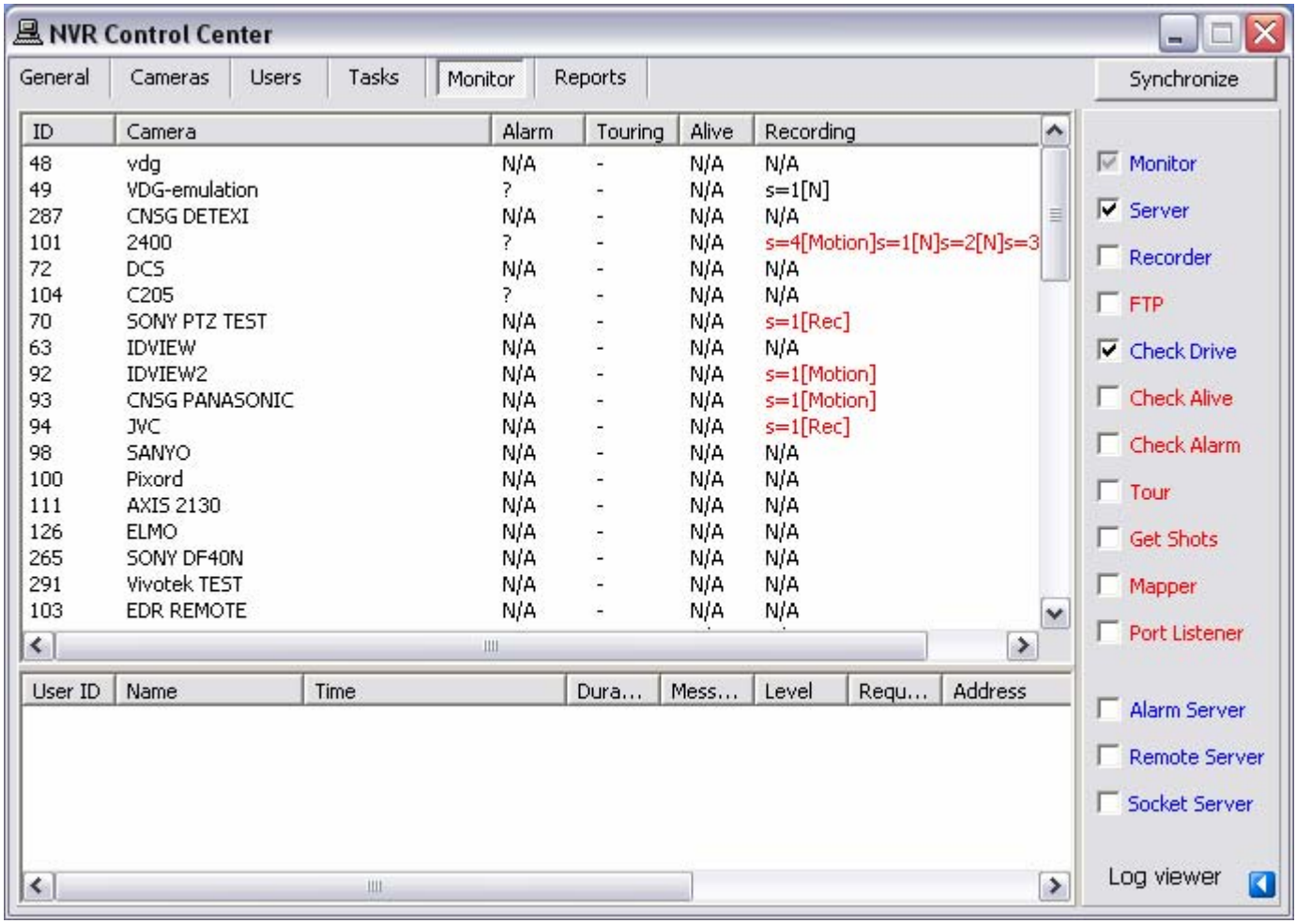


Fig 8. NVR Control Center — Monitor
(NVR services.)

Monitor — Also known as the Startbar, is an internal service to start/stop other NVR services. The Monitor service is also responsible for monitoring the health and status of all NVR Services.

Server — Also known as the CamServer, authenticates remote users connected to the NVR through the Remote Client. The CamServer is also responsible for tracking statistics about the remote user's connections.

Recorder — Records information and images from each video input into the NVR archive, according to the configured schedules, preferences, alarms and events.

FTP Server — Receives images from cameras via FTP (if configured) and writes them into the NVR archive. It also raises an alarm when such images are received from a camera, and can also be used for FTP notification of IP address changes from the camera to the NVR.

Check Drive — Monitors the condition of the storage path and device to confirm existence and available space for new video being recorded to the archive.

Check Alive — Monitors if camera is online and video inputs are active.

Check Alarm — Monitors the hard inputs of connected video devices, and raises alarms when defined changes are seen on such inputs.

Tour — Moves PTZ cameras through a predefined series of locations according to defined schedules or on alarms or events.

Get Shots — Captures still shots related to alarms from streaming video when configured, and stores them in a special location in the archive.

Port Mapper — Also known as the Port Mapper. When configured, the Port Mapper routes network requests between two network connections on different subnets or networks. This allows for separate security and corporate networks across which the DETEXI system can communicate.

Port Listener — Also known as the I/O Listener, has the ability to monitor alarms raised by local alarm devices connected to the NVR computer via COM ports.

Alarm Server — Also known as Alarm Central, is responsible for raising alarms via the Text-to-Speech engine, telephone, e-mail and other mediums. This is configured as an Automatic Windows Service and starts at Windows startup.

Remote Server — An internal service for intercommunications between linked NVR Domain Controller and child NVRs. This is configured as an automatic Windows Service and will start with Windows.

Socket Server — An internal service to support remote TCP/IP access to the NVR. This is configured as an automatic Windows Service and starts at Windows startup.

2. Service Status

All services are visible and configurable in the NVR Control Center — Monitor (Fig 8). The status of all the cameras that have been installed can be seen there as well.

- ✓ The **color** of the service name indicates its status — blue while running, red while stopped.
- ✓ The **checkbox** next to a service name configures how it is affected by the Monitor service. If a service is checked, its status will be monitored and displayed.
- ✓ **Checked** services will also be started/stopped along with the Monitor service. The Monitor service is started and stopped using the **Start/Stop NVR Service** toggle button in the NVR Control Center — General — Global Settings (Fig 2).

3. Runtime Configuration

For most settings, the NVR services support runtime configuration. This means that changes can be made to cameras, users, etc. **without stopping** the NVR services. When you are ready for your changes to take effect, you should synchronize the services with the current configuration.
The **Synchronize** button is found in the upper right corner of the NVR Control Center, **no matter** what page is active.

4. Turn off Services not Currently in Use

The unnecessary services can be turned off to preserve system resources. It is recommended that the Monitor service be active at all times. **Checked** services *(with checked checkbox next to the service name)* will be monitored and started/stopped along with the Monitor service.

To run/monitor just authentication and recording NVR services —

1. In the **NVR Control Center — Monitor** (Fig 9) uncheck all services except Server and Recorder to enable their monitoring.
2. Click on the service names to turn the Server and Recording names blue and all others — red. This turns off the unnecessary services while keeps running the authentication and recording services.
3. Click **Synchronize** button to activate the new configurations.

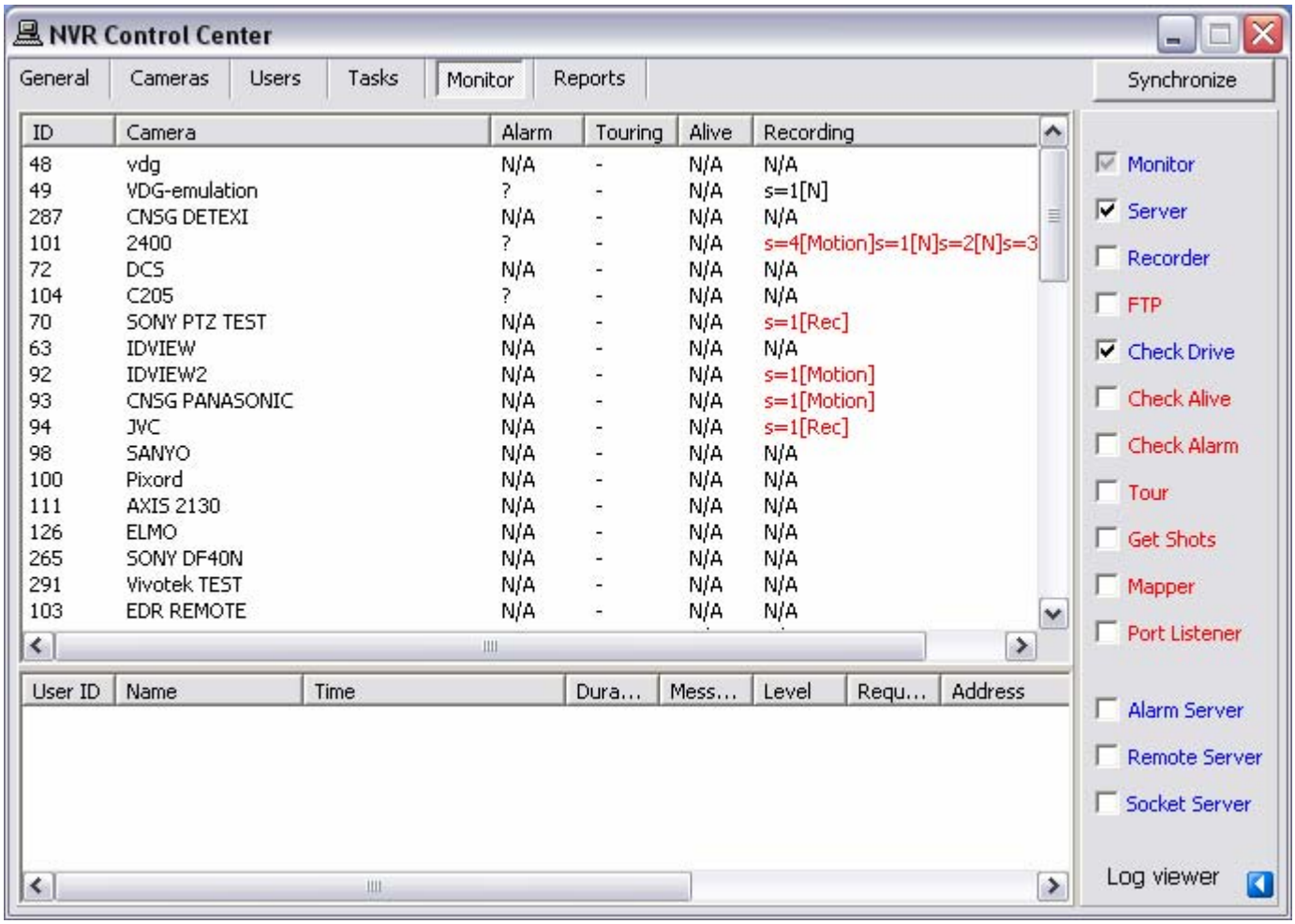


Fig 9. NVR Control Center — Monitor
(Turning service on/off.)

- ✓ If, for some reason, the user stops a service and it is selected to be monitored, it will be **restarted** by the Monitor service in approximately 30 seconds.
- ✓ During the system tuning you may need to **disable** restarting a service by the Monitor service. Uncheck the service checkbox to disable monitoring. Than you can click on the service name to turn it red to stop the service or blue — to run.

NVR Services Health Monitoring

1. NVR Services Monitoring

In the default setup the DETEXI NVR is working in an unattended mode, this means it is up to the local administrator to check the status of the programs and related hardware manually. However, in most cases a PC Server accommodating the DETEXI software is in a **remote location** with no local human interaction, therefore a designated person or persons should be aware of the DETEXI NVR status at any given time. You may not need the recorded video for weeks or even months, but if something happened (camera failure, power failure, network failure etc.) during that time it is possible that the NVR does not have some or any recorded video at all and the required evidence may be lost.
There are several areas that should be checked to insure that you have a healthy and functioning system —

- ✓ Is the NVR running at all (power is OFF or ON)
- ✓ Are all selected NVR components running
- ✓ Are all cameras with an active schedule functioning and being recorded
- ✓ Is there enough space to make a recording
- ✓ Are there enough system resources to make a recording
- ✓ Is the NVR Domain Controller network and all it's child NVRs healthy and running

The DETEXI NVR services could fail due to unforeseen events and therefore **must** be monitored and controlled. To monitor the health of the NVR services you need to assign a task (action/notification that will be executed in a case of failure) to each component you wish to monitor.
Tasks to be executed on check status/health consist of predefined tasks —

- ✓ Remote DETEXI Client notification
- ✓ E-mail notification
- ✓ Phone notification
- ✓ Speak notification
- ✓ Execute program action

From our point of view it is most likely user will initiate the E-mail notification task or Execute program action. The **Execute program action** allows you to execute any external program to do whatever you want to do and is limited only by your imagination and the resources required to develop it.

- ✓ Before using the e-mail notification task all necessary settings for sending e-mail (SMTP settings and e-mail account settings) **must** be setup in the NVR Alarm Listener.
- ✓ For more information, refer to the DETEXI Reliability System.

2. Setup System Health Monitoring Tasks

To setup NVR services health monitoring you need to assign a task *(action/notification that will be executed in a case of failure)* to each component you wish to monitor.

4. In the **NVR Control Center — Monitor** (Fig 10).
5. Press blue Health Monitor On/Off button in the **bottom right** corner — the system health monitor **No answer task** panel appears.
6. To assign a task to the system component (service) — select **previously created** task from the drop-down list next to the component.
7. Assign a task to each system component.

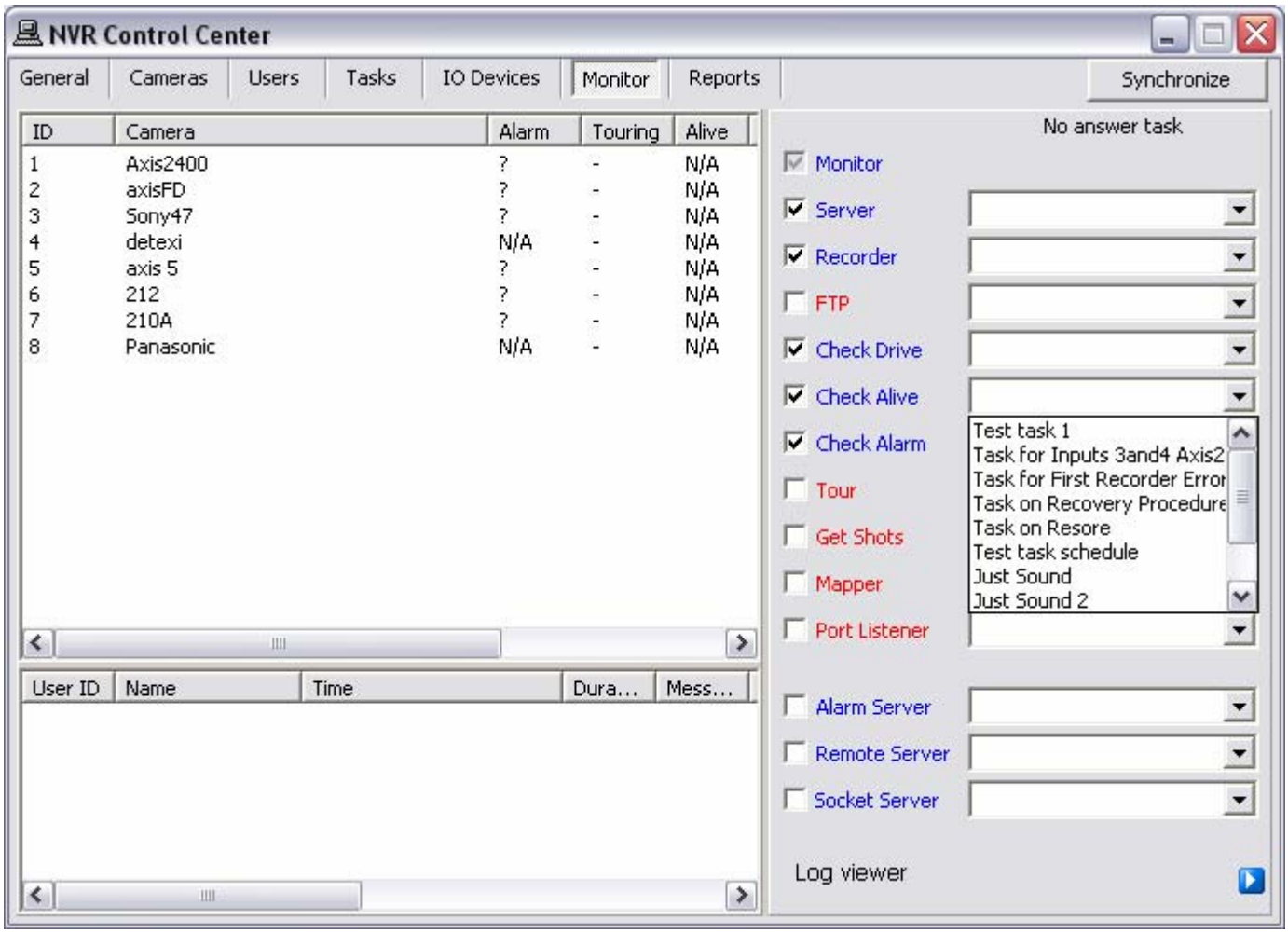


Fig 10. NVR Control Center — Monitor — No Answer Task
(Setup system health monitoring tasks.)

- ✓ Component failure if any will be **detected** within 3 minutes and the assigned task will be executed.
- ✓ System will check status **only** for the components with the checkbox **checked**.
- ✓ For more information, refer to the **NVR Events and Alarms** section.

NVR Recording Setup

Recording Methods

The main purpose of the DETEXI Network Video Recorder is to record and archive live video for later replay and analysis. Recording in the DETEXI NVR is either schedule-based or event-based with or without motion detection, and many recording options are available.

Schedule Based Recording

Schedule based recording can be set up as continuous (24/7 or other) with or without motion detection or triggered. An alarm-triggered recording can be activated by, for example, video motion detection or an external input through a camera's input port. Scheduled recording can combine both continuous and triggered recording instructions (within schedule).

- ✓ Recording with no motion detection — video is archived constantly while on schedule, with no motion analysis being done.
- ✓ Recording with motion detection — video is archived constantly while on schedule, the video is analyzed and encoded with markers when motion is detected for faster and smarter replay.
- ✓ Recording only on motion — video is analyzed constantly while on schedule, but only archived when motion is detected.
- ✓ Recording on camera input alarm — the hard input(s) of the camera are monitored while on schedule, and when an alarm is detected on the input(s) video is archived. Although this is event based recording, it still relies on a schedule.

Event Based Recording

- ✓ Recording on NVR event (Recording Task Action) — video is archived for any defined camera when a chosen event occurs in the NVR.

- ✓ Schedule-based continuous, scheduled and recording only on motion are the most **basic** recording options.
- ✓ Event-based recording is discussed in the NVR Events and Alarming.

Enable/Disable Recording

Before setting up any type of recording ensure first that recording is enabled for the selected camera. After the camera was generally defined in the NVR it has recording `enabled` by default — the **Exclude from recording** checkbox is **unchecked**.

- ✓ Turning on recording requires **at least one schedule** to be added and configured for the selected camera, and motion settings (if appropriate) defined.
- ✓ To optimize performance `disable` recording for the cameras that are not intended for recording. Thus the Recorder service will ignore those cameras completely, freeing resources for other tasks.

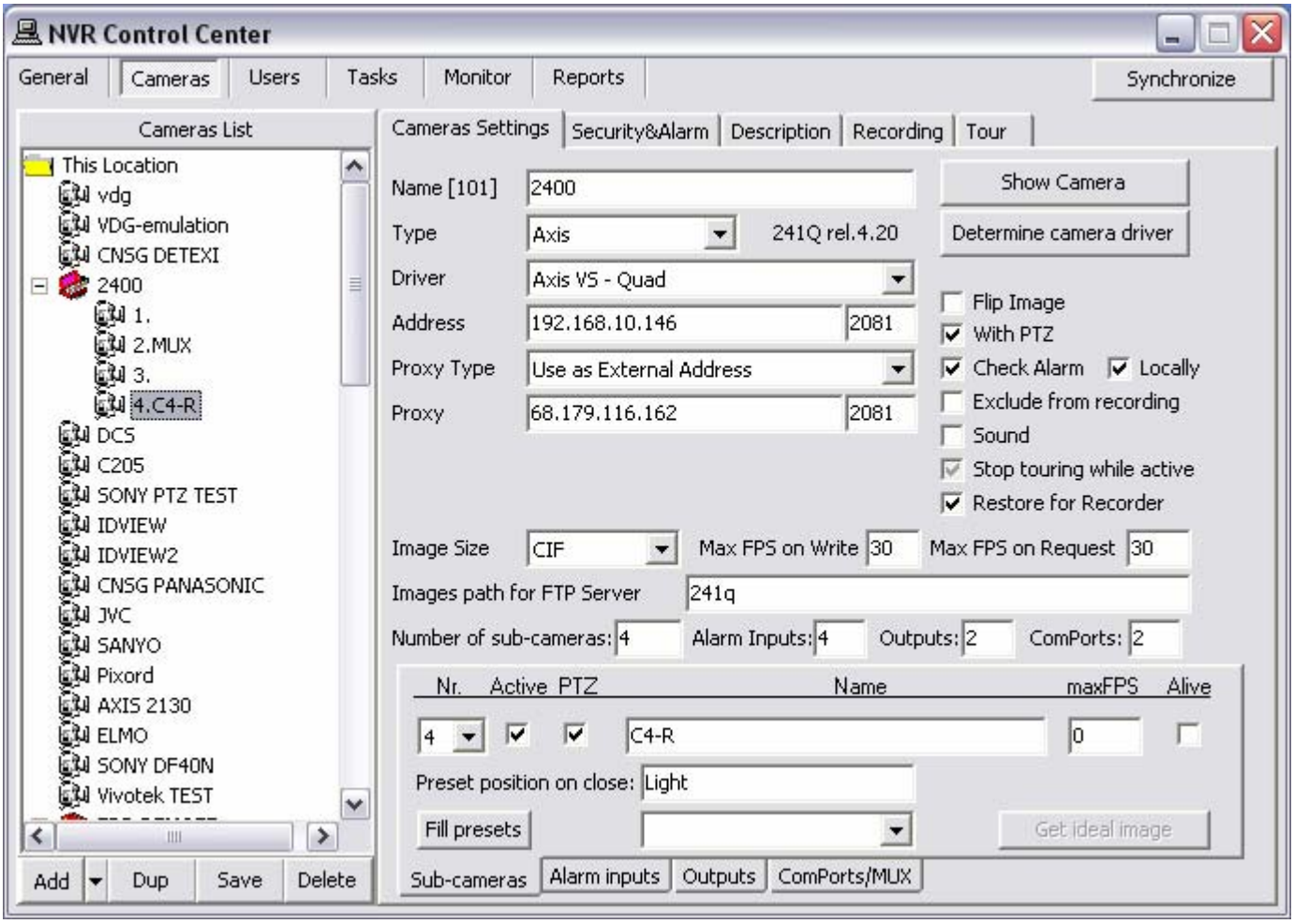


Fig 11. NVR Control Center — Cameras — Cameras Settings
(Enable/disable recording.)

To disable recording for the camera —

1. In the **NVR Control Center — Cameras** (Fig 11) select a camera from the **Cameras List**.
2. In the **Cameras Settings** **check** **Exclude from recording** checkbox to `disable` recording.
3. Click **Save** button below the **Cameras List** to save changes.

Recording Services

1. Start Recording Services

There are two NVR services that should be running and monitored by the Monitor service in order to record — Recorder and Check Drive.

1. To start recording services — go to the **NVR Control Center — Monitor** (Fig 12).
2. Click on the service name to turn it blue to run the service.
3. **Check Recorder** and **Check Drive** checkboxes to enable monitoring and Monitor service will start them in approximately 30 seconds.

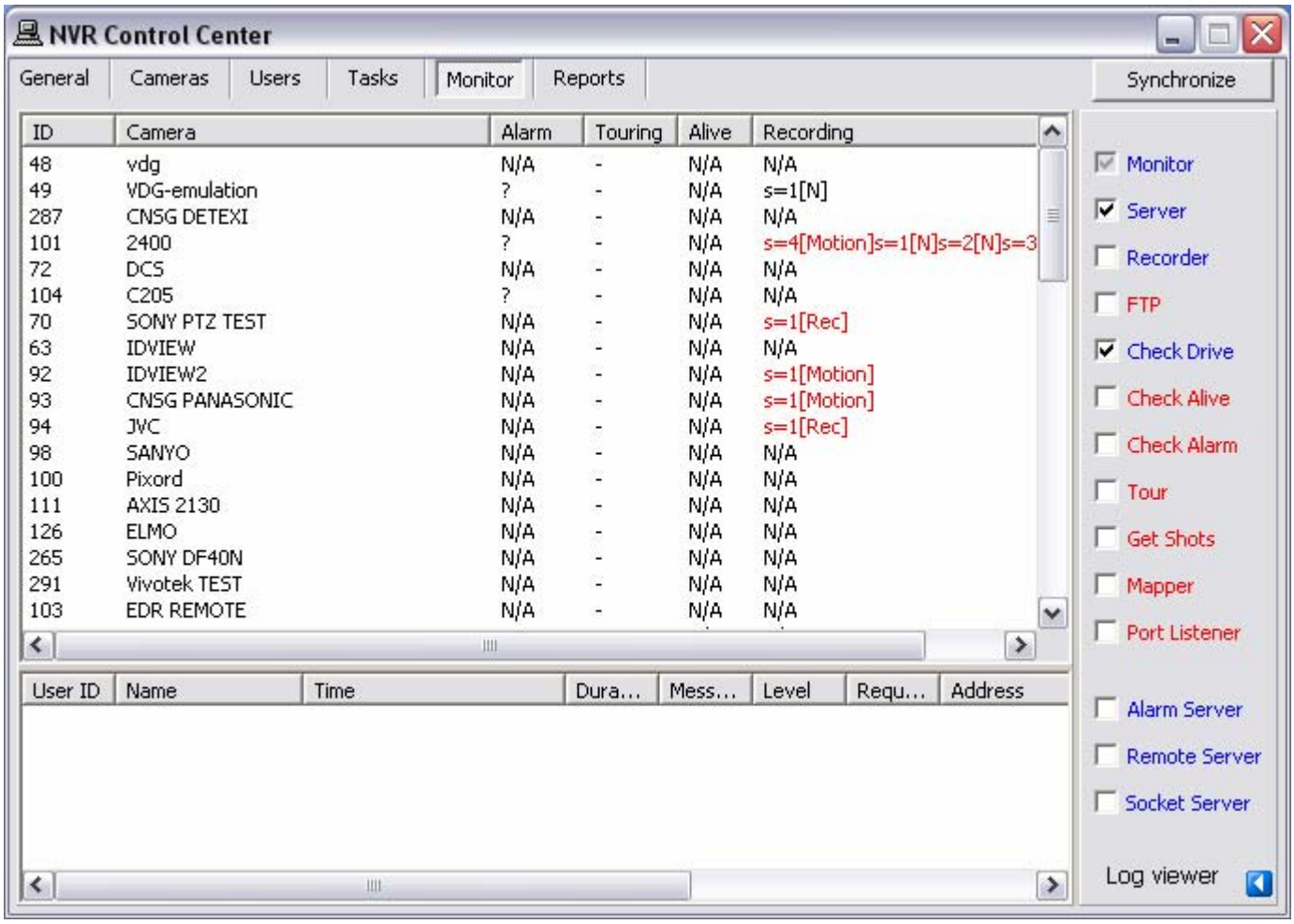


Fig 12. NVR Control Center — Monitor *(Start/stop recording services.)*

- ✓ In the NVR Control Center — Monitor the color of the service name indicates its status — blue while **running**, red while **stopped**.
- ✓ The checkbox next to a service name configures how it is affected by the Monitor service. If a service is **checked**, its status will be monitored and displayed.
- ✓ If, for some reason, the user stops a service and it is selected to be monitored, it will be **restarted** by the Monitor service in approximately 30 seconds.
- ✓ During the system tuning you may need to **disable** restarting a service by the Monitor service. Uncheck the service checkbox to disable monitoring. Than you can click on the service name to turn it red to **stop** the service or blue — to **run**.

2. Synchronize Recording Services

The DETEXI NVR recording services support runtime configurations. This means that changes in the cameras recording settings can be made **without stopping** the NVR services. When you are ready for your changes to take effect, you should synchronize the services with the current configuration. The **Synchronize** button is found in the upper right corner of any NVR Control Center page.

3. Quickly Check the Status of Video Streams

When the services are running the icons will show in the System Tool Tray. A flashing red light on the Check Drive icon indicates that the service is busy. This could mean that it is executing the daily archive clean-up, constantly overwriting data because the Minimum Free Space Limit was reached, or attempting to connect to an unavailable directory or drive.

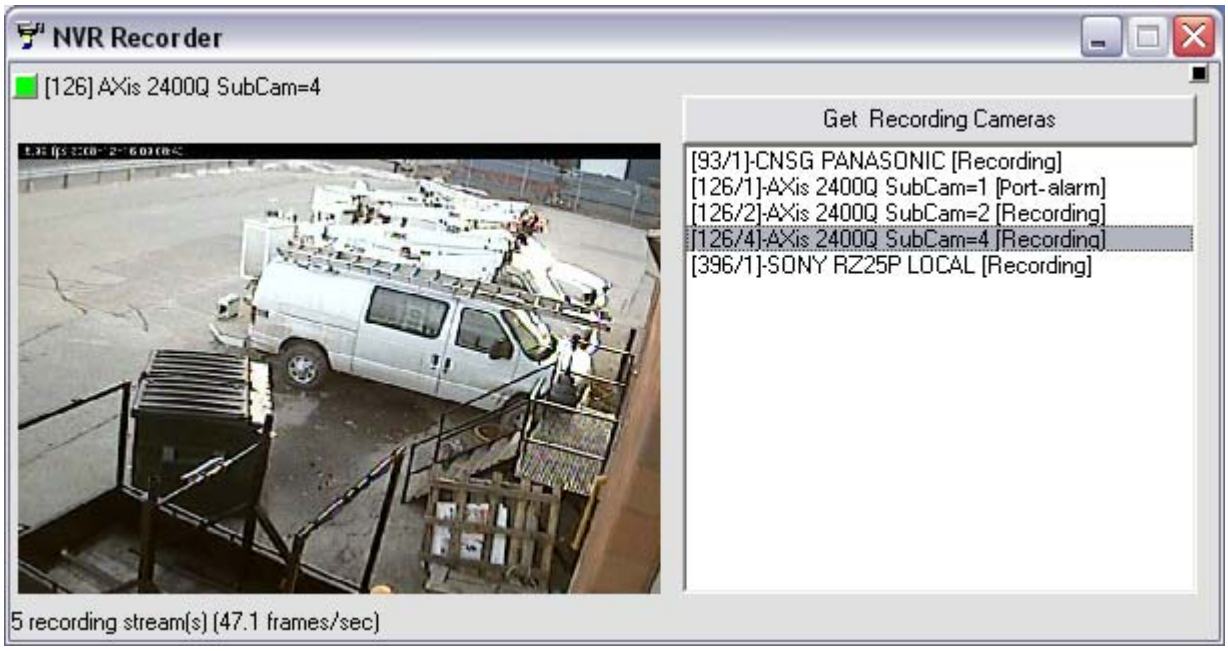


Fig 13. NVR Recorder Service Interface *(Check the status of video streams.)*

1. To quickly check the status of the NVR video streams — double-click the Recorder icon in the System Tool Tray — the NVR Recorder service interface launches.
2. Click **Get Recording Cameras** button to get the list of cameras showing **active** to the Recorder.
3. Select a camera from the list — the current camera video stream shows, if there is one:
   - ✓ If you see live video, the recorder is either analyzing that video for motion, recording that video to the archive, or both.
   - ✓ If you see no connection image **with** [Port-alarm] notation, it indicates that although the camera is being monitored for I/O Port Alarms, the video is not currently being recorded.
   - ✓ If you see no connection image **without** [Port-alarm] notation, this means the recorder should be either analyzing the video for motion, recording it to the archive, or both, but has temporarily lost connection to that camera — the connection to the camera **should be checked**.
4. **Minimize** the window to return it to the System Tool Tray (**do not close** — it will stop the service).

Setup Schedule-Based Continuous Recording

A scheduled recording will archive video with the quality settings defined, as long as the defined schedule is valid — whether there is motion or not. In this configuration no motion detection is turned on at all, so the Recorder service does not analyze the video stream before archiving it. Turning on continuous recording requires **one 24/7 schedule** to be added and configured for the camera.

Do the following steps to configure continuous recording for the camera —

1. Confirm that Recording is Enabled for the Selected Camera

1. In the **NVR Control Center — Cameras** (Fig 11) select camera to configure from the **Cameras List**.
2. In the **Cameras Settings** ensure the **Exclude from recording** checkbox is **unchecked**.
3. Switch to **Recording — Schedule** tab.

2. Setup 24/7 Recording Schedule, Video Quality

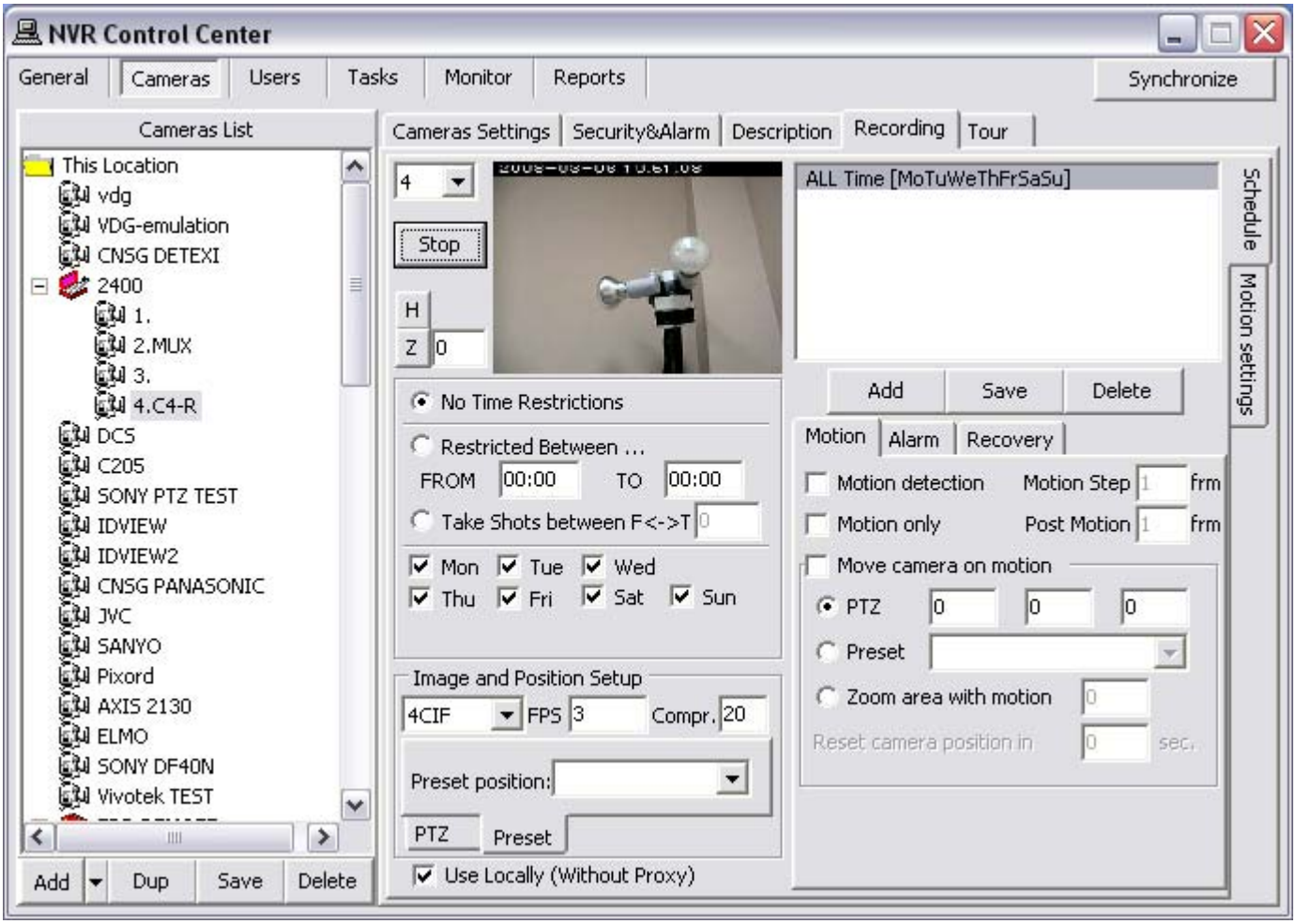


Fig 14. NVR Control Center — Cameras — Recording — Schedule
(Setup 24/7 recording schedule, video quality.)

4. In the **Recording — Schedule** (Fig 14) click **Add** button under the **Schedule** list to add a new

recording schedule.

5. Leave **No Time Restrictions** radio button selected, and leave all **days of the week** checkboxes **checked** to configure a 24/7 schedule.
6. Setup video quality under the **Image and Position Setup** —
   - ✓ Select **Resolution** from the drop-down list the video will be recorded at. *Higher resolution means better image quality, and larger file size.*
   - ✓ Enter **FPS** — the number of frames per second that will be archived. *Higher FPS means more fluid motion, and larger file size.*
   - ✓ Enter **Compression %** which will be applied to the video before it is archived. *Lower compression percentage means better image quality, and larger file size.*
7. On the **Motion** tab **Motion detection** checkbox should be **unchecked** *(motion detection is set by default).*
8. Click **Save** button below the schedule list to save the schedule.
9. Switch to the **Camera Settings** to select another camera to configure.

- ✓ After saving the schedule, it will be named based on the settings defined within it.
- ✓ In this configuration no motion detection is turned on at all. Motion detection and Motion Only checkboxes under the Motion tab **unchecked**, Motion Step and Post Motion do not apply and are grayed out.
- ✓ Defining a recording schedule at a specific resolution, FPS and compression **may affect live video streams** from this camera — depending on whether the camera supports simultaneous video streams with different parameters such as this. **Check** the specifications of the camera in use.

3. Start or Synchronize Recording Services

10. When you are ready for your settings to take effect, start the **Recorder** and **Check Drive** services from the **NVR Control Center — Monitor** or if the services were running and monitored during the configuration just click the **Synchronize** button to activate the new configurations.

Setup Multiple Recording Schedules

A scheduled recording that records according to the multiple recording schedules will archive video with the quality settings defined, as long as the defined schedule is valid — whether there is motion or not. In this configuration no motion detection is turned on at all, so the Recorder service does not analyze the video stream before archiving it.
Do the following steps to configure multiple recording schedules for the camera —

1. Confirm that Recording is Enabled for the Selected Camera

1. In the **NVR Control Center — Cameras** (Fig 11) select camera to configure from the **Cameras List**.
2. In the **Cameras Settings** ensure the **Exclude from recording** checkbox is **unchecked**.
3. Switch to **Recording — Schedule** tab.

2. Setup Multiple Recording Schedules, Video Quality

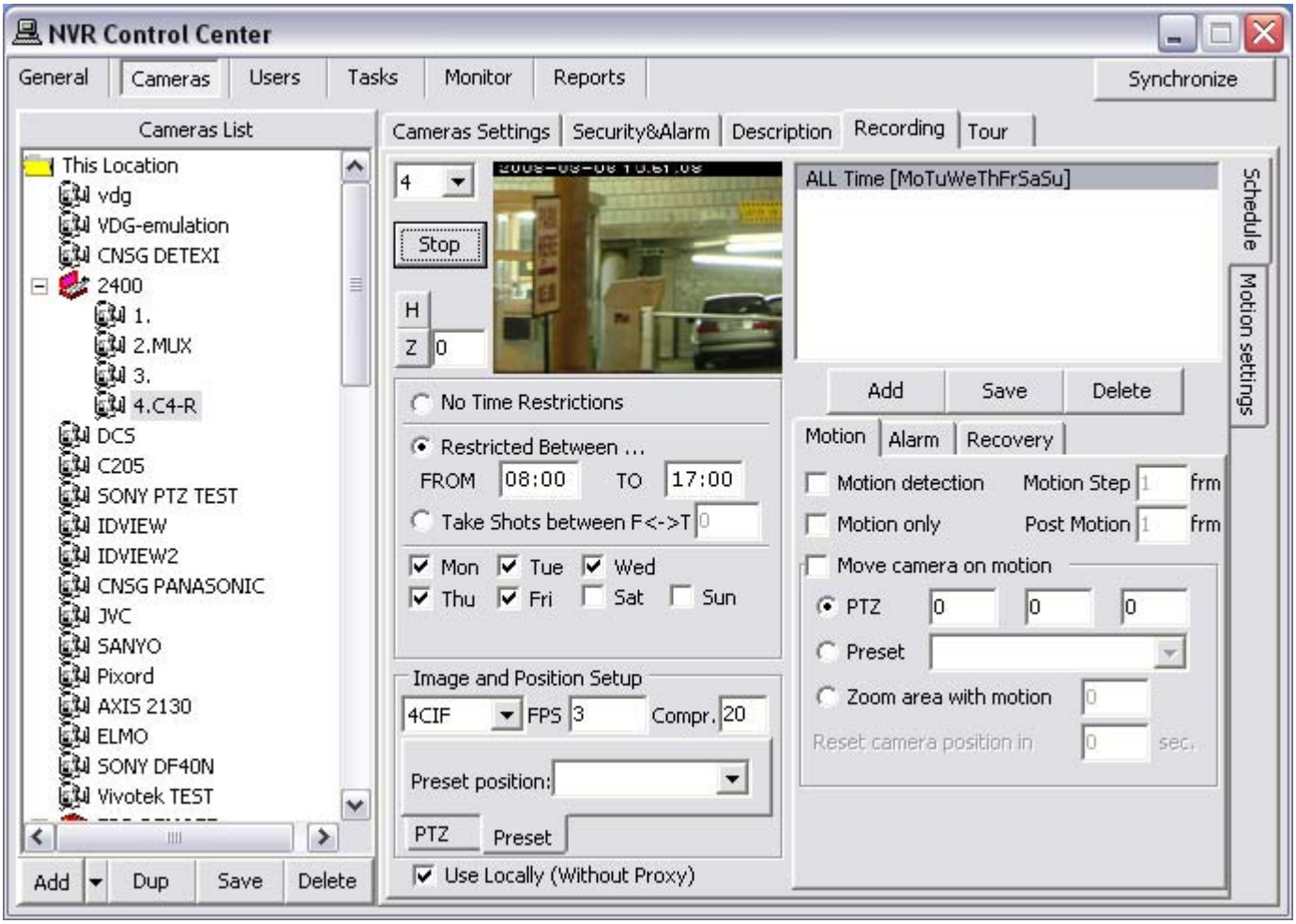


Fig 15. NVR Control Center — Cameras — Recording — Schedule
(Setup multiple recording schedules, video quality.)

4. In the **Recording — Schedule** (Fig 15) click **Add** button under the schedule list to add a new recording schedule.
5. Select the **Restricted Between** radio button and define a time range **FROM - TO** *(for example: FROM 08:00 TO 17:00, which is the equivalent of FROM 8AM TO 5PM).*

6. Leave proper **days of the week** **checked** to have the schedule repeated these days only.
7. Setup video quality under the **Image and Position Setup** —
   - ✓ Select **Resolution** from the drop-down list the video will be recorded at. *Higher resolution means better image quality, and larger file size (4CIF on the sample).*
   - ✓ Enter **FPS** — the number of frames per second that will be archived. *Higher FPS means more fluid motion, and larger file size (3 on the sample).*
   - ✓ Enter **Compression %** which will be applied to the video before it is archived. *Lower compression percentage means better image quality, and larger file size (20 on the sample).*
8. On the **Motion** tab **Motion detection** checkbox should be **unchecked** *(motion detection set by default).*
9. Click **Save** button below the **Schedule** list to save the schedule item.
10. Add more schedule items for the camera or switch to the **Camera Settings** to select another camera to configure.

- ✓ After saving the schedule, it will be named based on the settings defined within it.
- ✓ In this configuration no motion detection is turned on at all. Motion detection and Motion Only checkboxes under the Motion tab **unchecked**, Motion Step and Post Motion do not apply and are grayed out.
- ✓ Defining a recording schedule at a specific resolution, FPS and compression **may affect live video streams** from this camera — depending on whether the camera supports simultaneous video streams with different parameters such as this. Check the specifications of the camera in use.

3. Start or Synchronize Recording Services

11. When you are ready for your settings to take effect, start the **Recorder** and **Check Drive** services from the **NVR Control Center — Monitor** or if the services were running and monitored during the configuration just click the **Synchronize** button to activate the new configurations.

Setup Scheduled Recording with Motion Detection

In the case of schedule-based recording with motion detection — motion detection is turned on, but the analysis is not used to determine whether or not to archive the video. Motion information is **encoded** into the continuous stream of archived video, indicating if motion was detected in each frame — and if so, how much motion was detected. This information is used during **replay** allowing the user to see when motion occurred, as well as skip over all motionless video at the click of a button. Turning on recording requires **at least one schedule** to be added and configured for the camera.
Do the following steps to configure recording schedules with motion detection for the camera —

1. Confirm that Recording is Enabled for the Selected Camera

1. In the **NVR Control Center — Cameras** (Fig 11) select camera to configure from the **Cameras List**.
2. In the **Cameras Settings** ensure the **Exclude from recording** checkbox is unchecked.
3. Switch to **Recording — Schedule** tab.

2. Setup Recording Schedules, Video Quality

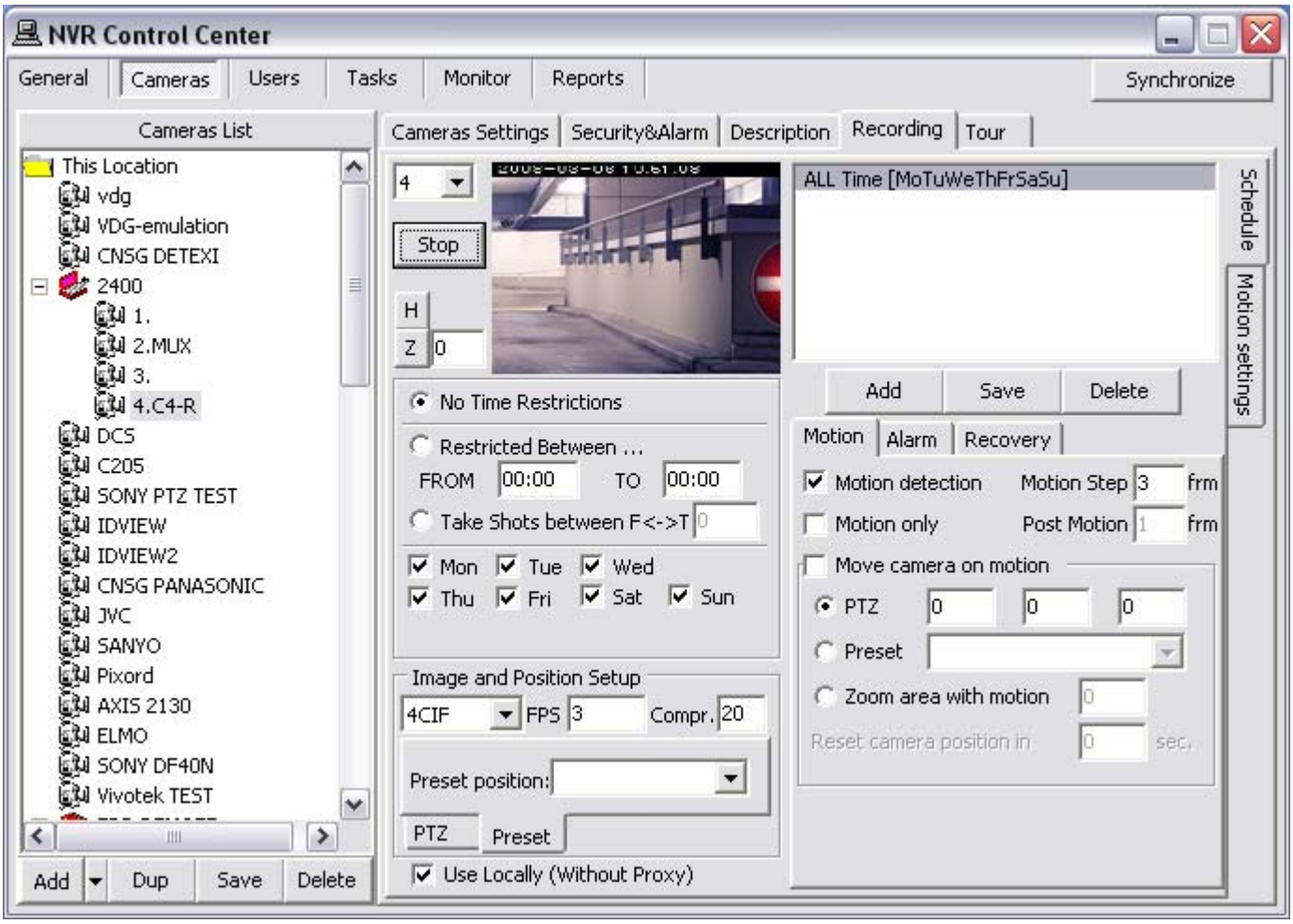


Fig 16. NVR Control Center — Cameras — Recording — Schedule
(Setup recording schedules, video quality. Setup motion detection.)

4. In the **Recording — Schedule** (Fig 16) click **Add** button under the schedule list to add a new recording schedule.
5. Leave **No Time Restrictions** radio button selected, and leave all days of the week checkboxes **checked** to configure a 24/7 continuous schedule;
   — or —
   Select the **Restricted Between** radio button and define a time range **FROM - TO** and leave proper days of the week **checked** to have the schedule repeated these days only.
6. Setup video quality under the **Image and Position Setup** —
   - ✓ Select **Resolution** from the drop-down list the video will be recorded at. Higher resolution means better image quality, and larger file size (4CIF on the sample).
   - ✓ Enter **FPS** — the number of frames per second that will be archived. Higher FPS means more fluid motion, and larger file size (3 on the sample).
   - ✓ Enter **Compression %** which will be applied to the video before it is archived. Lower compression percentage means better image quality, and larger file size (20 on the sample).
7. Continue to Setup Motion Detection.

- ✓ After saving the schedule, it will be named based on the settings defined within it.
- ✓ Defining a recording schedule at a specific resolution, FPS and compression **may affect live video streams** from this camera — depending on whether the camera supports simultaneous video streams with different parameters such as this. Check the specifications of the camera in use.

3. Setup Motion Detection

8. Under the **Motion** tab (Fig 16) **Motion detection** checkbox should be **checked** *(motion detection is set by default)*.
9. Set the **Motion Step** — the sample rate for motion analysis. *With a motion step of 1, every frame will be analyzed. With a motion step of 3, every third frame will be analyzed and so on*.
10. Click **Save** button below the **Schedule** list to save the schedule item settings.
11. Add more schedule items for the camera or switch to the **Camera Settings** to select another camera to configure.

- ✓ When a schedule has motion detection enabled, the Motion Settings become available to the user. These settings are not required, but can be used to **optimize** motion detection for each individual camera and its environment.
- ✓ The **actual time** between frames compared for motion detection will depend upon the FPS defined in the schedule.

4. Start or Synchronize Recording Services

12. When you are ready for your settings to take effect, start the **Recorder** and **Check Drive** services from the **NVR Control Center — Monitor** or if the services were running and monitored during the configuration just click the **Synchronize** button to activate the new configurations.

Adjust Motion Settings

When a schedule has motion detection enabled, the Motion Settings become available to the user. These settings are not required, but can be used to optimize motion detection for each individual camera and its environment. Motion settings apply only to the **currently selected** recording schedule, allowing different motion settings to be applied to different times of day and levels of light.
A set of motion settings can be defined as the **default**, which will automatically apply to all new schedules created for that camera.

1. Select Camera and Schedule for Adjusting

1. In the **NVR Control Center — Cameras** select camera to configure from the **Cameras List** and switch to the **Recording — Schedule** (Fig 17).
2. Select a recording schedule with motion detection and switch to the **Motion Settings** left side tab.

2. Motion Indicator Graph

Video motion detection defines activity by analyzing data and differences in a series of images. Software algorithms continually compare images from a video stream to detect changes in an image.
The motion indicator graph (at the bottom left) indicates the motion detected (Fig 17).

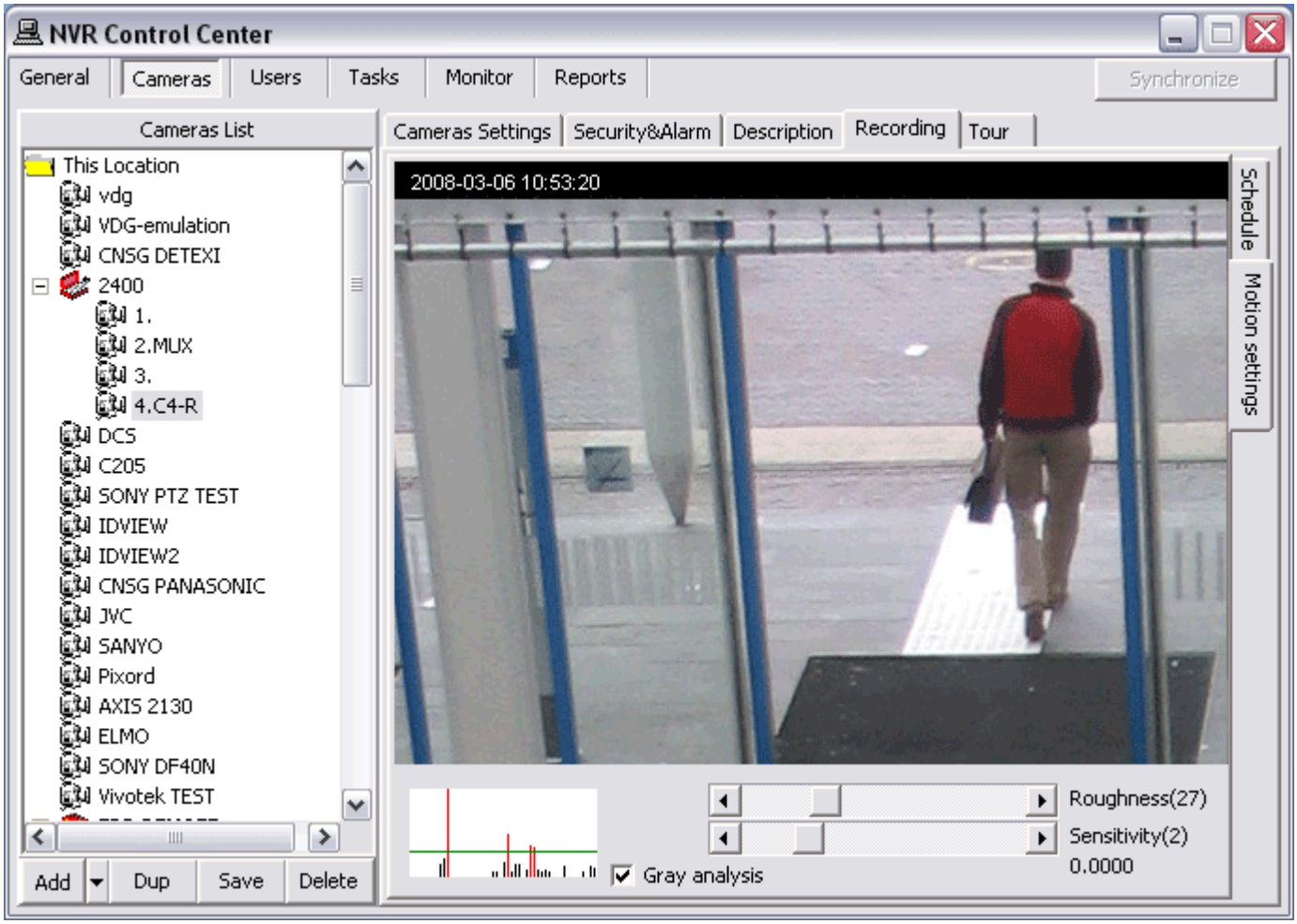


Fig 17. NVR Control Center — Cameras — Recording — Motion Settings

- ✓ Each vertical line in the graph indicates motion detected; the height of the line shows how much motion was detected at the moment.
- ✓ When a vertical line passes above the green horizontal line it turns red, indicating that motion detected will trigger the system reaction.

Two parameters are available for fine-tuning the system. These parameters include the **Roughness** for how large an object should be for the system to trigger, and **Sensitivity** for how much an image can change before the system reacts. Finding the right balance between these settings will directly impact the number of false alarms the system will give and whether all relevant motion in the scene is detected.

3. Create Region of Interest (ROI)

Region of interest (ROI) defines the region of the camera's view that should be analyzed for motion. Regions that will be analyzed show red, while motion in unpainted regions will be ignored. The ROI grid can be resized and moved, and each box within the grid can be turned on or off individually. If no ROI is defined, the entire view will be analyzed for motion.

To create a ROI for the selected recording schedule —
In the **Motion Settings** (Fig 18) draw a ROI by left-clicking and dragging from the upper left corner to the bottom right corner of the image — a red grid will be drawn, indicating where the ROI is.

- ✓ To resize ROI select the bottom right corner and drag it.
- ✓ To move ROI left-click and drag it to a new place.
- ✓ To deselect/reselect a section of the ROI click on the section holding **Ctrl** key.
- ✓ To clear ROI right-click and select **Clear ROI**.

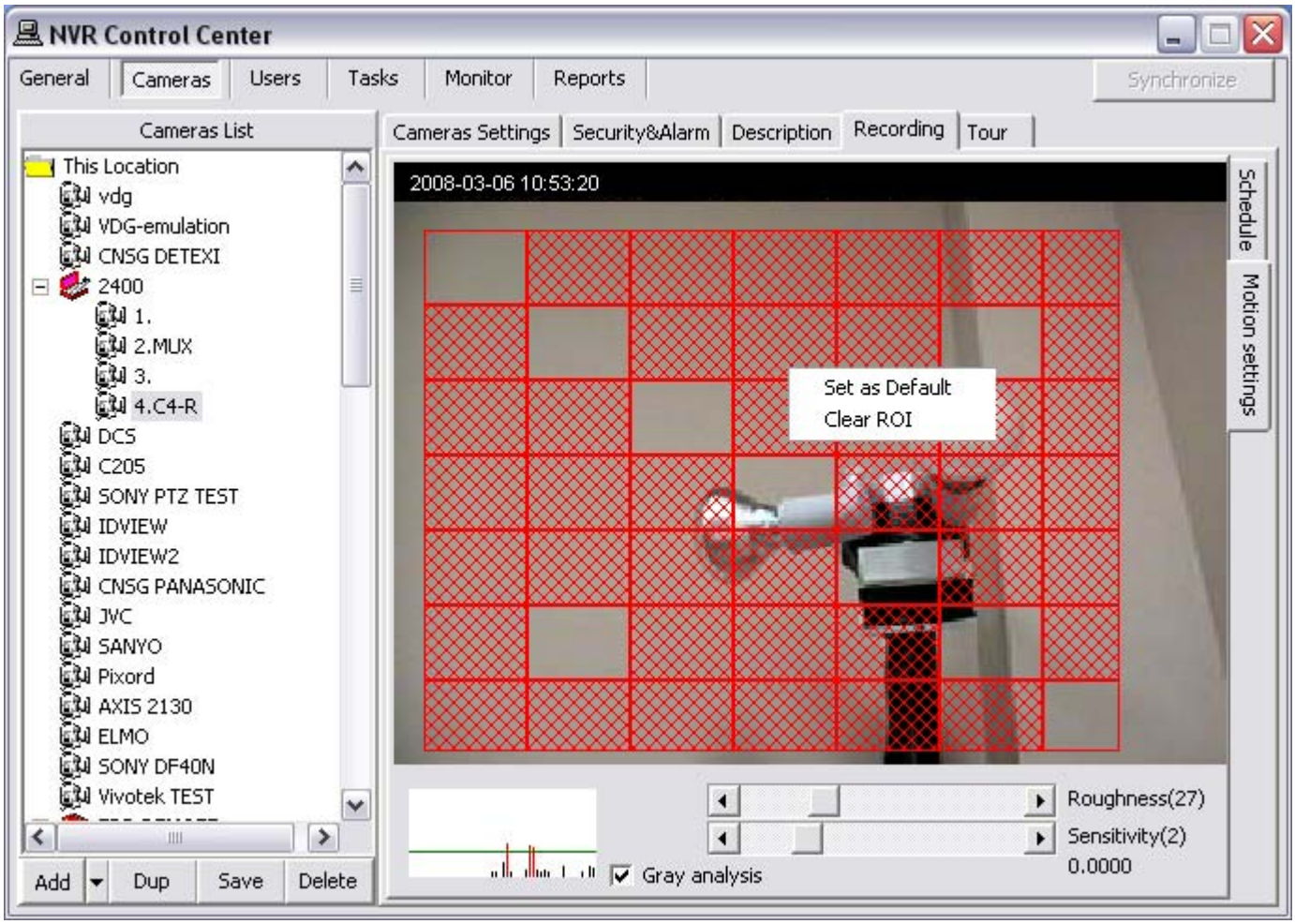


Fig 17. NVR Control Center — Cameras — Recording — Motion Settings
(Create region of interest. Set motion settings as default.)

4. Set Motion Settings as Default

A set of motion settings can be defined as the **default**, which will automatically apply to all new schedules created for the selected camera. To setup motion settings as default right-click on the camera view and choose **Set as Default**.

5. Save Motion Settings

After defining the motion settings, users **must** return to the **Schedule** tab and click **Save** button below the schedule list to save the selected schedule or the settings will be lost.

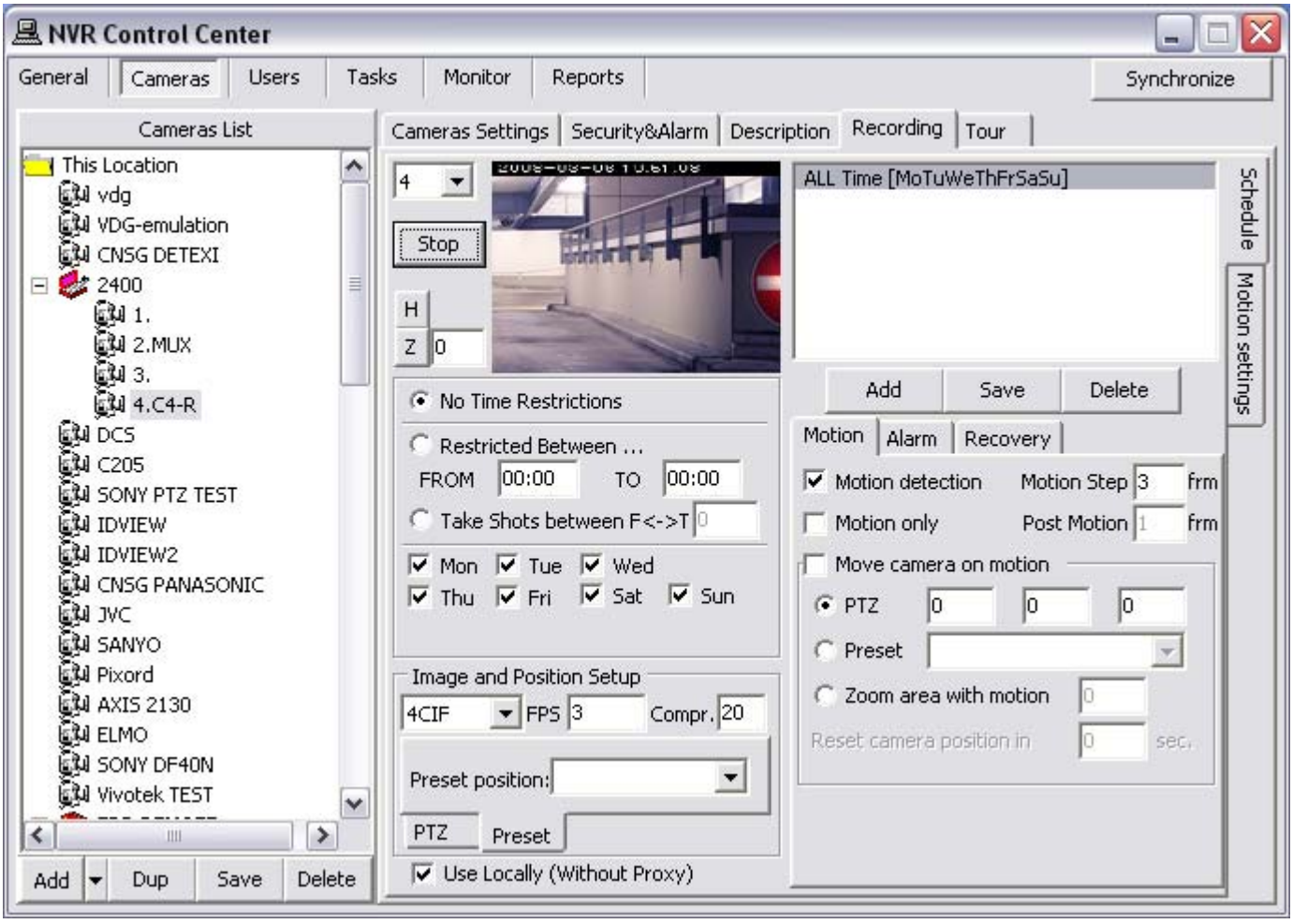


Fig 18. NVR Control Center — Cameras — Recording — Schedule
(Save Motion Settings.)

6. Start or Synchronize Recording Services

When you are ready for your settings to take effect, start the **Recorder** and **Check Drive** services from the **NVR Control Center — Monitor** or if the services were running and monitored during the configuration just click the **Synchronize** button to activate the new configurations.

DETEXI Client

Local and Remote DETEXI Client

In the DETEXI network video management system, video can be viewed from any point on the network. Using the **DETEXI Client** part of the DETEXI software, multiple authorized users can access live or recorded video at any time and from any networked location.

There are two different installations of the DETEXI Client: **Local Client** for the system administrator and **Remote Client** for the system users.

DETEXI

Local DETEXI Client —

Installed automatically along with the DETEXI NVR is a useful system administrator tool for testing user configuration and basic functionality. It only connects to the local DETEXI NVR, does not require the NVR services to be running, and does **not require authentication** *(authentication features are disabled)*.

Remote DETEXI Client

Remote DETEXI Client —

Installed stand-alone on any PC, or/and included automatically with the DETEXI NVR installation enables connection to any **authorized** DETEXI NVR available anywhere on the Internet or corporate network for remote viewing and control. Requires NVR settings configuration and authentication.

Launch DETEXI Client

The DETEX system user interface — DETEXI Client — is developed with a focus on ease-of-use and intuitive handling with navigation tools providing quick access to cameras and recording in the system.

DETEXI

Launch Local DETEXI Client —

To launch Local DETEXI Client open **DETEXI** from **Start — All Programs** or click the program icon on your desktop.

Remote DETEXI Client

Launch Remote DETEXI Client —

To launch Remote DETEXI Client open **Remote DETEXI Client** from **Start — All Programs** or click the program icon on your desktop.

Remote Client Authentication

Before Remote DETEXI Client can connect to a DETEXI NVR, the Authentication Server **must** be configured. The Authentication Server defines the TCP/IP settings the Remote Client should use to connect to one or more NVR Servers.

1. Login Prompt

1. Launch Remote DETEXI Client — the Login Prompt window appears (Fig 19). Since the Client is not yet aware of any server to authenticate with, authentication attempts at this time would fail.
2. Click **Setup** button to enter the Client **Setting**.

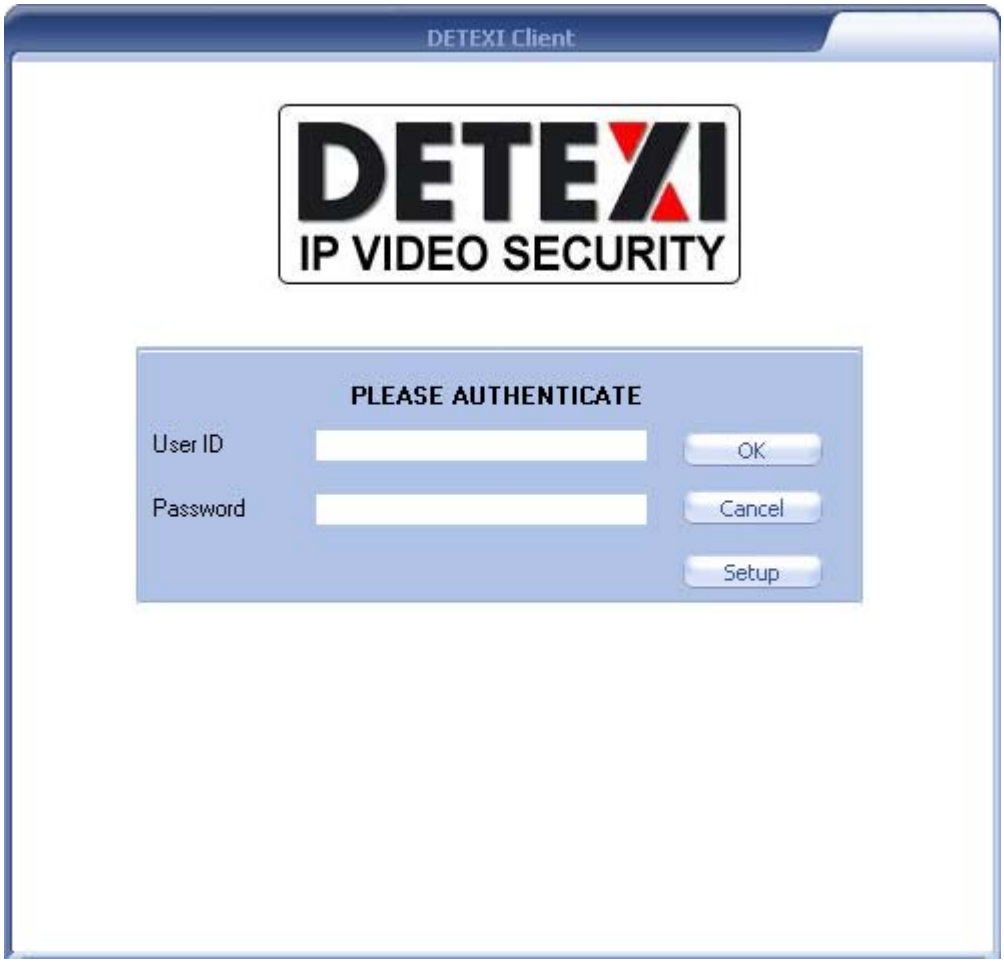


Fig 19. Remote DETEXI Client *(Login prompt.)*

✓ Authentication Server is one of underlying DETEXI NVR services. All services are visible and configurable in the NVR Control Center — Monitor. [Authentication] Server service, also known as the CamServer, authenticates remote users connected to the NVR through the Remote Client. It is also responsible for tracking statistics about the remote user's connections.

2. Setup Authentication Server

3. In the **Setting** (Fig 20) under the **Authentication Server Setup** click **Servers Settings** button to open the **Central Servers List** panel to define the connection settings for all DETEXI NVRs the Client will connect to.

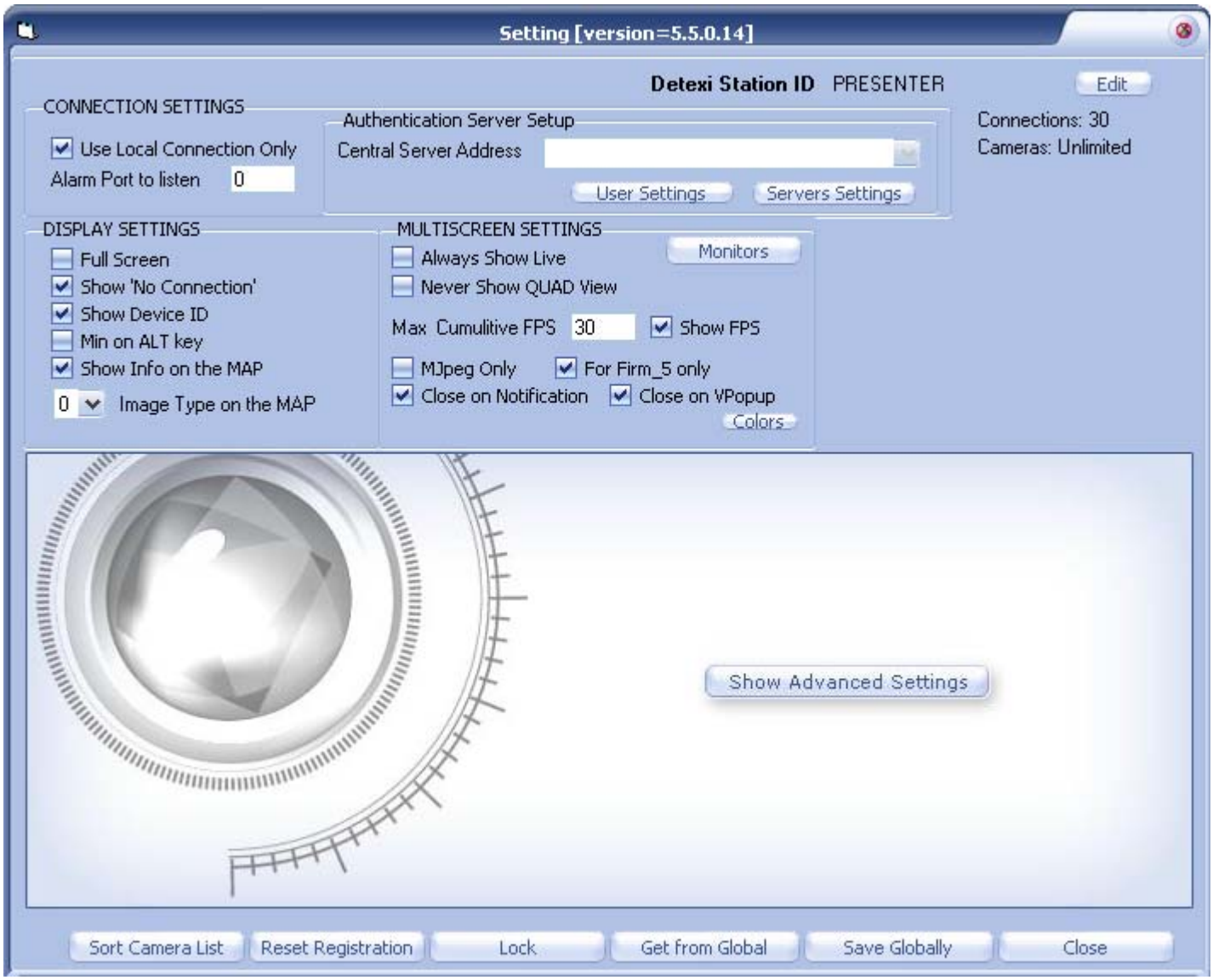


Fig 20. Remote DETEXI Client — Setting
(Setup authentication server.)

2. Configure Central Server

4. In the **Central Servers List** (Fig 21) —
   - ✓ Click **Add** button to add a new Central Server configuration
   - ✓ Enter any descriptive **Name** for the server definition that will be used to distinguish between multiple servers.
   - ✓ Enter **Central Server Address** — IP Address and Port to Listen of the NVR Server being connected to.

- ✓ Check **This Client is inside the Local Network** checkbox if all the cameras and Client belong to one network *(for the optimization purpose)*.
- ✓ Click **Save** button to save the settings.
- ✓ Add more servers to the list.

5. Choose a preferred central server address: select a server from the **Central Servers List** and click **Set as Current Server** button — the selected server will be assigned as the default central server. The panel will close automatically.
6. In the **Settings** click **Close** button to return to the Login Prompt.

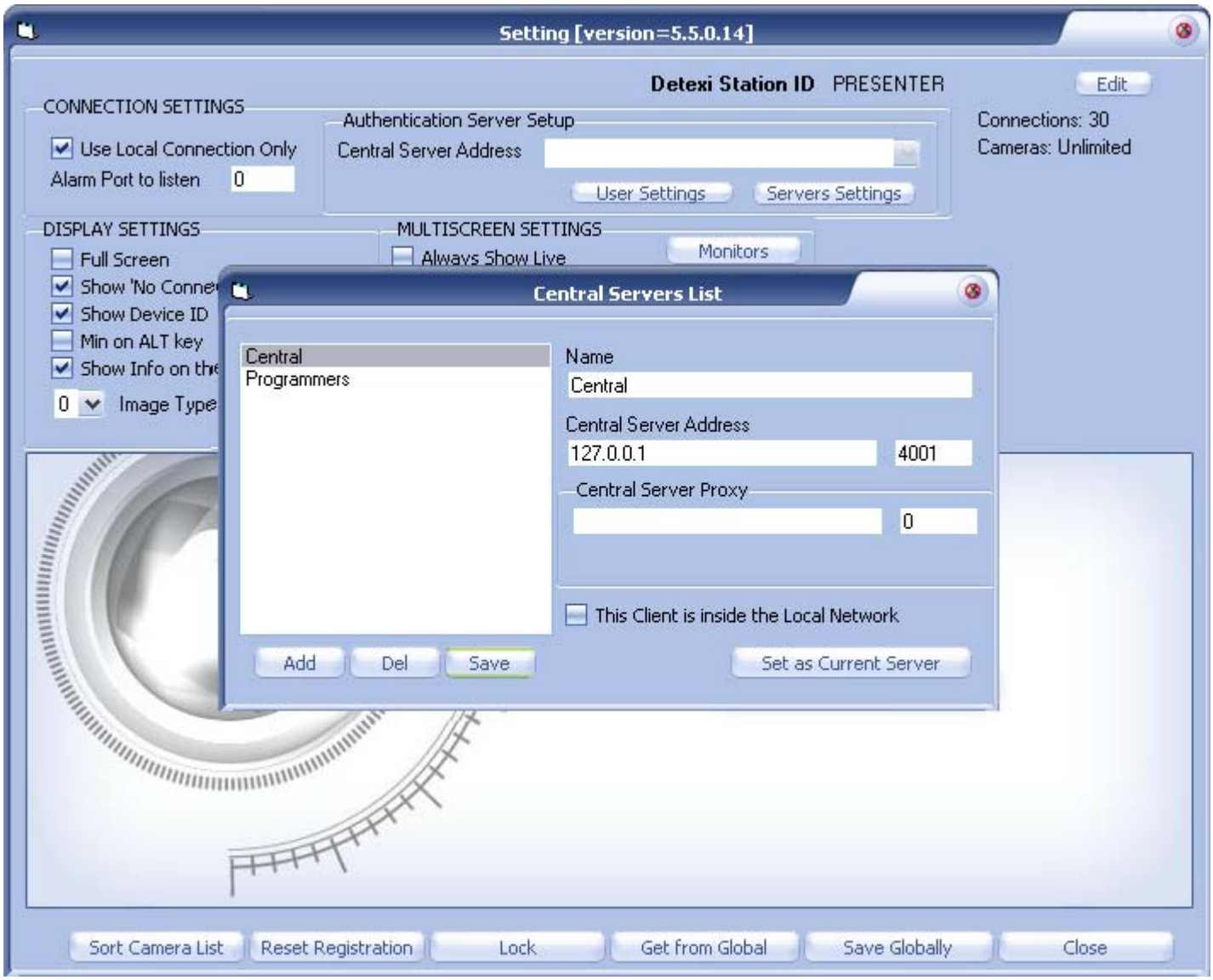


Fig 21. Remote DETEXI Client — Setting — Central Servers List
(Configure central server.)

- ✓ If required, in order to reach the NVR the Central Server Proxy could be setup — Proxy Address and Port to be communicate through. In most configurations, this information will not be necessary and can be left blank.
- ✓ If only **one** Authentication Server is setup make sure that Central Servers List panel was closed by pressing **Set as Current Server** button, or authentication will fail.

3. Login

7. If more than one Authentication Server is setup select one from the Login Prompt drop-down list. If only one — it will be used automatically (Fig 22).
8. Provide a valid **User ID** and login **Password**, and click **OK** button to open the **Start Page**.

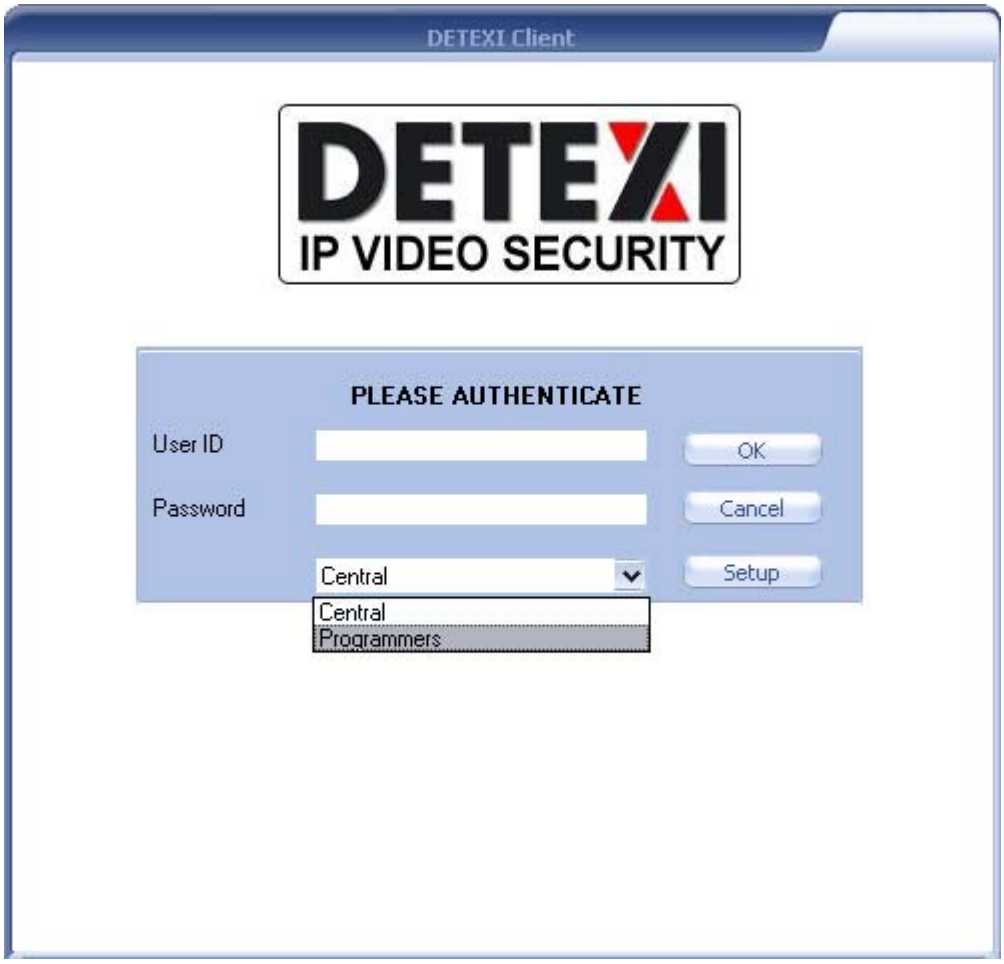


Fig 22. DETEXI Client — Login Prompt — NVRs List
(Select authentication server to login.)

DETEXI Client Start Page

When the DETEXI Client is launched the start page provides the list of cameras configured in the DETEXI NVR. From the start page all branches of the DETEXI Client can be accessed. Users can organize and monitor network cameras and video encoders on their network — set up view groups, record, control the cameras' video, audio and pan/tilt/zoom and playback archived video.

1. Local Client Start Page

Local DETEXI Client is a useful system administrator tool for testing user configuration and basic functionality. It only connects to the local DETEXI NVR, does not require the NVR services to be running, and does **not require authentication** *(authentication features are disabled)*. In the Local Client **all cameras** configured in the local NVR will be available in the start page Cameras List (Fig 23).

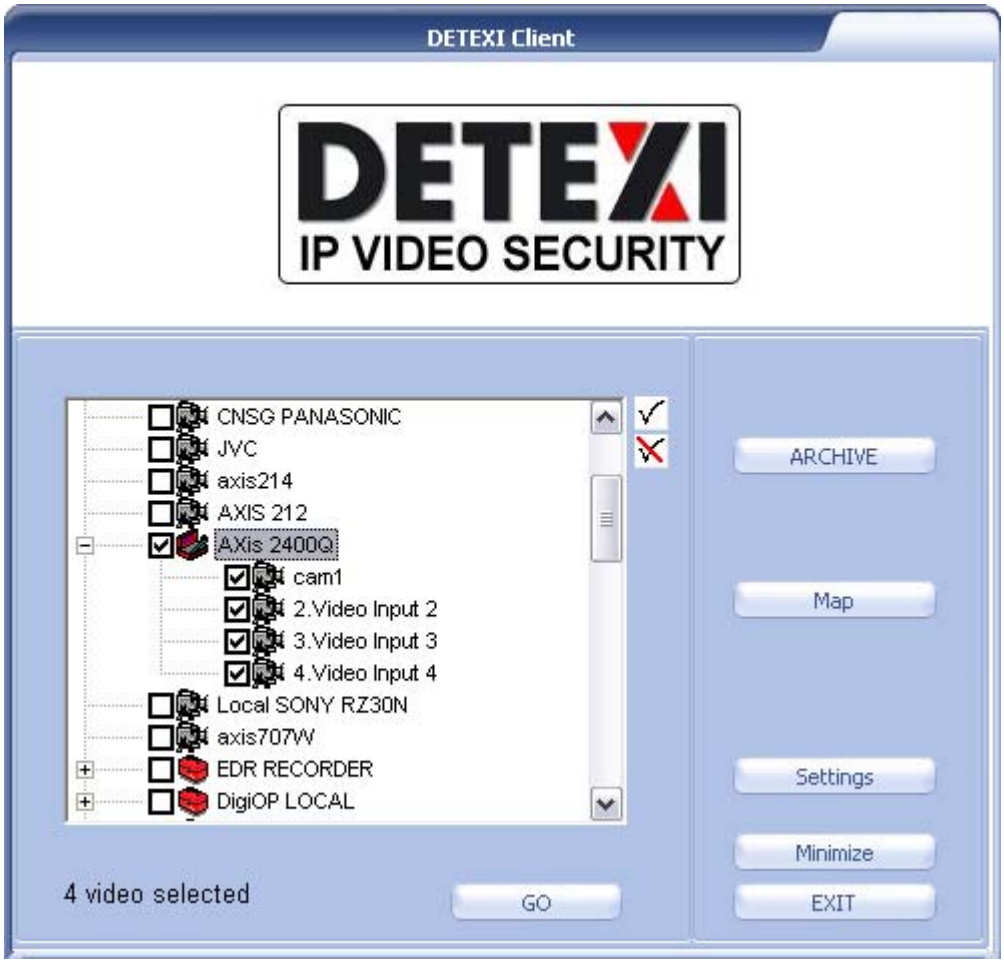


Fig 23. Local DETEXI Client — Start Page

General Navigation

GO — launches live video of all cameras **checked** in the Cameras List.

ARCHIVE — launches the **Archive Retrieval Tool** built into the Client.

Map — launches a MAP page allowing for users to browse and select cameras by location on one or more maps (visible only if at least one map location is configured in the NVR with at least one camera assigned to it).

Settings — launches the **Settings Configuration**, where all options/settings of the Client are configured.

Minimize — minimizes the Client application into the System Tool Tray.

EXIT — completely closes the Client application.

- ✓ All cameras in the Cameras List can be checked/unchecked individually.
- ✓ Check/uncheck childnodes with parent node checkbox.
- ✓ Use Check All and Uncheck All buttons to check/uncheck all cameras in the Cameras List.

2. Remote Client Start Page

Remote DETEXI Client enables connection to any authorized DETEXI NVR available anywhere on the Internet or corporate network for remote viewing and control. Requires authentication with credentials defined within the NVR being connected to. Multiple user credentials are defined within the NVR, to allow for different user permissions and user tracking. In the Remote Client the cameras available in the start page Cameras List will depend upon the user logged in **permissions** (Fig 24).

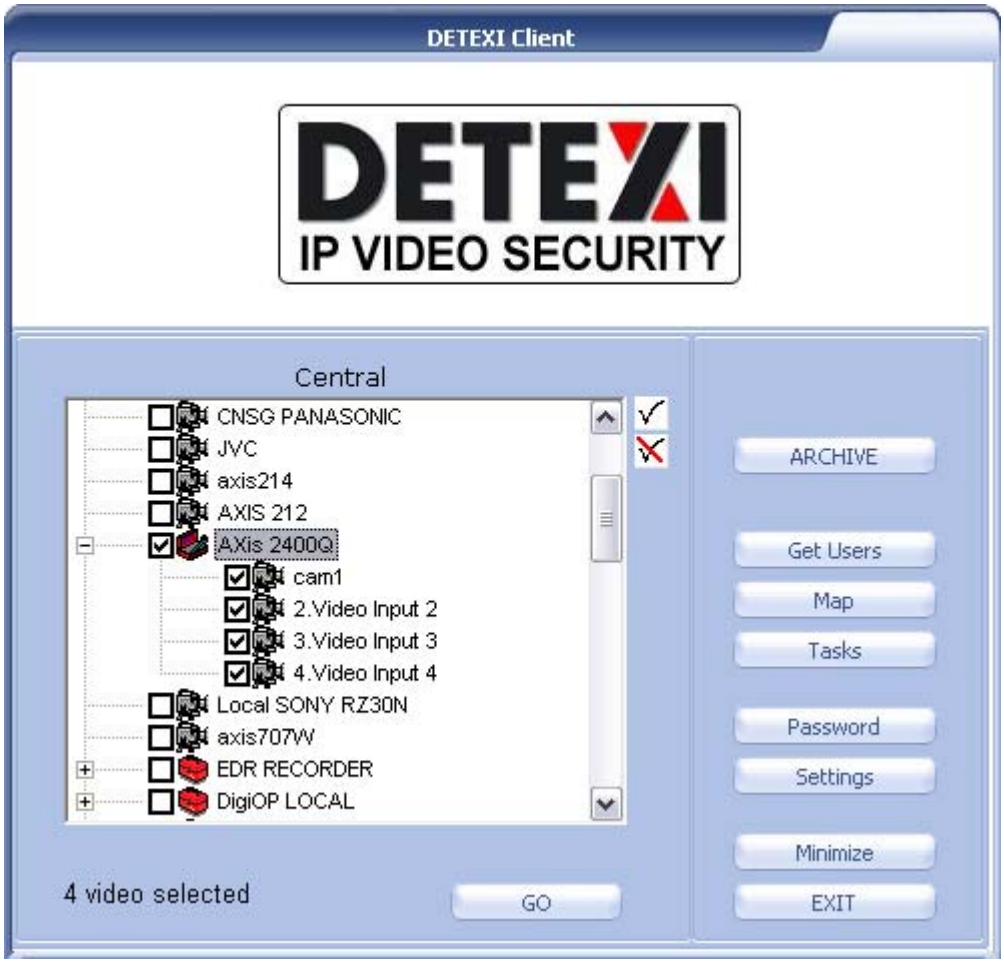


Fig 24. Remote DETEXI Client — Start Page

General Navigation

GO — launches live video of all cameras **checked** in the Cameras List.

ARCHIVE — launches the **Archive Retrieval Tool** built into the Client.

Get Users — launches a **Get Users** page, which allows users to see other users currently logged into the same DETEXI NVR, as well as communicate via text chatting.

Map — launches a MAP page allowing for users to browse and select cameras by location on one or more maps *(visible only if at least one map location is configured in the NVR with at least one camera assigned to it)*.

Tasks — launches a **List of Executable Tasks** available upon the user logged in permissions *(is only visible if the user logged in has permissions to execute at least one task)*.
Password — launches **Change Password** page allowing the currently logged in user to change their password.
Settings — launches the **Settings Configuration**, where all options/settings of the Client are configured.
Minimize — minimizes the Client application into the System Tool Tray.
EXIT — completely closes the Client application.

3. Get Users

Get Users button on the Remote Client start page launches a **Get Users** page (Fig 25), which allows users to see other users currently logged into **the same** DETEXI NVR, as well as communicate via text chatting.
The top-left pane of the page lists all users *(including you)* currently logged into the DETEXI NVR you are connected to.
Clicking on a user in the list shows that user's connection information —

- ✓ IP Address the user is connected from.
- ✓ Cameras the user has permission to view.
- ✓ How much longer the user has permission to connect to the system before being logged out.

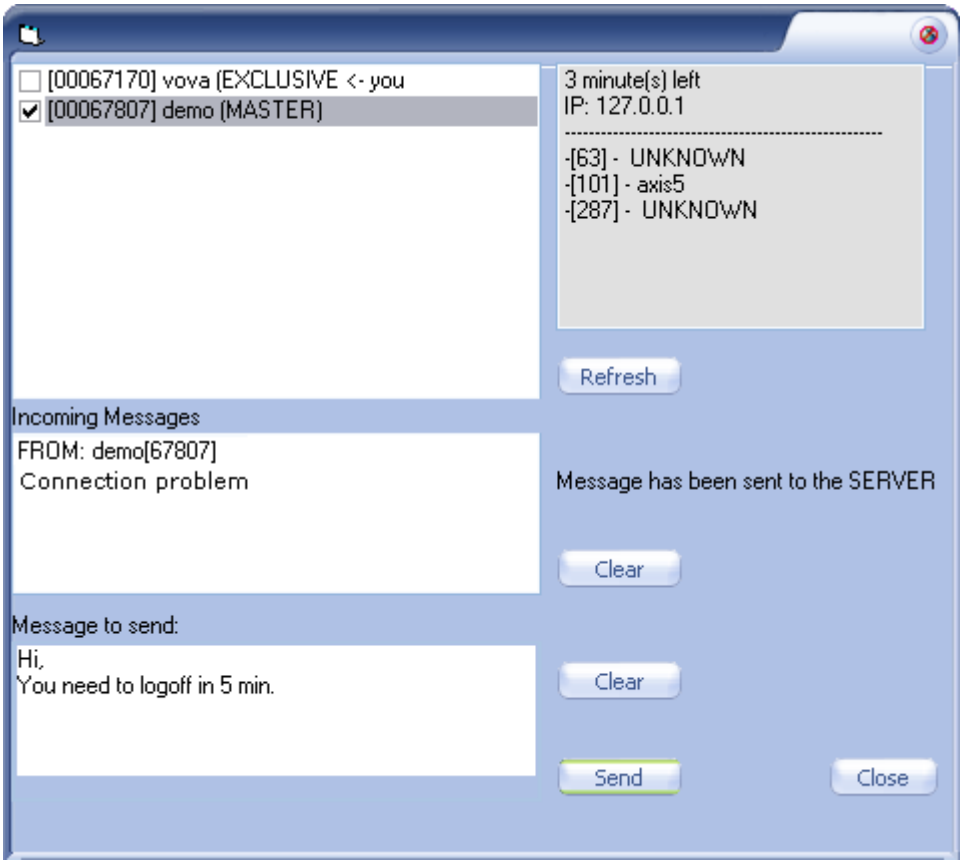


Fig 25. Remote DETEXI Client — Get Users
(Users connection information. Send/receive messages.)

Navigation
Refresh button refreshes the list of users, to see any users that may have logged in or out since the page was opened.

Incoming Messages — Clear button clears all messages in the textbox.
Message to Send — Clear button clears the current message in the textbox.
Send — sends the message from the **Message to Send** textbox to the selected users.
Close — returns to the Client start page.

To send a message to one or more users —

1. Check the users you want to send the message to.
2. Type the message in the **Message to Send** textbox.
3. Click **Send** button.

Master users

There are regular users and master users. Master users can force other users to log off of the DETEXI NVR. This feature could be useful when the **maximum** *(license allowed)* number of clients are logged on. Master users can kick one user off the system to allow another on.

To log off one or more users —

1. Check the users you want to log off.
2. Click **Kill** button. The users will be notified, and then their Clients will be closed.
   – or —
   Click **Kill ALL** button to log off all users.

4. Provide Password

Password button on Remote Client start page launches **Provide Password** page (Fig 26) allowing the currently logged in users to **change** their password.

- ✓ Required password format — any number of alphanumeric characters.

Fig 26. Remote DETEXI Client — Provide Password
(Change Password.)

5. Map

MAP button on the DETEXI Client start page launches a **MAP** page allowing for users to browse and select cameras by location on one or more maps (Fig 27).

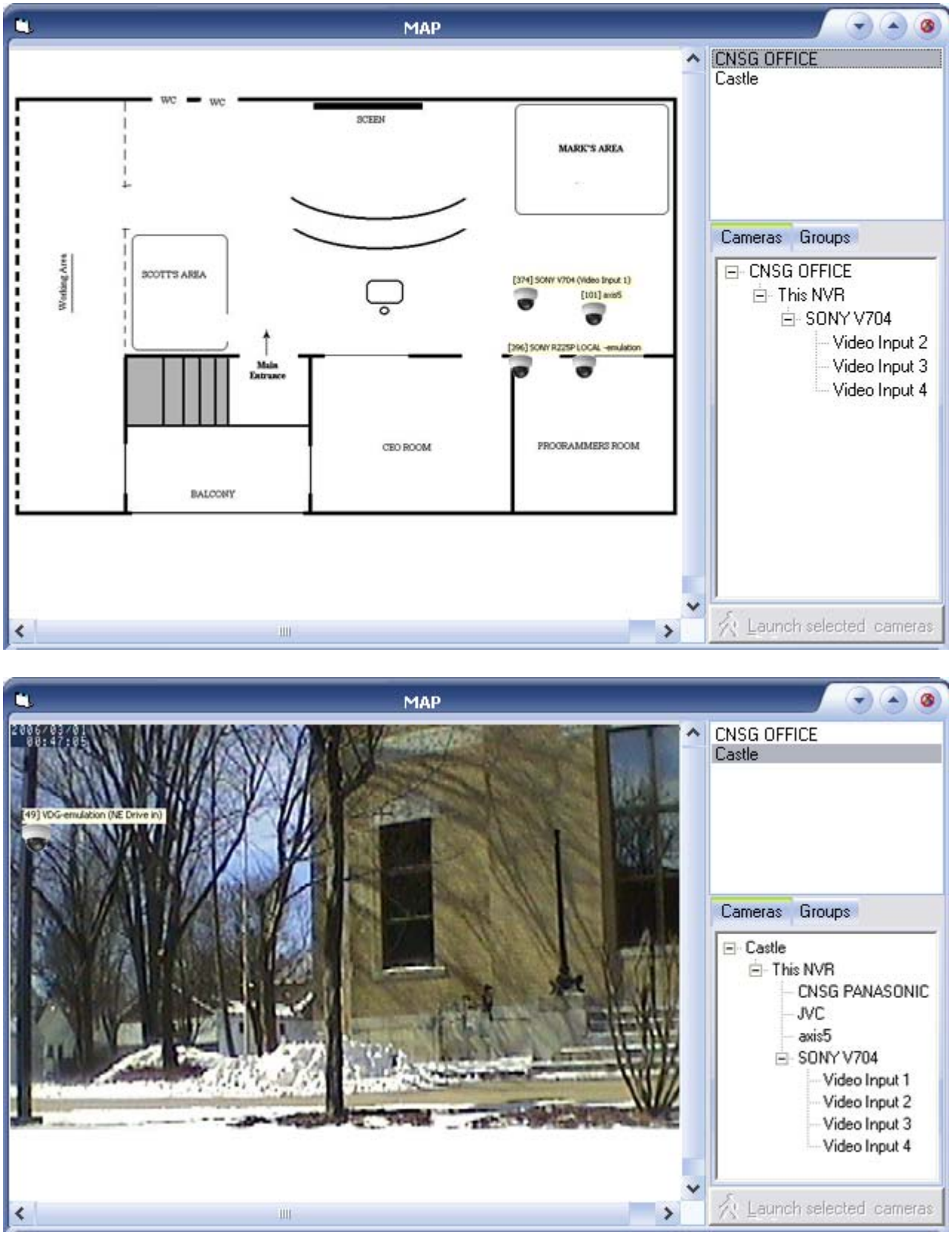


Fig 27. Remote DETEXI Client — Map *(Office Plan / Shot.)*

6. Tasks

Tasks button on the Remote Client start page launches an **Execute Task** panel with the list of executable tasks available upon the user logged in permissions.

Trigger Task —

1. Login to the Remote DETEXI Client and select camera on the Client start page.
2. Press the **Tasks** button to launch **Execute Task** panel (Fig 28) with the tasks available upon the user logged in permissions.
3. Select a task of interest and press **Start Task** button to trigger this task.

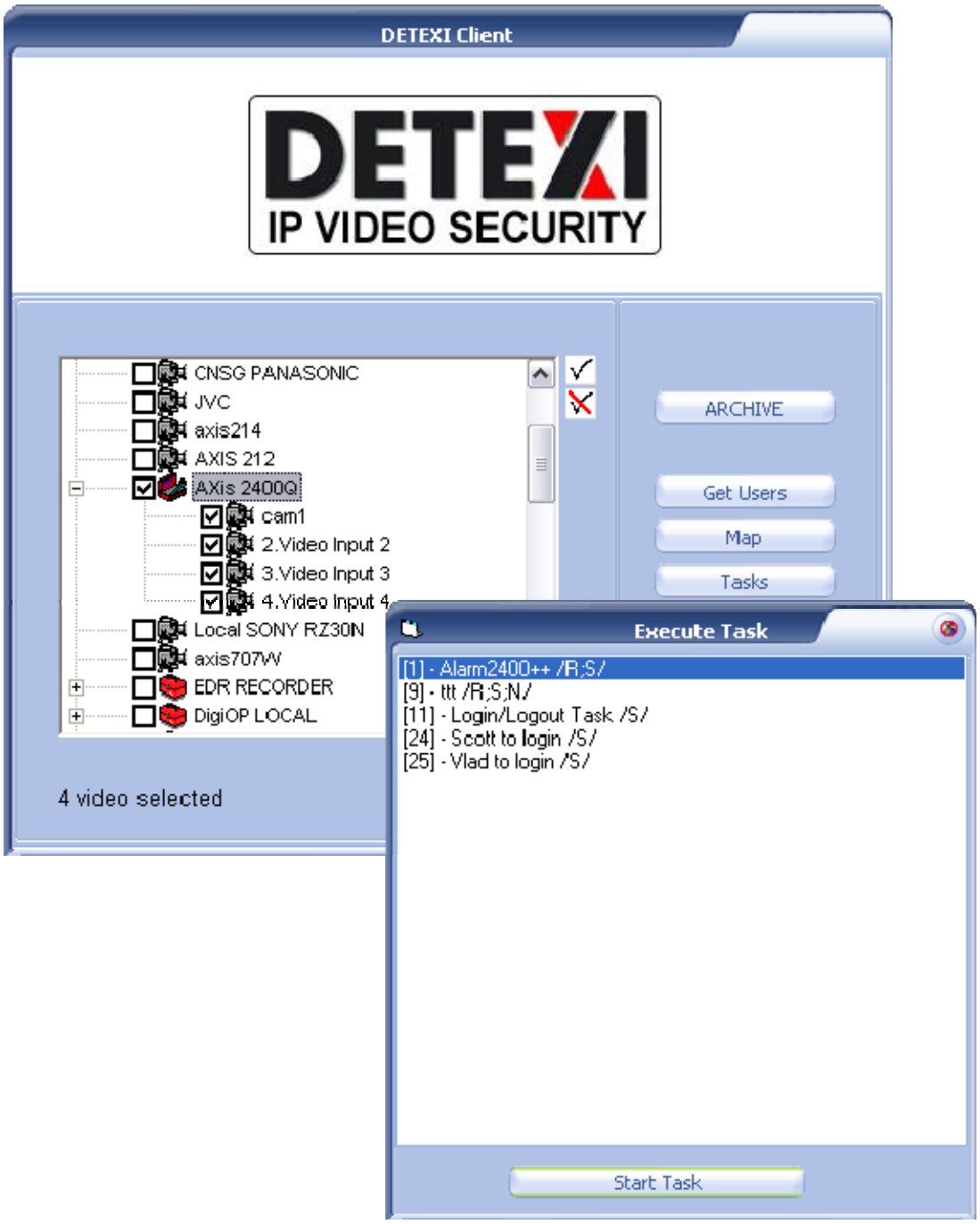


Fig 28. Remote DETEXI Client — Execute Task
(Trigger task.)

Live View (Single, Multi-camera)

Cameras live view provides an interface to organize and monitor network cameras and video encoders on your network. From live view workspace you can set up view groups, record, and control the cameras' video, audio and pan / tilt / zoom.

1. Single View

If only **one camera** was selected in the start page cameras list and **GO** button clicked, the Single View is launched with live video streaming from the selected camera providing access to the various camera controls (Fig 29).

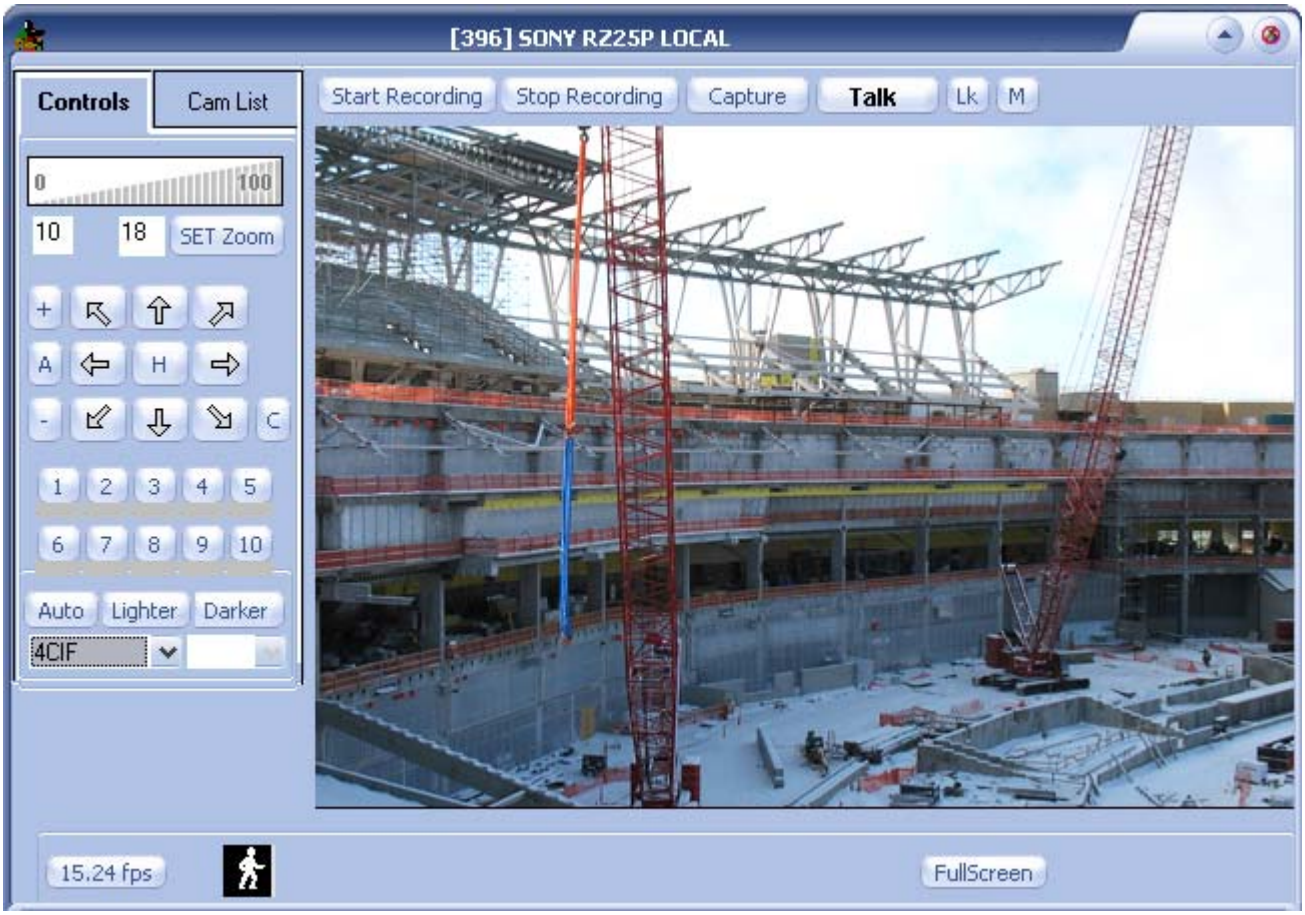


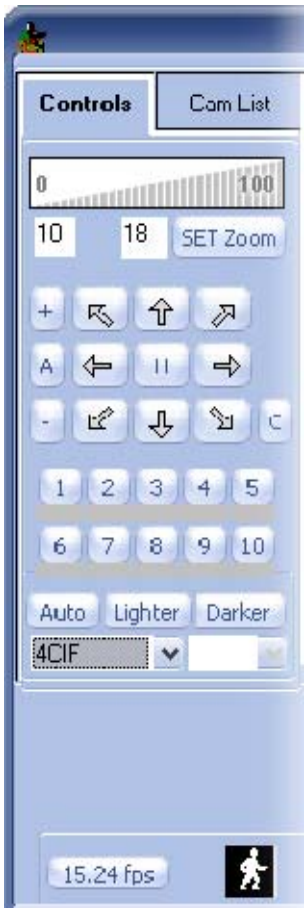
Fig 29. DETEXI Client — Single View
(Live video streaming from the selected camera.)

Full Screen

Click the **Full Screen** button at the bottom of the screen to view the streaming video in full screen,
— or —
Click the arrow toggle button in the **upper-right** corner of the single view to open/close full screen mode.

- ✓ Hide/show the **Controls** panel by **F** key on the keyboard.
- ✓ Single view can also be launched from the multi-camera view for any camera in the group via the **GOTO** option in the **right-click** menu.

Controls



Zoom — if the camera being viewed is a PTZ camera, the **Zoom** controls will be active (depending on permissions in the Remote Client).

- ✓ Clicking within the 0-100% scale will adjust the zoom coordinate of the camera to that percentage of the camera's full zoom capabilities.
- ✓ Users may also enter the desired percentage in the text box and click **SET Zoom** to define a specific zoom percentage.

Pan/Tilt — if the camera being viewed is a PTZ camera, the Pan/Tilt controls will be active (depending on permissions in the Remote Client).

- ✓ Clicking the arrows will move the camera view in that direction one step.
- ✓ If the camera has a home position defined within it, the **H** button will send it to that position.

Resolution Selection — when the live view is launched, the video is streamed in a default resolution as defined in the NVR.

- ✓ Users can change the resolution of the video to another resolution supported by the camera using the resolution drop-down list. This will visibly affect the quality of the image.

Compression Selection — when the live view is launched, the video is streamed with **medium** compression by default.

- ✓ Users can change between low, middle and high compression using the drop-down list. This will visibly affect the quality of the image.

Center Video on the Spot

If the camera being viewed is a PTZ camera, the user has the ability to **click** anywhere on the streaming video image to center video on that spot (depending on permissions in the Remote Client). This only change pan/tilt coordinates, and does not effect zoom. To **Zoom In/Out** — click on the video to center video on that spot and **roll mouse wheel** up and down

- ✓ The resolutions available will depend upon the camera type being viewed. Axis cameras with an auto-configured driver in the NVR will show the specific resolutions supported by that camera model.
- ✓ In the multi-camera view the user can center video on the spot for any PTZ camera as well and zoom in/out by clicking **Page Up/Page Down** buttons.

1. Multi-Camera View

If more than one camera was selected in the start page cameras list and **Go** button clicked, the Multi-Camera View is launched with live video streaming from the first selected cameras (up to thirteen). The multi-camera live view dynamically sizes and tiles the cameras view to fit all selected cameras with the least wasted space (Fig 30).

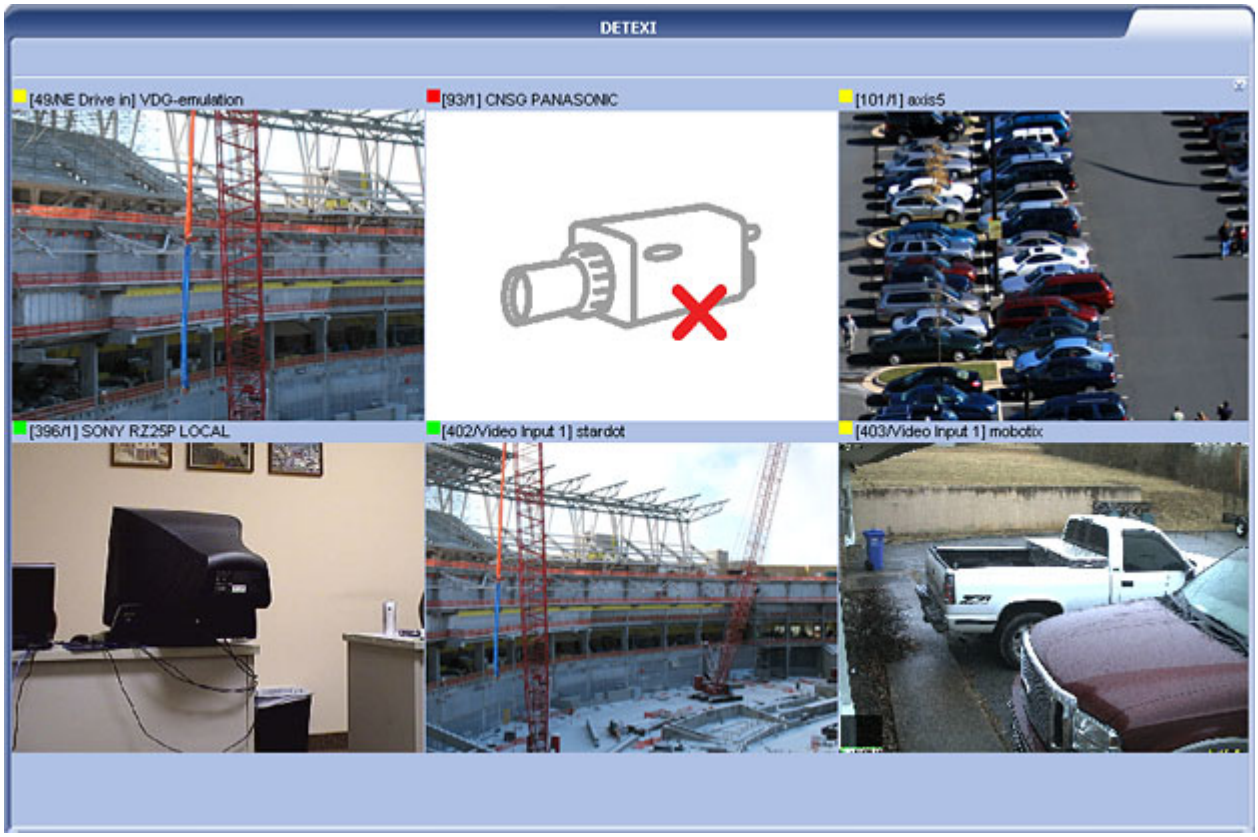


Fig 30. DETEXI Client — Multi-Camera View

The multi-camera view provides a quick way of viewing multiple cameras.

Live Status Indicator — each camera video stream in the multi-camera view has a colored box icon next to the camera name, indicating the status of the video.

- ✓ If the indicator is red, the live stream is halted.
- ✓ A flashing yellow/green indicator means that live video is currently streaming.

Standard Tiling — all cameras' views will be the same size, dynamically sized and tiled with the least wasted space. The multi-camera view can be changed via **Tiling** buttons.

- ✓ Single camera view can also be launched from the multi-camera view for any camera in the group via the **GOTO** option in the **right-click** menu.

Full Screen Setting

If in the **Setting** under the **DISPLAY SETTINGS** the **Full Screen** checkbox is **checked** the **Tiling** buttons appear in the upper right corner of the multi-camera view.

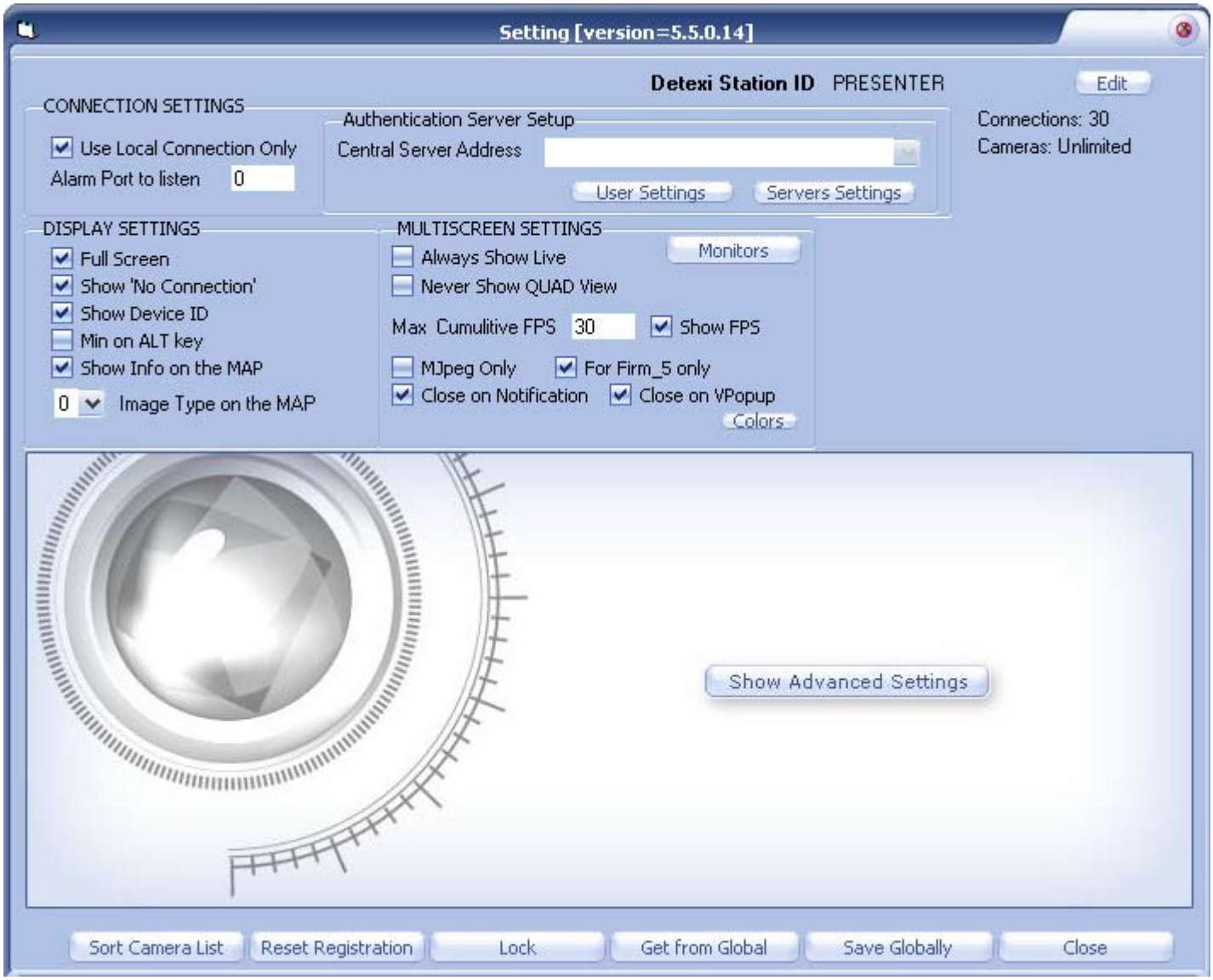


Fig 31. DETEXI Client — Setting
(Full screen setting.)

Tiling Buttons

Press one of the **Tiling** buttons in the upper right corner of the multi-camera view — **S**, **6** and **12** — to change the multi-camera view (Fig 32).

S — all cameras' views will be the same size, dynamically sized and tiled with the least wasted space.
6 — only the first (5 + 1) selected cameras will be shown, with the first much larger than the rest.
12 — only the first (12 + 1) selected cameras will be shown, with the first much larger than the rest.

To show the camera of choice in the large position — press **Shift** button, than **drag and drop** any camera on top of large view or change the cameras order in **Setting — Sort Camera List**.

Fig 32. DETEXI Client — Multi-Camera View
(Tiling buttons in the upper right corner.)

Sort Camera List

To show the camera of choice in the large position —

1. In the **Setting** click **Sort Camera List** button in the **bottom left** corner.
2. In the **Sort the Cameras** panel (Fig 33) select the camera and move it on the top of the list.
3. Click the **Save** button

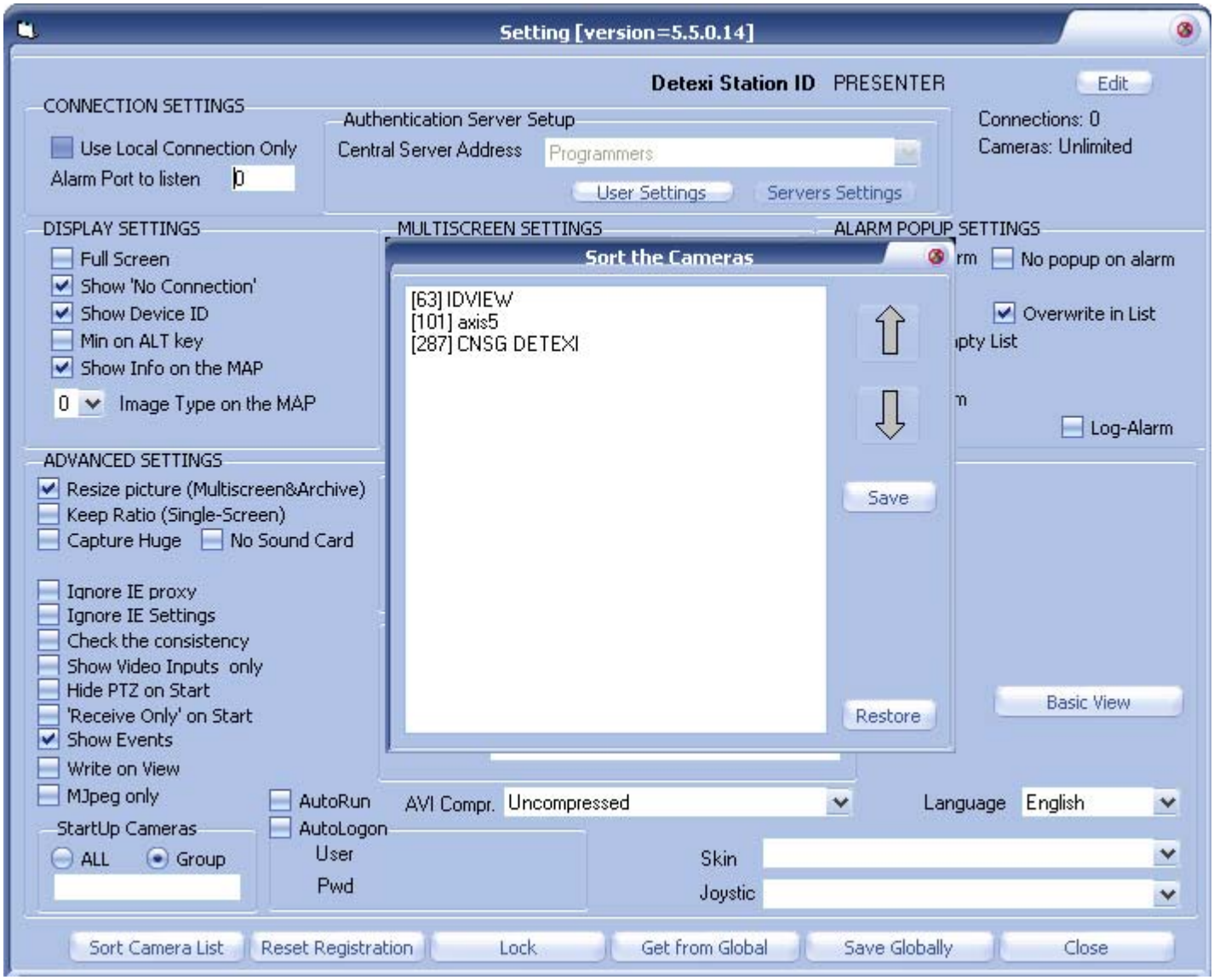


Fig 33. DETEXI Client — Setting

(Sort the cameras list to show the camera of choice in the large position.)

Launch Single View — GO TO Option

GOTO option, available by **right-clicking** on any camera video stream in the multi-camera view, launches the single view for the selected camera **in front** of the multi-camera view providing access to the various camera controls (Fig 34).

- ✓ To **change** the video stream being viewed in the single view **drag and drop** any other camera from the multi-camera view on top of the **current** single view.

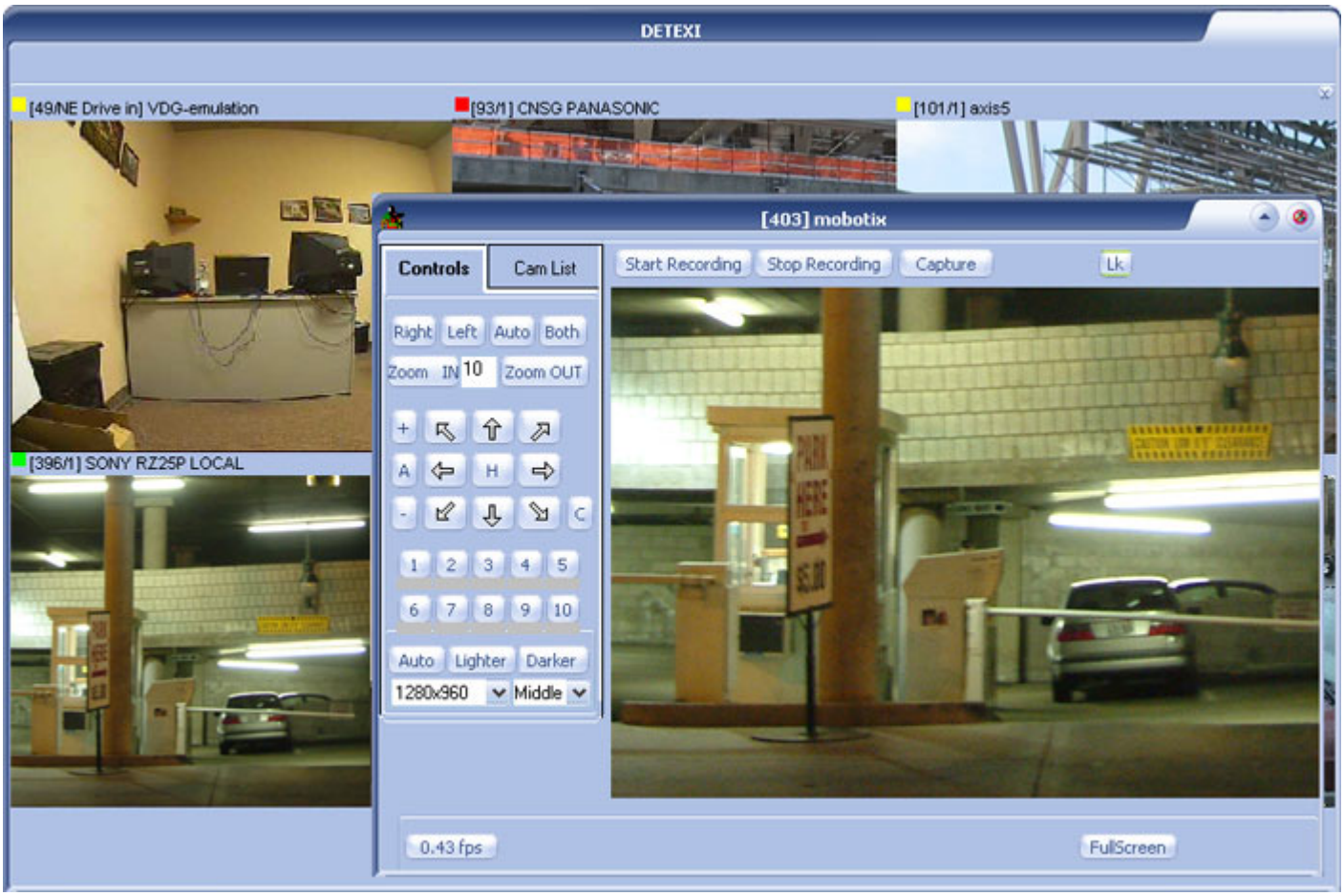


Fig 34. DETEXI Client — Multi-Camera View
(GO TO option. Single View Launched on Top.)

- ✓ To enlarge the selected camera view and display the camera controls while **tiling** all other cameras around it use Enlarge option (Fig 35).

Launch Single Camera View — Enlarge Option

Enlarge option is available by **right-clicking** on any camera video stream in the multi-camera view. It enlarges the **selected** camera view and displays the camera controls while **tiling** all other cameras around it (Fig 35).

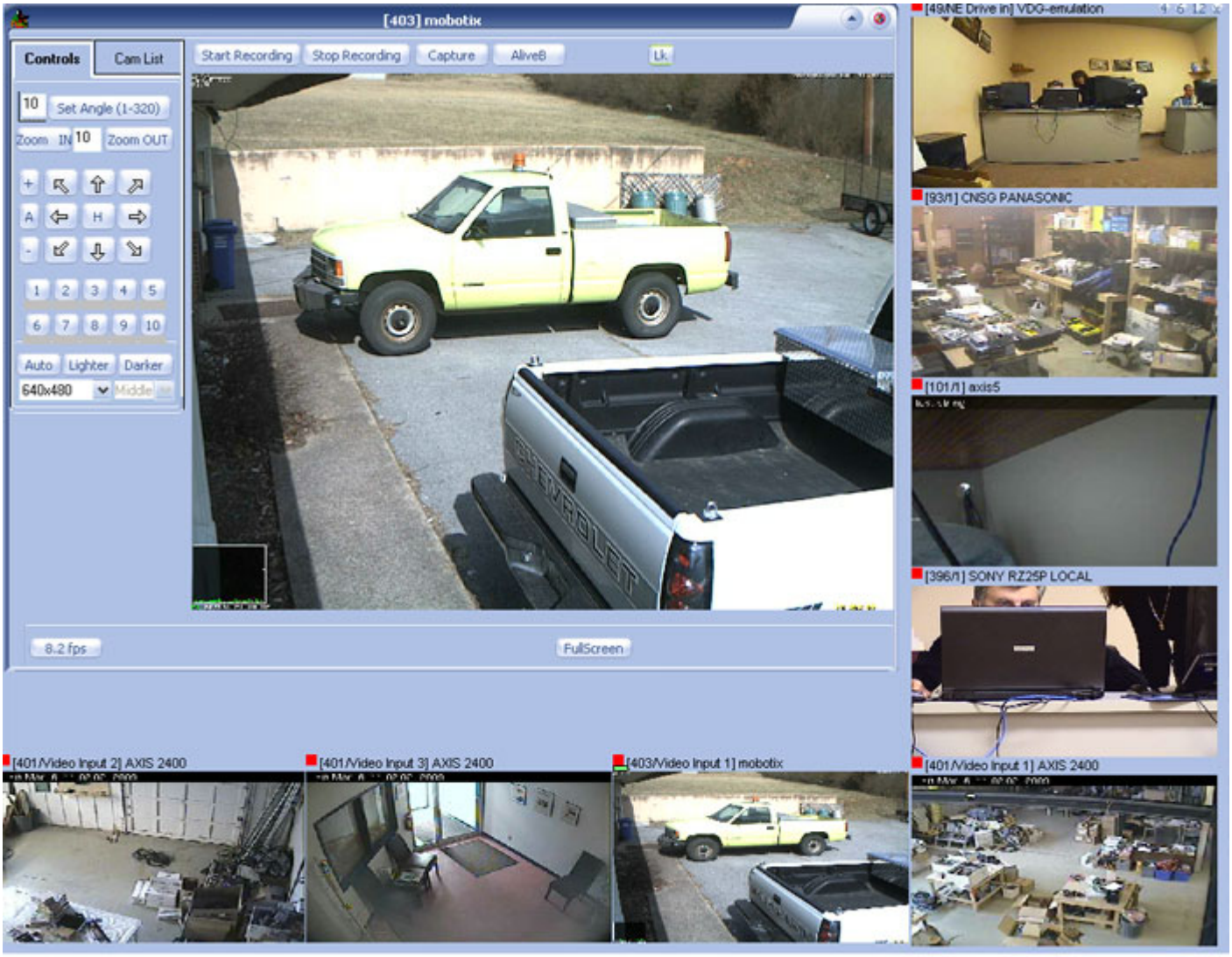


Fig 35. DETEXI Client — Multi-Camera View
(Enlarge option.)

✓ The Enlarge option is only active if in the **Settings** under the **DISPLAY SETTINGS** the **Full Screen** checkbox is **checked**.

Sequence

Sequence can be considered as a virtual IP-device video input that consists of sequence of multiple video inputs with **configurable** order and execution. Any sequence is created by compiling IP-devices' video inputs configured within the DETEXI NVR into a series of positions. Each position can contain one or more video inputs, splitting the screen if necessary to show all chosen video streams at once.

Sequence can be used in any way that a normal IP-device can —

- ✓ Sequences will show in the **Cameras List** for selection like a normal camera/ video server.
- ✓ Sequences can be viewed in the **Live View (Single or Multi-Camera)**.
- ✓ Sequence can be used as a carousel feature with the 1+5 or 1+11 multi-camera view, with the sequence in the hot spot cycling through the rest of the cameras organized around the large.

Position 1

Position 2

Position 3

Position 4

Fig 36. Sequence Positions Example

1. Configure Sequence

Add New Sequence (step 1-3)

1. In the **NVR Control Center** switch to the **Cameras**.
2. Below the **Cameras List** make sure that **Sequence** is chosen as add type from the drop-down list next to **Add** button.
3. Then click **Add** button to open blank **Cameras Settings** dialog (Fig 37).

Continue to the **Name Sequence, Add Position** steps.

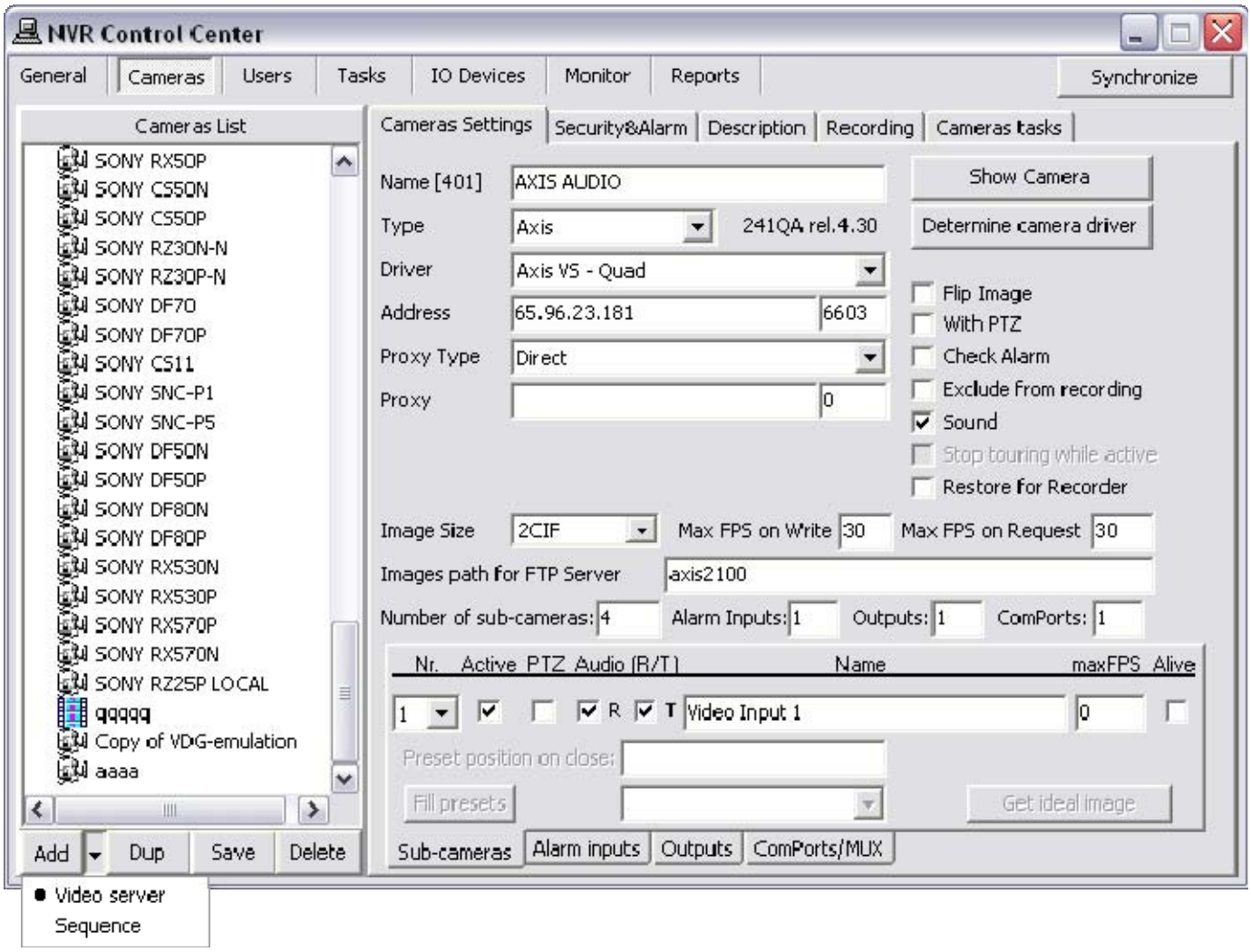


Fig 37. NVR Control Center — Cameras — Cameras Settings
(Add new sequence)

Name Sequence, Add Position (step 4-7)

4. In the **Cameras Settings** enter the sequence **Name**.
5. **Check Repeat** checkbox to loop the sequence. Leave **time(s)** as **0** for the sequence to loop infinitely. You may also want to define the **FPS** for the video streams to be displayed at.
6. **Right-click** in the white box and choose **Add Position** to add the first position in the sequence (Fig 37).
7. Define the **Dwell** time, as how long this position will be displayed before moving on to the next.

Continue to the **Define Cameras in the Position** steps.

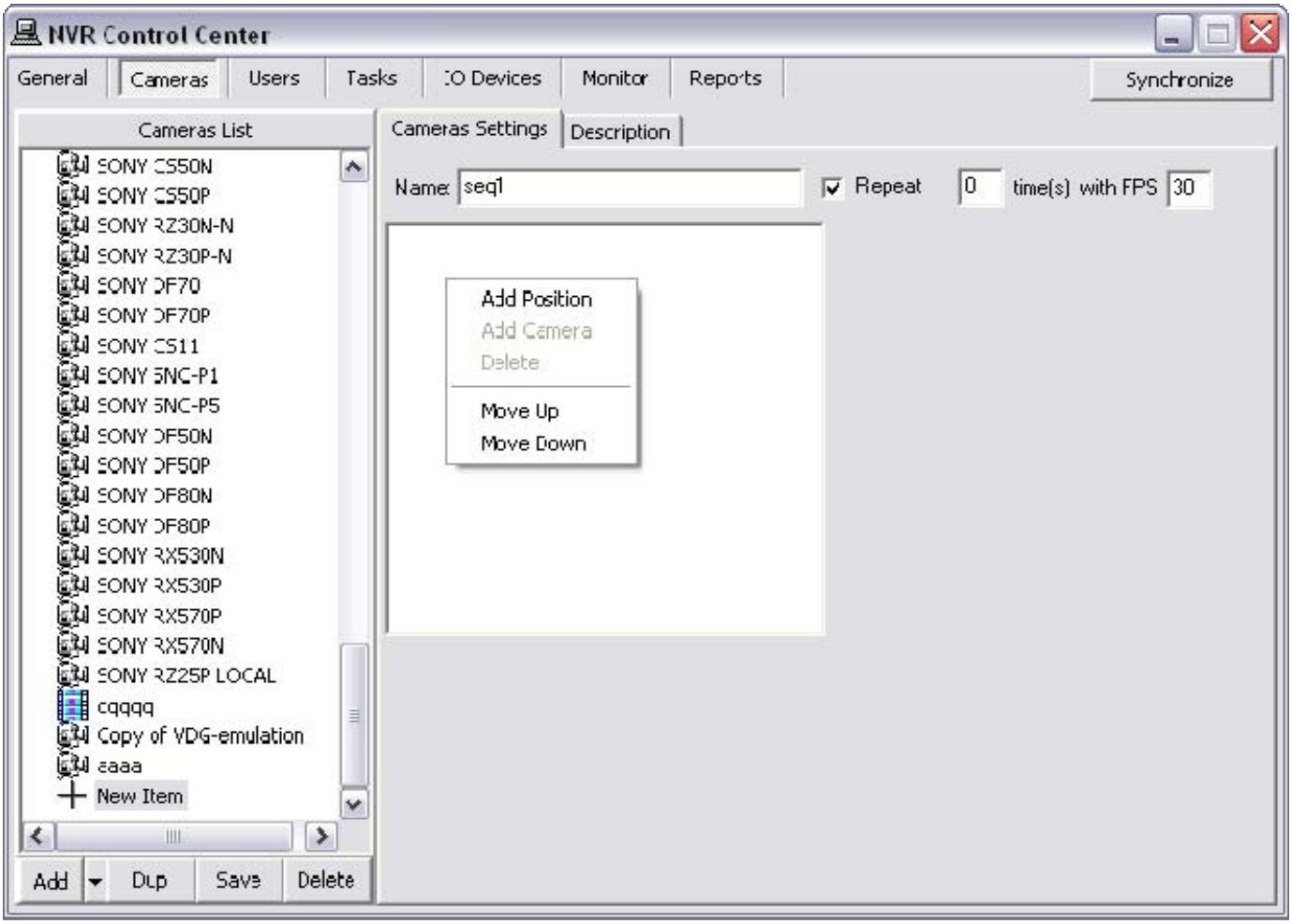


Fig 37. NVR Control Center — Cameras — Cameras Settings
(Name new sequence. Add position.)

Define Cameras in the Position (step 8-9)

8. **Right-click** on the position item and choose **Add Camera** to add a video stream to the sequence position.
9. Choose a desired camera from the list (Fig 38), and define image quality.
   - ✓ If the camera is PTZ, you may define PTZ coordinates to move the camera to when it loads.
   - ✓ If you would like to choose a predefined preset, click the **Connect button** to the right to populate the preset list. This would also bring live video in from the camera.

Continue to the **Add More Cameras, Positions** steps.

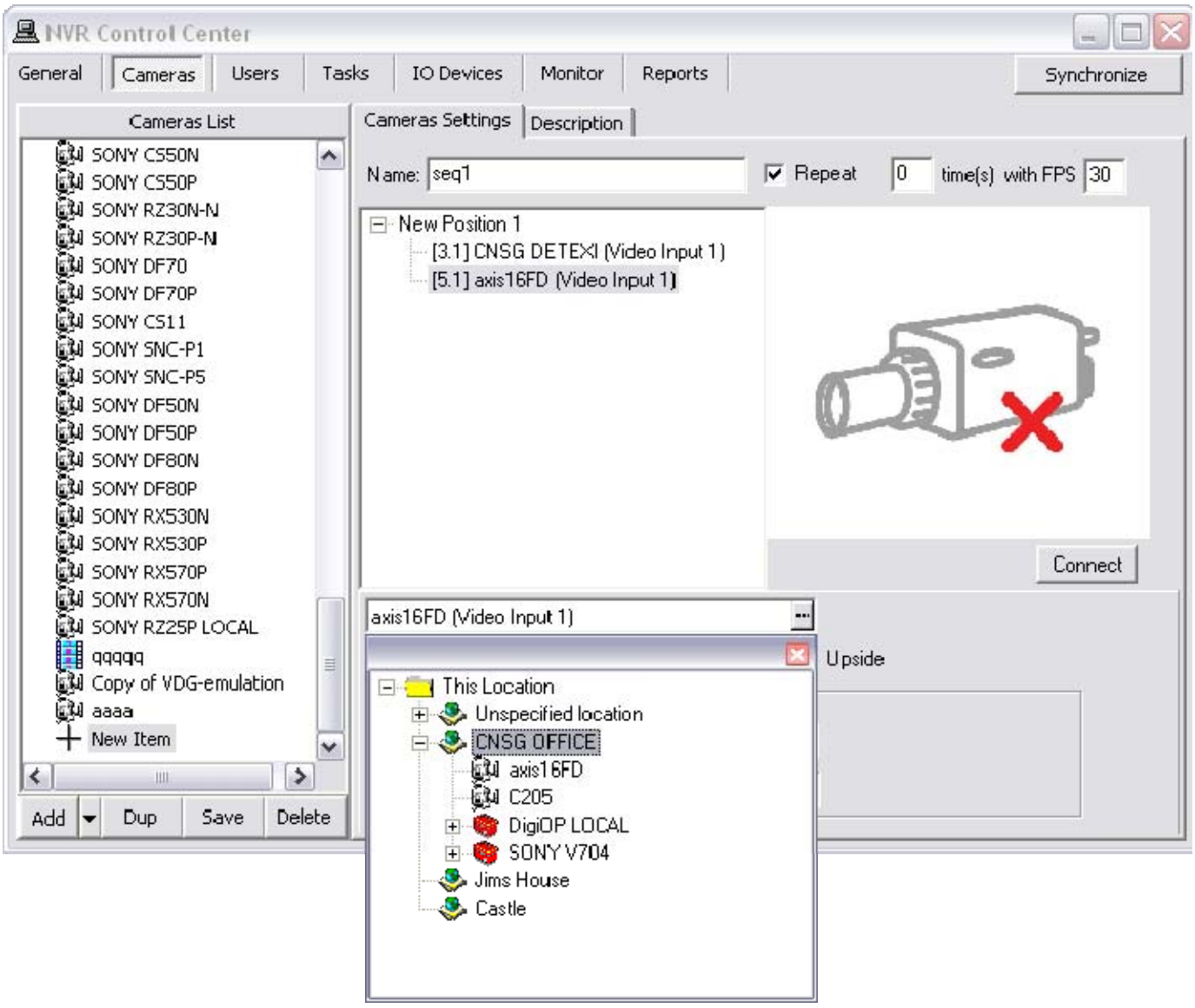


Fig 38. NVR Control Center — Cameras — Cameras Settings
(Define cameras in the position.)

Add More Cameras, Positions (steps10-12)

10. Add more cameras to the sequence position if necessary (Fig39).
11. Add more positions to the sequence until all desired positions are created.
12. Click **Save** button below the **Cameras List** to save new sequence.

Continue to the **Assign Permissions** steps.

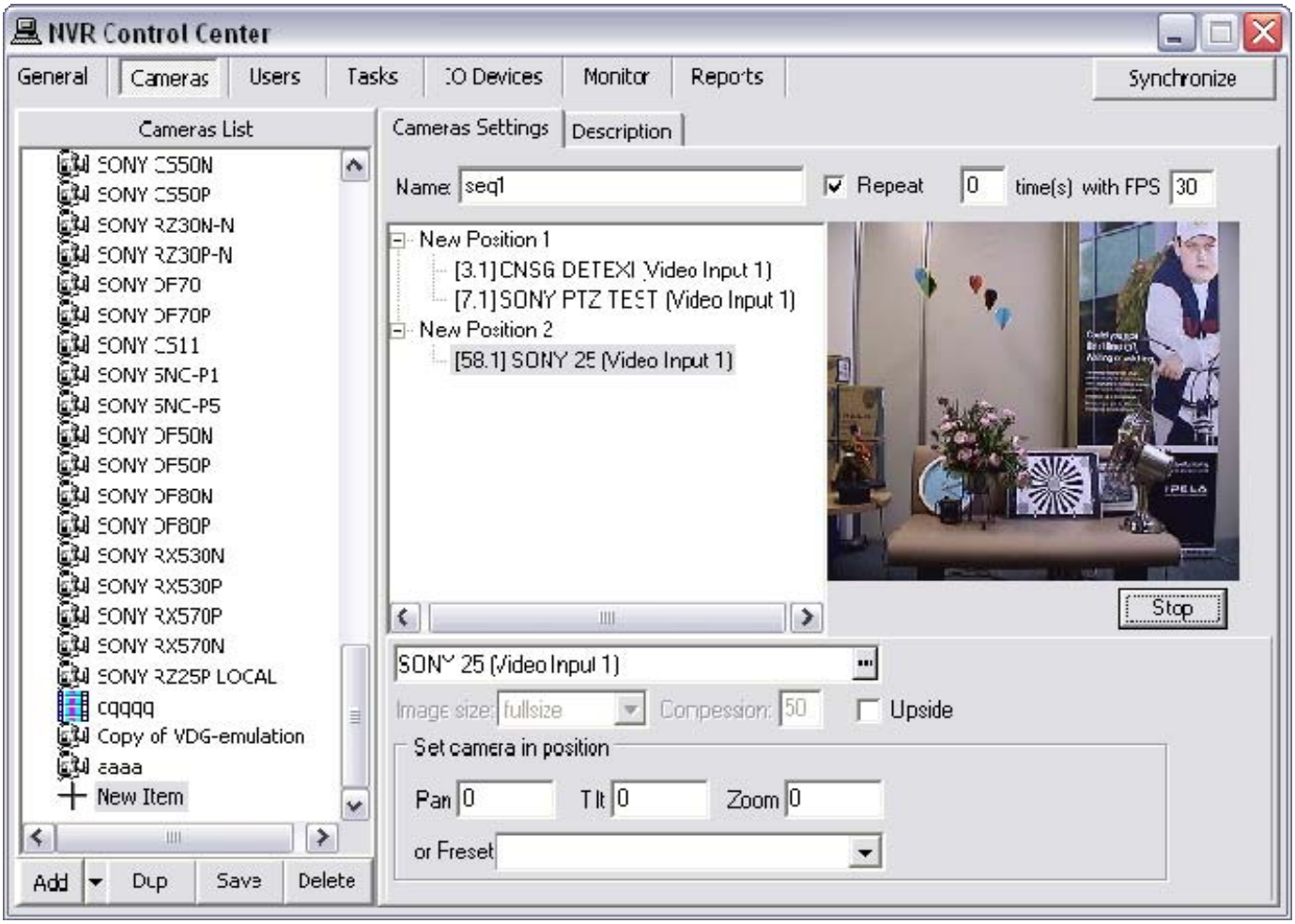


Fig 39. NVR Control Center — Cameras — Cameras Settings
(Add more cameras, positions. Save sequence.)

2. Assign Permissions

When the sequence is created the next step is to define which users will have **access** to this sequence in the remote DETEXI Client. Permissions for a sequence are set exactly as they are for camera/video server.

1. In the **NVR Control Center** switch to the **Users** (Fig 40).
2. Select a user from the **Users List**.

3. In the **User Information** select the sequence from the **Cameras List** at the left and click "**>**" button to add the permission to the user — the sequence name appears in the selected cameras list at the right.
4. Select the sequence in the selected cameras list at the right.
5. Check proper checkbox under the **User Rights** to pass the previously configured camera authentication settings — **Adm**, **Oper** or **User**.
6. Check **Can PTZ** checkbox below the selected cameras list to give the user PTZ permission on the selected camera. This setting is enabled by default if the camera has PTZ capabilities when assigned to the user.
7. Click **Save** button below the **Users List** to save user settings.

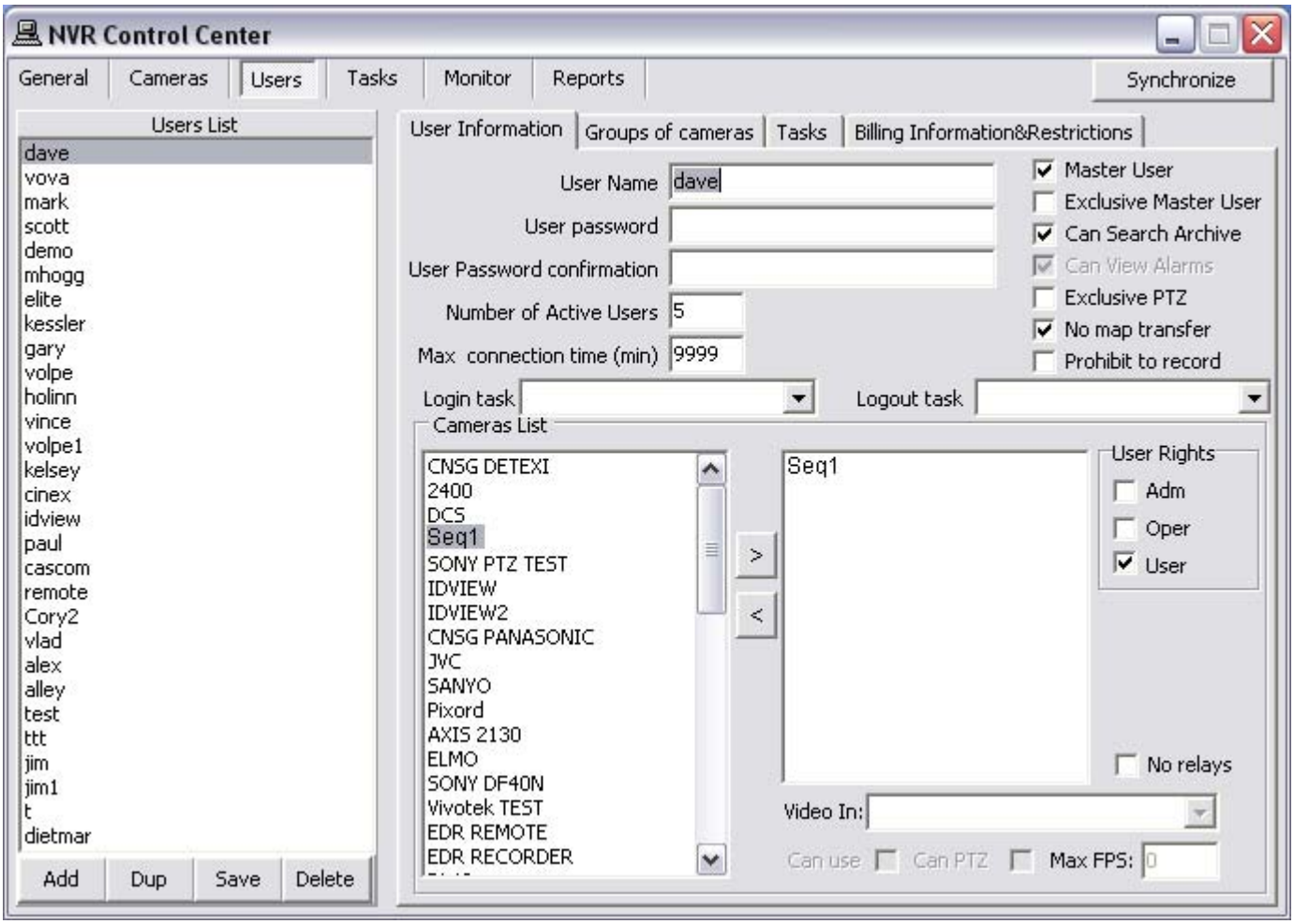


Fig 40. NVR Control Center — Users — User Information
(Assign permissions.)

- ✓ Be sure that User Rights (Adm/Oper/User) settings make sense considering the authentication settings in the **Security & Alarm**.
- ✓ The User Rights chosen for the first camera configured will automatically be assigned to each camera after that unless manually changed.
- ✓ PTZ permission is defined on a per-camera basis, and is enabled by default if the camera has PTZ capabilities when assigned to the user.

Video Viewing, Retrieval, Export

Client Archive Tool vs. Archive Viewer

With the DETEXI NVR configured to record video, Local and Remote DETEXI Clients can access the recorded video. There are two main tools that allow users to access the NVR video archive, search, view and export video —

- ✓ DETEXI Client Archive Tool
- ✓ DETEXI Archive Viewer

Although the DETEXI Client Archive Tool and DETEXI Archive Viewer have very similar capabilities, they access and pull the recorded video from the archive in very different ways allowing for both to excel in different environments and for different needs. That is especially apparent when connecting over a network. There are a few unique features in each as well.

The DETEXI Client Archive Tool pulls recorded video from the NVR archive transferring all frames in the time segment selected into local memory. For this reason, the amount of video that can be viewed at once is limited, and the initial load time is very affected by the network the video is being pulled across. Once loaded, however, this video can be viewed very quickly and efficiently at very high frame rates. When users already know the time and date of interest and only need to review a **small** amount of video, they might find the DETEXI Client Archive Tool more efficient than the DETEXI Archive Viewer.

When **large** amount of video need to be scanned for events the DETEXI Archive Viewer is the tool of choice. Rather than loading a collection of video into local memory, the Archive Viewer streams video directly from the NVR archive over the network. For this reason, a full 24 hours of data is at the user's fingertips for viewing at all times without requiring a large initial load time. However, this limits user to slower possible playback speed — completely dependent upon the network connection between the Archive Viewer and DETEXI NVR archive. It is not uncommon to see pauses in video playback for buffering of the video stream.

- ✓ When located on the DETEXI NVR computer, the DETEXI Archive Viewer is very efficient — limited only by the read speed of the hard drive and decoding speed of the video card.

DETEXI Client Archive Tool

The DETEXI Client Archive Tool pulls recorded video from the NVR archive transferring all frames in the time segment selected into local memory. For this reason, the amount of video that can be viewed at once is limited, and the initial load time is very affected by the network the video is being pulled across. Once loaded, however, this video can be viewed very quickly and efficiently at very high frame rates. When users already know the time and date of interest and only need to review a **small** amount of video, they might find the DETEXI Client Archive Tool more efficient than the DETEXI Archive Viewer.

- ✓ The **ARCHIVE** button on the Client start page launches the Archive Tool built into the DETEXI Client (Fig 41).

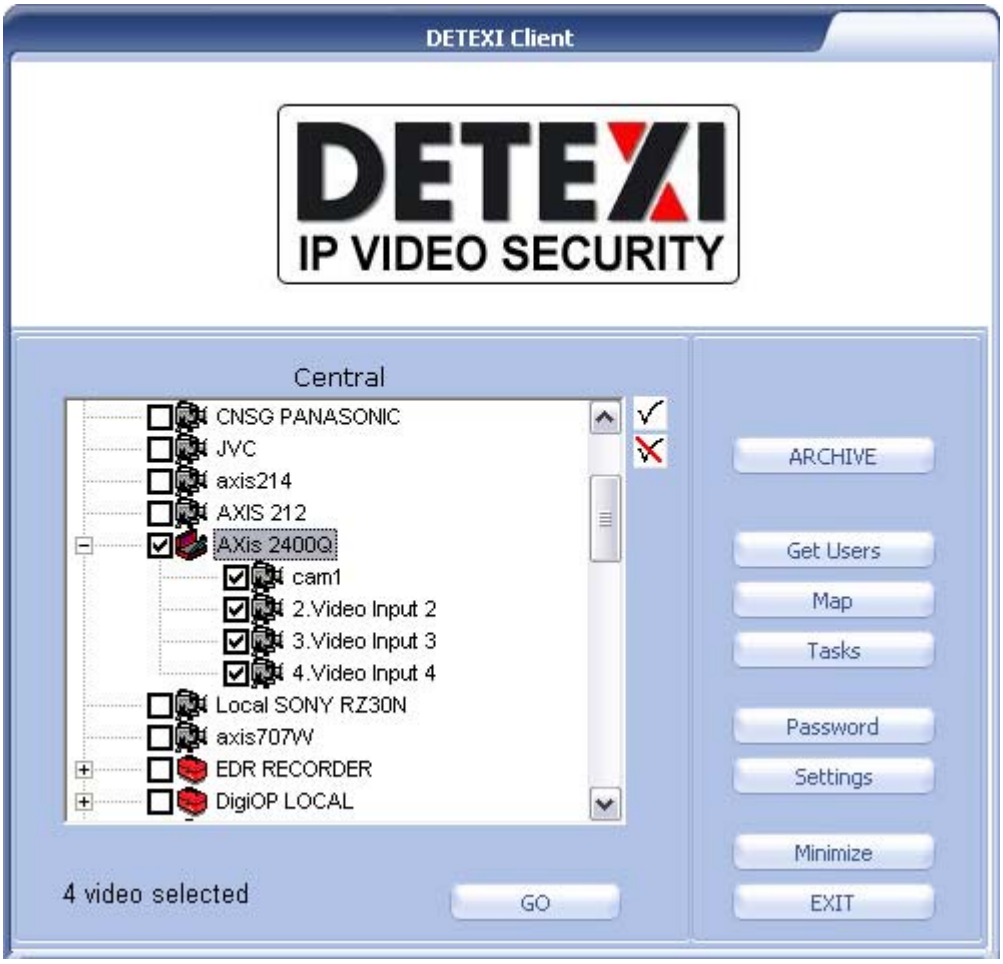


Fig 41. DETEXI Client
(Launch DETEXI Client Archive Tool.)

1. Search for Video of Interest

1. On the Client start page press **ARCHIVE** button — the Archive Tool built into the Client launches.
2. Double-click on the camera of interest in the **Search — Cameras** list to turn it yellow.
3. To choose the date of interest click on the down arrow next to today's date ant select the date from the calendar.
4. Click **Show** button to show all recording activity for the chosen date. The timeline will be filled in with the video bar graph, indicating the recorded video available for the day.
   - ✓ If motion detection is turned on in the recording schedule for the camera, the green bars indicate the amount of motion detected within each minute of video.
   - ✓ The solid gray around the motion bars indicate continuous recording.
   - ✓ Red bars indicate alarm video (recorded due to an alarm).
   - ✓ The height of each bar indicates how much video (of the given category) was recorded in that minute.

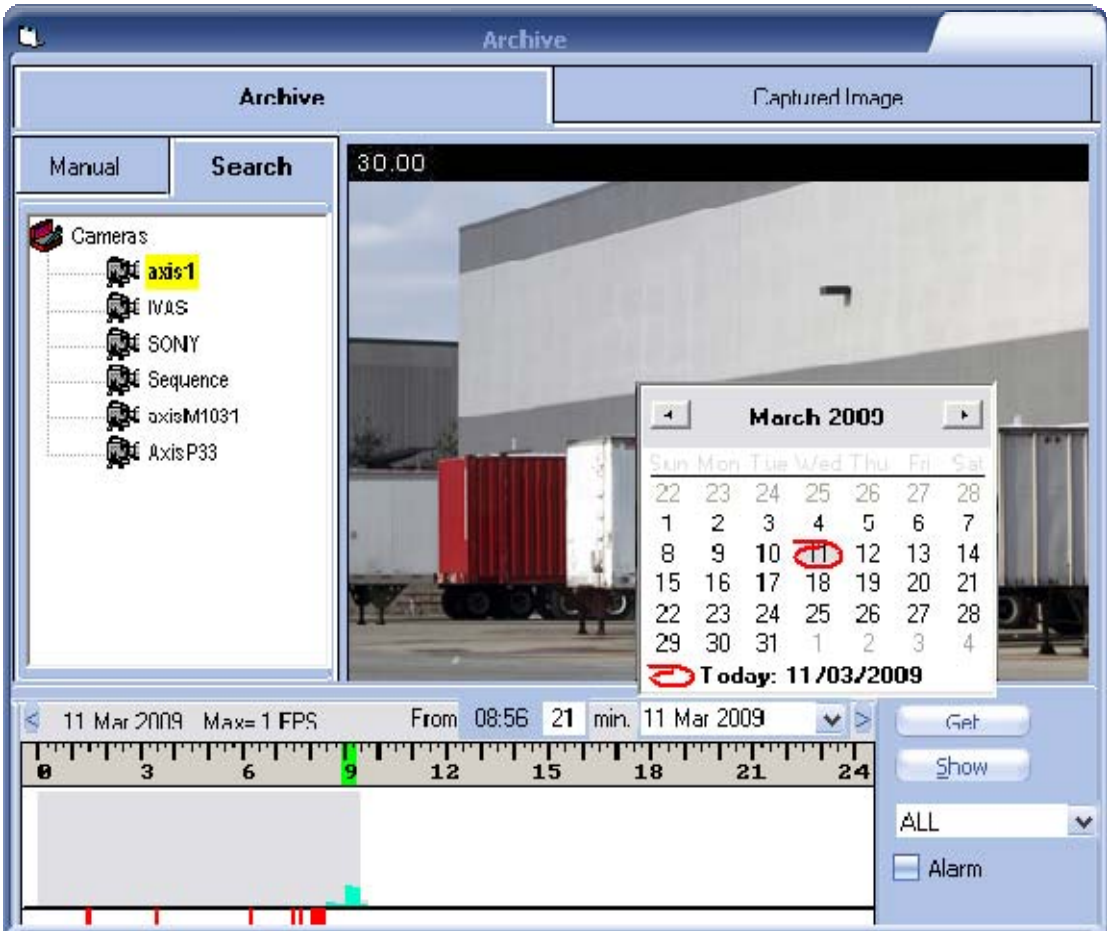


Fig 42. DETEXI Client — Archive
(Search for video of interest. Video bar graph.)

✓ A combination of solid gray and green bars are seen when a continuous recording with motion detection schedule is configured.

2. Select Segment of Video

5. To select the segment of video for viewing, **right-click and drag** on the **time line** above the video bar graph to highlight the time segment of interest. If no segment is selected, all video in the current view is considered selected.

   ✓ Be careful not to select too large period of time, since loading can take a long time depending on the network resources. The maximum amount of video that can be loaded at once is **10000** frames.

6. With video selected, click the **Get** button to begin loading the section of video into memory.

   ✓ Before clicking **Get** button, the **Alarm** checkbox can be checked to load only the alarm video *(recorded due to an alarm)* for that period of time rather than the continuous and motion video.

   ✓ While the video is loading, the **Get** button changes to a **Break** button, showing the current status of the load. If the load is taking longer than desired, this button can be used to **stop the load**, and whatever video was loaded to that point will be viewable.

3. Playback, Export Video

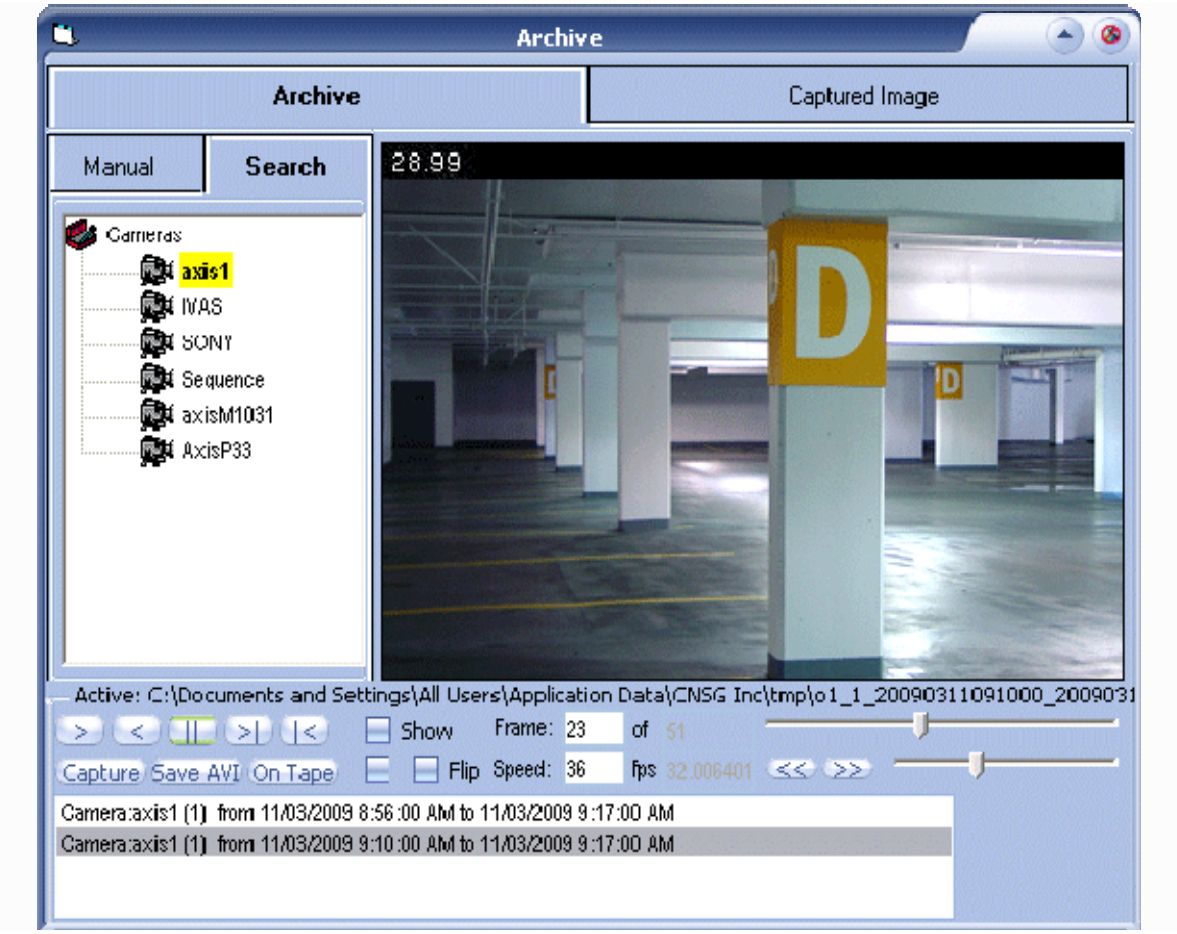


Fig 43. DETEXI Client — Archive
(Video playback control panel.)

7. Once a segment of video is loaded for viewing, the video playback controls appears, with all video currently loaded in memory listed at the bottom. Many situations may call for multiple sections of video listed there.

8. **Double-click** the portion of video listed to view the first frame.
9. Playback controls includes the following buttons from left to right — **Play Forward**, **Play Backward**, **Pause**, **Frame Forward** and **Frame Backward**.
   - ✓ The **Frame** slider can be used to quickly select a playback position within the video clip, and **Speed** slider — to adjust the playback rate in FPS.
10. Video can be exported in the form of a snapshot picture, or AVI format movie. Press **Capture** button to save a single frame of the video and follow to the **Captured Image** panel in order to enhance and save the snapshot.
11. To export selected recordings as an AVI format movie — when playback is stopped, click the **Save AVI** button to begin exporting the video from the current location until playback is stopped again.
    - ✓ It may be necessary to apply **compression** during the export in order to lower the file size. A compression type can be applied if desired in the Client **Setting — Show Advanced Settings** in the **Capture** section.

4. Edit Captured Image

Once video of importance is found, it is often necessary to be able to export that video to a universal format for distribution to management, the police, or other authority. This can be done with either the **Capture** or **Save AVI** features.

- ✓ Clicking **Capture** button will save a **single** frame of the video and transfer it into the **Captured Image** panel for editing. The image can be adjusted as needed and saved as a JPEG file.

Fig 43. DETEXI Client — Archive — Captured Image
(Edit and save captured image.)

DETEXI Archive Viewer

When **large** amount of video need to be scanned for events the DETEXI Archive Viewer is the tool of choice. Rather than loading a collection of video into local memory, the Archive Viewer streams video directly from the DETEXI NVR archive over the network. For this reason, a full 24 hours of data is at the user's fingertips for viewing at all times without requiring a large initial load time. However, this limits user to slower possible playback speed — completely dependent upon the network connection between the Archive Viewer and DETEXI NVR archive. It is not uncommon to see pauses in video playback for buffering of the video stream.

- ✓ When located on the DETEXI NVR computer, the DETEXI Archive Viewer is very efficient — limited only by the read speed of the hard drive and decoding speed of the video card.

DETEXI Archive Viewer —

Included automatically with the DETEXI NVR and Remote DETEXI Client installation connects local and/or remote users to the DETEXI NVR recorded video (NVR archive) for video retrieval and export. For remote users permission/authentication is required.

Launch DETEXI Archive Viewer —

To launch DETEXI Archive Viewer open **Archive Viewer** from **Start — All Programs** or click the program icon on your desktop.

To quickly retrieve the massive amounts of video being recorded from the DETEXI NVR archive — launch the DETEXI Archive Viewer, connect to the NVR and search for the video of interest. The following steps explain the process.

1. Search Video

1. Launch **Archive Viewer — Choose NVR and Camera** (Fig 44).
2. Select the NVR to connect to from the **NVR** list. Once connected, the **Server** list will be populated with the cameras / video encoders that currently have a recorded video.
3. Select the camera of interest from the **Server** list.
   - ✓ The **Alarm** checkbox can be **checked** before the selection in order to search for alarm video only.
   - ✓ If a video encoder is specified select a video input of interest from the **Video** list.
4. When the camera is selected, the **Date** list will automatically be populated with all dates containing recorded video for the selected camera. Choose the date of interest.
5. Press **Load** button — the video bar graph and the **Time** list will both be populated with data indicating when video for the date and camera selected was recorded.

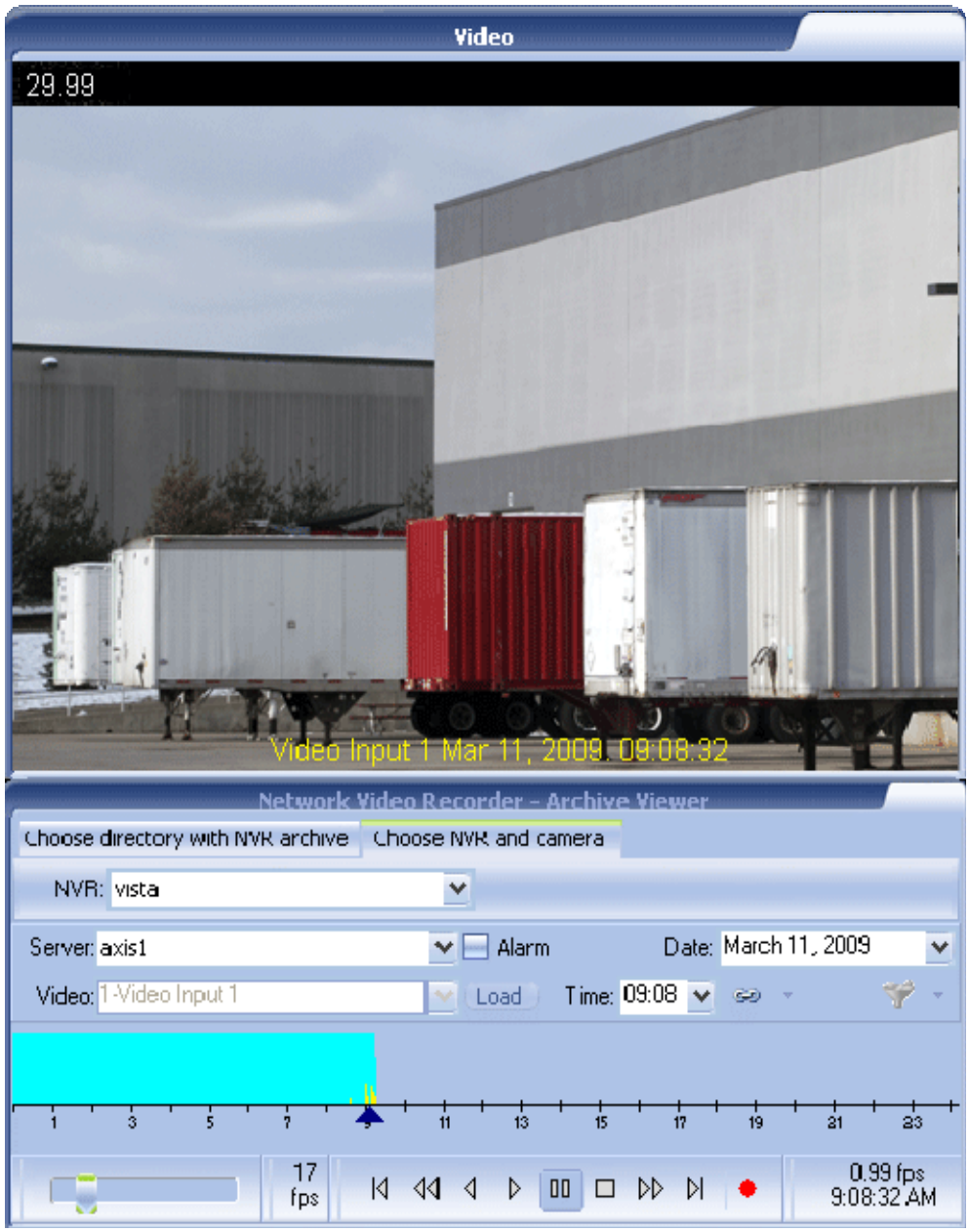


Fig 44. DETEXI Archive Viewer — Choose NVR and Camera
(Search video.)

6. Video bar graph indicates the existence of archived video based on the time of day. Each bar equating to **one minute** in time. The color of the bar at any given time indicates the category of video recorded: blue — continuous recording, yellow — recording on motion detected.

   ✓ A combination of solid blue and yellow bars is seen when a continuous recording with motion detection schedule is configured.

   ✓ The height of each bar indicates how much video (of the given category) was recorded in that minute.

7. Select a minute of interest from the **Time** list *(the position arrow moves to that time)* — the **first frame** of that minute video will be loaded; or **drag and drop** directly the position arrow on the time line.

- ✓ For remote users permission/authentication is required. Use credentials you would normally use in the DETEXI Client.

2. Playback, Export Video

The **playback controls** are displayed at the bottom center of the **Choose NVR and Camera** panel. Use these controls to play video forward and backward, stepping one frame forward and backward, and jumping to the beginning and end of the selected video (Fig 45).

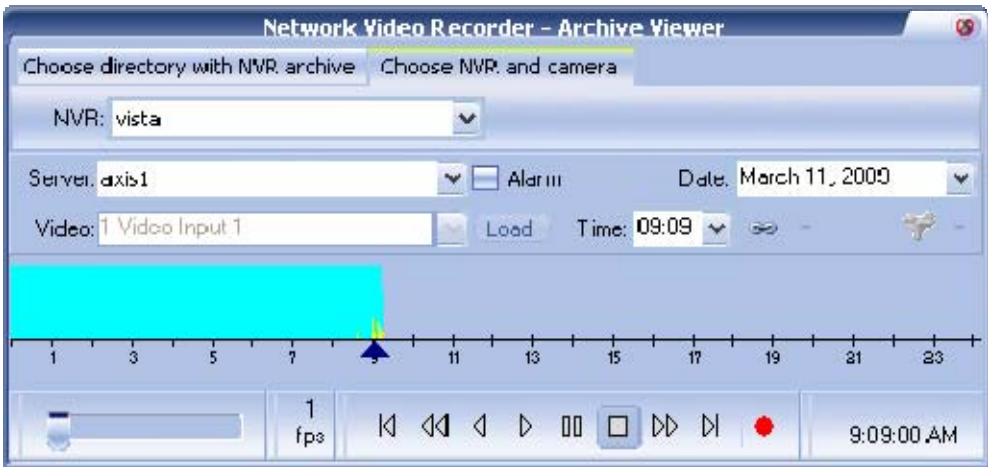


Fig 45. DETEXI Archive Viewer— Choose NVR and Camera
(Playback controls.)

Playback controls from left to right —

1. **First frame in the current minute** – jumps to the first frame in the currently selected minute.
2. **One frame back** – steps one frame backward in time.
3. **Play backward** – plays the video backward from the current position.
4. **Play forward** – plays the video forward from the current position.
5. **Pause** – pauses the video in the current position.
6. **Stop playing** – stops the video playback.
7. **One frame forward** – steps one frame forward in time.
8. **Last frame in the current minute** – jumps to the last frame in the currently selected minute.
9. **Record** (export video) – records video in **AVI** format from the current position until the playback is stopped, at the selected speed (FPS).

- ✓ Use the speed slider (FPS) at the bottom left corner to adjust the playback/ recording rate.
- ✓ When you click red **Record** control you will be asked to define filename and path for the exported video. The video file is available immediately after the recording was stopped in the directory that you defined. This file can then be viewed in a media viewer such as Windows Media Player, or distributed to other personnel.
- ✓ Users can keep track of video time by watching the clock in the bottom right corner. This clock follows the time of the video, as **stamped** by the NVR.

3. Compression

The primary function of the DETEXI NVR is to record video, for search and replay at a later date. When video of importance is found, it is often necessary to be able to export that video in a **universal format** for distribution to management, the police, or other authority. Before exporting retrieved video, it is important to consider the size of the resulting file, to be sure that it can be delivered in an acceptable way *(uncompressed video can result in a very large file such as 1GB for only 2 or 3 minutes of video).*

- ✓ Be aware that applying compression to video is often considered changing the video from its original form, and can potentially **prevent the video from being used in prosecution**.

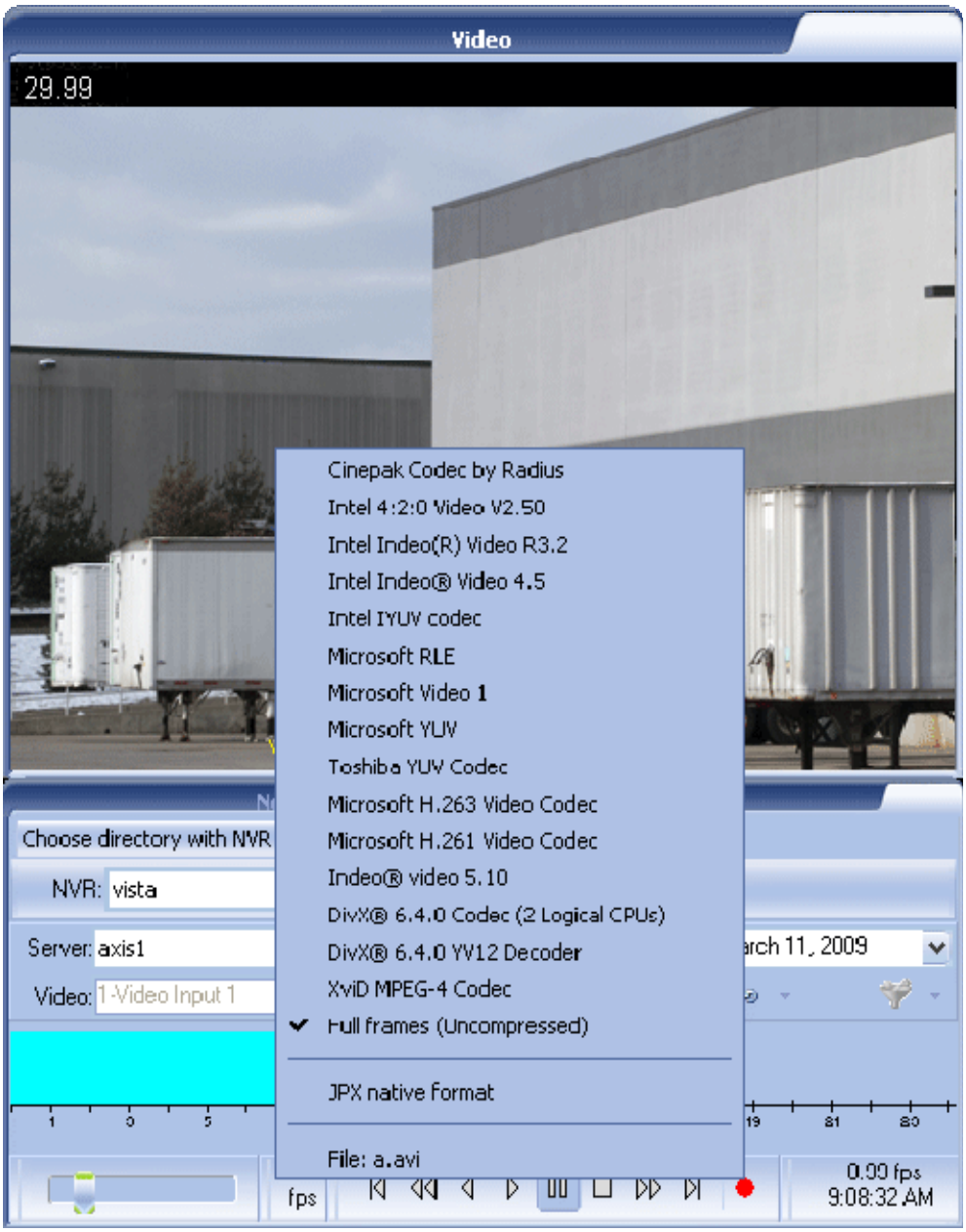


Fig 46. DETEXI Archive Viewer *(Choose compression type before recording.)*

1. To compress video before exporting, **right-click** on the red Record control and choose the desired compression type from the right-click menu (Fig 46).
2. Press red **Record** control to start recording and continue as usual.

DETEXI NVR Events and Alarms

The DETEXI system has the ability to complete different kind of actions at many different stages of video recording and viewing. This allows for immediate response to things that occur — turn on/off lights, start recording alarm video, open/close security gates, and even inform personnel via phone or other means. These and other capabilities of the DETEXI system make it more than just a video recording tool. Software motion detection, alarm detection, other events, and the actions that can be taken on these alarms and events make the DETEXI an **Intelligent** Network Video Management System.

Tasks

Actions/notifications triggered by alarms or events raised in the system are called **tasks**. Each task is a list of preconfigured actions and/or notifications that define what is to happen. Tasks execution is triggered on events that occur in the system if configured in the DETEXI NVR. Any task can include one or more actions/notifications, allowing for multiple things to happen when a single alarm or event is raised.

Action Types

The following types of actions are available for configuration in a task —

1. **Record Camera** — records alarm video for a user-defined camera or for the camera associated with the event that triggered it. The length, picture quality, and camera position of the recording can be defined if desired. An alarm snapshot can also be taken by this task.
2. **Move Camera** — for PTZ cameras, moves a user-defined camera to a user-defined position or preset, and can dwell for a user-defined length of time before returning to another defined position if desired.
3. **Video Popup** — launches specified camera's live view video streaming on the defined DETEXI Client computer. The Client must already be running on the defined computer.
4. **Control Relay** — controls the output relay of a specified camera — turns on, turns off, or activate for a user-defined length of time.
5. **Control Tour** — starts or stops a pre-configured tour on a specified camera for a user-defined period of time if desired.
6. **Execute Program** — executes an external program on the NVR Server, with user-defined parameters if desired.

Notification Types

The following types of notifications are available for configuration in a task —

1. **Network Client** — launches the camera in alarm (when applicable) live video stream along with alarm information and alarm video access, to the defined DETEXI Client computer. Alternatively, sends a user-defined message to be displayed on this computer, disregarding any alarm-specific information.
2. **Phone** — calls a user-defined phone or pager and plays alarm-specific or a user-defined WAV file or text-to-speech message. Has the ability to attempt multiple times on failure.

3. **eMail** — sends an alarm-specific or user-defined email to one or more user-defined email addresses. Has the ability to attempt multiple times on failure.
4. **Speak** — plays alarm-specific or a user-defined WAV file or text-to-speech message over the NVR Server soundcard.

- ✓ Each individual event can only have **one** task assigned to it.
- ✓ Any task can include one or more actions/notifications, allowing for **multiple** things to happen when a single alarm or event is raised.
- ✓ An event can also have a composite task assigned to it. Any composite task consists of several predefined tasks of the user's choice.

Task Triggers — NVR Events and Alarms

A trigger is a set of criteria that, when met, starts the execution of a task. There are many alarms and events that are monitored by, or can occur within the DETEXI system — from monitoring the health of the DETEXI software components and the status of a camera's I/O, to the authentication of users via the DETEXI Client. Each of these events can trigger a predefined task. In order to get advantage of getting a notification/action defined in a task any task should be **assigned** to a specific alarm/event.

System Health Alarms/Events

General

- ✓ **NVR Status Task** — (if assigned) is executed once a day at a time you can predefine by yourself. If this task HAS NOT BEEN executed at that time it means you have to check the system.
- ✓ **NVR Service Health Status** — when any of the individual NVR Services encounter problems, this event is raised.

NVR Storage Errors

- ✓ **Archive Storage Writing Error** — when video cannot be stored to the designated archive path due to a writing error, such as insufficient permissions to write to the drive or if the path is invalid, this event is raised.
- ✓ **Archive Storage Drive Limit Reached** — when the drive limit defined in the If free space is less than [XX] MB parameter is reached, and the Stop Saving option is set, this event is raised. This alarm automatically causes the recording service to **stop**. User intervention is required to restart the service when appropriate resources are available.

IP-Device Status

- ✓ Check Alive service task — the **Check Status Task** can be triggered if the IP-device fails to answer on the Check Alive service request.
- ✓ Recovery Procedure tasks — when NVR loses connection to a camera it is scheduled to record, it enters into a recovery procedure. Tasks can be executed at different points within the procedure.
  Task on First Error can be triggered when NVR first loses connection;
  Task on Recovery Procedure Failure — initiates if all the attempts of recovery have failed;
  Task on Restore initiates in case the IP-device comes back online.

NVR Network (Domain) Alarms

- ✓ **When NVR does not respond** — the task should be setup for each **child NVR** in the NVR network (domain) to be aware weather a child NVRs are alive and properly respond to the NVR Domain Controller.

Log In/Out Events

General User Login/Logout

- ✓ **Login/Logout Task** — when any user logs in or logs out, the event is raised with information indicating the user and the action (login/logout).

Specific User Login/Logout

- ✓ **Login Task** — indicates that a specific user has logged in. Used instead of or along with the general login/logout event, allows different tasks to be assigned individually to users of interest.
- ✓ **Logout Task** — indicates that a specific user has logged out. Used instead of or along with the general login/logout event, allows different tasks to be assigned individually to users of interest.

IP-Device Alarms/Events

IP-Device Status (Part of System Health Monitoring Alarms/Events)

- ✓ Check Alive service task — the **Check Status Task** can be triggered if the IP-device fails to answer on the Check Alive service request.
- ✓ Recovery Procedure tasks — when NVR loses connection to a camera it is scheduled to record, it enters into a recovery procedure. Tasks can be executed at different points within it:
  Task on First Error can be triggered when NVR first loses connection;
  Task on Recovery Procedure Failure — initiates if all the attempts of recovery have failed;
  Task on Restore initiates in case the IP-device comes back online.

FTP Alarm

- ✓ **FTP Alarm**— in some wireless configurations and other environments where constant streaming is not possible, video can be uploaded via FTP based on decision making within the IP-device. When video is uploaded to the DETEXI NVR FTP Server, the video is merged into the archives as alarm video, and this event is raised.

Alarm on Motion

- ✓ **Input Alarm** — if an IP-device supports external I/O, the Check Alarm (IO Listener) service can monitor the status of the camera's inputs. This event is raised when an IP-device's defined input is in an active (non-normal) state. A separate event is raised for each IP-device input that has this feature enabled.
- ✓ **Soft Motion Alarm** — when motion detection is enabled in the IP-device recording schedule, an event is raised each time motion is detected on an IP-device by the DETEXI software. A separate event is raised for each IP-device recording schedule if Alarm on Motion is configured.

User Triggered Task

- ✓ **User Triggered Task**— task execution can be added to a user's permissions, by assigning users the specific tasks they are allowed to trigger manually from the Remote DETEXI Client.

Define New Task

Actions triggered by alarms or events raised in the system are called tasks. Each task is a list of preconfigured actions and/or notifications that define what is to happen. Tasks execution is triggered on events that occur in the system if such response is configured in the DETEXI NVR. The following steps explain how to create new task in the system.

1. Create New Task

1. In the **NVR Control Center — Tasks** click **Add** button under the tasks list to add a new task.
2. Enter the **Task Name** and **Description**.
3. Press **Save** button to save new task.
   - ✓ When defining a task, users have the option to assign an execution schedule to that task. Schedules are not required, but are another way to trigger tasks. Task schedules can execute task repeatedly within a time frame, or at a specific time.
   - ✓ Tasks are not limited to being assigned to either a schedule, an alarm or event; in fact a single task can be assigned to execute based on a schedule as well as several different alarms and/or events for several different cameras if appropriate.
4. With the **new task selected** in the task list, right-click and choose **New — Action** or **New — Notification** option to configure action or notification in the task accordingly. Or choose **New — Task** option to configure a composite task.

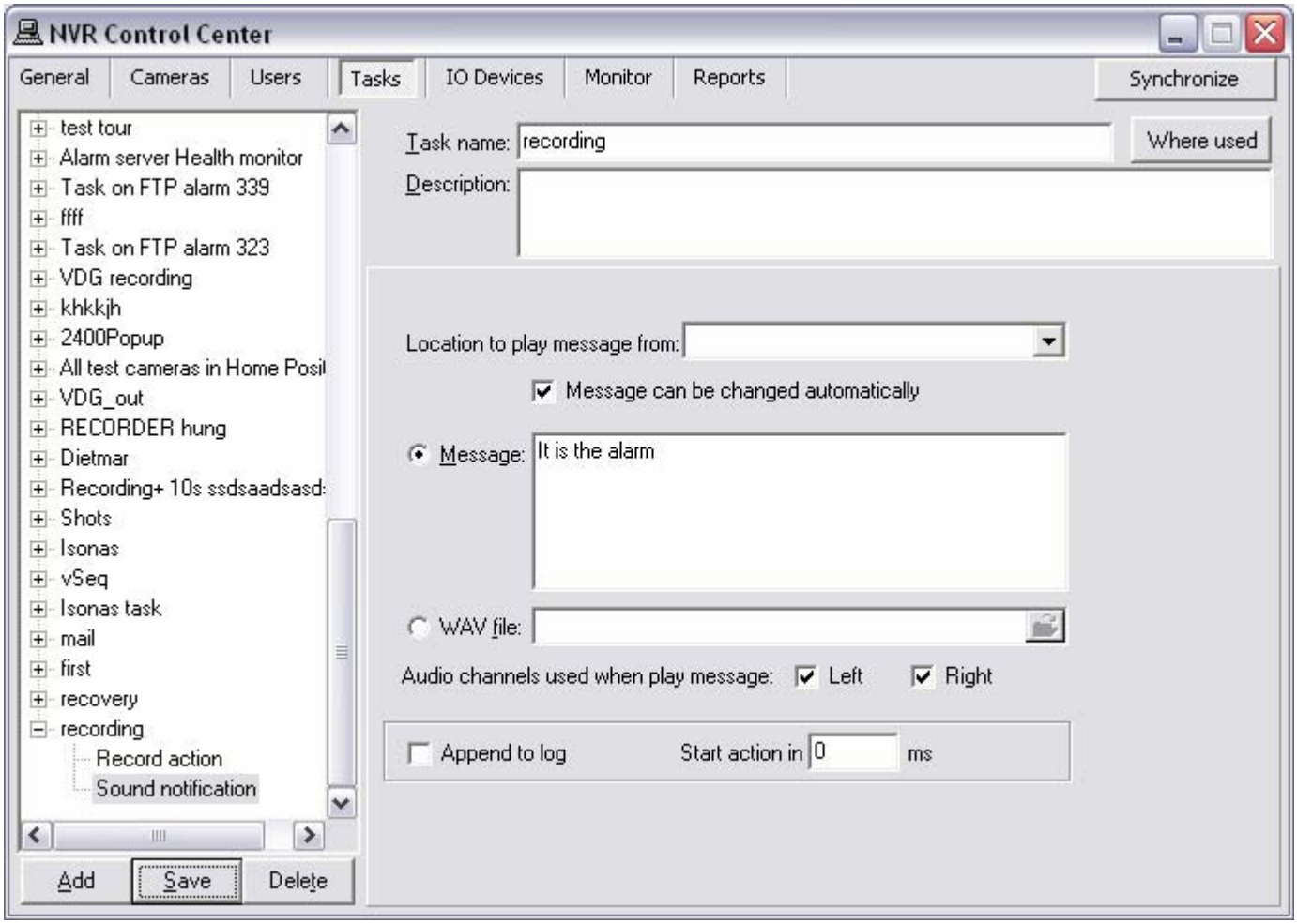


Fig 47. NVR Control Center — Tasks *(Add new task.)*

2. Add New Action to Task

5. If **New — Action** option was selected, the actions menu appears.
6. Select the action to configure — **Record Camera**, **Move Camera**, **Video Popup**, **Control Relay**, **Control Tour** or **Execute Program** — right panel will be populated with configuration settings specific to this action.
7. Configure the selected action and click **Save** button under the task list to save the task configuration.

   ✓ To add **more** actions/notifications to the task — with the same task selected in the task list, **right-click** and choose **New — Action** or **New — Notification** option to add one more action/ notification to that task.

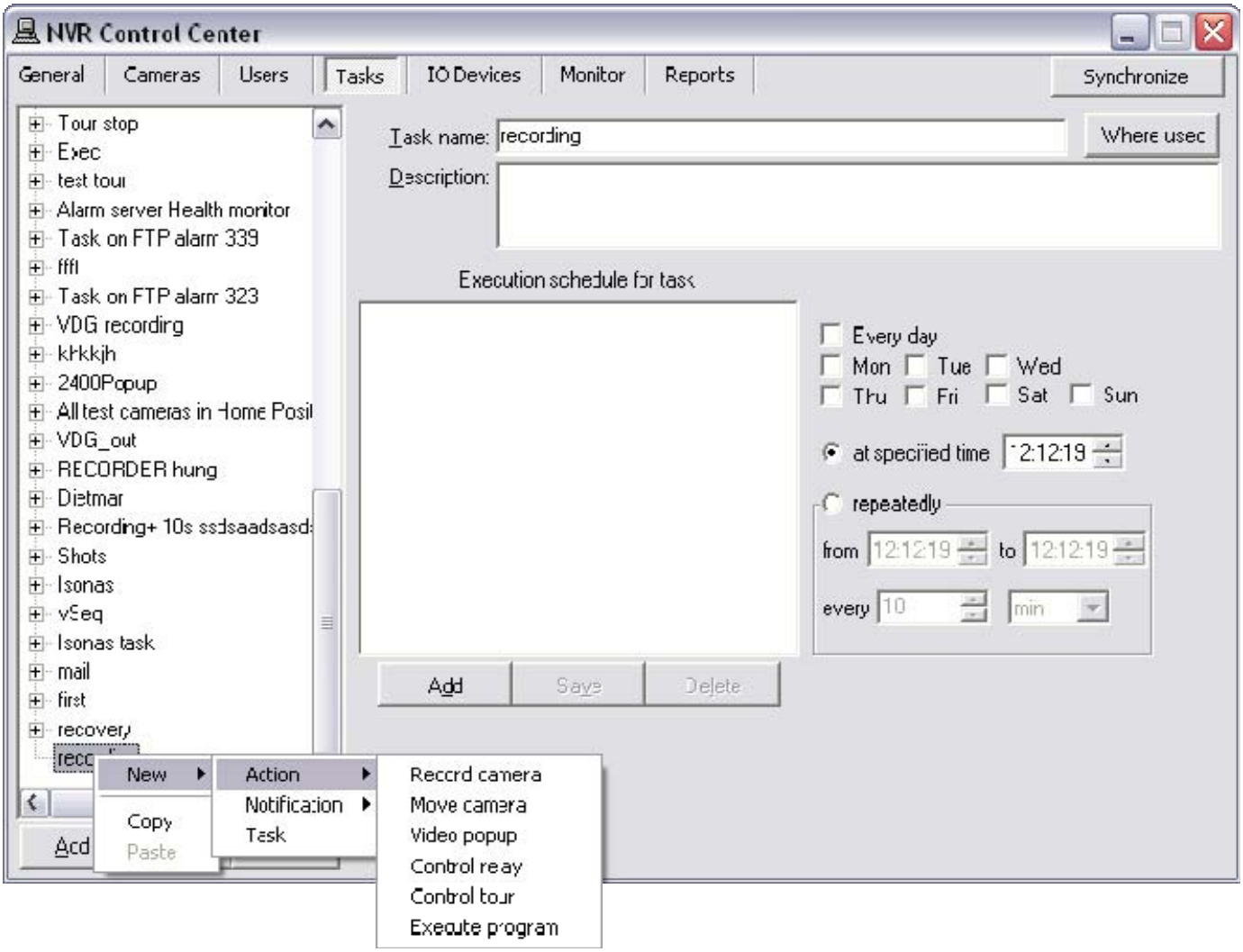


Fig 48. NVR Control Center — Tasks
(Add new action.)

✓ Any task can include one or more actions/notifications, allowing for **multiple** things to happen when a single alarm or event is raised.

3. Add New Notification to Task

8. If **New — Notification** option was selected, the notifications menu appears.
9. Select the notification to configure — **Network Client**, **Phone**, **eMail** or **Speak** — right panel will be populated with configuration settings specific to this notification.
10. Configure the selected notification and click **Save** button under the task list to save the task configuration.

    ✓ To add **more** actions/notifications to the task — with the same task selected in the task list, **right-click** and choose **New — Action** or **New — Notification** option to add one more action/ notification to that task.

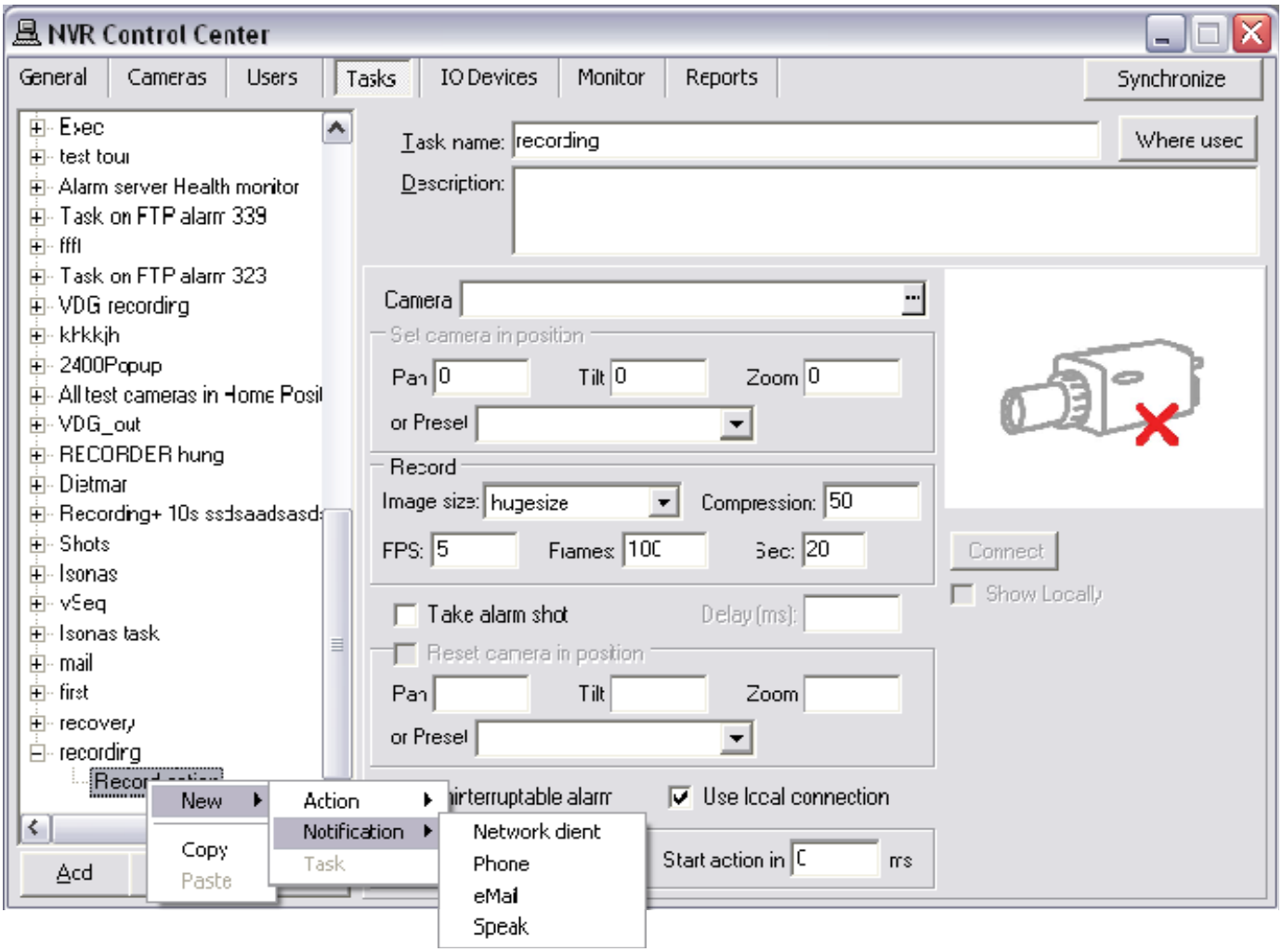


Fig 49. NVR Control Center — Tasks
(Add new notification.)

✓ Any task can include one or more actions/notifications, allowing for **multiple** things to happen when a single alarm or event is raised.

4. Composite Tasks

11. If **New — Task** option was selected, the tasks drop down list activates.
12. Select a task from the list.
    - ✓ To add more tasks to the `composite task` — with the same task selected in the task list, **right-click** and choose **New — Task** option.

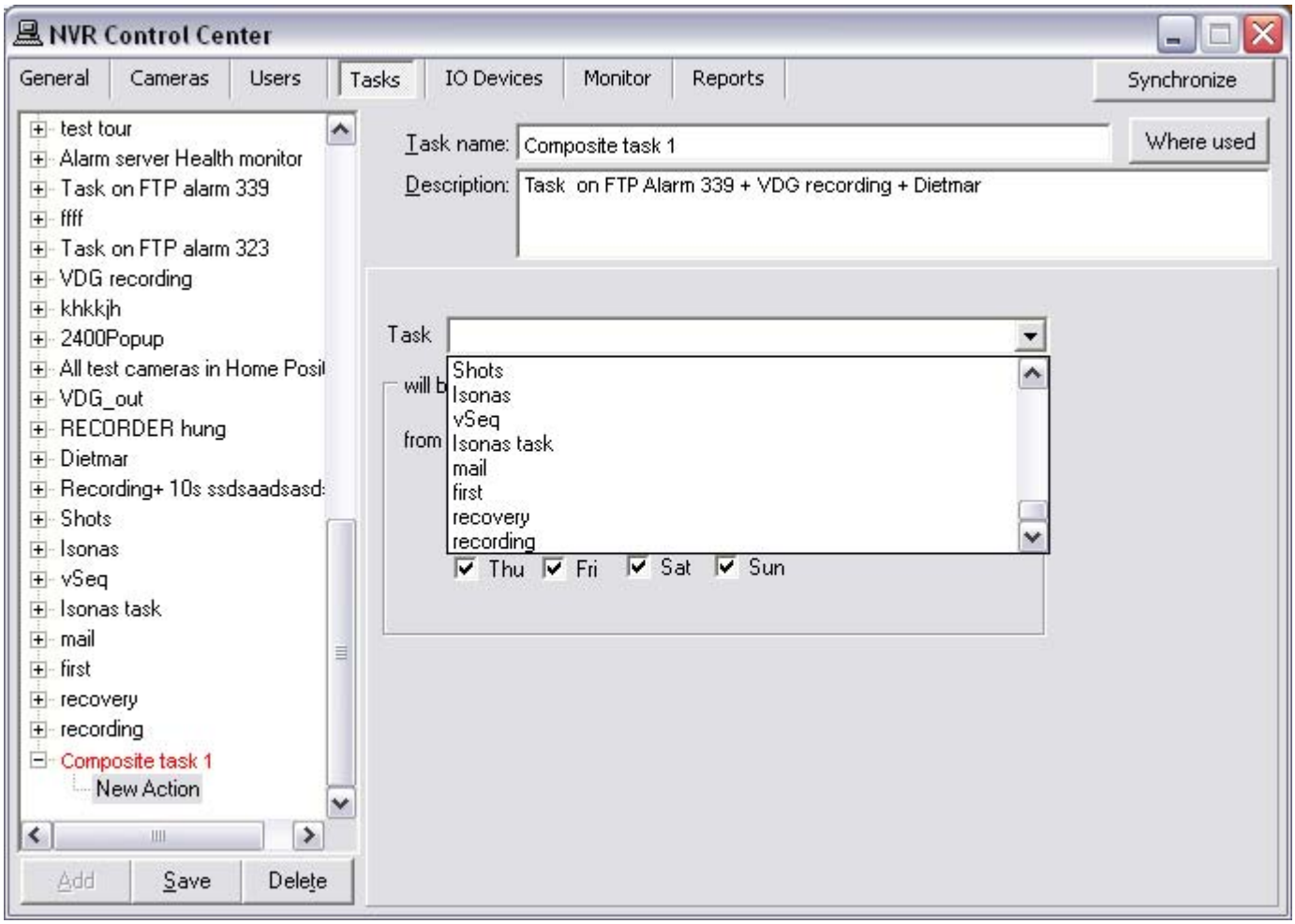


Fig 50. NVR Control Center — Tasks
(Composite task.)

- ✓ Composite tasks are red colored in the list.
- ✓ Any composite task consists of several predefined tasks of the user's choice.

5. Information About Task Usage

To keep track of the events and assigned tasks launch Information About Task Usage page.

1. If In the **NVR Control Center — Tasks** (Fig 50) click **Where Used** button at the **top-right** — **Information About Task Usage** page appears (Fig 51).
2. Once on the page, select any task from the list on the left — all events that the task is assigned to will be listed in the right pane.

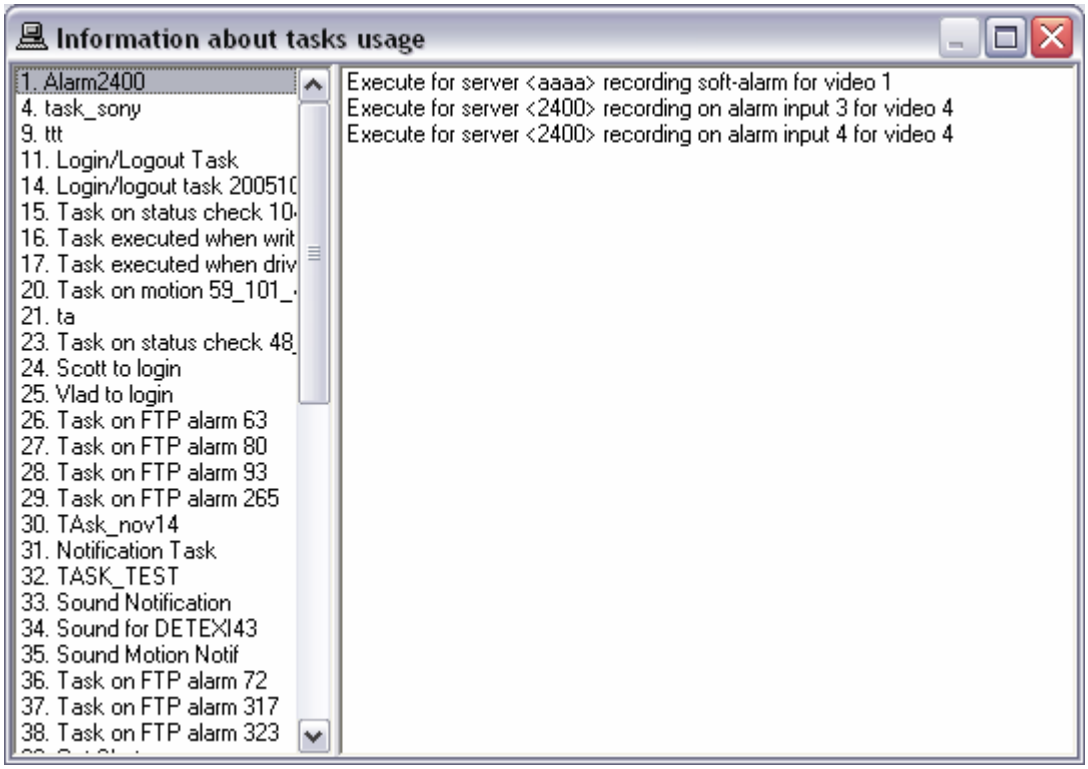


Fig 51. NVR Control Center — Tasks —Information About Task Usage
(Select task from the list.)

✓ The Information About Task Usage panel can also be launched from any page or pane in the NVR Control Center by pressing **CTRL+T** keys

Configure System Health Monitoring Tasks

In most cases a PC server accommodating the DETEXI software is in a remote location with no local human interaction, therefore a designated person or persons should be aware of the DETEXI system status at any given time. There are several areas that should be checked to insure that you have a healthy and functioning system —

- ✓ Is the NVR running at all (power is OFF or ON)
- ✓ Are all selected NVR components running
- ✓ Are all cameras with an active schedule functioning and being recorded
- ✓ Is there enough space to make a recording
- ✓ Are there enough system resources to make a recording
- ✓ Is the NVR Domain Controller network and all it's child NVRs healthy and running

The DETEXI IP-surveillance installations could fail due to unforeseen circumstances and therefore the following system events **must** be monitored and controlled. This will minimize the risk of the system failure and associated down-time.

1. Assign NVR Status Task

DETEXI IP-Surveillance reliability checking is based on the Task Execution Engine. If something happens to the system, hardware or one of the DETEXI NVR components, certain task assigned to this event is executed.

But what if something happens to the Task Execution Engine by itself?

The obvious conclusion is — you will never have any task executed at all and you will never know that something is wrong with the DETEXI NVR. To solve this issue a special NVR Status Task was developed which *(if assigned)* is executed once a day at a time you can predefine by yourself. If this task HAS NOT BEEN executed at that time it means **you have to check the system**.

- ✓ The main purpose of the **NVR Status task** is to send out the **current status** of the NVR components at predefined time. It is initiated once a day at a predefined time and provides the user a list of the NVR components being monitored and their status.

To assign NVR status task —

1. In the **NVR Control Center** switch to the **General — Global Settings** (Fig 52).
2. Select an appropriate predefined task from the **NVR status task** drop-down list.
3. Set a desired time.

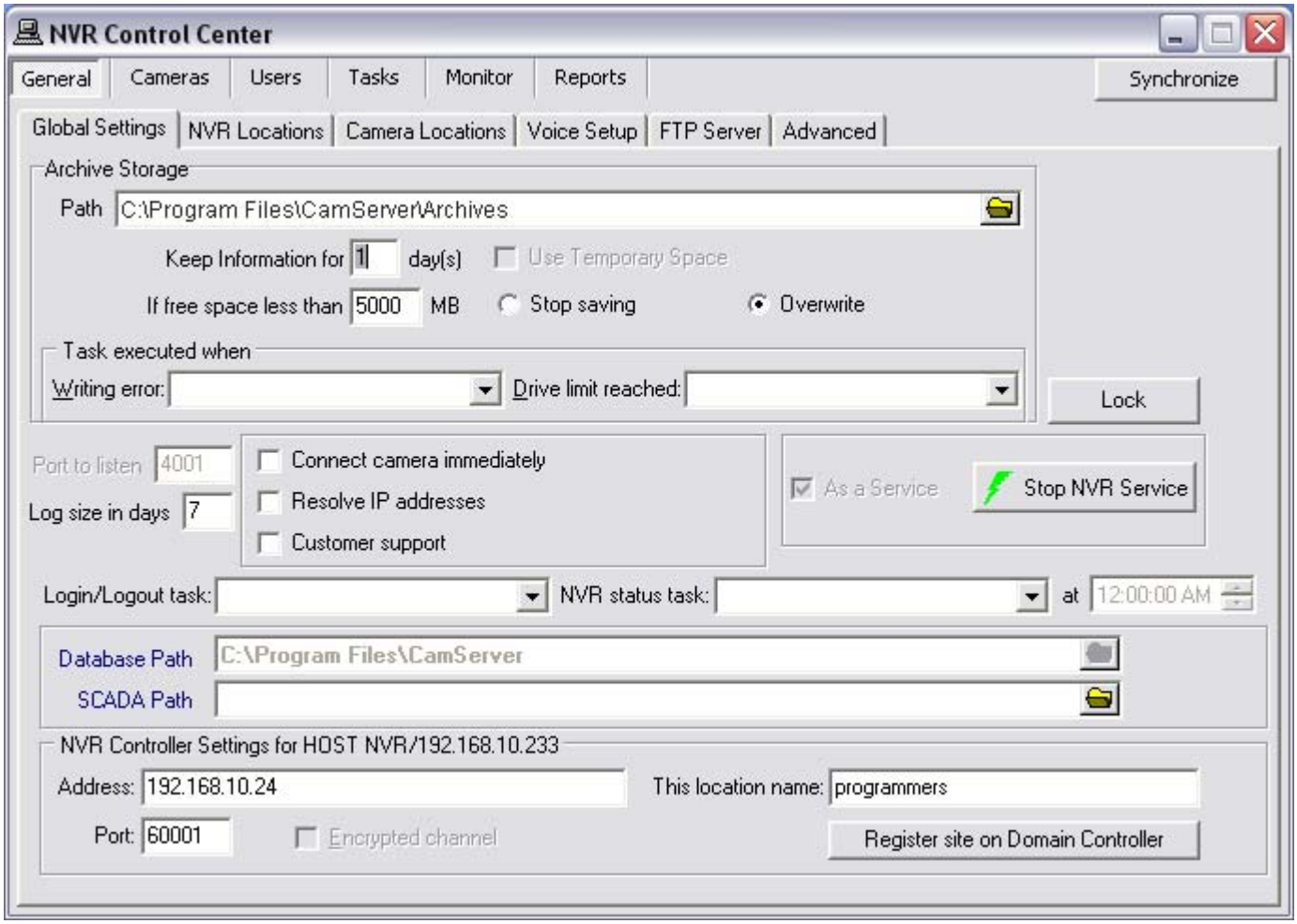


Fig 52. NVR Control Center — General — Global Settings
(Assign NVR status task.)

✓ If you want to setup your own schedule with a different time interval (twice a day or once a week or whatever you want) to send out notification that the NVR is alive, you should create a Scheduled Task and use it for checking if the Reliability System is functioning properly.

2. Assign NVR Storage Errors Tasks

There are some problems that should not be tolerated. If the tasks associated with them are initiated you have to seriously reconsider your NVR settings and/or the hardware you are using.

- ✓ The **Writing error** task initiates when the **Recorder** fails to record streaming data on the hard drive. It could be because of a hard drive error, a Windows error or the Recorder could not do its job because of lack of resources *(usually an underpowered CPU)*.
- ✓ The **Drive limit reached** task initiates in case of free space for the system files or free space necessary for NVR functioning becomes too low. In some circumstances the **Recorder** service could even be stopped because the NVR cannot manage the given amount of information due to a lack of system resources. In this case you should reconsider your IP-devices recording schedule settings and /or **Keep information for** parameter and/or your hardware configuration.

In order to get advantage of getting a notification/action in case of any of the catastrophic errors occurs you **must setup** the Writing error and Drive limit reached tasks —

1. In the **NVR Control Center** switch to the **General — Global Settings**.
2. In the **Tasks executed when** section select an appropriate predefined task from the **Writing error** drop-down list (Fig 53) and the **Drive limit reached** drop-down list.

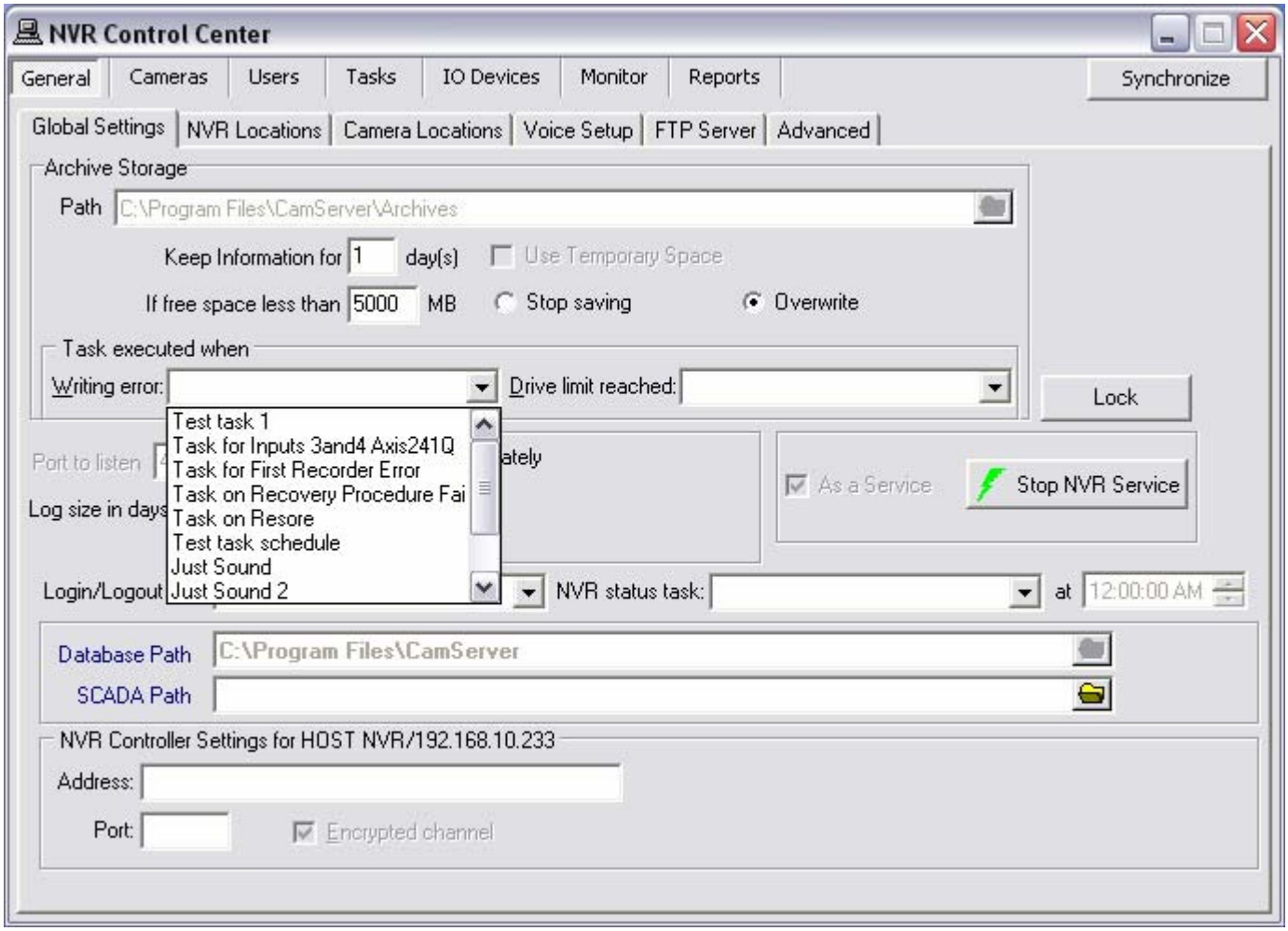


Fig 53. NVR Control Center — General — Global Settings
(Assign NVR storage errors tasks.)

3. Assign NVR Services Health Monitoring Tasks

NVR Service Health alarm is raised when any of the individual NVR services encounter problems. To monitor the health of the DETEXI software components (services) you need to assign a predefined task that will be executed in a case of failure to **each** component you wish to monitor (Fig 54).

1. In the **NVR Control Center** go to the **Monitor**.
2. Press blue Health monitor On/Off toggle button in the **bottom right** corner — the system health monitor **No answer task** panel appears.
3. To assign a task to the component — select previously created task from the drop-down list next to the component.
4. Assign a task to **each** system component you wish to monitor.

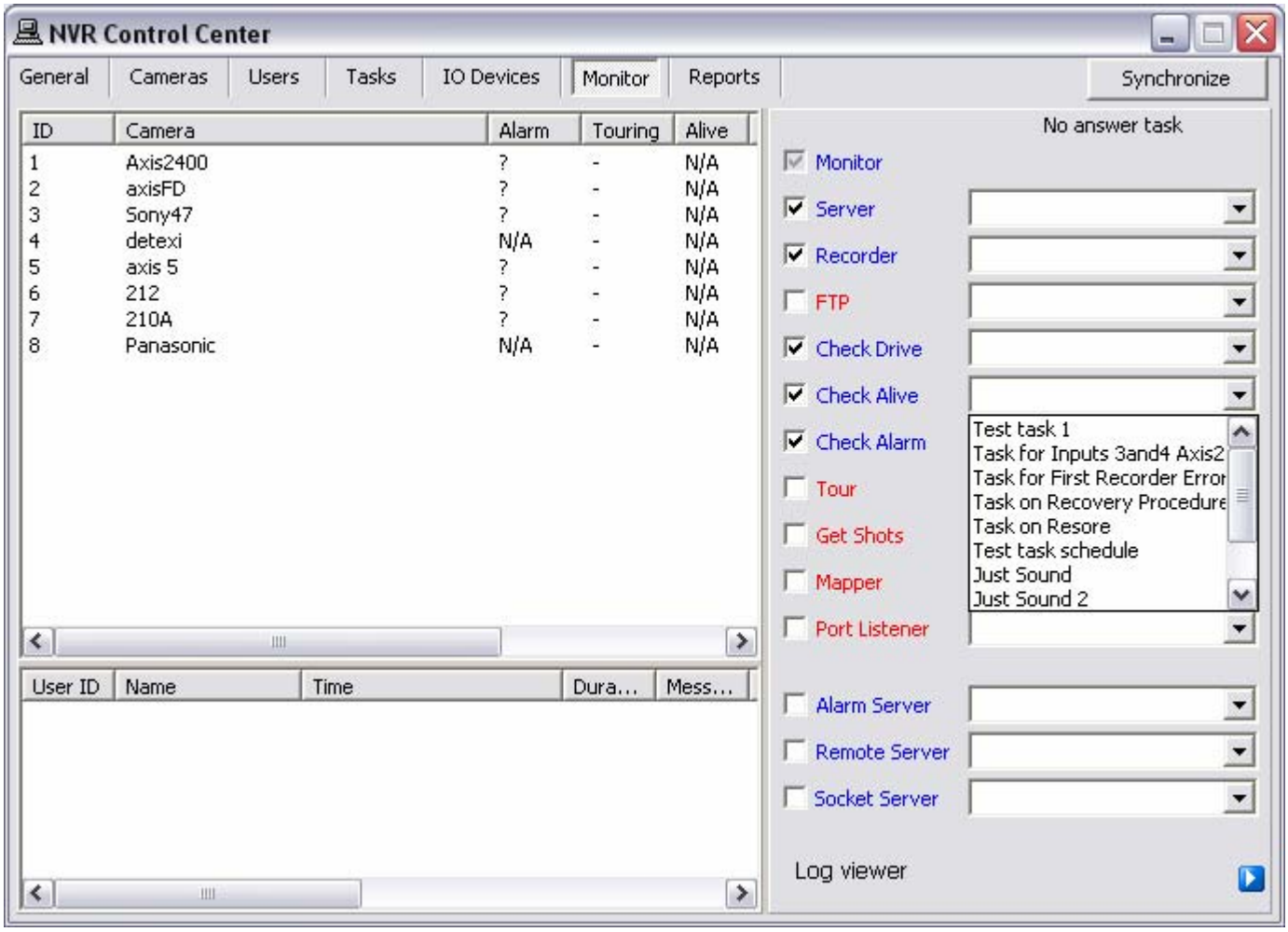


Fig 54. NVR Control Center — Monitor
(Assign a predefined task to each service.)

- ✓ Component failure if any will be detected within 3 minutes and the assigned task will be executed.
- ✓ System will check status **only** for the components with the **checkbox** checked.
- ✓ To learn more about NVR Services refer to NVR General Settings — NVR Services.

4. Assign IP-Device Status Tasks

The DETEXI NVR streaming and records video information from the IP-cameras/video servers, which are complex devices by themselves and can often be the source of problems.

There are two methods to deal with IP-devices errors —

- ✓ Using a **Check Alive** service — the **Check Status** task can be triggered if the IP-device fails to answer on the Check Alive service request.
- ✓ Using a **Recovery Procedure** in the IP-device recording schedule — when NVR loses connection to a camera it is scheduled to record, it enters into a recovery procedure. Tasks can be executed at different points within the procedure. **Task on First Error** can be triggered when NVR first loses connection; **Task on Recovery Procedure Failure** — initiates if all the attempts of recovery procedure have failed; **Task on Restore** initiates in case the IP-device comes back online.

Assign Check Status Task for the camera using Check Alive service

The Check Alive service is relatively heavy on NVR resources and it should be used only in the case of recording on I/O ports when the recorder is off and starts to record when the signal from I/O port is received. First ensure that Check Alive service in the NVR Control Center — Monitor is **checked**.

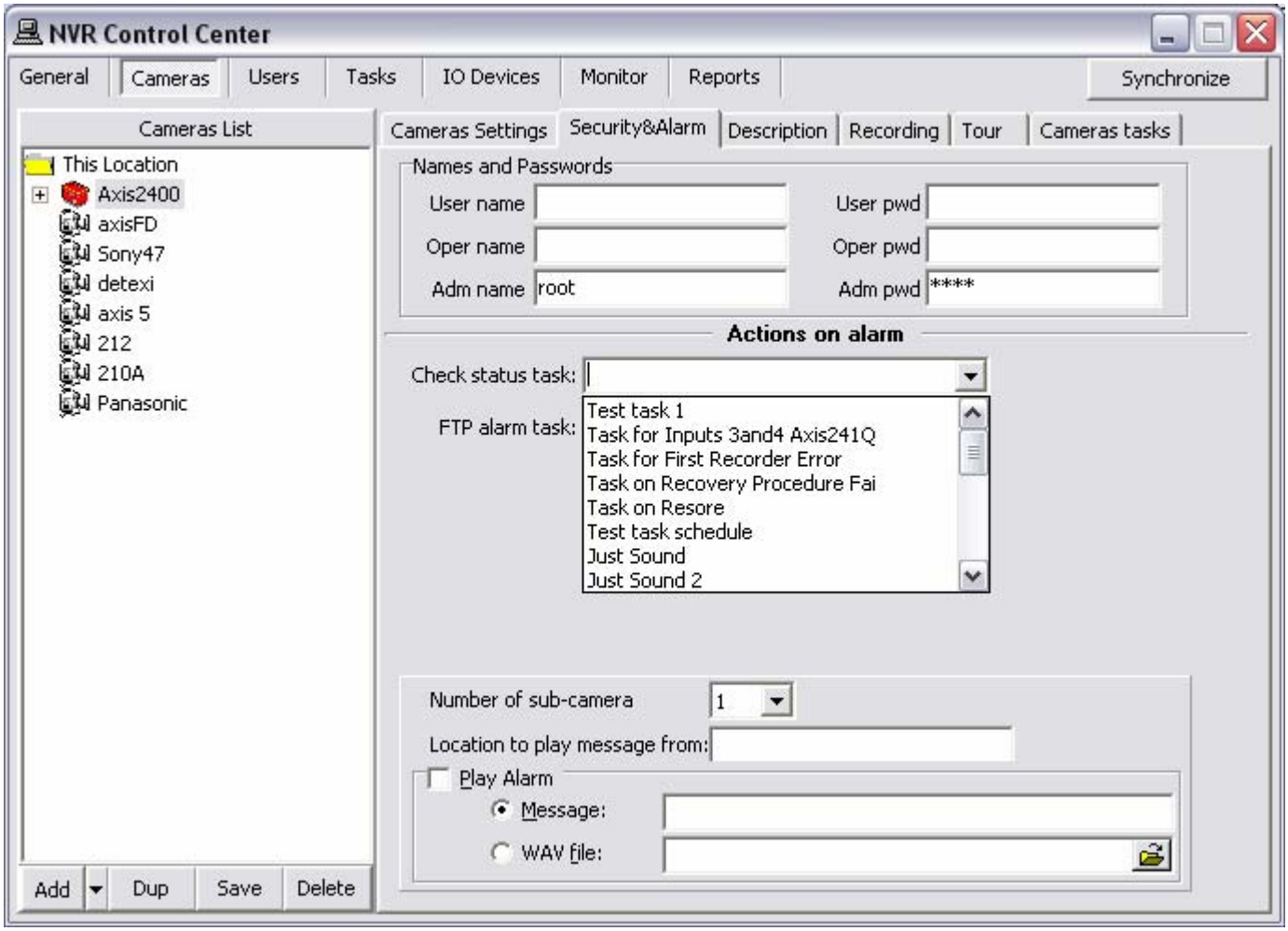


Fig 55. NVR Control Center — Cameras — Security & Alarm
(Assign Check status task.)

1. In the **NVR Control Center** select a camera from the **Cameras List**.
2. Go to the **Cameras — Security & Alarm** (Fig 55).
3. Under the **Actions on alarm** select an appropriate predefined task from the **Check status task** drop-down list. Task initiates if the IP-device fails to answer on Check Alive request.
4. Repeat steps 1-3 for any camera from the **Cameras List** to setup actions on alarm.

✓ It must be clear that if a device fails to answer this does not necessarily mean that there is a physical device failure. It could be a connection (network) error. From the NVR reliability point of view it is irrelevant as to why there is no video stream but from the point of view of the technician (who has to fix the problem) there is a big difference.

Setup Recovery Procedure in a camera recording schedule

Another method to deal with IP-devices errors is to setup Recovery Procedure inside a camera recording schedule. The Recovery Procedure fully describes how the Recorder will deal with the faulty camera.

5. In the **NVR Control Center — Cameras** select camera from the **Cameras List** and go to the **Recording — Schedule** (Fig 56).
6. Select a schedule from the schedules list to **update** existing schedule or press **Add** button below the list to create a **new** schedule.

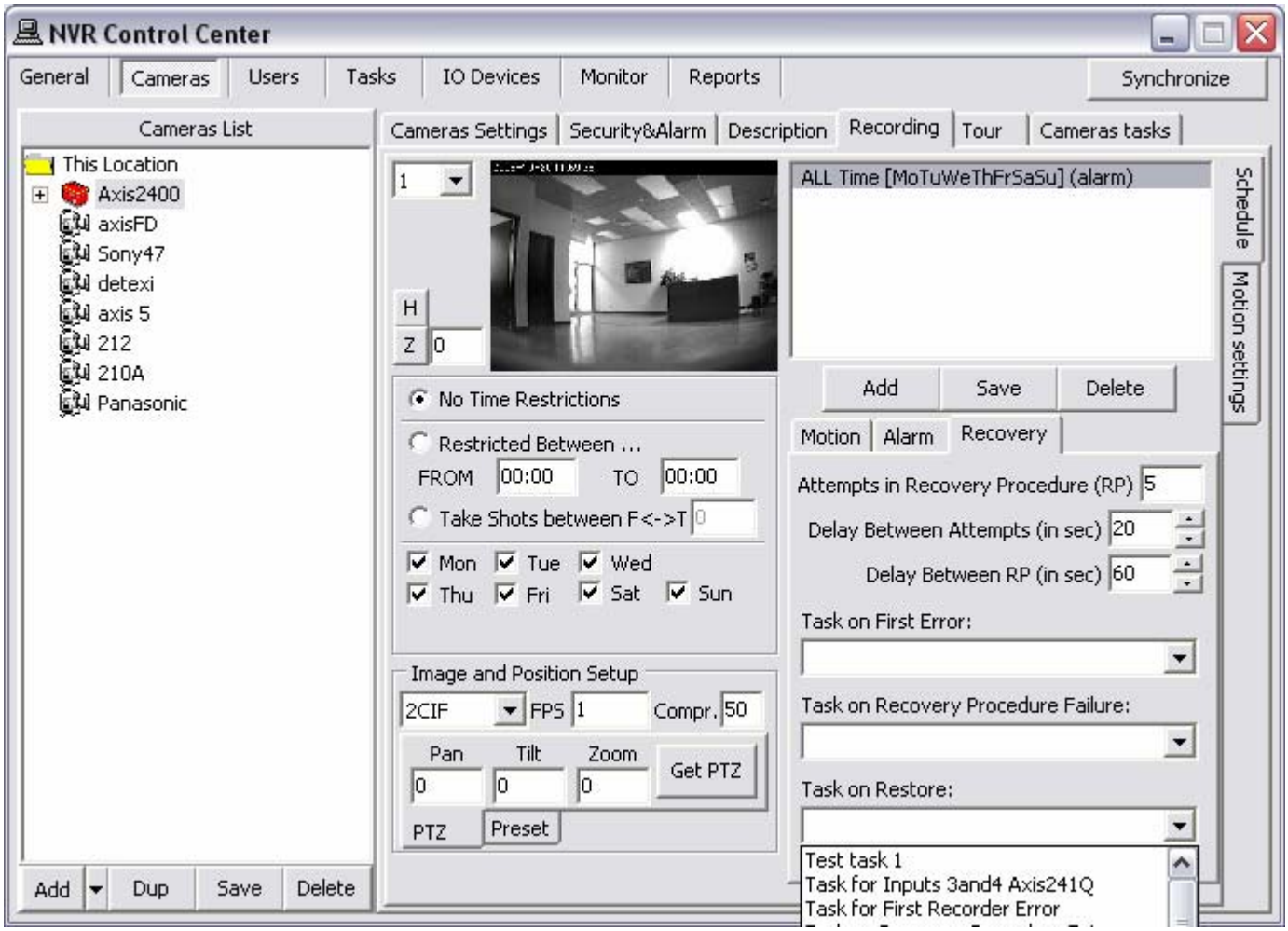


Fig 56. NVR Control Center — Cameras — Recording — Schedule — Recovery
(Setup recovery procedure.)

7. Switch to the **Recovery** tab to setup a recovery procedure parameters —
   - ✓ **Attempts in Recovery Procedure (RP)**
   - ✓ **Delay Between Attempts (in sec)**
   - ✓ **Delay Between RP (in sec)**
8. Select predefined tasks for events you are going to track (in any combination)—
   - ✓ **Task on First Error** — *(if assigned)* the Recorder initiates the corresponding task immediately on the video stream failure;
   - ✓ **Task on Recovery Procedure Failure** — *(if assigned)* task initiates if all the attempts of Recovery Procedure have failed;
   - ✓ **Task on Restore** — *(if assigned)* task initiates in case the IP-device comes back online.

9. Press **Save** button below the schedules list.
10. Repeat steps 2 - 5 for the other schedules.

✓ Setting up a Recovery Procedure for many cameras with complicated recording schedules could be time consuming. To make it easier use the recovery settings **template**.

The Recovery Procedure Recommended Settings

- ✓ **Attempts in Recovery Procedure** (RP) — 5
- ✓ **Delay Between Attempts** (in sec) — 30
- ✓ **Delay Between RP** (in sec) — 600
- ✓ **Task on First Error** — assigned
- ✓ **Task on Restore** — assigned

According to the recommended settings the **Recorder** initiates the **Task on First Error** when the video stream failure occurs. Than makes up to **5** attempts with **30**s interval to recover the stream. If any of the attempts succeeds the **Task on Restore** will be initiated; if not — the next round of attempts to connect to the faulty camera starts in 10min (**600**s).

Create Template for Setting a Recovery Procedure

Setting up a Recovery Procedure for many cameras with complicated recording schedules could be time consuming. To make it easier **—** a template enforcing particular settings in newly created schedules can be created (Fig 57).

11. In the **NVR Control Center** go to the **General — Advanced**.
12. Under the **Recorder Recovery Settings Template** setup Recovery Procedure settings —
    - ✓ **Attempts in Recovery Procedure**
    - ✓ **Delay Between Attempts**
    - ✓ **Delay Between RP (in sec)**
13. Select predefined tasks for events you are going to track (in any combination)—
    - ✓ **Task on First Error** — the Recorder initiates the corresponding task immediately on the video stream failure;
    - ✓ **Task on Recovery Procedure Failure** — task initiates if all the attempts of Recovery Procedure have failed;
    - ✓ **Task on Restore** — task initiates in case the IP-device comes back online.

The Recovery Procedure settings from this template will be forced in to each **newly created** cameras recording schedule and could be changed.

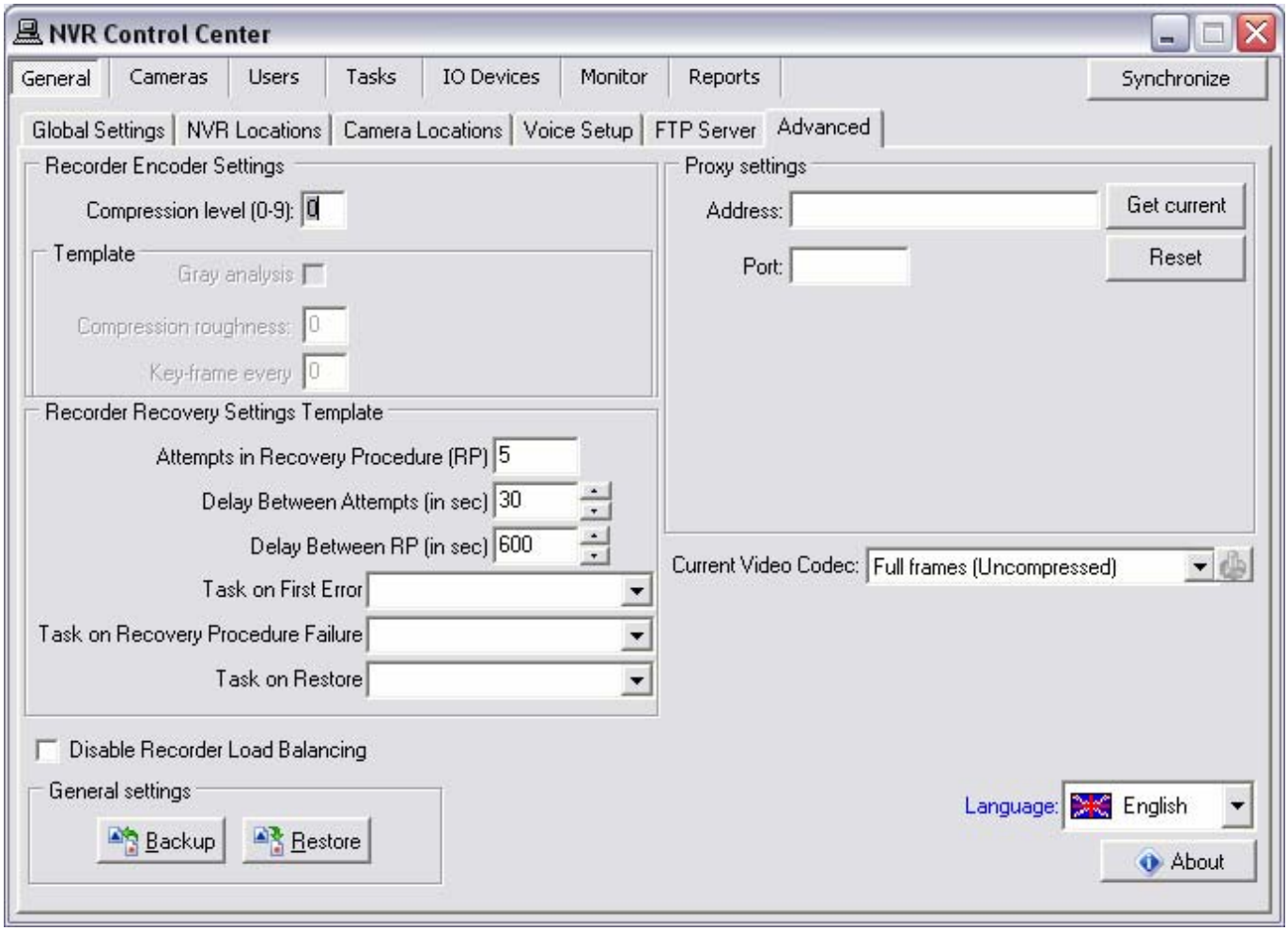


Fig 57. NVR Control Center — General — Advanced
(Create Recorder recovery settings template.)

✓ If Recovery Procedure template was created a newly created schedule will use the template parameters as **default**.

5. Assign Child NVR Status Task in the NVR Network (Domain)

Although every NVR in the **NVR Domain Controller** configuration should have its **own** reliability settings there is a new intercommunication layer between the NVR Domain Controller and a child NVR, which could also fail and therefore the system administrator **must** be able to check its status.
To be aware weather a child NVRs are alive and properly respond to the NVR Domain Controller you should setup the **Task when NVR does not respond** for **each** child NVR in the NVR network (domain).

To assign child NVR Status task do the following steps (Fig 58) —

1. In the Domain Controller **NVR Control Center** go to the **General — NVR Locations**.
2. Select a child NVR from the **Servers Locations** list.
3. In the **NVR Locations** switch to the **Monitoring** tab and input your setting to define
   - ✓ **Interval for monitoring**
   - ✓ Number of **Attempts**
   - ✓ Interval between attempts **Each**
4. Select an appropriate predefined task from the **Task when NVR does not respond** list.
5. **Check** **Check alive** check box.

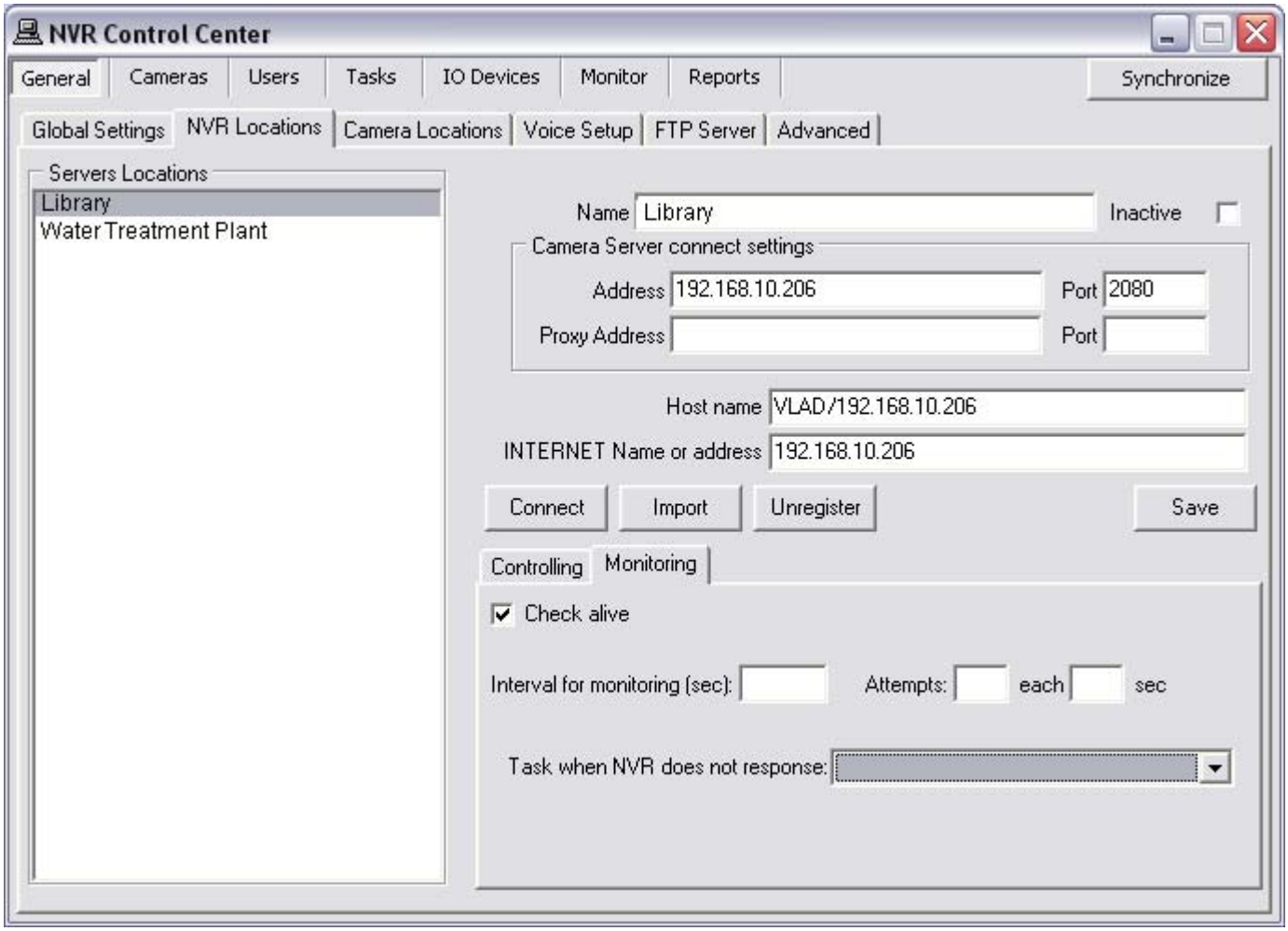


Fig 58. NVR Control Center — General — NVR Locations
(Assign Task when NVR does not respond.)

✓ If you know for a fact that the site is **temporary down** for maintenance or other issues, simply **uncheck** the **Check Alive** check box. In this case the system will NOT initiate unnecessary tasks for a known problem and will return to monitoring only after you check the box again.

Configure Login/Logout Tasks

1. Assign General User Login/Logout

- ✓ **Login/Logout Task** — when any user logs in or logs out, the event is raised with information indicating the user and the action (login/logout).

To assign General User Login/Logout task (Fig 58) —

1. In the **NVR Control Center** go to the **General — Global Settings**.
2. Select an appropriate predefined task from the **Login/Logout Task** drop-down list.

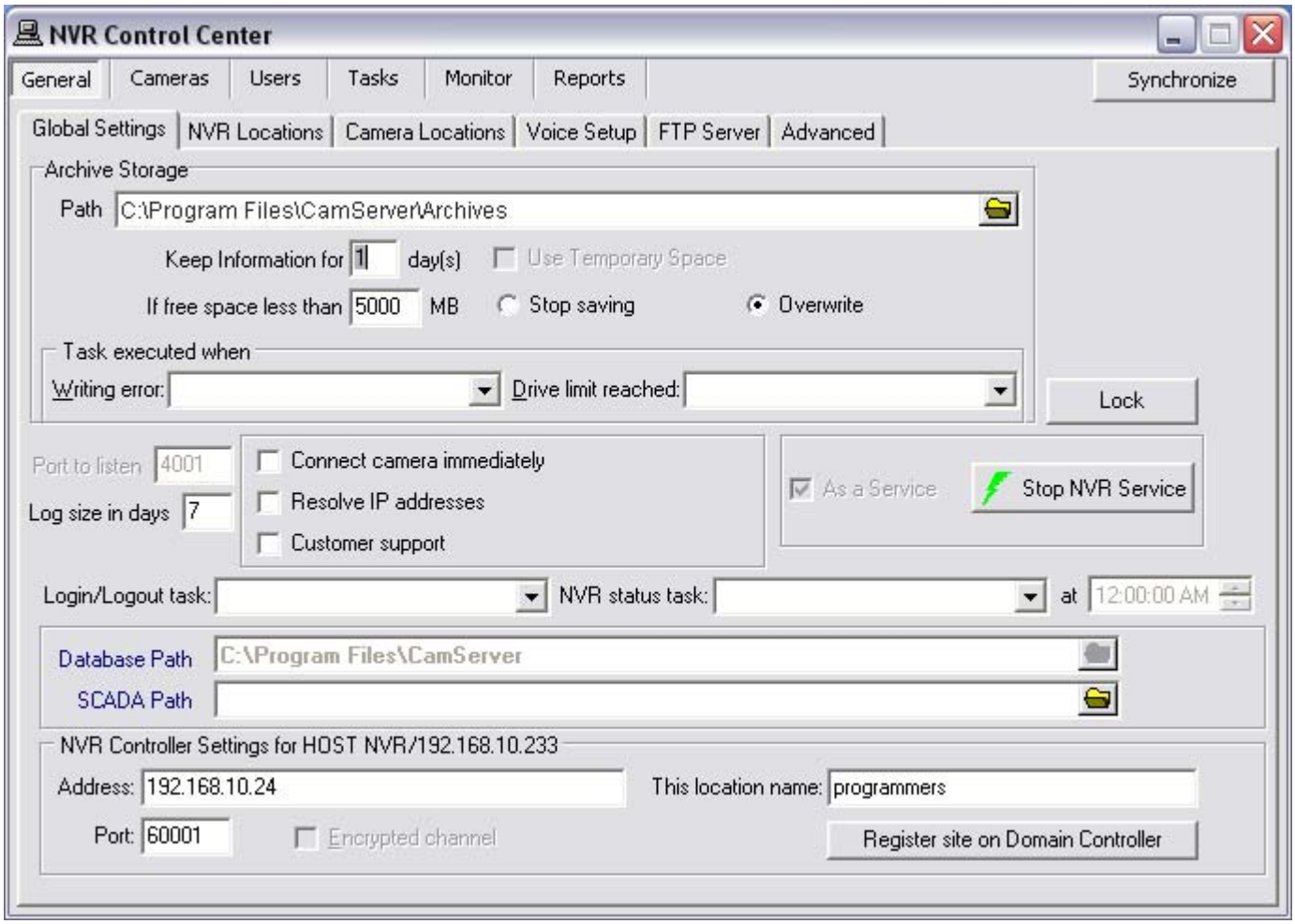


Fig 58. NVR Control Center — General — NVR Locations
(Assign Login/Logout task.)

- ✓ Each individual event can only have one task assigned to it.
- ✓ Any task can include one or more actions/notifications, allowing for **multiple** things to happen when a single alarm or event is raised.
- ✓ An event can also have a **composite task** assigned to it. Any composite task consists of several predefined tasks of the user's choice.

2. Assign Specific User Login/Logout

- ✓ **Login Task** — indicates that a specific user has logged in. Used instead of or along with the general login/logout event, allows different tasks to be assigned individually to users of interest.
- ✓ **Logout Task** — indicates that a specific user has logged out. Used instead of or along with the general login/logout event, allows different tasks to be assigned individually to users of interest.

To assign Specific User Login/Logout task —

1. In the **NVR Control Center** go to the **Users**.
2. Choose a specific user from the **Users List** to upload user's information.
3. In the **Users Information** select a predefined task from the **Login Task** drop-down list and/or select a predefined task from the **Logout Task** drop-down list.
4. Click **Save** button below the **Users List** to save changes.

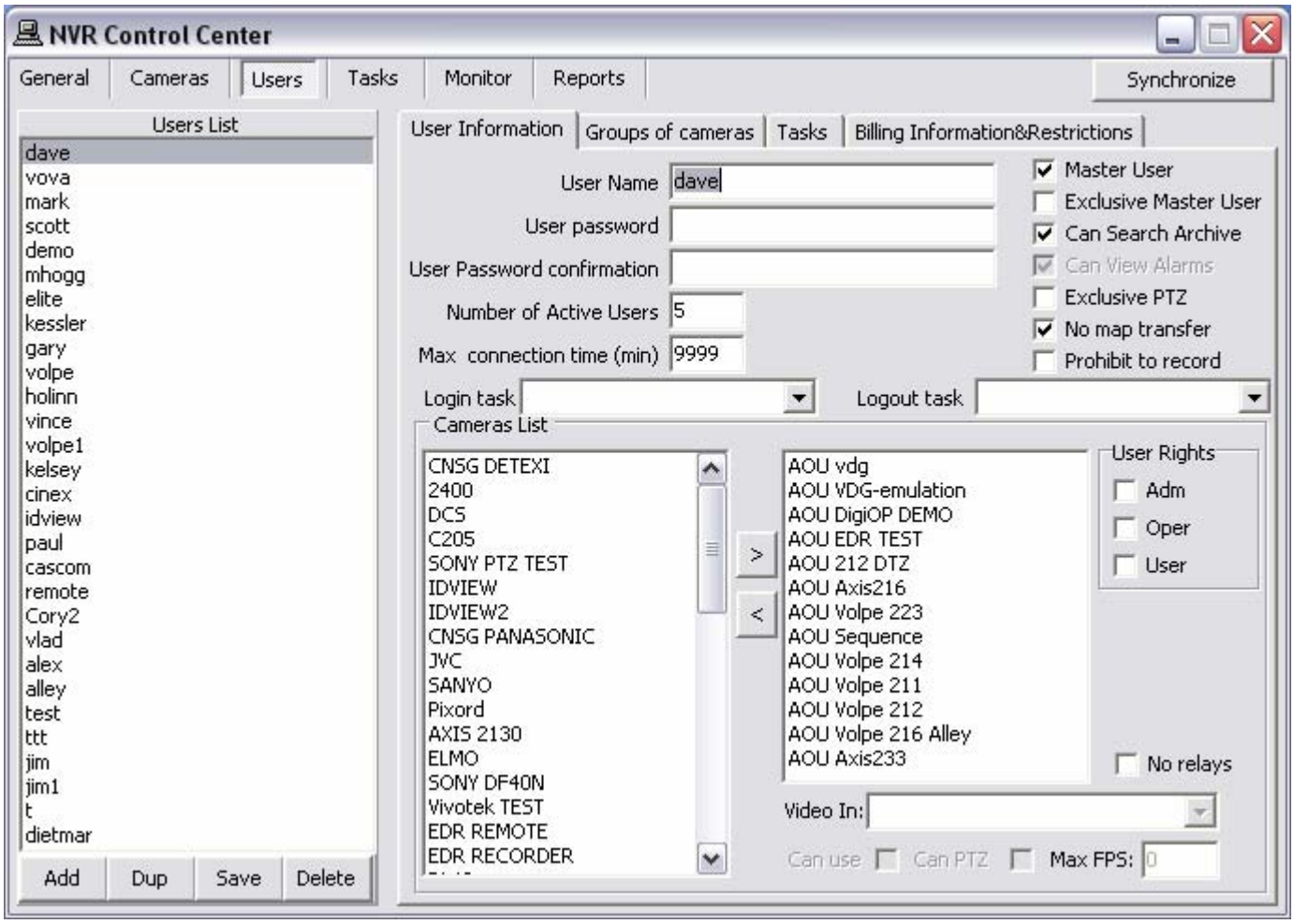


Fig 59. NVR Control Center — Users — User Information
(Assign Login task. Assign Logout task.)

Configure IP Device Tasks

The following tasks if configured in the DETEXI NVR will keep you informed of the status of any IP device in your IP-surveillance installation, alarms on the device I/O *(if supported)*, detected motion and more.

IP-Device Status Tasks

(IP-Device Status Tasks as part of the DETEXI health monitoring system are described in details in the Configure System Health Monitoring Tasks section.)

- ✓ Check Alive service task — the **Check Status Task** can be triggered if the IP-device fails to answer on the Check Alive service request.
- ✓ Recovery Procedure tasks — when NVR loses connection to a camera it is scheduled to record, it enters into a recovery procedure. Tasks can be executed at different points within it:
  Task on First Error can be triggered when NVR first loses connection;
  Task on Recovery Procedure Failure — initiates if all the attempts of recovery have failed;
  Task on Restore initiates in case the IP-device comes back online.

FTP Alarm

- ✓ **FTP Alarm**— in some wireless configurations and other environments where constant streaming is not possible, video can be uploaded via FTP based on decision making within the IP-device. When video is uploaded to the DETEXI NVR FTP Server, the video is merged into the archives as alarm video, and this event is raised.

Alarm on Motion

- ✓ **Input Alarm** — if an IP-device supports external I/O, the Check Alarm (IO Listener) service can monitor the status of the camera's inputs. This event is raised when an IP-device's defined input is in an active (non-normal) state. A separate event is raised for each IP-device input that has this feature enabled.
- ✓ **Soft Motion Alarm** — when motion detection is enabled in the IP-device recording schedule, an event is raised each time motion is detected on an IP-device by the DETEXI software. A separate event is raised for each IP-device recording schedule if Alarm on Motion is configured.

1. Assign FTP Alarm Task

✓ **FTP Alarm Task** — in some wireless configurations and other environments where constant streaming is not possible, video can be uploaded via FTP based on decision making within the IP-device. When video is uploaded to the DETEXI NVR FTP Server, the video is merged into the archives as `alarm video`, and this event is raised.

To assign FTP Alarm task do the following —

1. In the **NVR Control Center** go to the **Cameras**.
2. Select camera to configure from the **Cameras List** and switch to the **Security & Alarm** (Fig 60).
3. Under the **Actions on Alarm** select an appropriate predefined task from the **FTP Alarm Task** drop-down list.
4. Click **Save** button below the **Cameras List** to save settings.

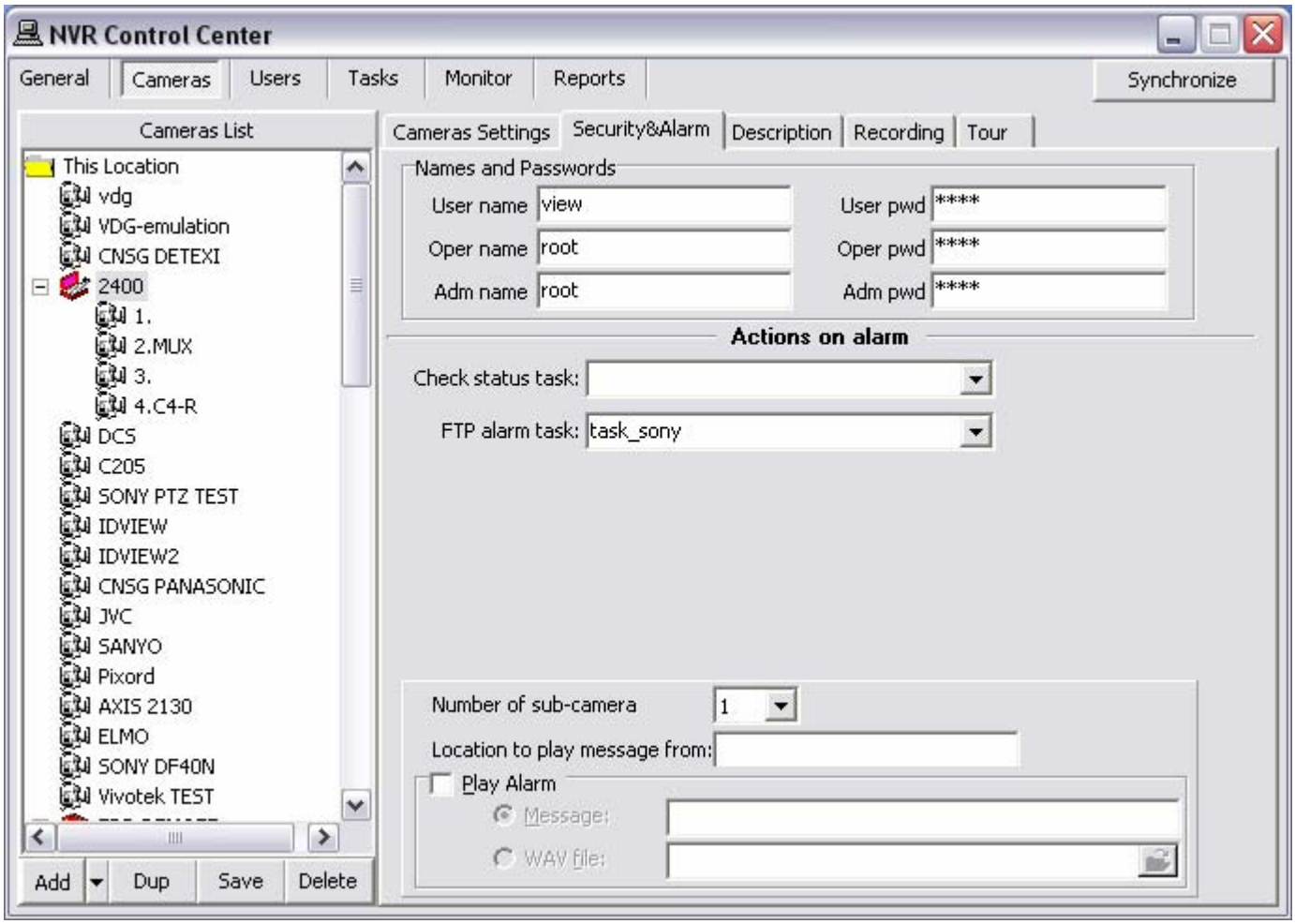


Fig 60. NVR Control Center — Cameras — Security & Alarm
(Assign FTP Alarm task.)

2. Assign Input Alarm Task

IP-device Input Alarm executes task on hard motion detection, when an external motion detector is connected to the IP-device input. If a camera supports external I/O, the Check Alarm (IO Listener) service can monitor the status of the camera's inputs. **Input Alarm** event is raised when an IP-device defined input is in an active *(non-normal)* state. A separate event is raised for **each** IP-device input that has this feature enabled.

1. In the **NVR Control Center** — **Cameras**.
2. Select camera to configure from the **Cameras List** and switch to the **Recording — Schedule**.
3. Select a schedule from the schedule list and switch to the **Alarm** tag (Fig 61) below the list.
4. Select **Input Ports** from the **Alarm on** drop down list and specific input port from the **Port** drop down list.
5. Check **Active** checkbox — the **Execute task** drop down list activates — select a predefined task from the list.
6. Click **Save** button below the schedule list to save settings.

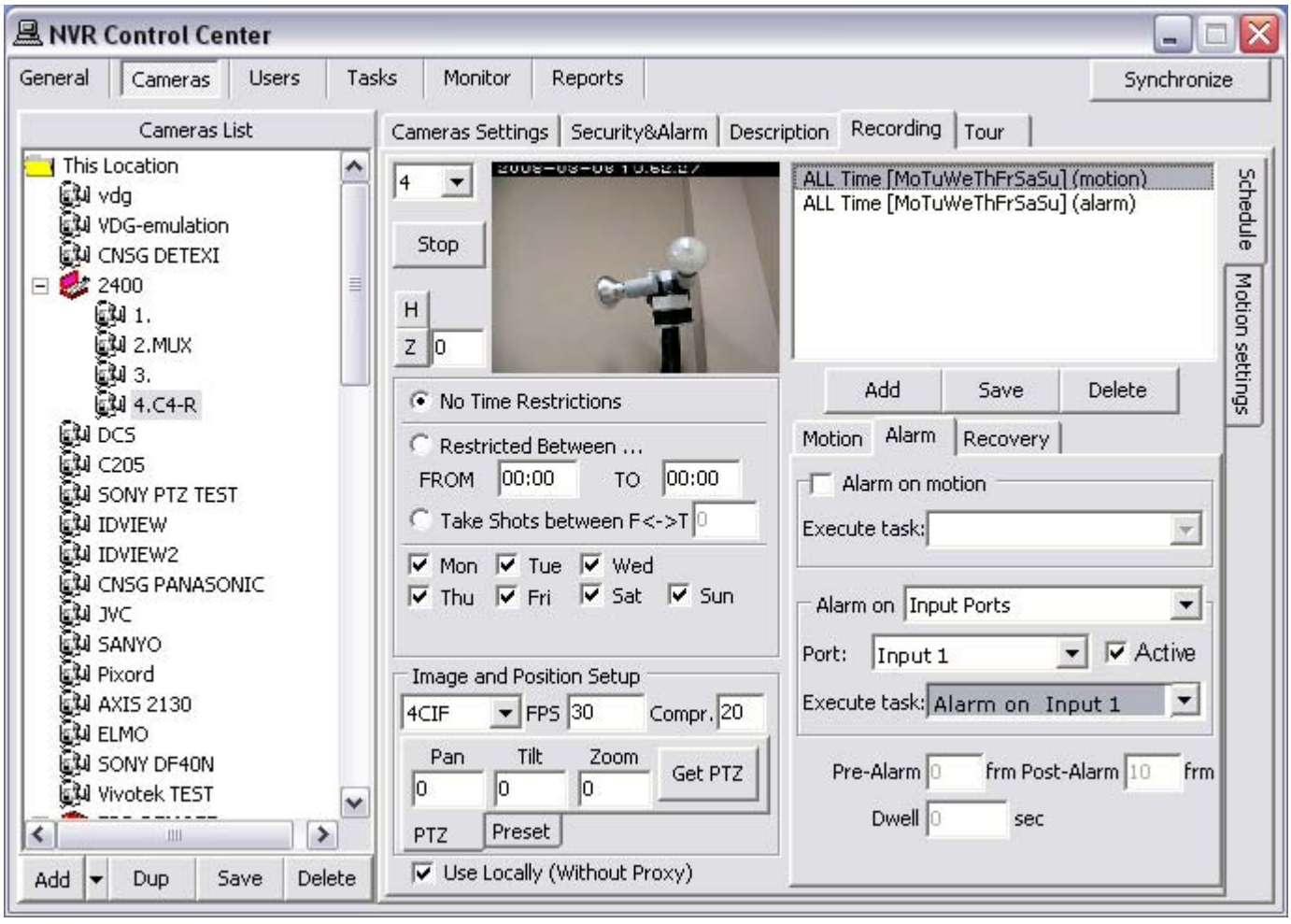


Fig 61. NVR Control Center — Recording — Schedule — Alarm
(Assign Input Alarm task.)

✓ The **Input Alarm** applies to **hard motion** sensing (triggered by an external motion detector) only. For soft motion sensing (residing in the software) the IP-device Soft Motion Alarm should be configured.

3. Assign Soft Motion Alarm Task

When **motion detection** is enabled in the IP-device recording schedule, the **Soft Motion Alarm** is raised each time motion is detected on an IP-device by the DETEXI software. A separate event is raised for each IP-device recording schedule if Alarm on Motion is configured.

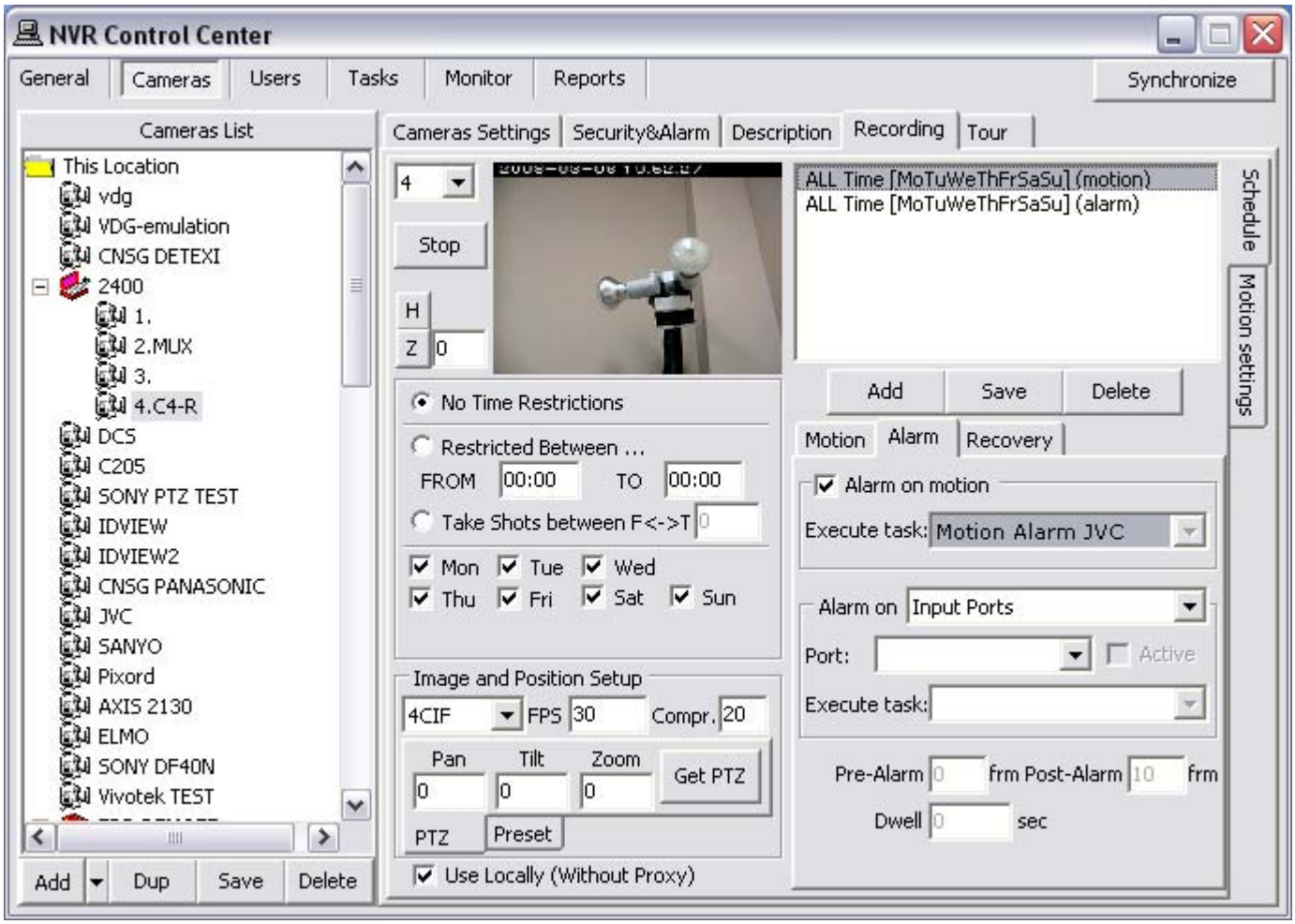


Fig 63. NVR Control Center — Recording — Schedule — Alarm
(Assign Alarm on Motion task.)

1. In the **NVR Control Center** — **Cameras**.
2. Select camera to configure from the **Cameras List** and switch to **Recording — Schedule**.
3. Select a schedule from the schedule list and switch to the **Alarm** tag (Fig 63) below the list.
4. **Check Alarm on Motion** checkbox — the **Execute task** drop down list activates — select a predefined task from the list.
5. Click **Save** button below the schedule list to save settings.

✓ The IP-device **Soft Motion Alarm** applies to **soft motion** sensing (residing in the software) only. For hard motion sensing (triggered by an external motion detector) the IP-device Input Alarm should be configured.

Configure User Triggered Tasks

User Triggered Task — task execution can be added to a user's permissions, by assigning users the specific tasks they are allowed to trigger manually from the remote DETEXI Client.

1. Assign User Triggered Task

1. In the **NVR Control Center** go to the **Users**.
2. Select a user from the **Users** list and switch to the **Tasks** (Fig 64).
3. Select a task of interest in the **Available** list and press the direction button to move the selected task to the **Selected** list.
4. Add more tasks to the **Selected** list if necessary.
5. Press **Save** button under the **Users** list to save changes.

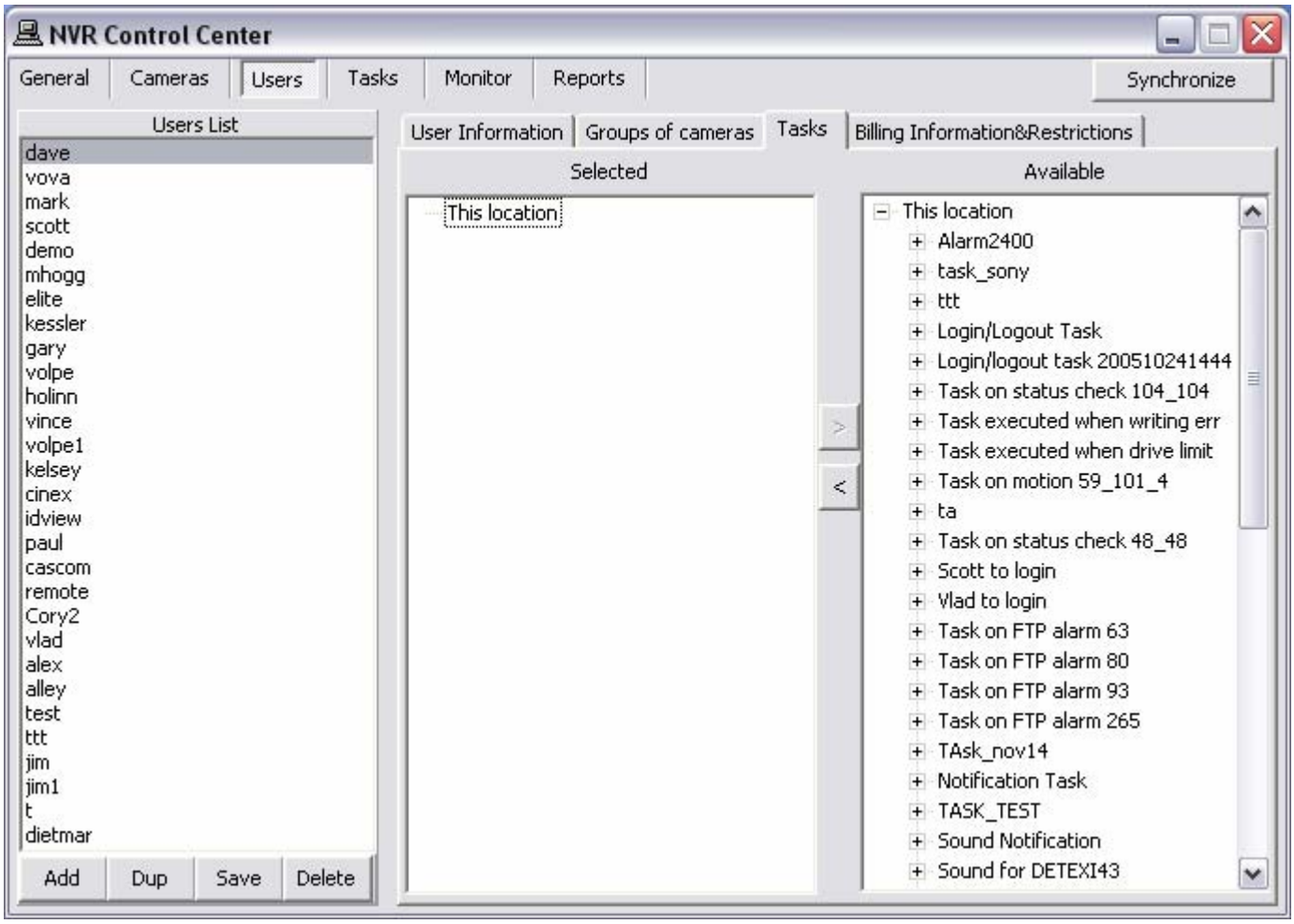


Fig 64. NVR Control Center — Users — Tasks
(Assign User Triggered task.)

✓ Tasks configured with alarm-specific information should not be assigned as no alarm-specific information will be available.

2. Trigger Task from Remote Client

1. Login to the **Remote DETEXI Client** (Fig 65).
2. On the Client start page press the **Tasks** button to launch **Execute Task** panel with the tasks available upon the user logged in permissions.
3. Select a task of interest and press **Start Task** button.

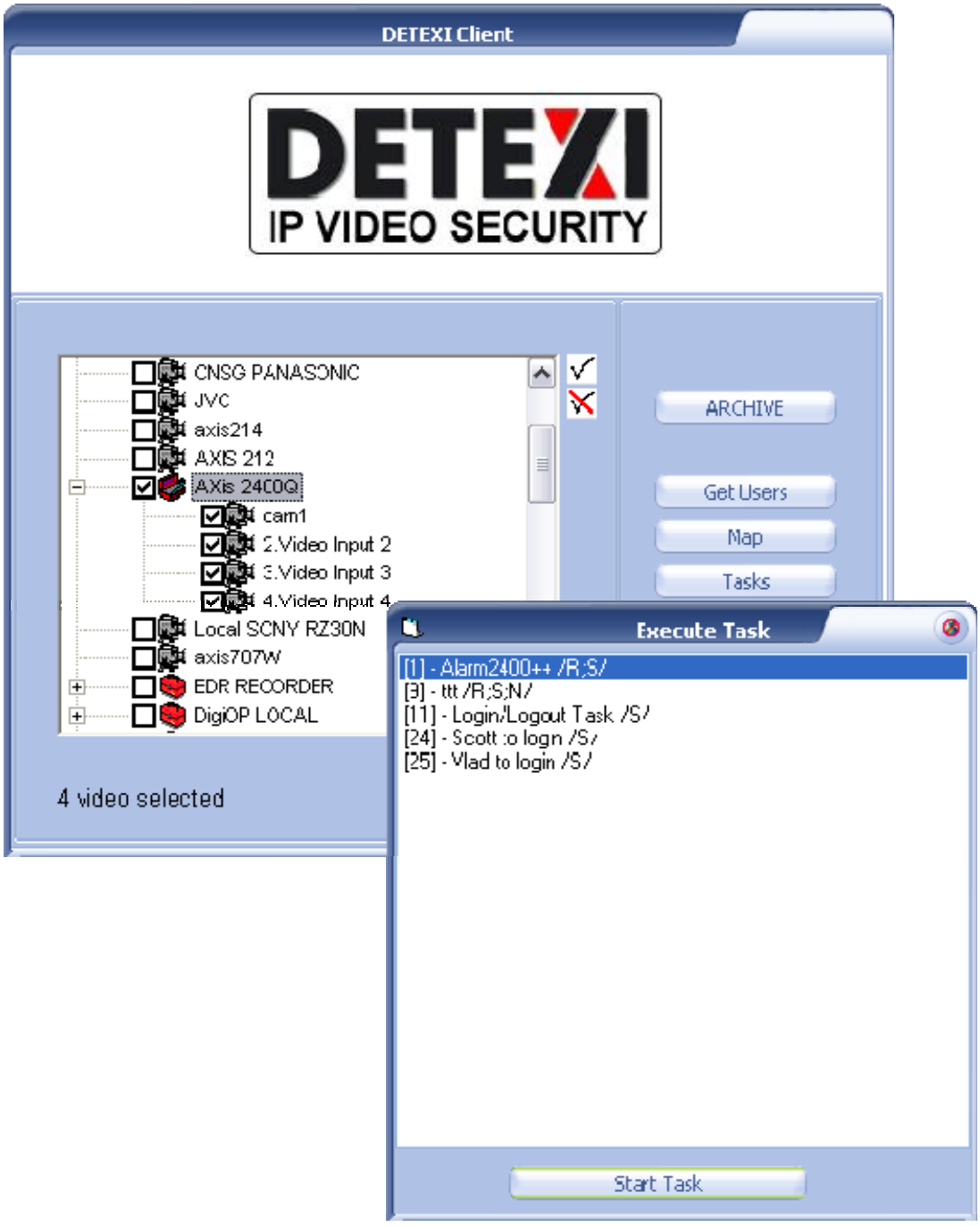


Fig 65. Remote DETEXI Client — Execute Task
(Trigger available task.)