ETHIRIS®

VIDEO MANAGEMENT SOFTWARE

Getting Started with Ethiris ▶

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1 Introduction

1 Introduction

Introduction

This manual is designed to help beginners get started with their Ethiris systems.

There are a total of six different manuals for Ethiris. Besides this one, there are also *Installing Ethiris, Admin - Configuration for Ethiris, Ethiris Client User´s Guide, Integration with Ethiris, and Getting started with Ethiris Mobile*.

This part of the manual suite describes the basic setup of an Ethiris system, assuming that Ethiris is already installed on the computer. For information on how to install Ethiris, please refer to the *Installation* manual. For in-depth information on the various functions in Ethiris, please see the *Admin - Configuration for Ethiris* manual and the *Ethiris Client User´s Guide* manual.

Use

The primary purpose of Ethiris is camera surveillance, which is performed in two ways. One way is manually to monitor live video from different cameras. The other way involves recording video from connected cameras. Recording can take place continuously from one or more cameras or in the form of video sequences when a recording condition is met. The recorded video can be played back afterward using sophisticated timelines and a VCR-like interface.

General Description

Ethiris is a surveillance system that uses network cameras and analog cameras, together with video encoders from different suppliers. The product is divided into several program parts, where *Ethiris Server* and *Ethiris Client* are the most important ones. The server part manages all cameras and stores video on the hard disk. The client part displays live video and recorded video sequences.

There is also a program called *Ethiris Admin*, which is used for configuring all Ethiris modules in the system. In *Ethiris Admin* you configure the *Ethiris Servers* by, e.g., defining which cameras are connected to each *Ethiris Server*, when video shall be recorded, what frame rate and resolution to use, etc. You also define the view layout in the various *Ethiris Clients* in the system using *Ethiris Admin*.

In theory, an unlimited number of cameras could be connected to each Ethiris server and be displayed in the desired number of Ethiris clients simultaneously. In practice, however, bandwidth and monitor resolution set limits for the appropriate number of cameras connected.

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There are different license levels for Ethiris, which permit different numbers of cameras to be connected. To meet the need for a large number of cameras, Ethiris is designed with a focus on scalability. Scalability means that it is possible to divide your system into several Ethiris servers and thus distribute the load over several computers.

Ethiris Server

Ethiris Server is the core of an Ethiris system. It handles all communication with the cameras and recording of video on a hard disk. Ethiris Server runs as a service under the operating system and is automatically started as soon as the computer is started. An Ethiris system can be comprised of one or several Ethiris Servers.

Ethiris Client

Ethiris Client is used for viewing live video and recorded video. An Ethiris Client can connect to one or several Ethiris Servers for access to cameras. An Ethiris system can contain one or several Ethiris Clients.

Ethiris Admin

Ethiris Admin is used for configuring the different parts in an Ethiris system. Ethiris Server and Ethiris Client are configured with this common tool. From any computer in the system, Ethiris Admin can be run and used for configuring all Ethiris components on-site.

Ethiris Mobile

Ethiris Mobile is an app for connecting to your Ethiris systems via your cell. With Ethiris Mobile you can watch live video from various cameras in your system. You can also see all the alarms.

Ethiris Server OPC Server

Ethiris Server OPC Server is a separate Ethiris component that is used for letting other systems gain access to the information in Ethiris Server. Any other system with an OPC client can connect to one or several Ethiris Servers and read/write to all signals in Ethiris Server. E g starting recording of a camera or control a PTZ camera.

Ethiris ActiveX

Ethiris ActiveX is a component used for viewing live video from a camera connected to an Ethiris Server. This component can be used in any system that can handle standard ActiveX components.

Ethiris Viewer

Ethiris Viewer is a separate program used for viewing exported video from an Ethiris system.

Ethiris Signature Validator

Ethiris Signature Validator is a separate software that is used to validate the authenticity of exported jpg images, so-called *watermark*.

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2 Getting Started

Overview

In the following section, you will learn how to start using Ethiris through a guided tour.

This tour will alternate between the server and client parts. A functioning system is based on at least one server and at least one client. Step by step, we will configure a complete system.

The section is divided into various tasks. The first tasks are simple systems. We will gradually add more and more functions so that, when all the tasks have been completed, we will have looked at the vast majority of the functions in Ethiris. This is all so that we can cover as many different requirements as possible.

After the tour, you will:

- Understand the fundamental objects in Ethiris

- Be able to configure both small and large systems

- Have an idea of the various client views in Ethiris

- Be able to configure the user interface in Ethiris

- Be able to use the most common functions in Ethiris

Before we start in on the tasks, we need to explain how the licensing of Ethiris works.

Ethiris License

Temporary License

When you install Ethiris Server on a computer, the installation program sets up a temporary license. This means that Ethiris Server works normally, but for a limited time (15 minutes) from when the system is started. When this time has expired, Ethiris Server will cease to communicate with the cameras connected. However, any simulator cameras connected will continue to work without interruption. Restart the computer to get a new test period.

When an Ethiris Server runs under a temporary license, all video retrieved from it and displayed in Ethiris Client will also be marked with "License missing".

To obtain a license that allows Ethiris Server to work fully, you have to use Kentima License Handler to generate a registration key and send it to Kentima AB. See the following section for how this is done.

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Registration

Registration has to take place at the computer where the server is running

Before Kentima AB can issue a license code for a system, the customer must – after installing Ethiris Server – create a registration code from the installed Ethiris Server program and send it to Kentima AB. This procedure is managed by the tool *Kentima License Handler*. Note that all operations required for licensing must be performed locally on the computer that is being licensed.

The registration code that is created by Kentima License Handler is unique to the computer where it was created, and the license code that Kentima AB will create is based on this registration code and will, therefore only function on this computer.

Note! Remember to disable virtual network cards such as VPN clients, Bluetooth, or WiFi before generating the registration code. Otherwise, there may be a license problem later on if Ethiris Server does not find the virtual network card.

The license handler is a guide with a few simple steps to facilitate the registration of an Ethiris product:

1. This is the first step of the license guide. **Select** Ethiris - Server (or other Kentima product to license).

Figure 2.1 First step in the license guide.

Select the product to license and then **click** *Next>* to continue the licensing procedure.

2. The next step is to **send** the *registration code* to Kentima AB. The best alternative is to log on to Kentima Partner pages on the Internet at **www.kentima.se** and paste the registration code into the license page and retrieve a license code directly.

    Other alternatives are the ones shown in *Figure 2.2* . If you choose the option, **By e-mail,** a new e-mail will be created automatically containing the necessary information when you click on **Send**. All you have to do is fill in the user and company information before you send it. In the same fashion, a letter (Notepad document) is created if you choose **By letter**, where you just have to fill in user and company information, print and send it or save the text file and attach it to an email.

The last alternative is simply to copy the Registration code from the dialog and then paste it into an email for sending it to *license@ethiris.com*.
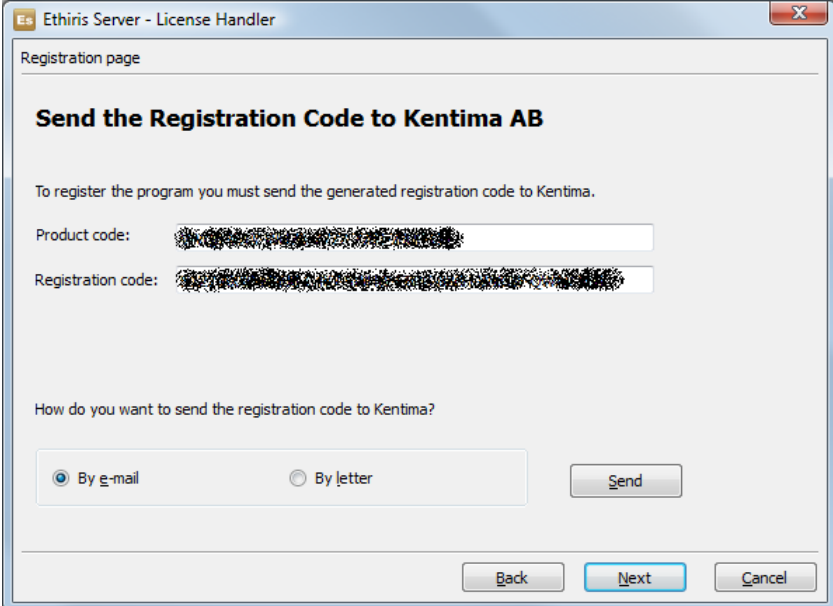
Figure 2.2 In this step, you send the registration code to Kentima.

When you have sent the registration code to Kentima, **click** *Next*.

3. In this step, you enter the license key that you obtain from Kentima. Since you have not yet received any license key you can **click** *Cancel* and return to this step at a later time.
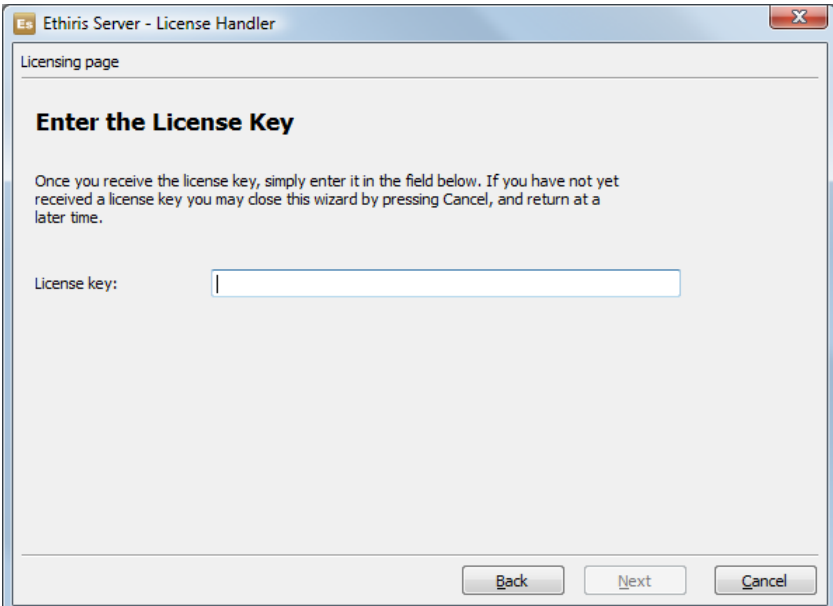
Figure 2.3 Enter the license code you received from Kentima.

When you have received your license key from Kentima, you can return to this step, enter the license key in the designated box and **click** *Next* to continue to the next step. The license handler will automatically take you to the correct step if you start it again.

4. This step shows that the registration has succeeded and displays the license information.
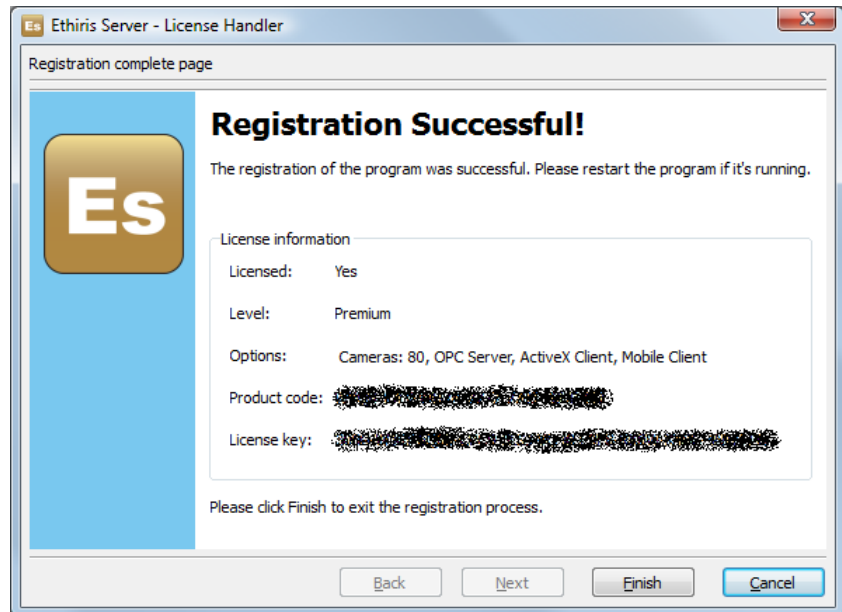
Figure 2.4 This step confirms that the licensing procedure is completed.

After checking the license information is correct, **click** *Finish* to close the guide.

The next time you open the license handler and selects the same product, the following dialog is displayed.
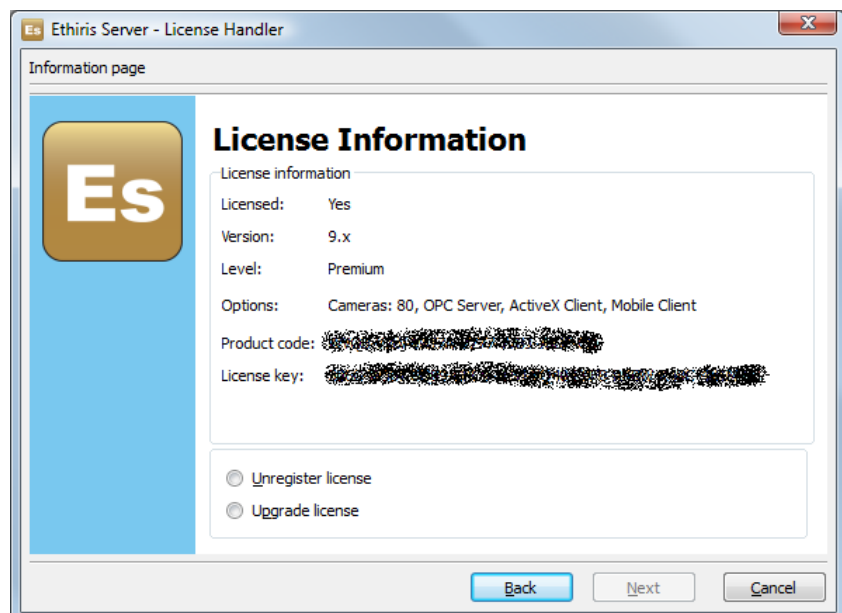
Figure 2.5 This dialog is displayed if you open the license guide again.

After having entered the license code, please restart the computer to restart the Ethiris Server and discover the new license code.

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Unregister the license

The most common reason for unregistering the license is that you are moving the software from one computer to another. To verify that you have removed the license from the original computer you get a unique unregistration code that you can send to Kentima.

If you want to unregister a license, start the license handler, and go through these simple steps:

1. The first step is to indicate that you want to unregister the license.
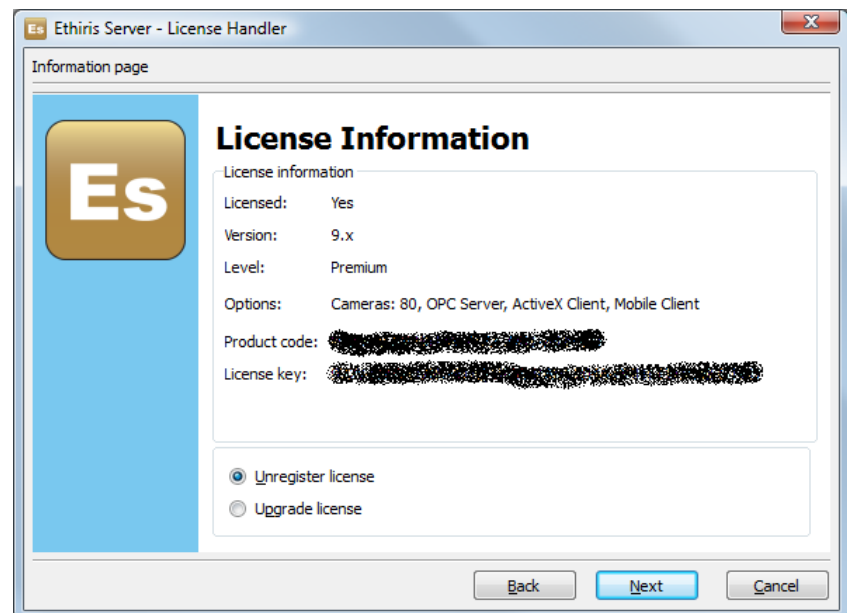
Figure 2.6 Here, you can choose to unregister the license.

Check the radio button *Unregister license*. Now you can **click *Next*** to continue.

You will get a warning dialog to make sure you do not unregister the license by mistake.
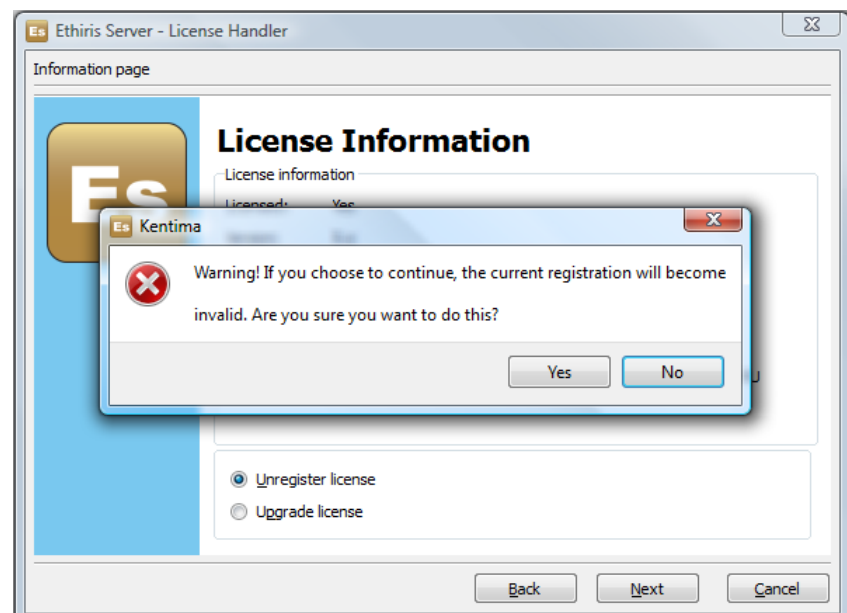
Figure 2.7 The Warning dialog is displayed to avoid unregistering by mistake.

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In this case, when you want to unregister, **click** *Yes*.

Here we can see that the license is unregistered. You must also send the unregistration code to Kentima.
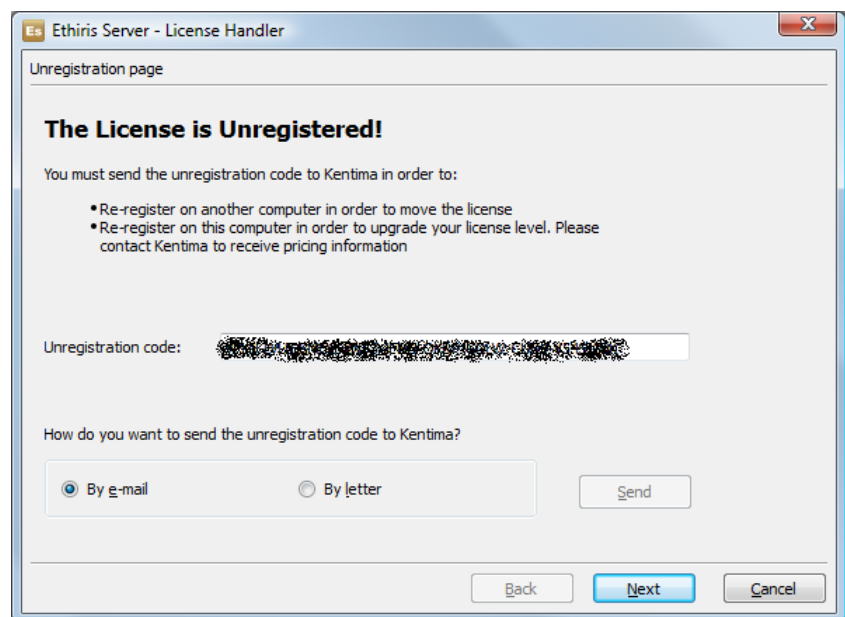
Figure 2.8 The license has been unregistered, and an unregistration code has been generated.

After sending the unregistration code to Kentima, **click** *Next***.**

If the purpose of the unregistration was to move the software to another computer, it's a good idea to send the registration code from the new computer and the unregistration code from the old computer together in the same e-mail/letter.

Send the code to Kentima AB by e-mail or post. Don't forget to specify the return address and any request for another license level than the current one.

Upgrade the license

If you need to upgrade an active license, you can – after agreement with your Ethiris-supplier – take out a new registration code from Ethiris and send it to Kentima to get a new license code containing a different license level or other options.

1. **Start** *Kentima License Handler* from the Start-menu and select the Ethiris product you wish to upgrade and **click** *Next*.

Figure 2.9 Select product to upgrade.

2. **Select** *Upgrade license* and then **click** *Next* to generate a new registration code and send it to Kentima, and you will receive a new license code with a different level and/or options.
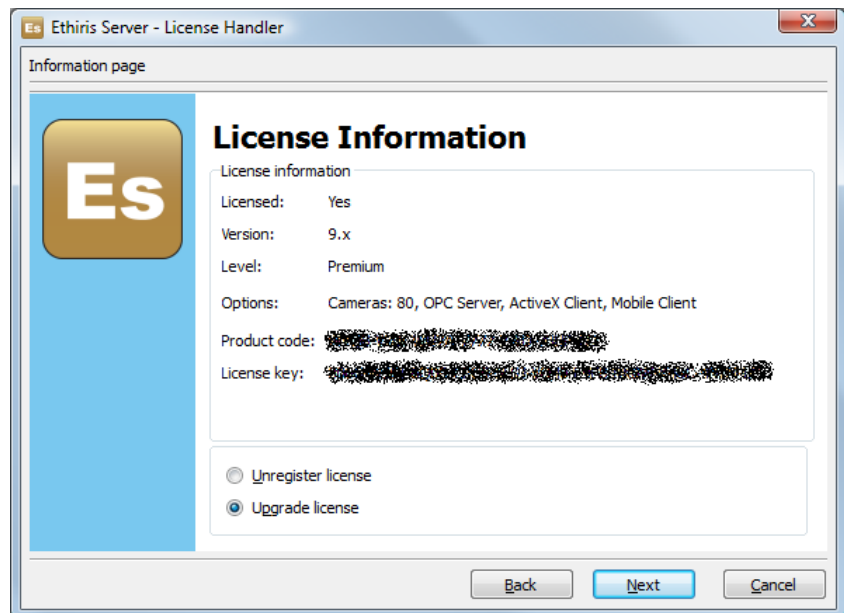
Figure 2.10 Select "Upgrade license" to upgrade.

3. Don't forget to fill in contact information in the letter/e-mail that you send to Kentima if there are any questions.

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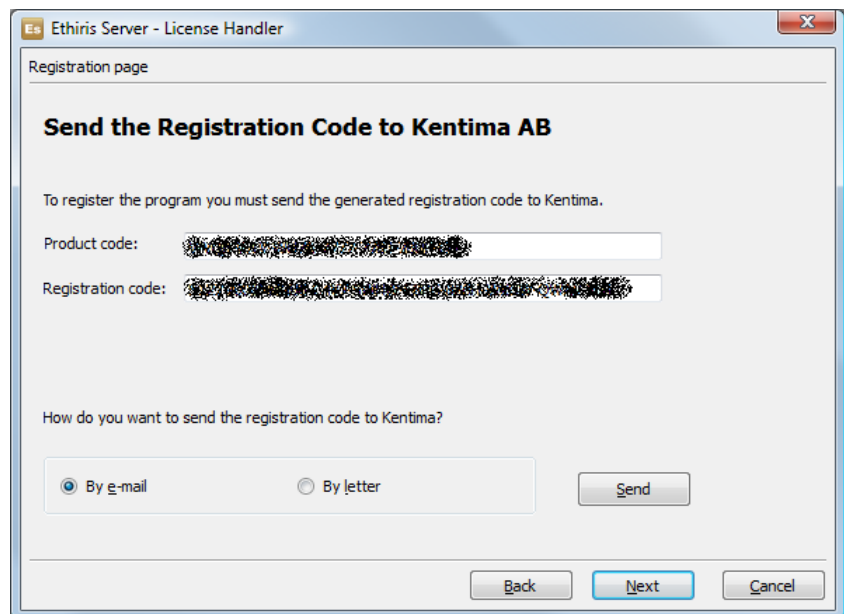
Figure 2.11 Select "By e-mail" or "By Letter" to send in the registration code.

4. When you have sent the code to Kentima, you can close the license handler by **clicking** *Cancel*. When the new license code arrives, it can be entered into the system in the precise same way as during a new installation. See the description above.

Address

You can send registration codes or unregistration codes for Ethiris Server in any of the following ways:

- **Internet** – Go to http://www.kentima.com and log on to the Kentima partner pages.

- **E-mail** – Fill in your company information in the license handler dialog and send the e-mail message to license@ethiris.com (pre-set in the e-mail)

- **Mail** - Fill in your company information in the license handler dialog, print the letter and post it to:
  Kentima AB
  Box 174
  245 22 Staffanstorp
  SWEDEN

  Mark the envelope: "Ethiris License"

For the fastest response register on the internet, this gives the possibility for automatic handling, the other methods require manual involvement and will take a little bit longer to handle.

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License levels

For the moment, there are five license levels in Ethiris. The difference lies mainly in how large of a system that can be built.

Free

The entry-level is free of charge and is intended to be used by anyone who wants to try out Ethiris. You can connect up to 4 cameras. The functionality is limited but works just fine for many small systems.

Basic

The commercial entry level is intended to be used by smaller companies, small shops, and home users. There is no support for external I/O, although I/O that comes with cameras and video encoders are available in Ethiris.

Extended

This level is suitable for medium-sized companies and shops. At this level, PTZ support is available. Integration via OPC comes at this level and also support for external I/O (not just I/O via cameras).

Advanced

This license level is suitable for larger companies and larger shops. In Advanced you get integrated support for Windows authentication and audit trail in Ethiris. You also get support for multiple storage devices, which mean you can store recorded video in several locations from one Ethiris Server.

Premium

This level is suitable for large and advanced installations. The possibility for expansion is almost without limit. At the Premium level, ActiveX and OPC Server are included in the license fee, providing a lot of integration possibilities.

Note that Ethiris Client always is at the Premium level, only Ethiris Server exists in different license levels.

These tables describe the different license levels:

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Ethiris Server

License level	Free	Basic	Extended	Advanced	Premium
Number of cameras[1]	4	1-20	1-40	1-64	1-250
Max storage capacity	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Max storage time	1 day	Unlimited	Unlimited	Unlimited	Unlimited
Number of concur. clients conn. to server (the sum of clients, ActX, Ethiris Mobile & WQ)[1]	2	3	5	20	Unlimited
Requires Internet connection	Yes	No	No	No	No
Support for megapixel cameras	●	●	●	●	●
Schedules	●	●	●	●	●
Recording on event	●	●	●	●	●
Continous recording	●	●	●	●	●
Motion detection	●	●	●	●	●
Centralized administration	●	●	●	●	●
Browsing for cameras on the network	●	●	●	●	●
Script engine	●	●	●	●	●
Data logging	●	●	●	●	●
PTZ	●	●	●	●	●
Camera groups	●	●	●	●	●
Connect I/O devices via plug-in (1 device / camera license)	●	●	●	●	●
Connect Ethiris Mobile – Light mode	●	●	●	●	●
Connect Ethiris Mobile – Full mode	-	●	●	●	●
E-mail/SMS	-	●	●	●	●
OPC-client	-	-	●	●	●
Signing of exported jpg images	-	-	●	●	●
Multiple streams from cameras[2]	-	-	●	●	●
Door controllers (1 door / camera license)	-	-	●	●	●
Audio out to cameras / audio devices	-	-	●	●	●
Audio devices (1 device / camera license)	-	-	●	●	●
Number of I/O signals via external OPC-server	-	-	32	128	Unlimited
Number of preset positions/camera	-	-	Unlimited	Unlimited	Unlimited
Number of guarded tours/camera	-	-	Unlimited	Unlimited	Unlimited
TCP/http listeners	-	-	Unlimited	Unlimited	Unlimited
Connect Ethiris Server OPC-server	-	-	Option	Option	●
Connect ActiveX client	-	-	Option	Option	●
Connect WideQuick EthirisView	-	-	-	Option	●
Multiple storage devices	-	-	-	●	●
Authorization	-	-	-	●	●
Possibility of pre authorization	-	-	-	●	●
Ethiris native users and user groups	-	-	-	●	●
Audit trail	-	-	-	●	●
Remote control of Ethiris Client via script	-	-	-	●	●
Dewarping of 360-cameras in Admin/Client	-	-	-	●	●
Support for UPS	-	-	-	●	●
Hardware acceleration	-	-	-	●	●
Support for GigE cameras	-	-	-	-	●
Floating camera licenses	-	-	-	-	●
Encryption of video and data storage	-	-	-	-	●
Support for cluster and redundancy	-	-	-	-	●
Support for database connections	-	-	-	-	●
Support for alarm central functions	-	-	-	-	●

[1] The current hardware of the server/network may limit the actual number of cameras/clients that can be connected. It is up to the integrator to ascertain that the offered hardware can handle the proposed plant.

[2] Maximum total number of video streams is 2 x the number of available camera licenses.

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SIA-server	-	-	-	-	Option

Ethiris Client[3]

Connected server's license level	*Free*	*Basic - Premium*
Number of servers a client can connect to	1	Unlimited
Number of camera views/client view[4]	64	64
Number of sections	Unlimited	Unlimited
Support for megapixel cameras	●	●
Hotspot	●	●
Automatic camera switching	●	●
Support for maps and pictures in camera views	●	●
Export of recorded video	●	●
Motion search in recorded video	●	●
Digital zooming	●	●
Remote control of client from external system via COM	●	●
Client view activation via I/O	●	●
PTZ	●	●
Support for joystick	●	●
Event triggered playback of sound files	●	●
Authorization[5]	●	●
Audit trail[5]	●	●
Support for multiple monitors	●	●
Interaction objects in camera views	●	●
No license required	●	●
Wide screen support (flexible client views)	●	●
Event list	●	●
Alarm list	●	●
Pre authorization[5]	●	●
Instant replay[5]	●	●
Dewarping of 360-cameras[5]	-	●
Connect to cluster	-	●
Hardware acceleration[5]	-	●

[3] Ethiris Client is free of charge and exists only in one version. Availability of functions can depend on license level of Ethiris Server.

[4] The current hardware of the computer/network may limit the actual number of cameras that can be displayed. It is up to the integrator to ascertain that the offered hardware can handle the intended function.

[5] Availability of function depends on current license level of Ethiris Server.

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Task 1, a Very Simple System

This first task involves getting a system going that consists of one computer, which is to run both the server and client. The system consists of only one camera, an Axis M1054. The goal is to get live video from this camera and view it in Ethiris Client.

The client part will consist of a section with one client view. It could not be simpler than this.

We assume that the necessary cameras have been installed in the network. This also involves the allocation of IP addresses to the cameras. See the documentation for the camera in question for further information.

We also assume that Ethiris has been installed with both the client and the server on the same computer. See the *Installation* manual for more information on installing Ethiris.

Below is a list of the names that will be used for the various objects in the system.

Server part

Ethiris server: **Obelix**

Ethiris server IP address: **192.168.31.1**
(the IP address for the computer you use is probably different. Contact your network administrator if you are uncertain about this).
By default, 127.0.0.1 is suggested as the IP address when a new Ethiris server is to be registered in the configuration tool or the client. This corresponds to the local computer and works just as well as the actual IP address. Please note that this only works for the local computer and not if you want to connect to another computer in the network.

Camera: **Door**

Camera IP address: **192.168.31.153**

Client part

Section: **Section One**

Client view name: **View One**

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Instructions

Ethiris configuration wizard

From version 5.10 of Ethiris, there is a configuration wizard that starts automatically the first time you start Ethiris Admin. The condition for the wizard to start is that your Ethiris Admin project is empty, which is the case when you start Ethiris Admin directly after a new installation of Ethiris.

The configuration wizard helps the user get started with Ethiris, and the first three tasks in this Getting started manual can be done automatically by the configuration wizard.

When you start, the following dialog is displayed.
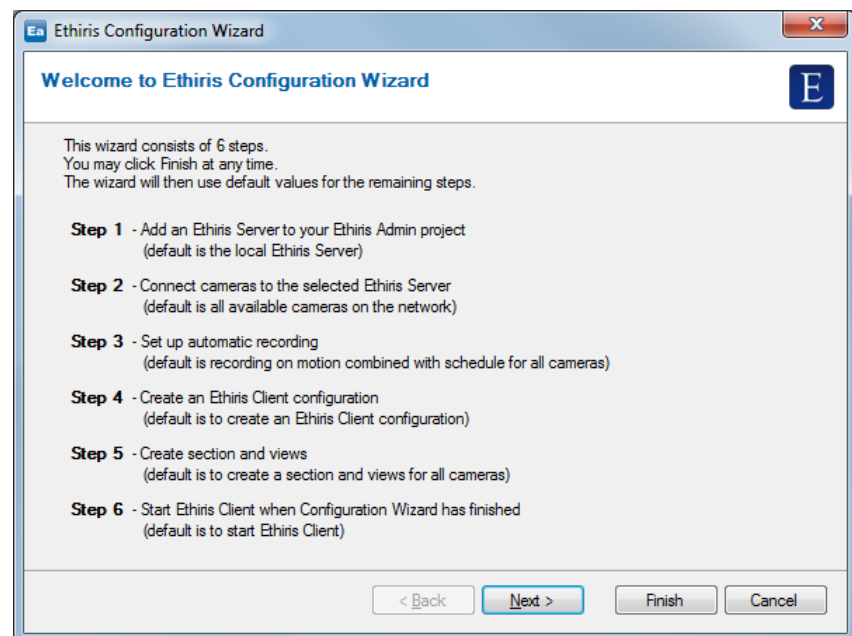
Figure 2.12 The welcome dialog in the configuration wizard.

If you are content with the default settings for all the steps, you can click *Finish* immediately. Then the wizard will connect to the local Ethiris Server (the one running on the local computer), search for available cameras on the network, and configure the cameras for automatic recording on motion and schedule. Furthermore, the wizard will create a client configuration based on the found cameras, and finally, the Ethiris Client will automatically be started with the newly created configuration.

So, if you want, you can run the configuration wizard and therefore skip the first three tasks in this manual and go directly to

Task 4, Deleting Video on page *2:60*.

If you don't want to run the wizard, you simply click the *Cancel* button.

A thorough description of the configuration wizard can be found in the *Ethiris Admin* manual.

The remaining sections for this task are based on a manual configuration, without the configuration wizard.

Without the configuration wizard

When Ethiris is newly installed, the system is empty since no cameras are connected to the system. The first thing we have to do is to tell Ethiris Server that there is an Axis M1054 camera in the network that we want to use.
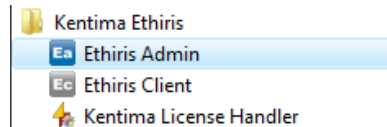
Although Ethiris consists of several program parts, not all of them are in the start menu. The server part is implemented as a service. A service can simply be configured from the *services* program in the Control Panel in respect of whether it is to start automatically when the computer is started. When Ethiris is installed, the server part is configured to start automatically when the computer is started. This means that the Ethiris server is always running.

The installation program adds a shortcut to the client part, *Ethiris Client*, and the configuration program, *Ethiris Admin*, to the start menu. Furthermore, a shortcut to *Kentima License Handler* is added to the start menu.

Please note that, in some installation types, the camera simulator *Ethiris Camera Simulator* is also installed. If this part were not deselected during installation, it would be a 4th option in the start menu. There may also be shortcuts to the OPC Server configuration tools.

OK. Let's get going with the guided tour.

1. **Click** the *Start* menu and **select** *Programs*.

2. **Select** the program group *Kentima Ethiris*.

3. **Click** the program icon *Ethiris Admin*.

📁 Kentima Ethiris
    Ea Ethiris Admin
    Ec Ethiris Client
    ⚡ Kentima License Handler

Start Ethiris Admin

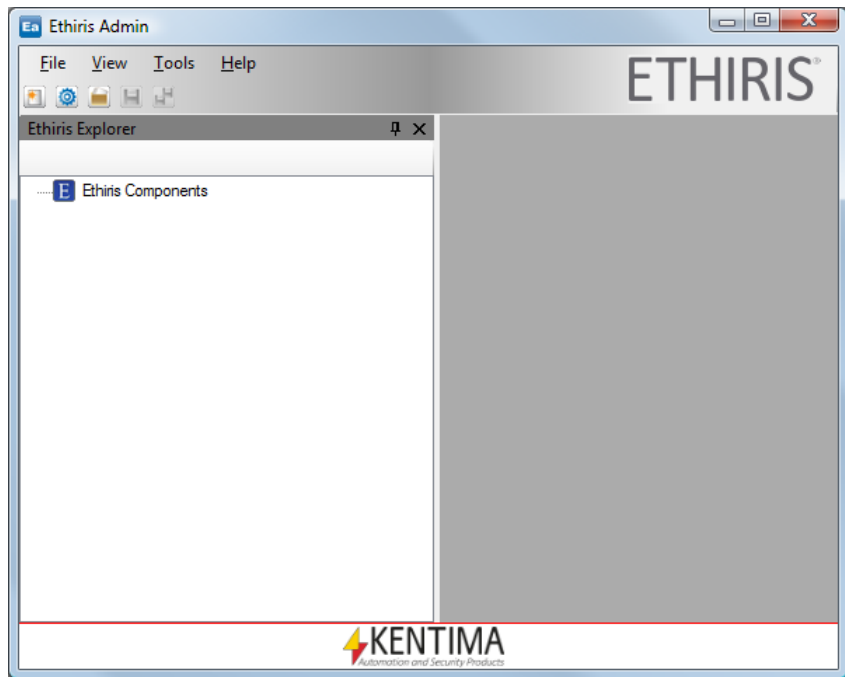KENTIMA
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Figure 2.13 System configuration for an empty system.

Language

Ethiris Admin and Ethiris Client use the currently selected language in the Control Panel, if possible. Beginning with version 5.14 there are 8 different languages to choose from for Ethiris Admin and an additional 12 (for a total of 20) for Ethiris Client; *English, Swedish, French, German, Russian, Norwegian, Dutch* and *Spanish* are available for both Admin and Client. For Ethiris Client are also *Croatian, Danish, Finnish, Italian, Polish, Portuguese, Serbian, Slovenian, Arab, traditional and simplified Chinese* and *Turkish* available.

To select another language, select the menu *Tools->Select Language*.

Firewall

If a firewall is activated on the computer where Ethiris Server runs, certain ports have to be opened to make Ethiris function properly.

Connecting to an Ethiris Server

To the left of the window is a treeview, called *Ethiris Explorer*, which, at this stage, is empty apart from the root element, *Ethiris Components*. You can administer several different Ethiris servers from the same Ethiris Admin program. Before you can start to work with a system, you have to *connect* to the Ethiris server(s) you want.

1. **Select** the *File->Connect Ethiris Component->Ethiris Server…* menu.

   A connect dialog is displayed with information on the local computer already entered.

2. **Click** on the button *Manual connect* to enter an IP address manually to connect to.
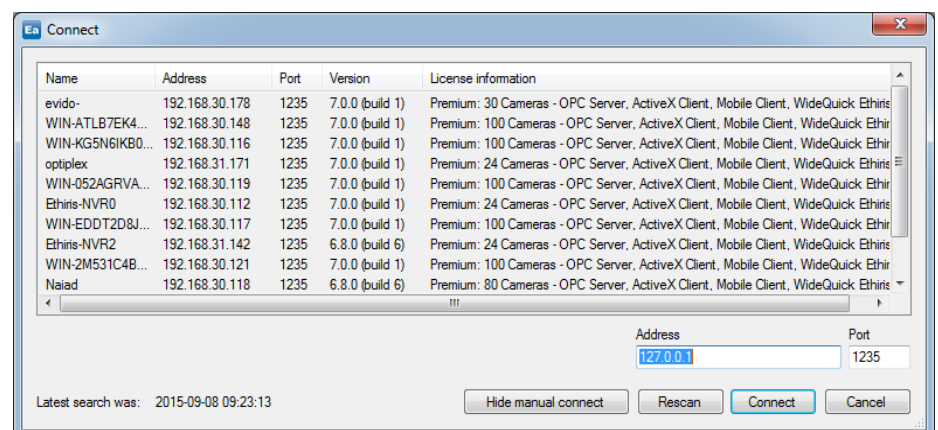

Figure 2.14 Connect Ethiris server dialog.

3. **Click** *Connect*.

When a new Ethiris Server is connected to Ethiris Admin, the relevant configuration is read from the server. The relevant information is entered in the treeview.

Figure 2.15 Ethiris Admin with one server connected.

Add a *camera*

The next step is to add a camera that represents the Axis M1054 available on the network.

1. **Double-click** the *Cameras* node in the treeview to open the *Cameras* panel.
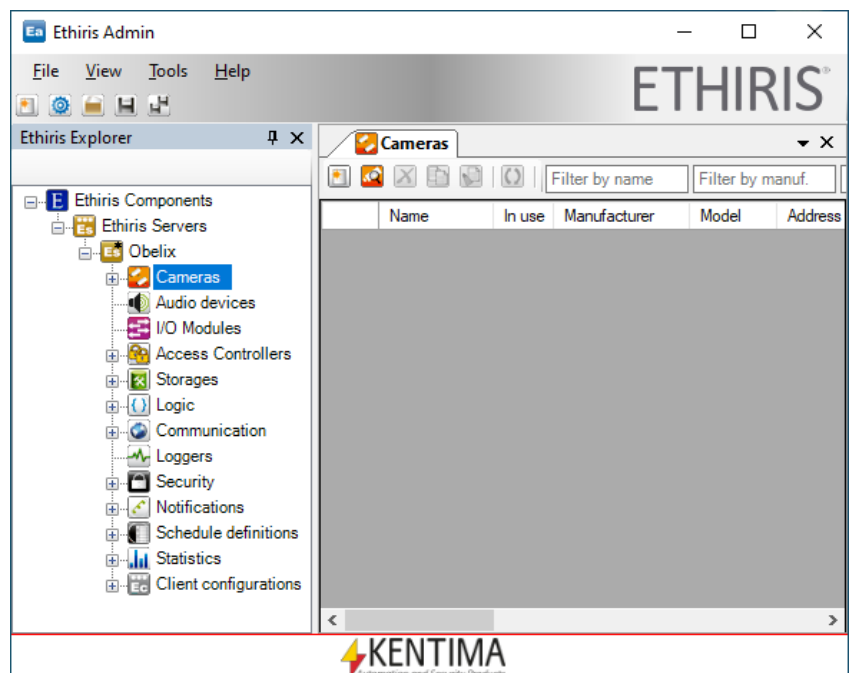

Figure 2.16 Ethiris Admin with Cameras panel opened.

There are two ways to add cameras to the server configuration; manually or by browsing for available cameras on the network.

The browsing function utilizes ONVIF and UPnP (Plug-And-Play), i.e., only cameras with support for ONVIF or UPnP will be found.

To enable UPnP on the computer running Ethiris Admin, open Windows firewall settings from the Control Panel and select *Allowed programs*.
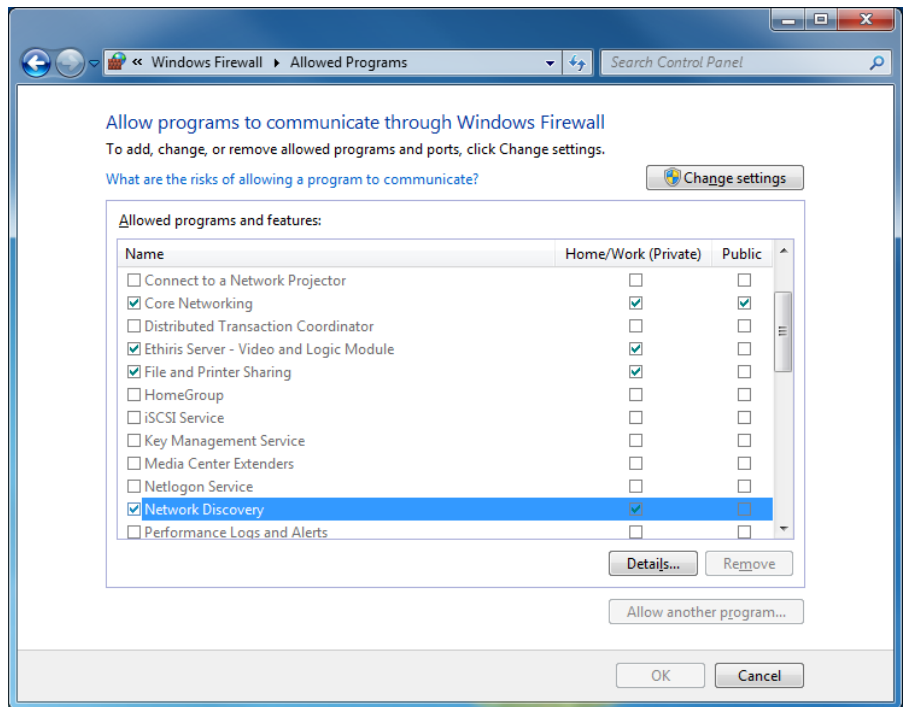
Figure 2.17 Allowed programs list in Windows 7.

Make sure *Network Discovery* is enabled.

Browse for camera(s) button.

2.   **Click** the *Browse for camera(s)* button.
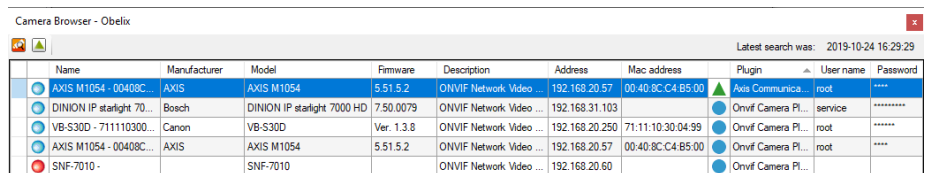
Figure 2.18 Dialog for browsing cameras on the network.

3.   **Select** the desired camera(s). In this case, the *Axis M1054* and **click** the *Add* button.

The Axis M1054 camera is immediately added to the list of cameras in Ethiris Admin. The default name is *Camera 1,* which we will soon change to *Door*.

Figure 2.19 The Axis M1054 camera is added to the network cameras list in Ethiris Admin.

4. Now, **click** in the field *Name* and **enter** *Door* instead of *Camera*. The name is instantly updated in the treeview as well.

Figure 2.20 Door is entered as the new name of the camera.

5. If the login and password should be something else than the default *root* and *pass,* you may change those corresponding fields as well.

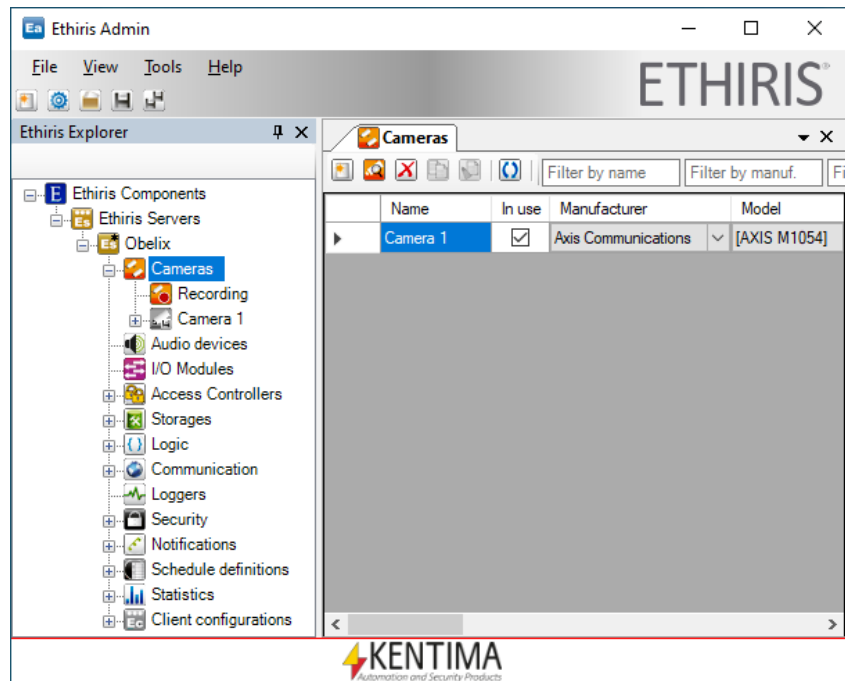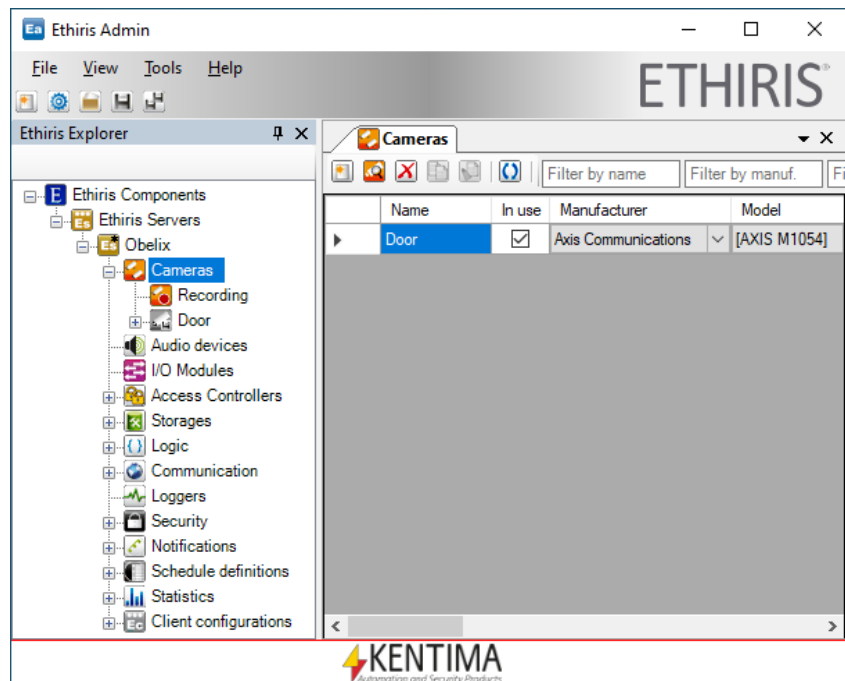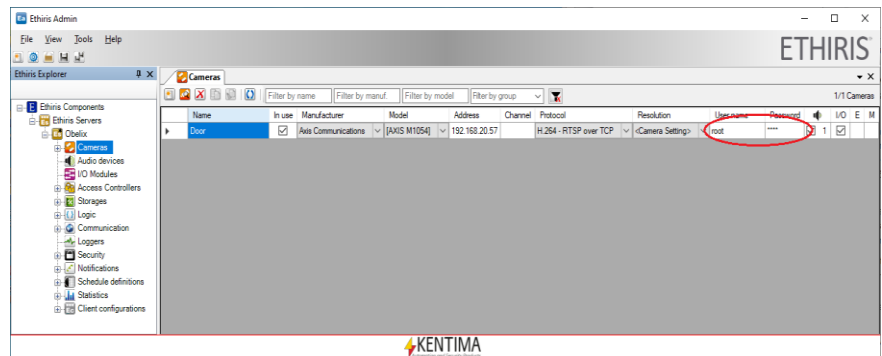*Figure 2.21 You may have to change the login and password.*

🖫*Save button.*

6. **Click** the *Save* button in the main toolbar for saving the new configuration to Ethiris Server.

When the configuration is saved, Ethiris Server is updated with the new information and starts to retrieve video from the camera. Before saving, Ethiris Server knows nothing about the camera and consequently will not start retrieving video until the configuration is saved.

Notice that the camera icon is gray before the configuration has been saved. This indicates that no video is retrieved from the camera. The reasons can be many. In this case, it's because the camera has not yet been saved to the server's configuration.

To manually add a camera to the server configuration, simply right click the *Cameras* node in the treeview and select *New-> Camera* in the popup menu or click the *New Camera* button 🖳 in the Cameras panel's toolbar. Each time this is done, a new row is created in the cameras list.

The default *Manufacturer*, Generic, and Model, Generic, are pre-selected. Simply select appropriate values in the drop-down lists for each camera.

When manually adding cameras to the configuration, you also have to enter the IP address manually.

There is a warning (the red dot with an exclamation mark) when one or several values are not OK for a camera. In the example below, the *IP-address* is missing.

Hold the mouse pointer over the warning icon ❗ to get information about what is wrong.

Use the warning icon to get more information
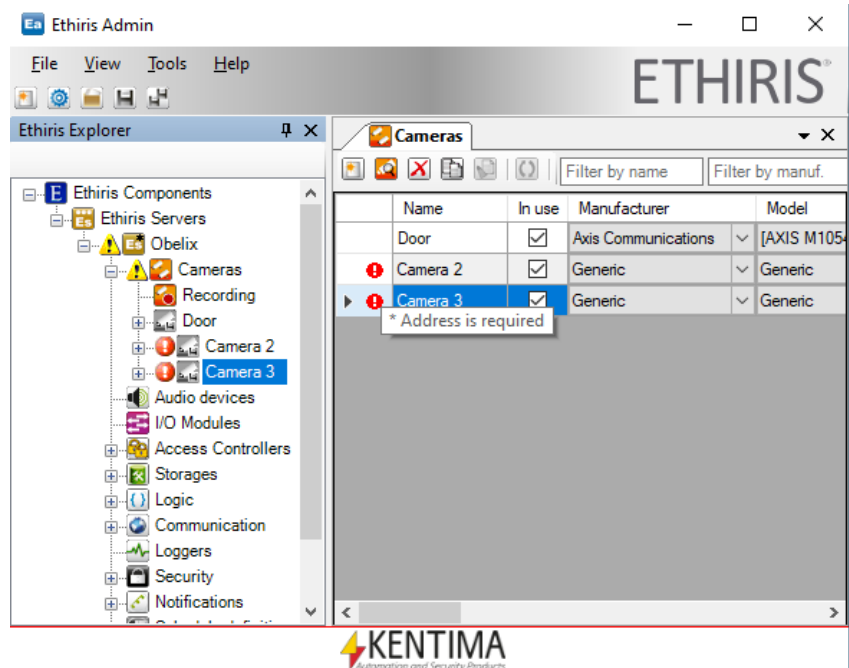
Figure 2.22 New cameras added.

If you don't want all cameras, simply select undesired cameras in the list by clicking on the left-most column and then click the *Delete camera* ✗ tool button.

It's perfectly alright to select multiple cameras simultaneously by clicking one row, holding the mouse button down, and then moving the mouse pointer to other rows. Alternatively, you can use the *Ctrl*-key or the *Shift*-key to select multiple rows.

More camera properties

As new cameras are added to the server configuration, they appear in the treeview as well. Click on the "+" at the camera *Door* to expand the tree and view other categories of camera properties.

Figure 2.23 Camera node expanded in the treeview.

You can open a specific property panel for each of the nodes in the treeview by double-clicking the treeview node, even the node representing the camera *Door* itself.

Figure 2.24 Camera properties panel opened.

Note that panels that were already opened are still open. Each panel has a tab. A panel can be moved and docked in a lot of different ways. Please see the *Admin Configuration* manual for information about how to work with panels.
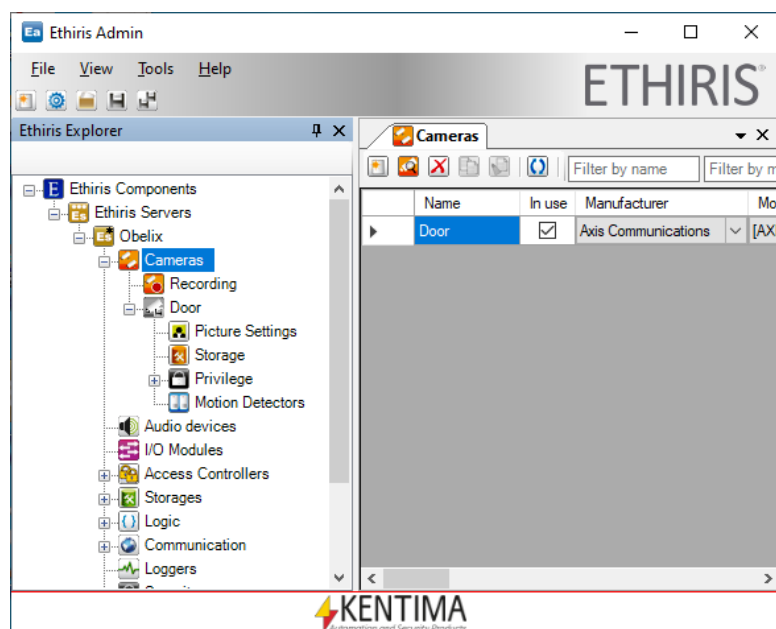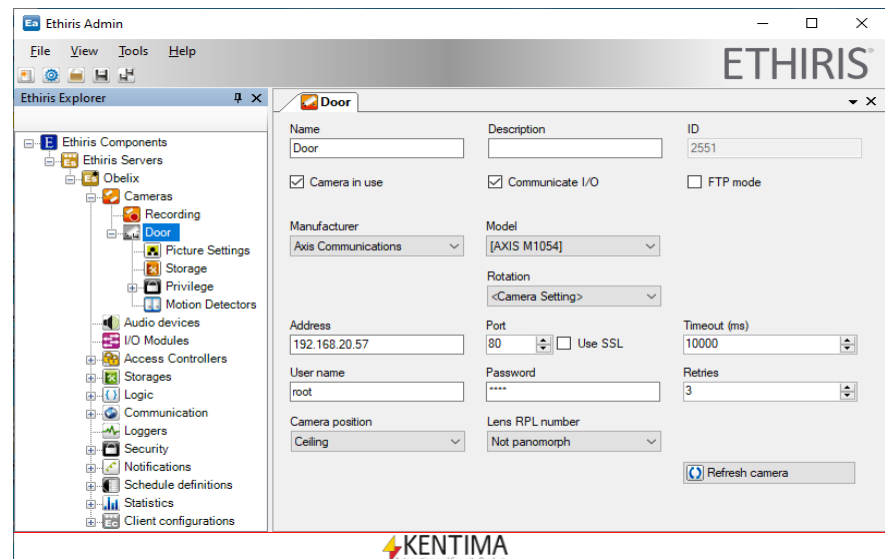
After a while, there may be quite a few panels opened. Feel free to close them by clicking the close button in the upper right corner of the panel or right-clicking any of the open panels' tabs and select any of the menu items for closure. The information entered on the panel is still there even after the panel is closed.

To make the server use the new configuration, we must save it to the server. Click on the *Save the selected component* 💾 to save the configuration.

Alright, this completes the server configuration for now.

Creating a client configuration

We also have to configure the Ethiris Client before we can view live video. Now, this is done from Ethiris Admin as well.

Again, you can create a new client configuration using the configuration wizard. Select *File->New Ethiris Component->Ethiris Client using wizard…* to try this out. Read more about the configuration wizard in the *Admin configuration* manual.

In this manual, we do it the hard way.

For the time being, Ethiris Clients cannot be configured online, but rather offline. This means that if no client configuration exists, you have to create a new client configuration. Since client configurations are stored on Ethiris Server you must first select the Ethiris Server that should handle the new configuration in the treeview.

1. In Ethiris Admin, **Select** the
   File->New Ethiris Component->Ethiris Client… menu.

This will create a new client configuration on the selected server. This new configuration gets a default name like *Client Configuration* or similar and is shown in the treeview under the node *Client configurations* for the selected server.

2. Now **double click** on the new configuration node, and Admin will open the configuration under the *Ethiris Clients* node in the treeview.
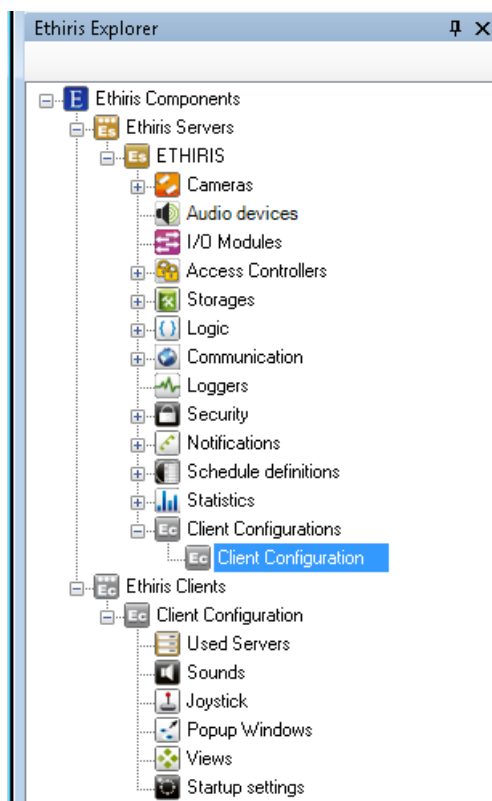

Figure 2.25 New Ethiris Client configuration in the treeview.

3. **Double click** on the newly opened configuration under the *Ethiris Clients* node to open the client configuration panel.
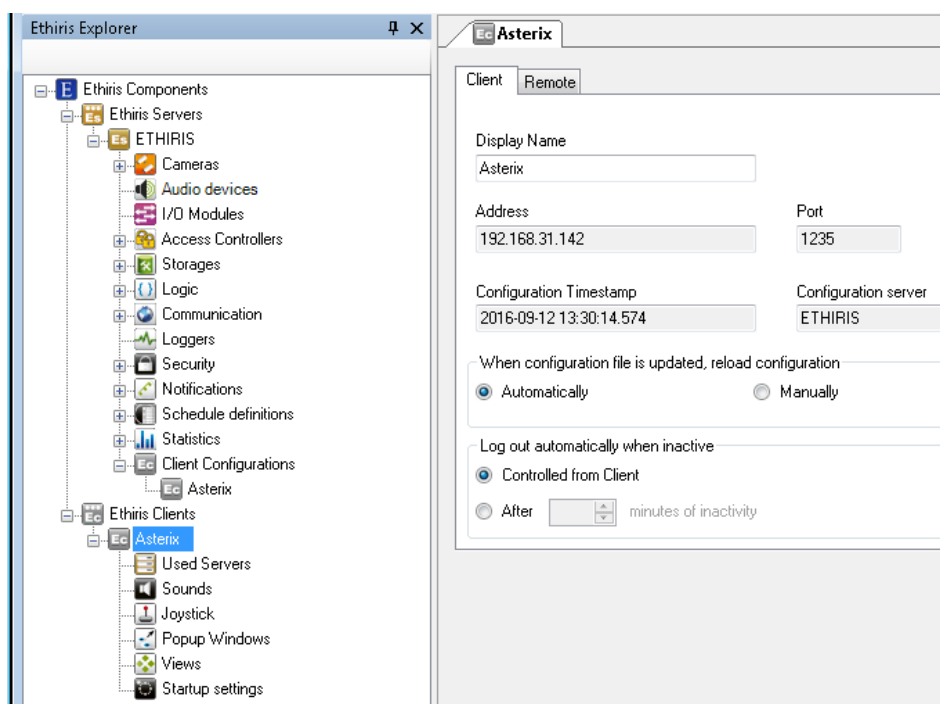
Figure 2.26 Ethiris Client configuration panel.

4. Enter the preferred presentation name for the client configuration in the field *Display name*. This is the name that will be displayed in the treeview in Ethiris Admin and in some contexts in the client program.

5. **Click** *Save* on the toolbar to save the configuration to the server.

The next step is to define which Ethiris Servers this particular Ethiris Client configuration will use.

1. **Double-click** the *Used Servers* node in the treeview to open the *Used servers* panel.
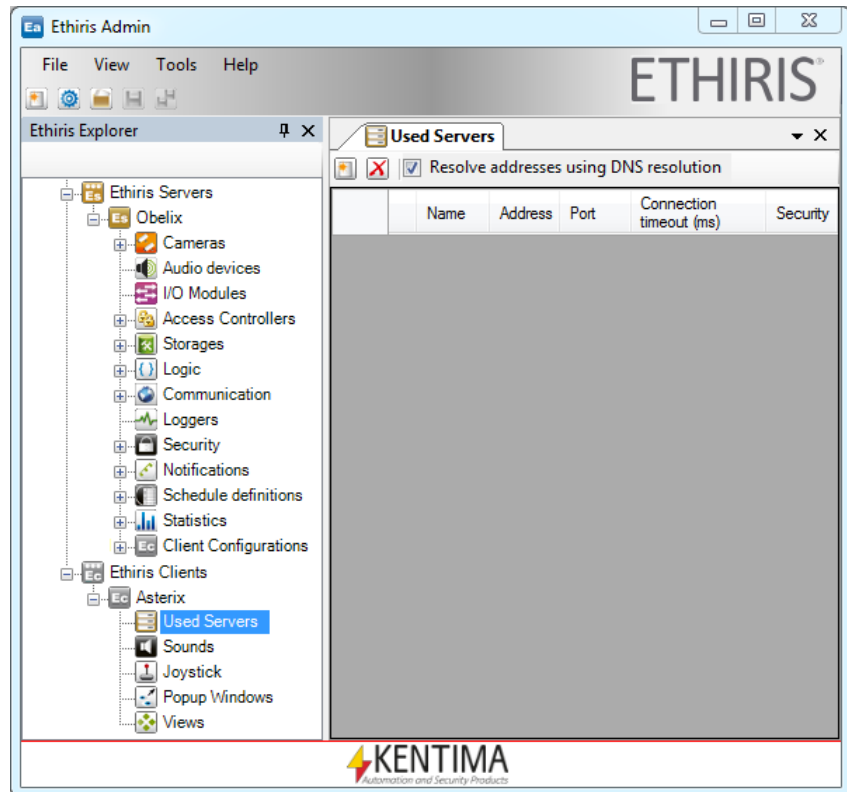
Figure 2.27 Ethiris Admin with Used servers panel opened.

2. **Click** the *Add server* button in the *Used severs* panel's toolbar to open the *Add Server to Client Configuration* dialog.
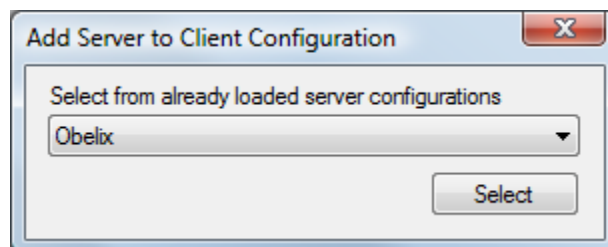
Figure 2.28 Dialog for connecting an Ethiris Server to a client configuration.

3. **Leave** *Obelix* selected in the list of already loaded server configurations and then **click** the *Select* button.

Now, the treeview is updated with information about which Ethiris servers are connected to the client configuration.

All cameras that are part of the server configuration are now available in the client configuration. Various client views can be defined in the client configuration, and all cameras available to the client configuration can be used.

Click the +-sign in the treeview to the left of *Obelix* to view the available cameras.
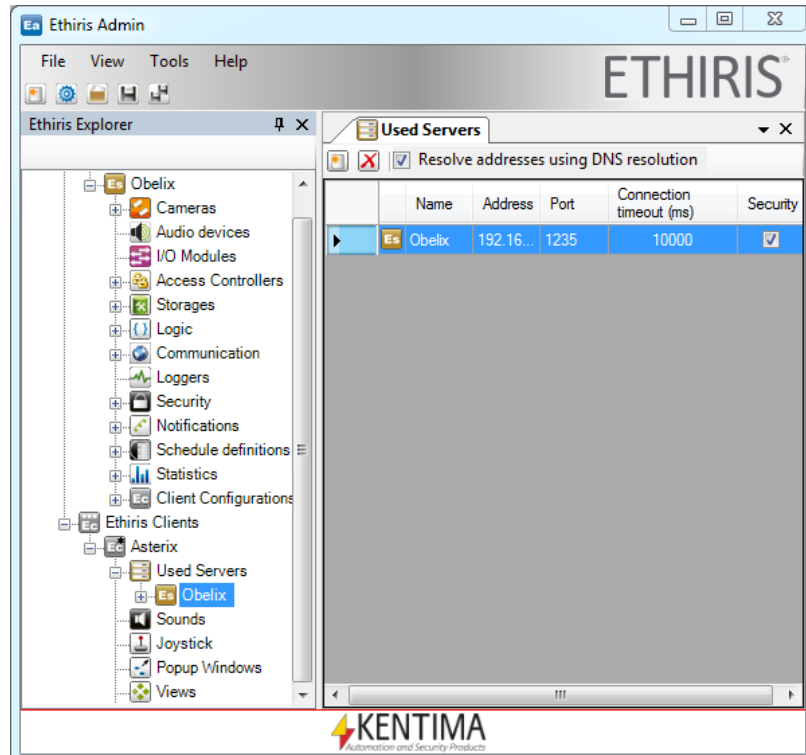
Figure 2.29 Ethiris Admin treeview is updated with the connected server.

Creating a section and a view

Next to the bottom of the client treeview, there is a node called *Views*. This is where you create sections and client views that shall be part of the client configuration and available for the operator running Ethiris Client.

1. **Right-click** the *Views* node in the treeview and **select** *New->Section* in the popup menu.
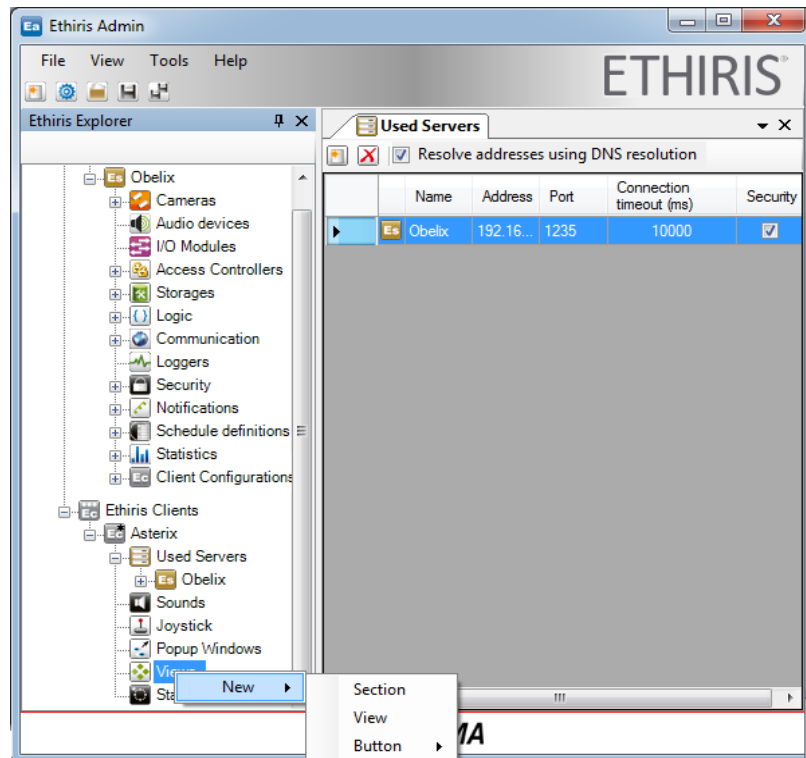
Figure 2.30 Create a new section in the client configuration.

2. A *Section* node is created in the treeview. **Enter** a name for the section, e.g., *Section One*.

3. **Right-click** the new section node and **select** *New->View* in the popup menu.

4. A *View* node is created in the treeview. **Enter** a name for the view, e.g., *ViewOne*.

5. Under the new *View* node in the treeview, a *Layout* node is automatically created. **Double-click** the *Layout* node. Ethiris Admin shall now look something like *Figure 2.31*.

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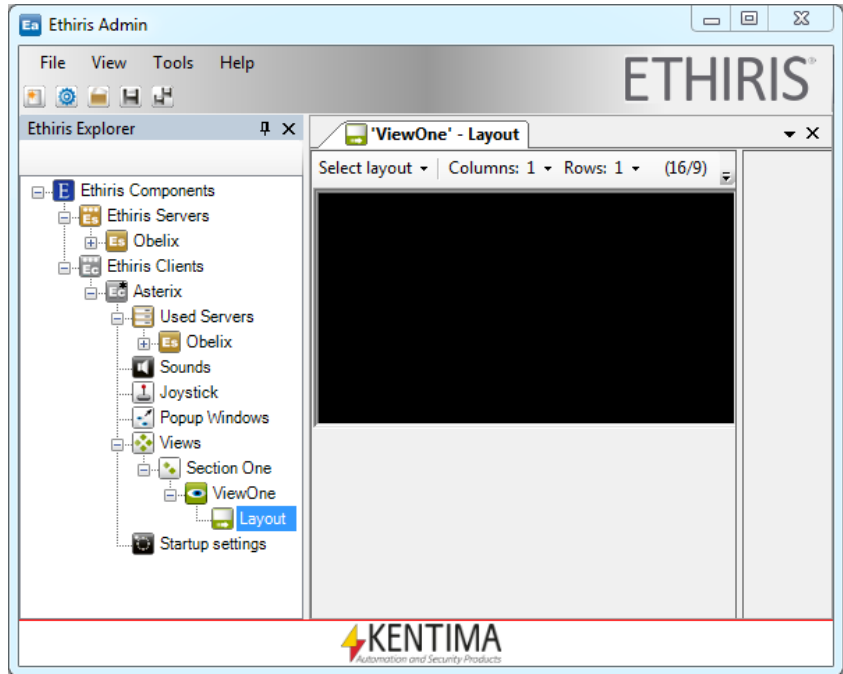
Figure 2.31 View layout in Ethiris Admin.

In the *View One – Layout* panel, you can choose among several pre-defined layouts. See *Figure 2.32*.
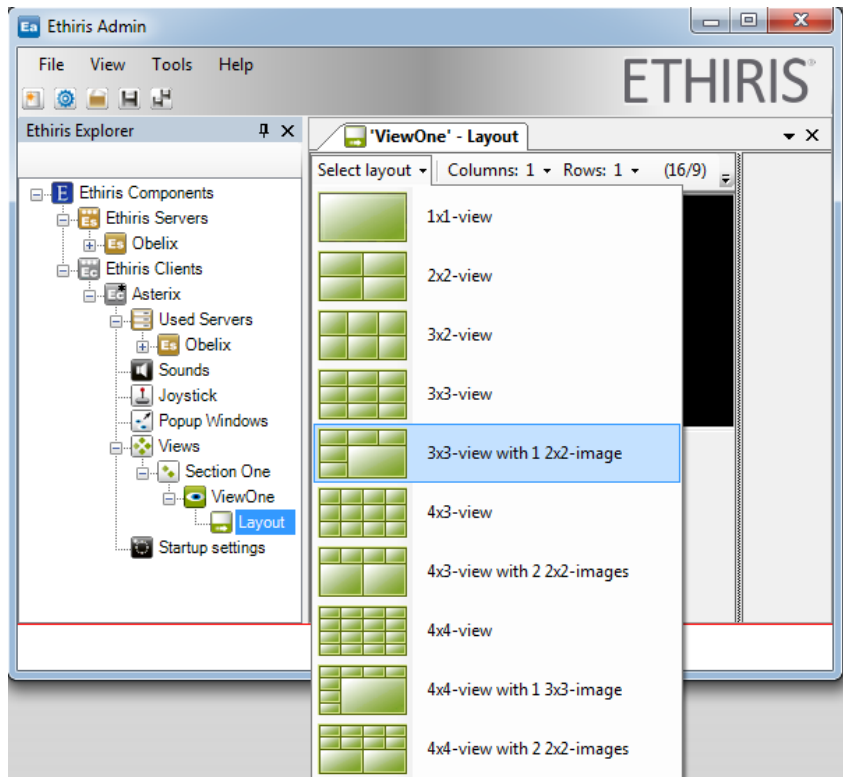
Figure 2.32 Pre-defined layouts.

You can also choose the number of columns and rows directly for the client's view. See *Figure 2.33*
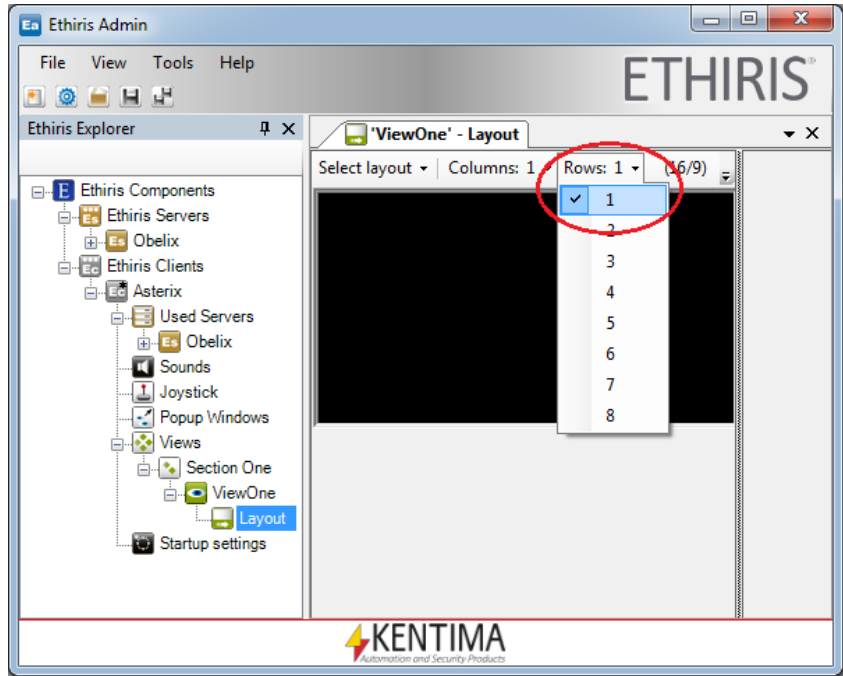
Figure 2.33 Select the desired number of columns and rows for the client view.

6. For now, keep the layout with one column and one row. **Click** in the black area to display all available cameras to the right in the layout panel. **Check** the *Use* checkbox for camera *Door* to select this camera in the client view. This means that when the operator selects the *View One* view in Ethiris Client, live video will be displayed from the camera *Door*.
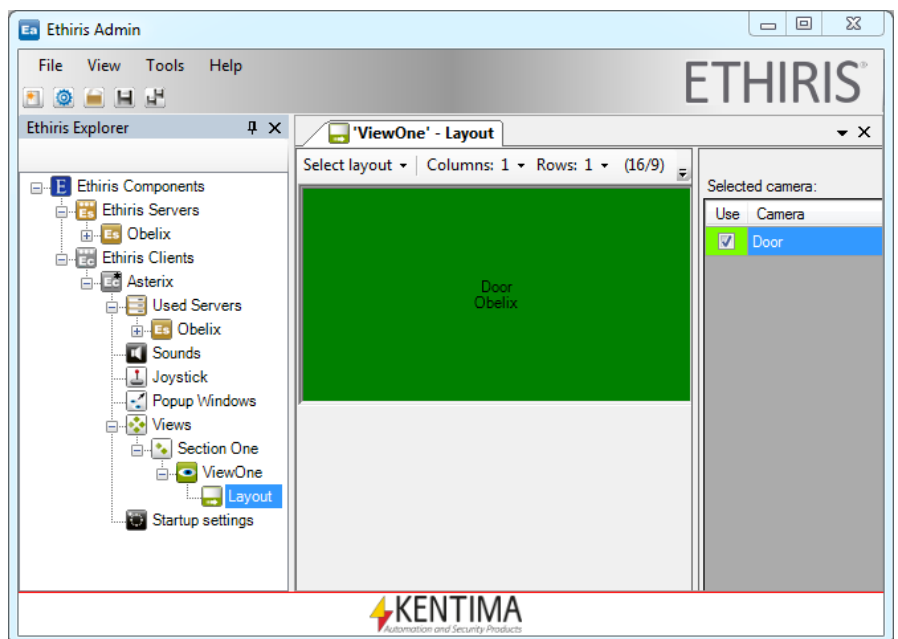
Figure 2.34 Select which camera to display in the client view.

Save the project

In Ethiris Admin, there is a project concept keeping track of all Ethiris components that are part of the project. There is a hidden *default* project that "remembers" which Ethiris components were loaded into Ethiris Admin last time Ethiris Admin was used. This means that you don't have to explicitly use *projects* if you don't need to handle several different projects on the same computer.

1. **Click** the *Save All* button in the Ethiris Admin toolbar to save the current project and all components in the project since we have already specified what server should handle it and the name of the client configuration we don't have to do that now.

Starting Ethiris Client

Now it is time to switch to the client program. The task involves being able to watch live video from the Axis M1054 camera added to the configuration.

There are two alternatives for starting the Ethiris Client program. Either you start the client from the start menu, or you right-click the client in the treeview in Ethiris Admin.

1. **Click** the *Start* menu and **select** *Programs*.

2. **Select** the program group *Kentima Ethiris*.

3. **Click** the program icon *Ethiris Client*.
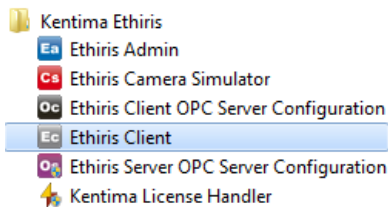
Starting Ethiris Client.

The first time the Ethiris Client is run, a *Connect* dialog is displayed to allow the selection of a configuration file from an Ethiris Server. **Select** a server where you which to fetch the client configuration from the list. You can also click on *Manual connect* to enter the server IP-address manually.
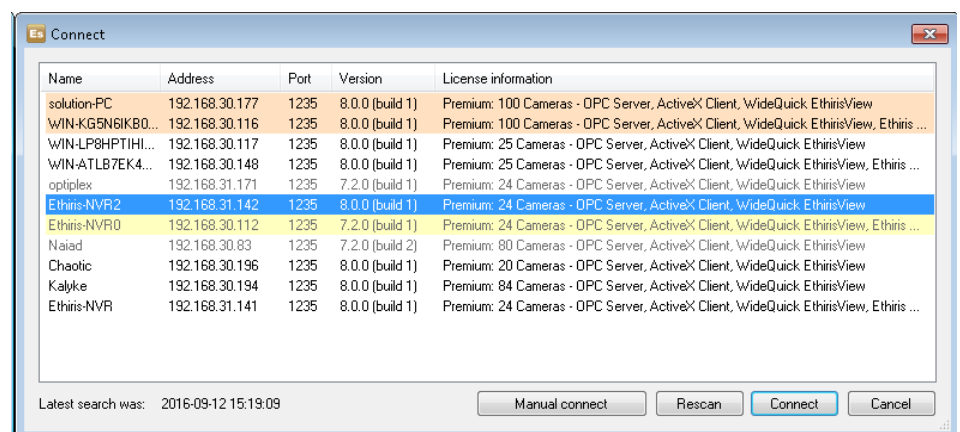
Figure 2.35 The Connect dialog to fetch a client configuration.

Just **click** the *Connect* button to proceed.

Once you have selected an Ethiris Server, you will be presented with a list of client configurations stored on that server.
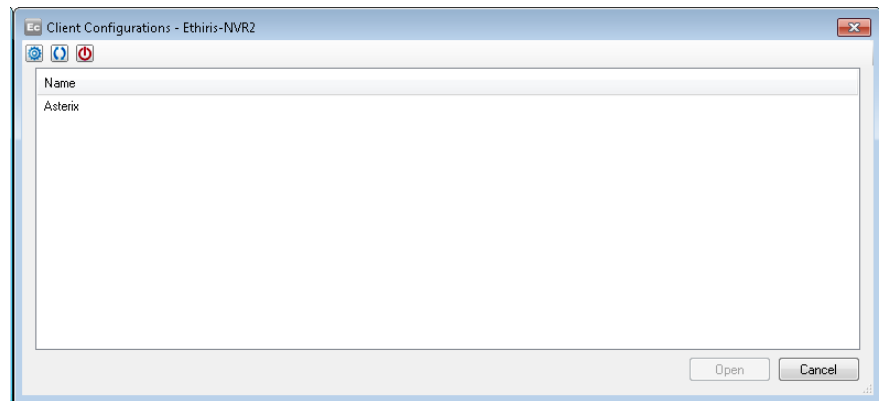
Figure 2.36 The dialog for selection of client configuration.

Open a configuration

The above dialogs can also be reached from the *Open configuration* button in the Ethiris Client toolbar.

Open Ethiris Client configuration button

Select the configuration we just created in Ethiris Admin and **click** the *Open* button. The configuration will immediately be loaded in Ethiris Client, and the first view in the first section is automatically selected. If everything works as expected, the live video should now be displayed from the Axis M1054 camera.
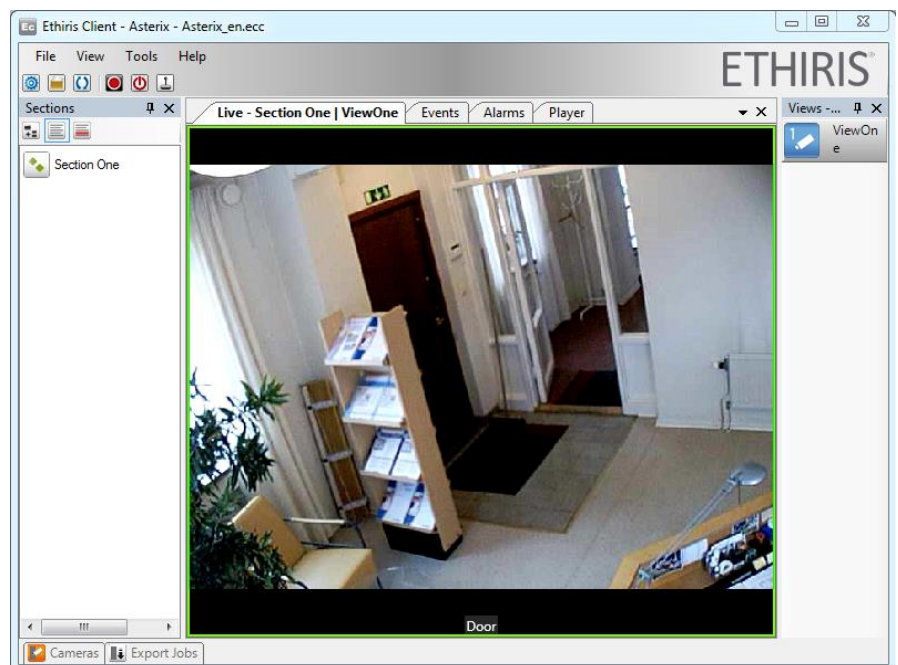
Figure 2.37 Live video in Ethiris Client.

To the left, in the *Sections Explorer tool window*, are buttons for selecting the section. As we have only defined one section, *Section One*, there is just one button.

To the right, in the *Views Explorer tool window*, are the view buttons that are defined for the relevant section. Here too, there is just one button as we have only defined one view button for this section. The first view button in a section that displays any form of client view is selected automatically when the section is selected.

At the bottom of the window is the *Cameras tool window*, which contains all available cameras. Hold the mouse pointer over the panel name for popping up the panel.
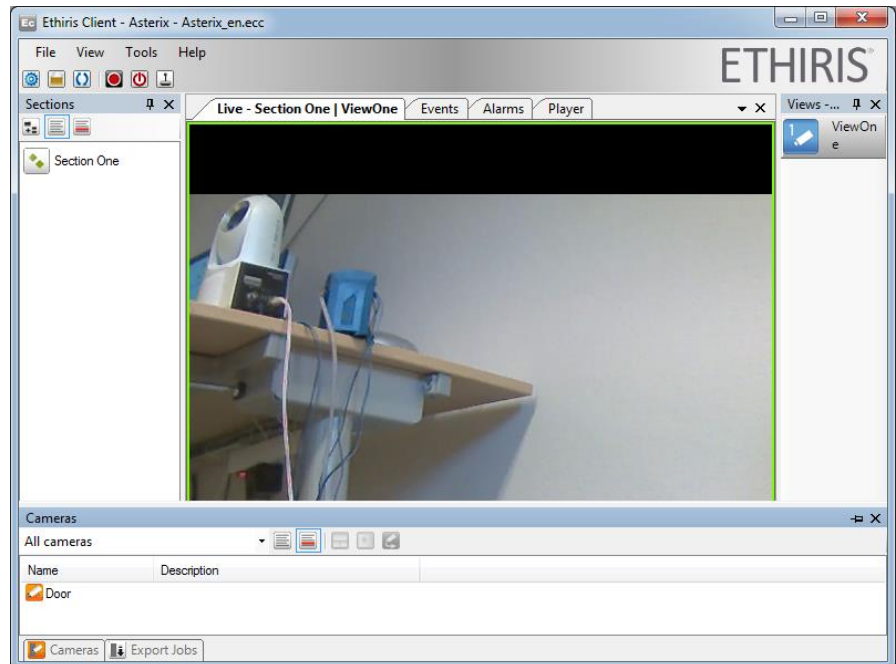
Figure 2.38 The Cameras tool window in Ethiris Client.

From the *Cameras tool window,* you can select one or several desired cameras and display them in the *Default Live panel*, *a new live window* or *load them in the Player*. More about this later on.

What have you learned?

Task 1 is now complete. So, what have you learned? You have learned how to configure a simple Ethiris system with one camera. You have learned how to connect to an Ethiris server in Ethiris Client and how to create a section with a camera and a view button. The principle for creating configurations for Ethiris Server and Ethiris Client is the same regardless of the number of cameras.

In the next task, we will learn to record video from our camera, both manually and in connection with motion in the video.

Task 2, Recording Video

This task will teach us how to record video, both manually and automatically, via motion detection in the video.

There are two main types of recording in Ethiris, *Event-controlled recording* and *Continuous recording*.

The only difference between these types is that event-controlled recording has a predetermined time (pre/post-event time) that is recorded in connection with an event. You define both the time for recording before the event and the time for recording after the event. Recording takes place for as long as the event is active and subsequently for the time defined for recording after the event. If, for example, you use motion detection as the condition for event-controlled recording by a specific camera and you have selected 60 seconds before, and 30 seconds after, the recording will start 60 seconds before the motion was detected, will continue for as long as the motion is detected and, when the motion is no longer detected, will continue for a further 30 seconds.

Continuous recording continues for as long as the recording condition is active.

An event in Ethiris may be many different things and also a combination of several different events (input signals).

Examples of events are a motion detector detecting motion, a schedule being active, or digital input is set. In Ethiris, all types of events are represented by an input signal that can have the value 1 or 0 (true/false). F ex a schedule is at every moment either active or inactive, 1 or 0. a motions detection detects either motion or no motion, 1 or 0.

Each camera that is defined in the Ethiris server configuration generates a number of signals that can be used to configure functionality in Ethiris. We will talk about this later in the manual. For now, we will say only that, for each camera, two *output signals* are generated, among other things. They are *RecordEvent* (Event-controlled recording) and *RecordContinuous* (Continuous recording). These output signals can be used as variables in scripts to define conditions for when the respective output signals are to be enabled.

Use the panel Recording *to configure recording*

From version 5.6 of Ethiris, there is a new panel in the server part of Ethiris Admin, which essentially facilitates recording configuration. The panel, which is called *Recording*, may be used for configuring both event-controlled recording and continuous recording. As a recording condition, you can use both schedules and/or motion detectors. If you need more advanced conditions for recording, you can still use a script. The whole idea behind this new panel is that in most cases, you should *not* have to use a script for recording configuration.

Instructions, Manual Recording

The manual recording button is a special case in Ethiris. It enables event-controlled recording for the camera that is currently active in Ethiris client. The duration of the event is 0, i.e., recording takes place only for the time that has been defined before the event and the time defined for recording after the event, the sum of pre/post-event time.

The manual recording button circumvents any conditions that have been defined in the panel *Recording* or for the output signal *RecordEvent*, i.e., regardless of whether the condition defined for RecordEvent for the relevant camera is met or not, clicking the manual recording button will generate a recording.

If Ethiris client has not yet been started, start it now.

In Ethiris Client, the manual recording button is located in the toolbar in the upper left corner.
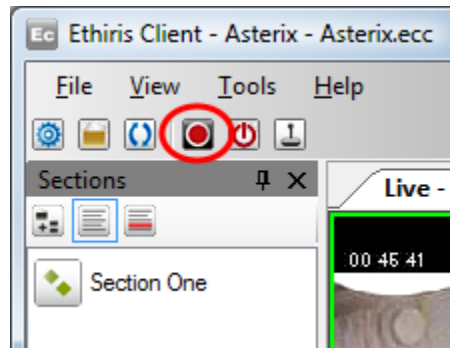
Figure 2.39 The manual recording button in Ethiris Client.

Testing manual recording

1. When a certain camera view is selected in Ethiris Client, this is indicated by a green frame. Since there is only one camera view in the current client view, it is automatically selected. Later on, when we have several camera views, you can select a camera view by clicking on it.
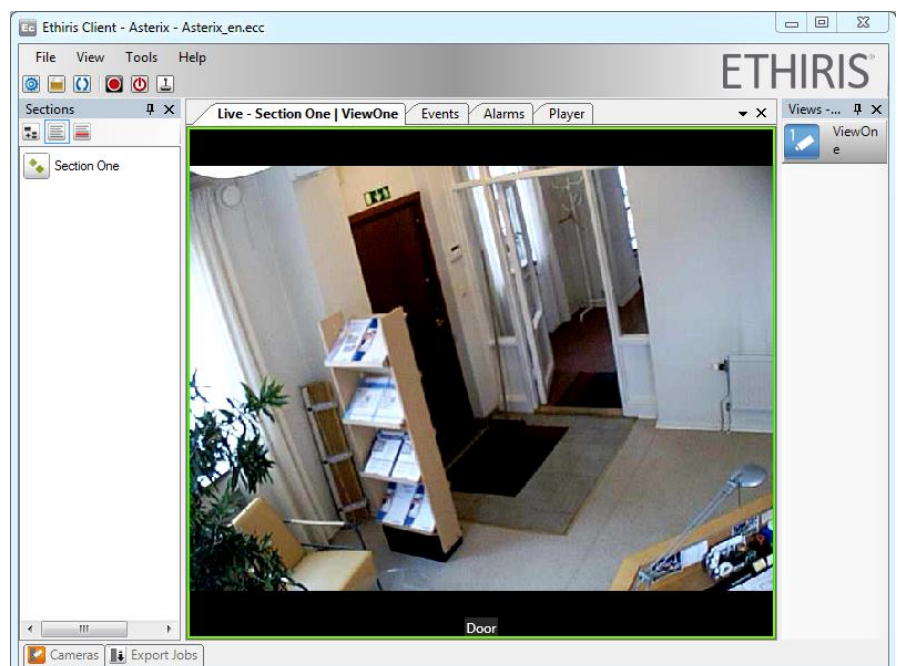
Figure 2.40 A selected camera view in Ethiris Client has a green frame surrounding it.

🔴 *Recording button*

2. **Click** the *recording button* in the toolbar to start recording video. To make it all a little more interesting, try to capture some activity in the video, i.e., record when something is happening in front of the camera.

Viewing recorded video

Recorded video is presented in the *Player* panel in Ethiris Client. However, every event-controlled recording is also represented by a row in the *Events* list in the *Events* panel.
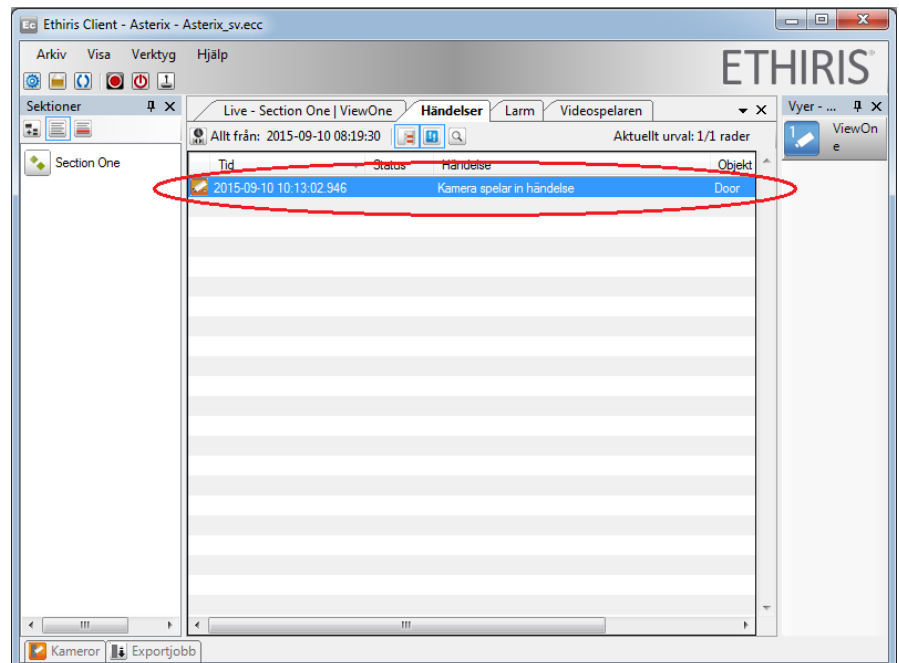
Figure 2.41 The Event list in Ethiris Client displays all event-controlled recordings.

There are also other kinds of events in the event list. More about this later on.

1. **Bring up** the *Events list* by **clicking** the *Events panel*.

2. **Double-click** the *Camera Record Event* item on the list.

This immediately brings up the *Player panel*, the relevant camera is selected into the Player, and the corresponding time is automatically selected.
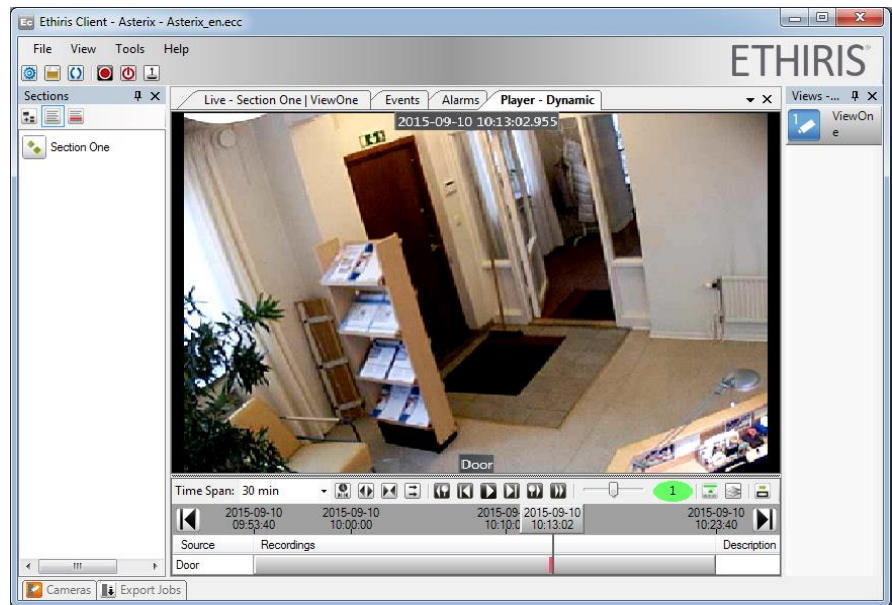
Figure 2.42 The Player in Ethiris Client is used for playback of recorded video.

The *timespan* in the Player is 30 minutes as default. This time is also indicated by the timestamps in the left (start time) respectively, the right (stop time) end of the timelines. In the example above, the start time of the timelines is at *09:53:40,* while the stop time is at *10:23:40* for a total of 30 minutes. When you scroll (move the time span), you move the 30-minute "window", in effect updating the timestamps indicating the start time and stop time for the timelines. You can move the time span in two ways; Click the "arrow buttons" at the left [◀], respectively right [▶] edge or drag the dark grey time band between the buttons to left/right with the mouse.

You can change the time span in several ways. To the left, in the maneuver panel, there is a time span selection list.
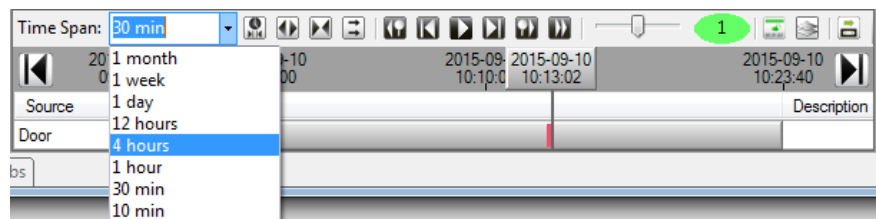
Figure 2.43 Select an appropriate time span in the time span selection list.

Select one of the time spans in the list. Another way is to click on the *Expand Time span* button [▣] to double the current time span or the *Shrink Time span* button [▣] to half the current time span.

Yet another way is to zoom in the timelines by drawing a rectangle. Left-click the mouse, drag the mouse pointer to select an area of interest, and finally release the mouse button to make the selection.
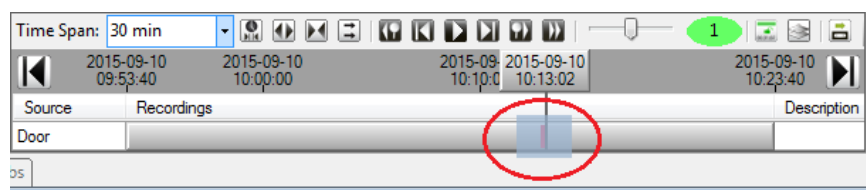
Figure 2.44 Zoom in interesting sequences in the timelines.

A *Time ruler* is determining at what time to display the recorded video.
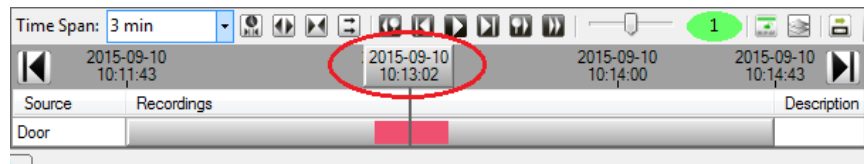
Figure 2.45 The Time ruler determines what time is to be displayed in the recorded video.

You can move the ruler back and forth to do a rapid search through the recorded video. The frame(s) corresponding to the current timestamp is displayed in the camera view(s) above the timelines.

As you probably have noticed by now, recorded video is indicated in the timelines with either red or blue color. Red color is used for event recorded video while blue color is used for continuously recorded video. When the ruler points to a recording (red or blue color), the corresponding video frame is displayed in the camera view(s) above.

Click the *Play* button to start playback of the video.

You can jump between recordings by clicking the *Step backward to previous video segment* button or the *Step to next video segment* button. Feel free to try these buttons out.

You can alter the playback speed by moving the slider handle, see *Figure 2.46*.
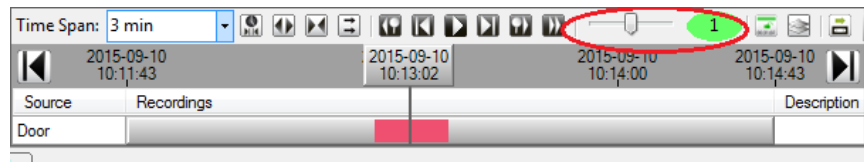
Figure 2.46 Move the slider handle to change the playback speed.

The speed can be set between 1/128 and 128x the normal playback speed.

Alright, let´s go back to our manual recording…

A manual recording of video is processed by the system as if it were a standard event recording. The only difference is that the event is enabled manually by clicking the recording button instead of automatically, which is the case with an event recording via, for example, motion detection in the video.

When you double-click the corresponding event in the *Events list,* the *Time ruler* is set to the exact event time. In practice, this means in the middle of the red segment since, as default, there are 10 seconds of pre-alarm recording and 10 seconds of post-alarm recording. Go to the beginning of the recording by clicking the *Step backward to previous video segment* button.

You may have wondered why there were 20 seconds of recorded video.

In the next section, we will look at how to set the frame rate and the time before and after the event for an event recording.

Recording settings

The recording settings for each camera are entered in the server configuration in Ethiris Admin. We will now increase the time for event recording and also increase the frame rate to 25 frames per second.

The recording time for an event is divided into two parts, the time for recording before the event and the time for recording after the event.

The default setting specifies 10 seconds before an event and 10 seconds after it. We will change this to **20 seconds before** and **15 seconds after the event**.

The frame rate is set as the number of frames per second.

1. **In** *Ethiris Admin*.

2. In the treeview to the left in the server configuration, **expand** the *tree* right down to the node *Recording*, i.e., **click** the *+ sign* to the left of each line in the treeview where this is necessary to open the following branches in the tree: *Ethiris Components\Ethiris Servers\Obelix\Camera\Recording*.

The treeview should now look roughly as in *Figure 2.47* on page *2:37*.
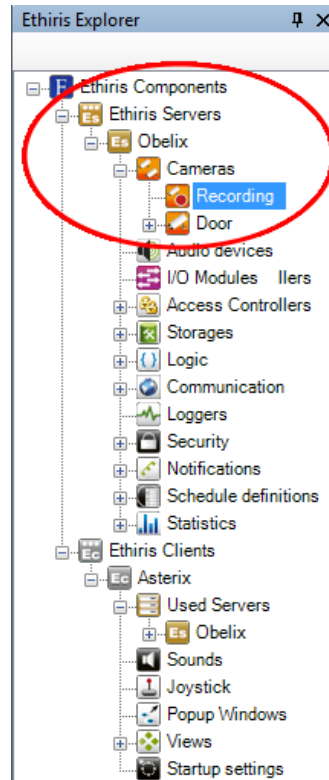
Figure 2.47 Treeview expanded to the node Recording.

3. **Double-click** the Recording node in the treeview to open the Recording panel. Change the following parameters in the section Event Recording:

4. **Enter** 25 for frame rate. Note that when selecting the cell in the table, the appearance changes, and you can change the value via a so-called spin box. You can also use the mouse wheel to increase/decrease the value or simply enter a value via the keyboard.

5. **Enter** 20 for the time before.

6. **Enter** 15 for the time after.

7. Leave the other settings as they are.
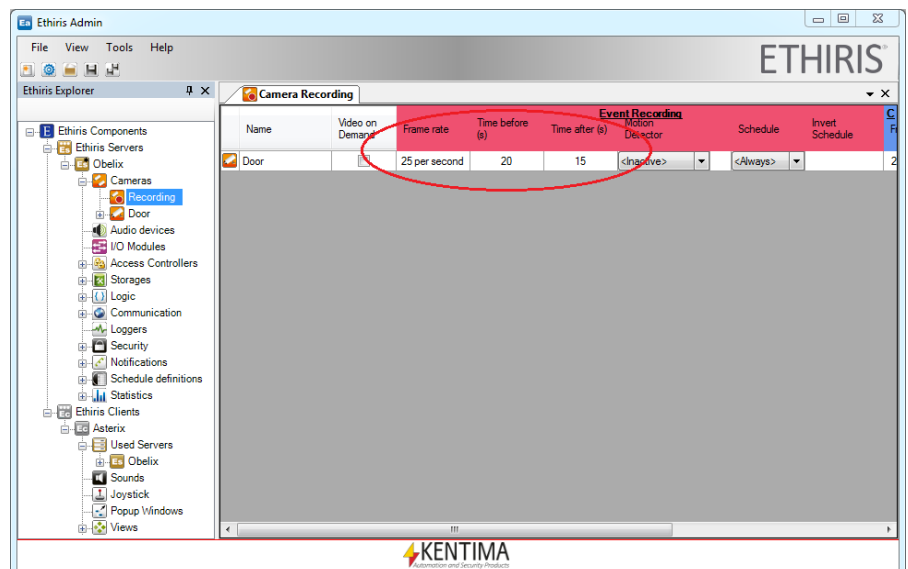
Figure 2.48 Settings for video storage for the camera Door.

To send the changes to the server, **click** the *save icon* in the Ethiris Admin toolbar.

Try the new settings by manually starting a new recording. For information on how to do this, see Testing manual recording on page 2:33.

Search for events (Filter)

By default, the event list displays all events that have occurred in the last hour. Sometimes you want to see more events, or perhaps you want to see fewer events.

To filter precisely the events, you are interested in. You use the *Select time* button in the *Events panel* in Ethiris client.

We will now filter events so that only events that occurred between 2012-02-14 at 14:00:00 and 2012-02-14 at 15:00:00 are displayed.

The date and time below probably do not match your events, so feel free to change the date and time to something more suitable.

1. **Select** the *Events panel* in Ethiris Client.

2. **Click** the *Select time* button. The filter dialog is displayed.

3. **Click** the down arrow in the selection list for *Oldest Date/Time*. **Select** *2012-02-14* in the calendar. Uncheck *Oldest available* if necessary.

4. **Click** the figure indicating the hour. **Scroll** up or down with the arrow keys or enter *14*.

5. **Press** the *right arrow key* to select the *minute value*. Set *00* with arrow up/down or enter the value.

6. **Ensure** that the *second value* is on 0*0*.

7. In the *Newest Date/Time* box, **unselect** the *Newest available* checkbox and then **set** *2012-02-14 15:00:00*.

8. The dialog should look roughly as in Figure 2.49. **Click** *OK* when you are happy with your filter settings.

Task 2, Recording Video
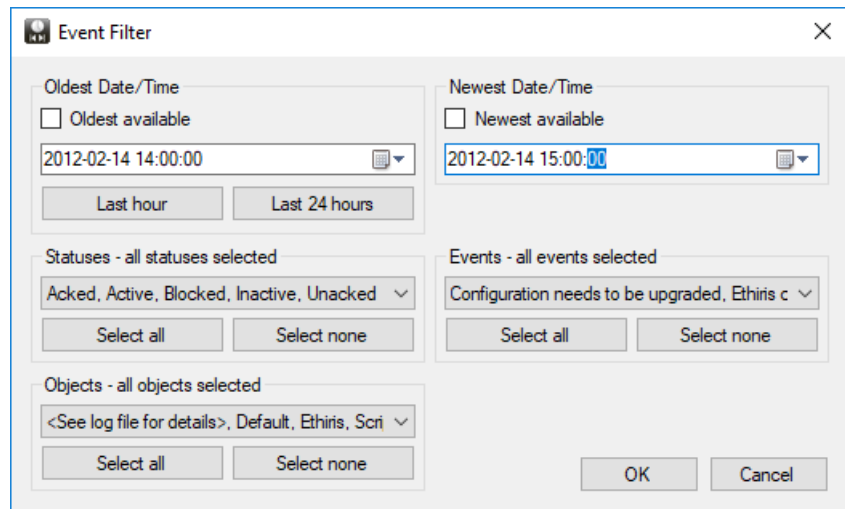
Figure 2.49 Example of filter for event list.

The event list is updated immediately to display the events that match the filter set.

In the next exercise, we will learn how to record video continuously instead of recording on a specific event.

Instructions, Continuous Recording

We will now set the camera *Door* so that it continuously records video with a frame rate of 2 frames per second. In this mode, we will record continuously from when we save the new configuration. Otherwise, it is usual to link the recording to a schedule that defines the times of day at which recording is to take place.

If Ethiris Admin has not yet been started, start it now.

Starting continuous recording

1. **Open** the panel *Recording*. For information on how to do this, see *Recording settings* on page 2:36. Change the following parameters in section *Continuous Recording:*

2. **Set** the *Frame Rate* to *5* frames per second (fps).

3. **Select** schedule *Always*.

4. **Leave** the rest of the parameters as they are.
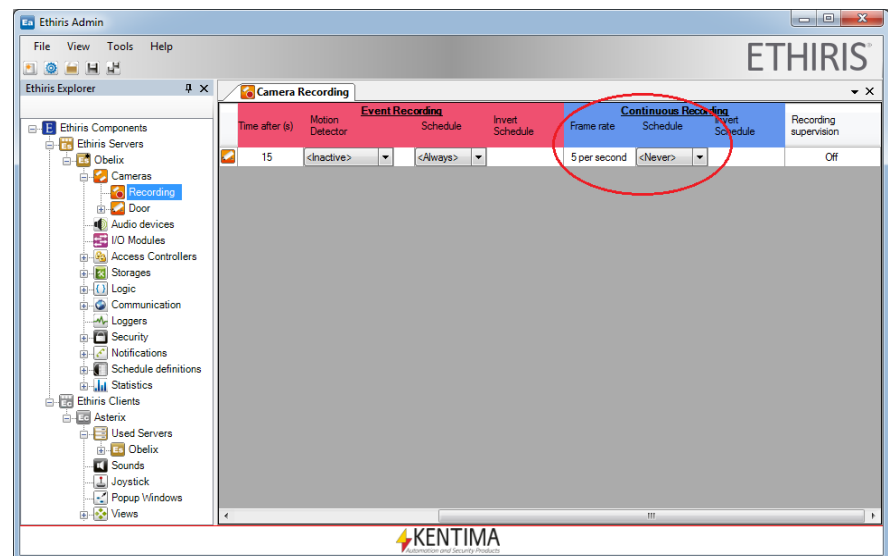
Figure 2.50 Settings for continuous storage from the camera Door.

To send the changes to the server, **click** the *save icon* in the Ethiris Admin toolbar.

Automatic deletion of continuously recorded video

Continuous recording requires a great deal of hard disk space. If we use VGA-sized frames (640*480 pixels) with medium level compression, we can reckon with an average frame size of 25-40 kB. In our example with two frames saved per second, we use, at a high estimate, 2 * 3 600 * 40 kB, which produces just over 280 MB per hour. This means about 6.5 GB per 24 hours, provided that we record round the clock.

To avoid filling the hard disk up completely, we can set automatic deletion of old video. Another reason for automatic deletion may be that an authority permit or other regulation forbids the storage of video for longer than a specific time.

There is a global setting for cleaning up old video that applies for all cameras in a certain Ethiris Server. If you want you can override this setting for individual cameras.

First, we will have a look at the global setting.

1. **Double-click** the *Storage* node in the treeview.
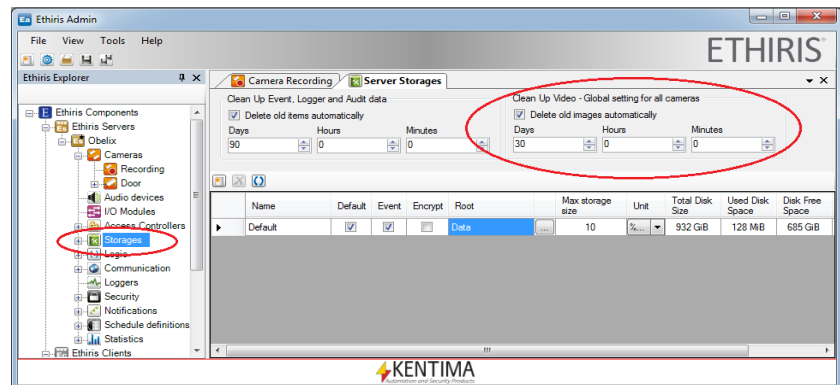
Figure 2.51 Global settings for automatic deletion of old video.

The default setting in Ethiris is that video will be deleted after 30 days. Here you can change this to another time or simply turn the function off completely.

If you want another setting for one or several cameras, you can override the global setting for desired cameras. To set automatic clean up for the camera *Door* to 1 hour, do the following:

1. **Go to** the *Camera Storage panel* for the camera *Door*.

2. **Check** the *Override storage Clean Up setting* checkbox.

3. **Set** *0 Days, 1 Hour, and 0 Minutes*.
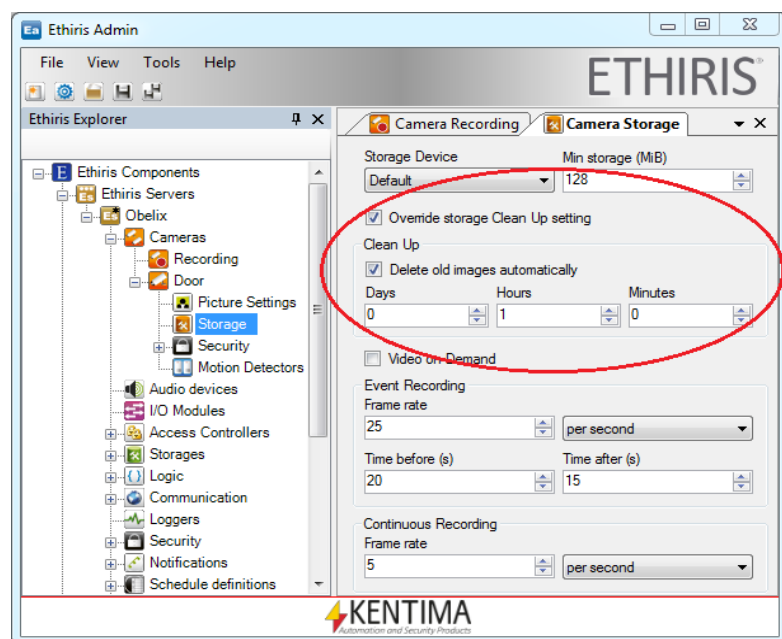
Figure 2.52 Settings for automatic deletion of recorded video.

Ethiris checks every 30 seconds whether there is video that is too old on the hard drive.

The above setting means that every 30 seconds, the program checks whether there is any saved video that is older than 1 hour. If any old video is found, it is deleted automatically.

To send the changes to the server, **click** the *save icon* in the Ethiris Admin toolbar.

Viewing continuously recorded video

Ethiris Client is used for viewing the video recorded via continuous recording. If Ethiris Client has not yet been started, start it now.

1. **Select** the *Player panel*.

Continuously recorded video has no connection with an event. Therefore they cannot be accessed via the event list. Instead, you go directly to the Player.

The first time you go to the Player since Ethiris Client was started, there are no cameras selected in the timelines. You can select cameras in several different ways.

You can select one of the *View buttons* in the *Views panel*. All views defined for live viewing can also be used for playback of recorded video.

You can also select desired cameras from the *Cameras panel* and load them into the Player.

In this exercise, we choose the former alternative.

2. **Click** the *View One* view button.
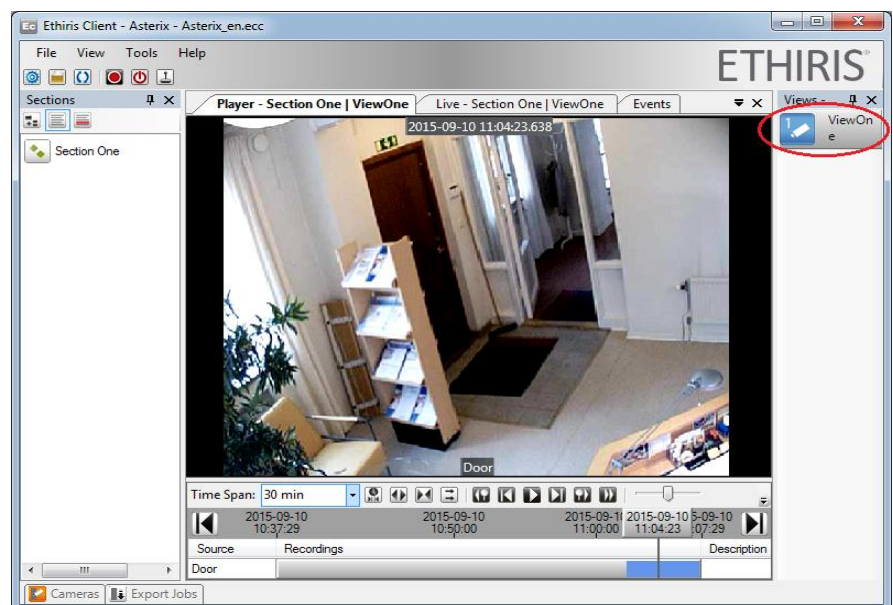
Figure 2.53 Continuously recorded video in the Player.

When you enter the Player for the first time, the time span in the timelines is set to 30 minutes and *now* is to the right in the timelines. This means that the latest half-hour is displayed in the timelines.

For information about how to manage the Player, please refer to *Viewing recorded video* on page *2:34*.

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Instructions, Recording in the Event of Alarms

Now we will add motion detection for the camera *Door* and link it to the start of recording of video from the same camera.

If Ethiris Admin has not yet been started, start it now.

Defining motion detection

1. In the treeview, **double-click** the *Recording* node.

2. In the *Motion Detector* column for the camera *Door*, **select** the *<New Standard Motion Detector>*.
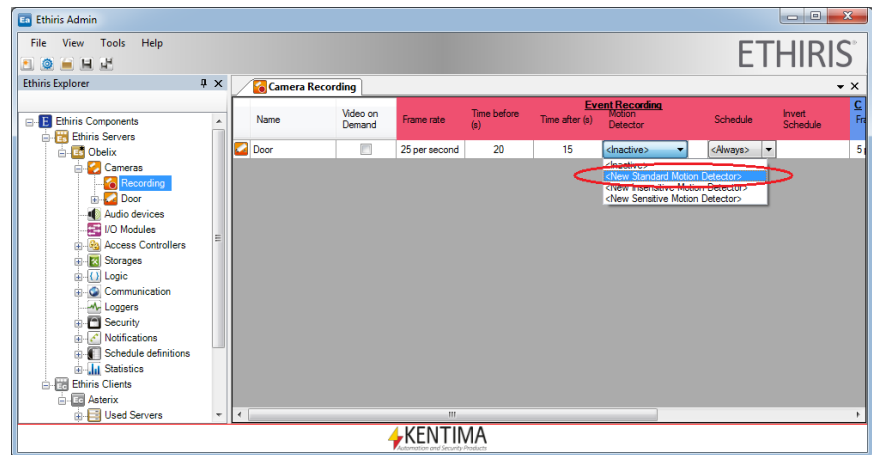
Figure 2.54 A new standard motion detector is selected.

This action automatically creates a new motion detector for the camera Door. The detector detects motion in the whole image, and if you want to mask parts of the image, you can go directly to the motion detector panel by clicking the new icon ![icon] to the right of the Motion Detector column.

In a new motion detector, motion is detected in the entire image. The area monitored can be limited by painting over irrelevant parts of the image. This is done by checking the *Exclude area from motion detection* box and selecting the appropriate pen size. Paint over by holding down the left mouse button and dragging the mouse over the camera frame. Erase by holding down the right mouse button. Use the *Clear mask* or *Fill mask* button to remove all masking or mask over the entire frame. In the example below, the top left part is masked. This is displayed via squares with a size corresponding to the pen size selected, which has a grid pattern.

The main idea is that only the *Triggering Level* and possibly a mask should have to be altered for a motion detector.

There are some more settings hidden under *Advanced Settings*. **Click the** *Advanced Settings* button to display these.

You can always reset the settings to one of the three pre-defined settings; *Insensitive*, *Standard,* or *Sensitive* by clicking the corresponding button.

Mask parts of the frame by checking the Exclude area from motion detection checkbox.

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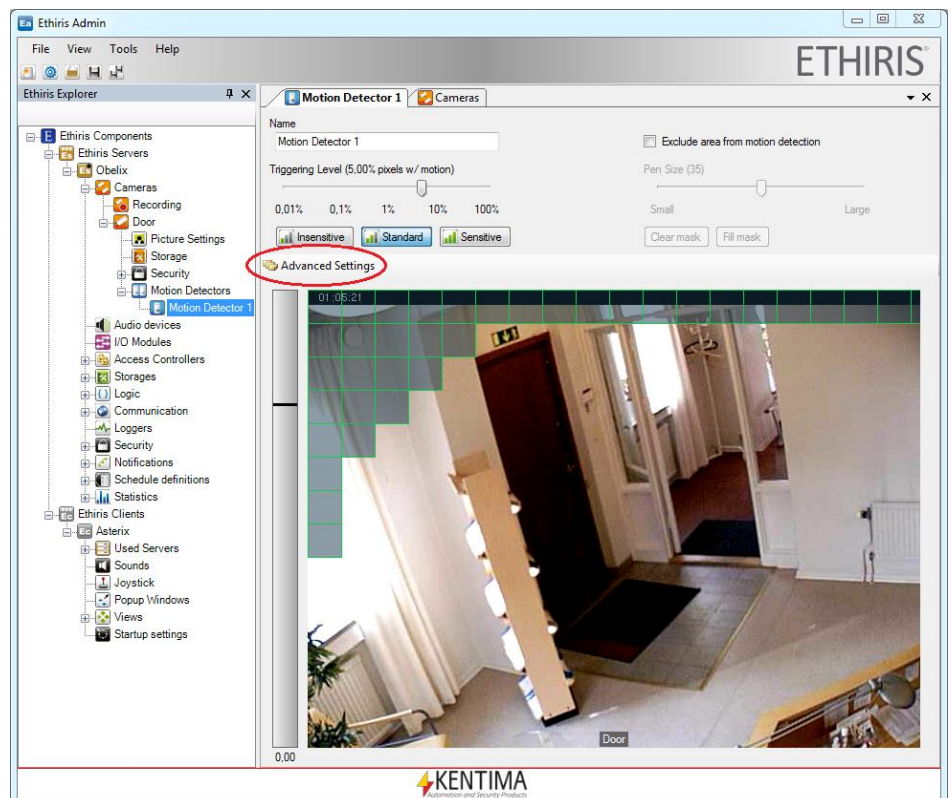
Figure 2.55 Click Advanced Settings for displaying the advanced settings options.

Experiment with the parameters *Sensitivity*, *Resolution*, *Frame rate,* and *Triggering level*. Ensure that something is moving in the video. This makes it easier to set the motion detection.

Motion is indicated with green, yellow or red pixels in the frame. The motion of individual pixels is displayed in green. Groups of pixels with motion are displayed with yellow or red pixels. Yellow indicates that the total motion in the frame is under the selected trigger level. When the trigger level is exceeded, the motion is displayed with red pixels. When it is red, motion detection should generate an alarm.

We will give a brief account of the various parameters here. A more detailed description is available in the *Admin Configuration* manual.

Exclude area from motion detection allows you to paint over parts of the frame that do not need to be monitored for motion. Unmonitored parts of the frame are still recorded in the event of an alarm. They are just not monitored for motion. Check this box if you want to exclude parts of the frame from motion detection.

Pen Size indicates the current width of the pen when masking the frame for motion detection.

Clear mask removes the entire mask. The whole frame will then be monitored.

Fill mask places a mask over the entire frame. In this situation, no part of the frame will be monitored. But the function is useful if only a small part of the frame is to be monitored.

Noise reduction specifies how to apply noise reduction filtering in an attempt to eliminate pixels that detect motion although no neighbor pixel does so. The default value will remove small and medium-size noise. This setting can be useful for cameras that work in low light conditions.

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Background filtering is used to compare motion against a more static background instead of just the previous frame. This means that real motion becomes more distinct, and there is a certain reduction in noise.

Number of frames specifies how many frames are to be used for mean calculation of the background. This may be 2-10 frames.

Filter time is specified in seconds and defines the time during which the background frame is to be calculated. In the example below, 5 frames are used during a filter time of 10 seconds. This means that the background frame is calculated as a mean of 5 frames backward in time, which are sampled at intervals of 2 seconds.

Sensitivity specifies the extent of change in color required for it to be interpreted as motion. A higher value results in higher sensitivity. A value of 60 is the default and should work in most circumstances.

Resolution specifies how fine motion is to be detected. 10 is the highest value. With this value, every pixel is checked in the area monitored in the frame. A higher resolution puts a greater load on the server. On many occasions, a lower resolution is adequate. However, when setting motion detection, it is useful to have a higher resolution to make it easier to see pixels with motion. When you are happy with the other settings, you can lower the resolution to reduce the load on the server. The default value is 8, but a value of 6 or 7 probably will work just as fine.

Frame rate specifies how often motion is to be checked. The higher the frame rate, the higher the accuracy, but also the higher the load on the server performing the comparison. It is worth considering that the lower the frame rate, the greater the differences between frames if something is moving in the frame, for example, a person passing by the camera. However, the time should not be so long that the person can pass by between two comparisons. The default value is 2 frames per second. This is a value that should work in most circumstances. Again, this has nothing to do with the frame rate of recorded video. This setting only affects how often motion detection shall be performed. Settings for recording are done in the *Storage* panel for the camera.

Measure only key-frames is used for decreasing the load on the server computer if the camera streams video in the format MPEG-4 or H.264. A MPEG-4/H.264 video stream consists of key-frames (I-frames) and P/B-frames where key-frames are whole images, and P-frames/B-frames are parts of images describing only the changes since the last image was sent. If *Measure only key-frames* is not checked, Ethiris Server has to decode all images in the video stream, both key-frames and P/B-frames. Usually, key-frames are sent once or twice every second and thus completely sufficient for motion detection.

Actual frame rate displays the actual frame rate and is especially useful for determining how often key-frames appear if you have chosen the setting above.

Trigger level specifies in % how much of the area monitored must contain motion for it to be interpreted as motion detection overall. Perhaps small animals can pass by while people should be detected. This calculation does not include green pixels, i.e., individual pixels with motion. It must be groups of coherent pixels with motion.

Number of frames with motion for triggering specifies how many motion detections in succession are required to produce an alarm. The aim of this is to avoid alarms if the camera frame suddenly changes brightness, for example, because the camera is adjusting its aperture or someone has switched on a light.

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When an alarm would have been produced, a symbol is displayed to the right of the *Advanced Settings* button.

See Figure 2.56 for an example of settings.

When you are satisfied with the settings, you may close the *Motion Detector* panel. Closing the panel relieves the computer from the work of painting live video. All the settings are internally stored in Ethiris Admin (in the treeview) and remains until you save the configuration.
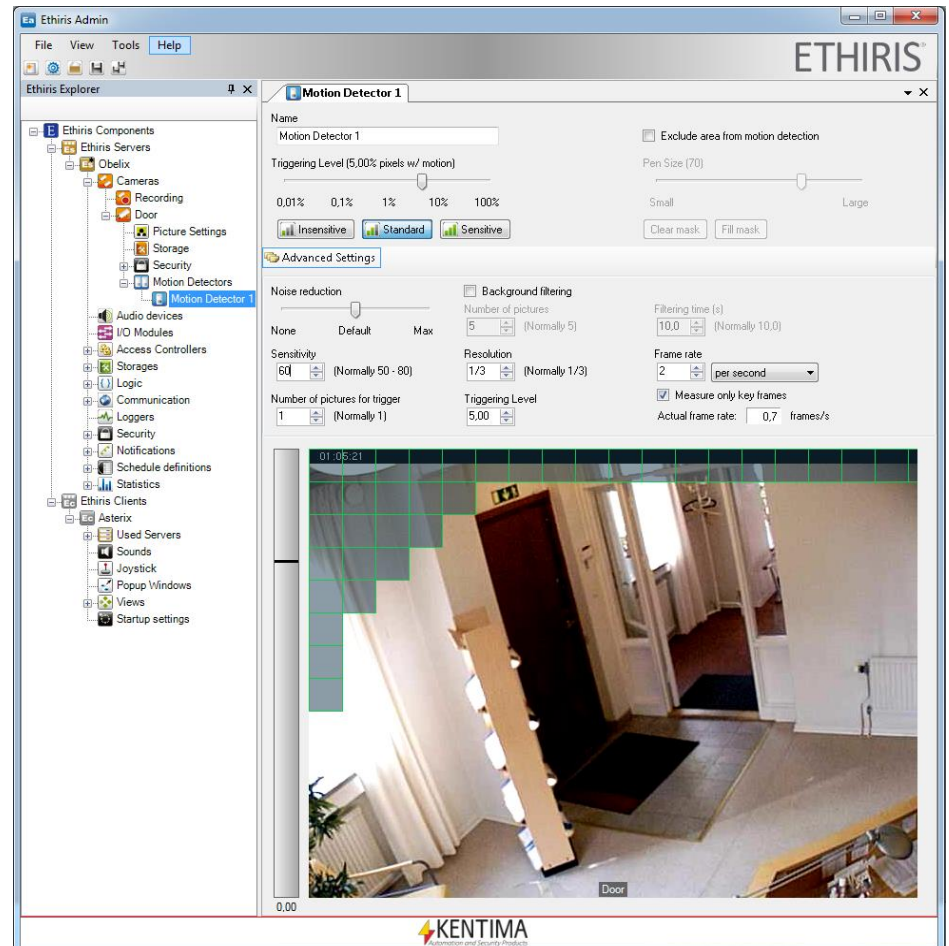
Figure 2.56 Example of settings for a motion detector.

What have you learned?

Task 2 is now complete. In this task, you have learned various ways of recording video with Ethiris. This can take place continuously or in connection with an event. An event may, for example, be generated via motion or manually by clicking a recording button.

In the next task, we will look at the options for limiting recording and live video viewing via a schedule.

Task 3, Using Schedules

This task will teach us how to limit recording via events and live video viewing by using schedules.

There are places where it is not permitted to film during certain times of the day. In such cases, you can use schedules to specify precisely the times at which the cameras are to be active.

Several different week-based and/or day-based schedule templates can be created separately with different active times. From the schedule templates, you then create the schedules. Each schedule can have its own unique deviations. Normally the schedule moves along according to the schedule template. However, in the event of any deviations, the deviating template applies instead. Deviations can be defined for a particular week or a particular date. Several deviations can be defined for each schedule. Each schedule can then be used in the desired number of contexts, for example, to control when a camera is to display live video or when the camera is to record video.

A schedule linked to a camera's *Enable* output signal controls the times at which the camera is to send video, i.e., live video viewing.

A schedule linked to a camera's *RecordEvent* or *RecordContinuous* output signal controls the times at which the camera can record video. The schedule signal can be combined with other input signals such as motion detection.

When it comes to controlling recording with a schedule, you should use the panel *Recording* to associate a schedule with event and/or continuous recording.

Instructions

If Ethiris Admin has not yet been started, start it now.

Add a schedule via the Recording panel

We will now create a schedule with the corresponding template via the *Recording* panel. The schedule and the template will get a default name and default times. These can be changed. As a default, the schedule is inactive workdays between 06:00 – 18:00 and Saturdays 09:00 – 15:00, i.e., it is active outside normal work hours.

1. **Double-click** the node *Recording* in the treeview.

2. In the section *Event Recording* and the column, *Schedule* **pick** *<New Schedule>*. See Figure 2.*57*.

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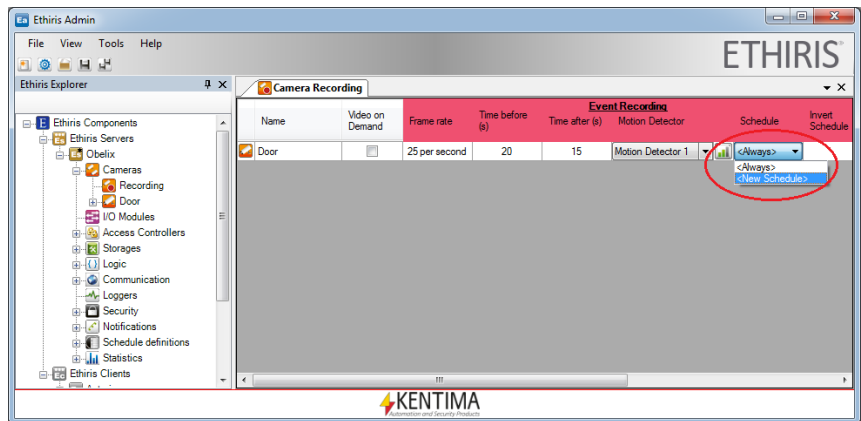
Figure 2.57 Create a new schedule directly from the panel Recording.

A new schedule with the corresponding template will immediately be created under the node *Schedule definitions*, see Figure 2.*58*.
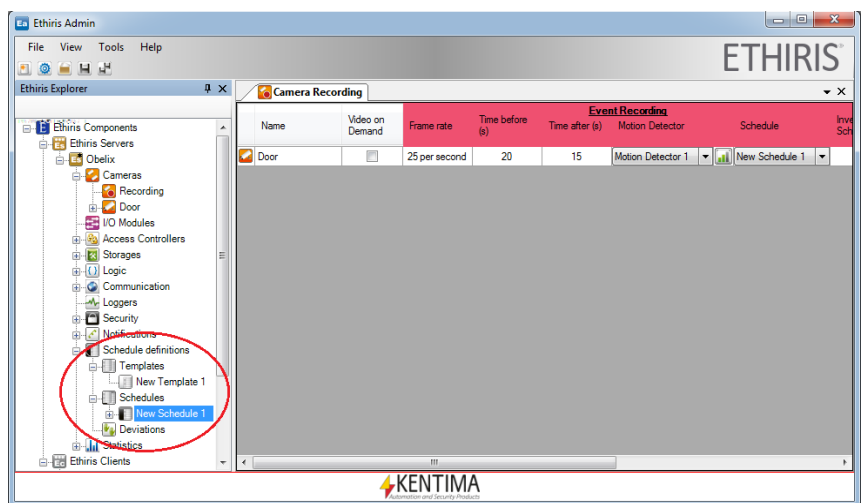
Figure 2.58 A new schedule with the corresponding template is immediately created under Schedule definitions.

Double-click the *New Template* to see/change the scheduled times.
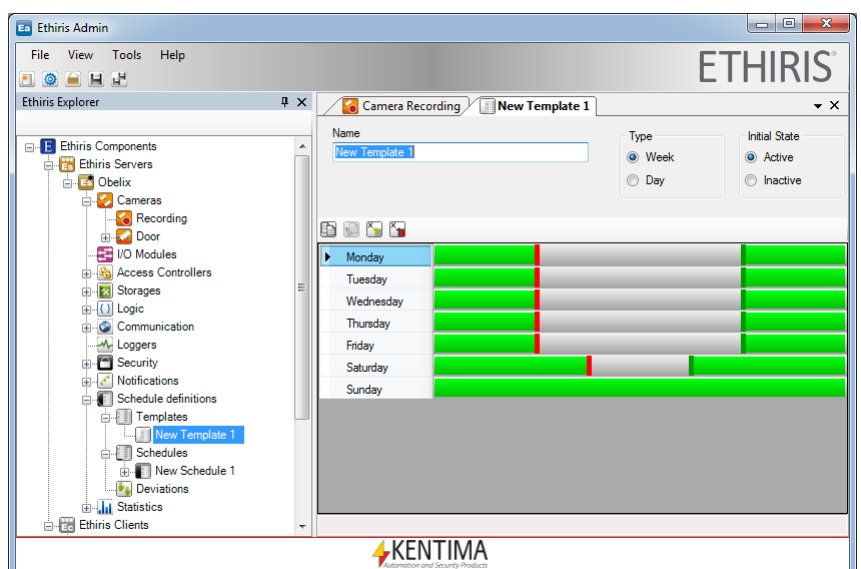
Figure 2.59 The schedule template is predefined with certain times.

The new schedule is common for the whole Ethiris server, i.e., all cameras in the system may use the same schedule.

If you want, you may also create templates and schedules directly under the node *Schedule definitions*.

Add a schedule template

We will now create a schedule template called *NormalTemplate*. It will have times that are inactive on working days between 07:00 and 18:00, i.e., it is active outside normal working hours.

It might be a schedule template for monitoring an office, where filming should not take place during working hours when the staff usually is at work.

1. In the Ethiris Server's configuration treeview, **open** the *Schedule definitions* node.

2. **Double-click** the *Templates* node in the treeview to open the *Schedule Templates* panel.

Add a new template

3. **Click** the *Add a new template* tool button in the *Schedule Templates* panel's toolbar. A new item is created in the Schedule Templates list.

4. In the list, **enter** *NormalTemplate* in the *Name* column.

5. In the treeview, under the *Templates* node, a new item, *NormalTemplate* is created. **Double-click** this item to open the panel for this template.

When you create a new schedule, there are already transitions defined.

6. **Adjust** the transitions by dragging them with the mouse. The red to *07:00* and the green to *18:00*. Start doing this for *Monday*. See *Figure 2.60* on page 2:50.
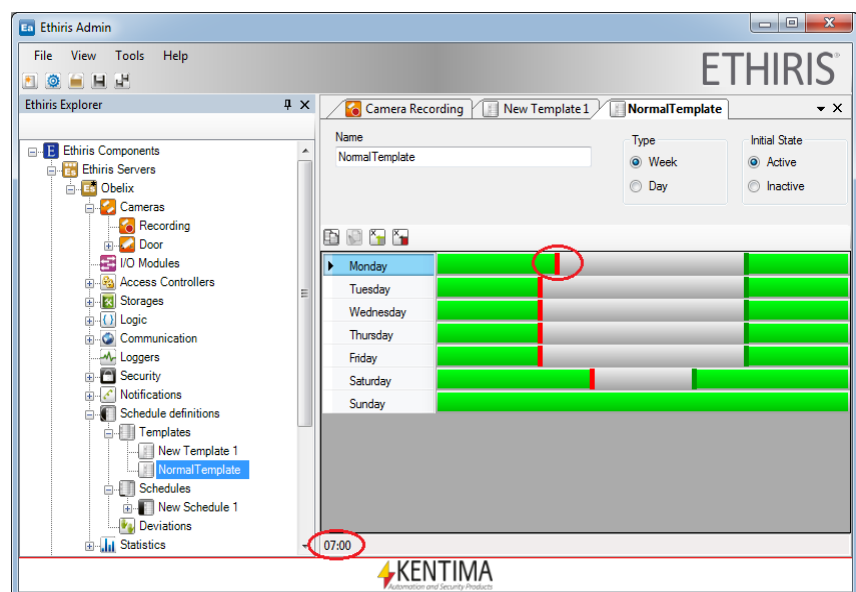
Figure 2.60 Adjust the time by dragging transitions.

7. When you got *Monday* right, you can copy this day to *Tuesday - Friday*. **Select** *Monday* by clicking on the text *Monday*. Then **click** the *Copy selected day* button. See *Figure 2.61* on page 2:51.
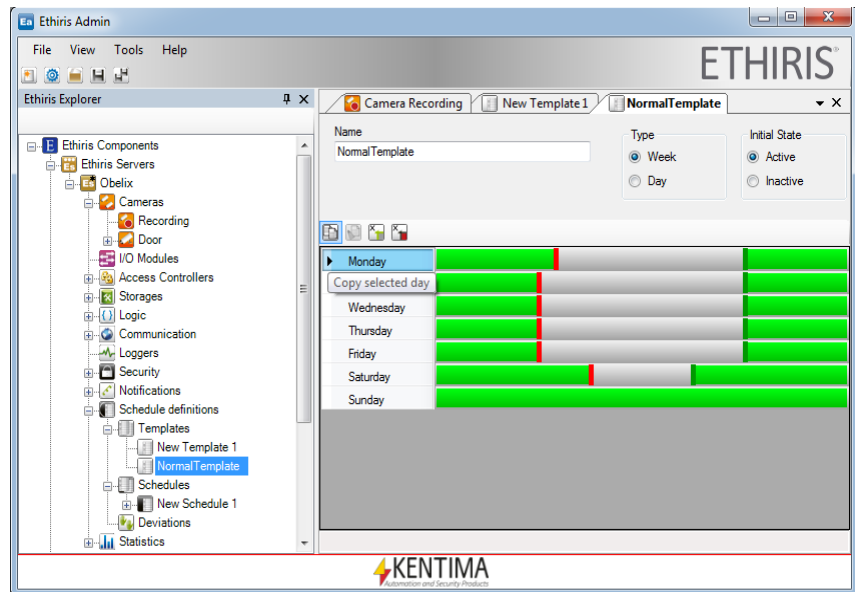
Figure 2.61 You can copy the settings for one day to other days.

8. Now, **select** *Tuesday* and then **click** the *Paste* button. **Repeat** for *Wednesday – Friday*.

9. Finally, **delete** the transitions on *Saturday* by right-clicking one transition at the time and **select** *Delete* in the popup menu. The template should resemble the one in *Figure 2.62* on page 2:51.
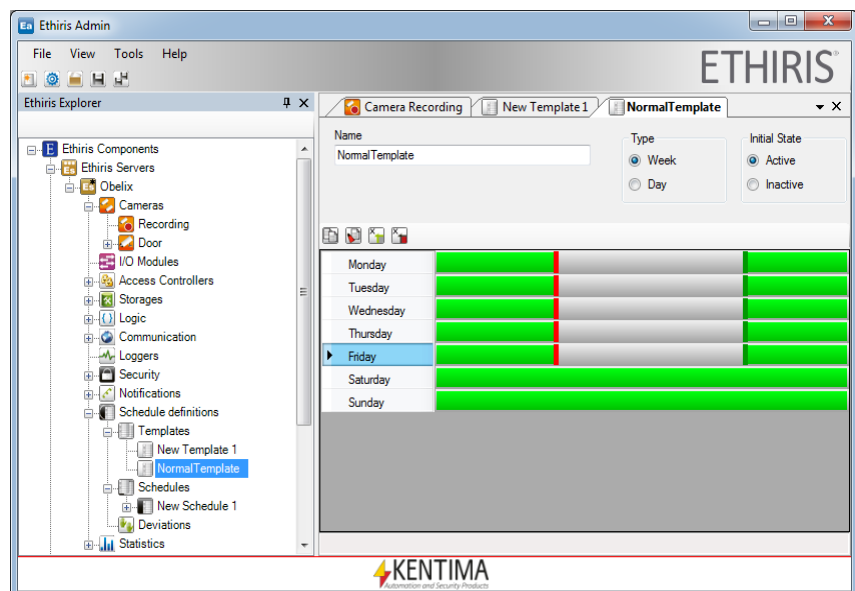
Figure 2.62 Schedule Template is now complete.
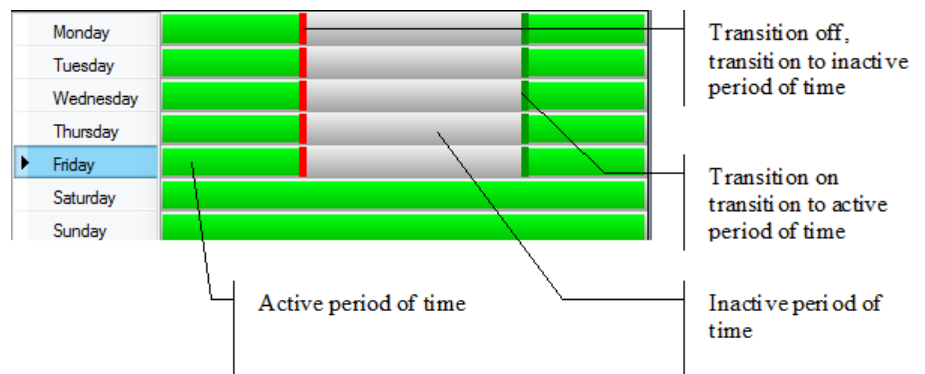
Figure 2.63 The Schedule Templates's components.

A few words about the schedule's components.

A week-based schedule template consists of 7 lines, one line for each day of the week. Each line corresponds to a time axis from 00:00 to 24:00.

Green periods mean active time. Grey periods mean inactive time. The schedule is based on transitions between active and inactive periods. When we go from Sunday to Monday, the status is determined by the *Initial State*.

The status of periods, i.e., whether they are active or inactive, depends on the transition that precedes a period. There are two types of transition, red (off), which indicates a transition to an inactive period, and green (on), which indicate a transition to an active period.

There are different ways of changing the times in a schedule. Existing transitions can be moved by dragging with the mouse. It is possible to drag to a different day by dragging the transition "over the edge" of the time axis. Please note that it is not possible to drag a transition past another transition. You can also right-click a transition and select *Set time…* in the popup menu.

You can also add brand new transitions by right-clicking a period and selecting *Add transition on* or *Add transition off* in the popup menu. In the same popup menu, you can choose to add a full period, i.e., with both an on and an off.

To completely remove a transition, right-click the transition and select *Delete* in the popup menu.

Creating a schedule from a schedule template

When we are happy with our schedule template, it is time to create a schedule from the template. You can create several schedules from the same template if you want. Each schedule can then have its own unique deviations. We will look more closely at deviations a little later in this exercise. Now we will just create a schedule from our *NormalTemplate*.

1. In the Ethiris Server's configuration treeview, **open** the *Schedule definitions* node.

2. **Double-click** the *Schedules* node in the treeview to open the *Schedules* panel.

Add new schedule

3. **Click** the *Add a new schedule* tool button in the toolbar.

4. In the list, **enter** *NormalSchedule* in the *Name* column.

5. In the treeview, under the *Schedules* node, a new item, *NormalSchedule* is created. **Double-click** this item to open the panel for this schedule. If there is more than one template, you

may have to change the *Schedule Template* to *NormalTemplate* in the list of templates as the first template is selected as default. It should look like *Figure 2.64* on page 2:53.
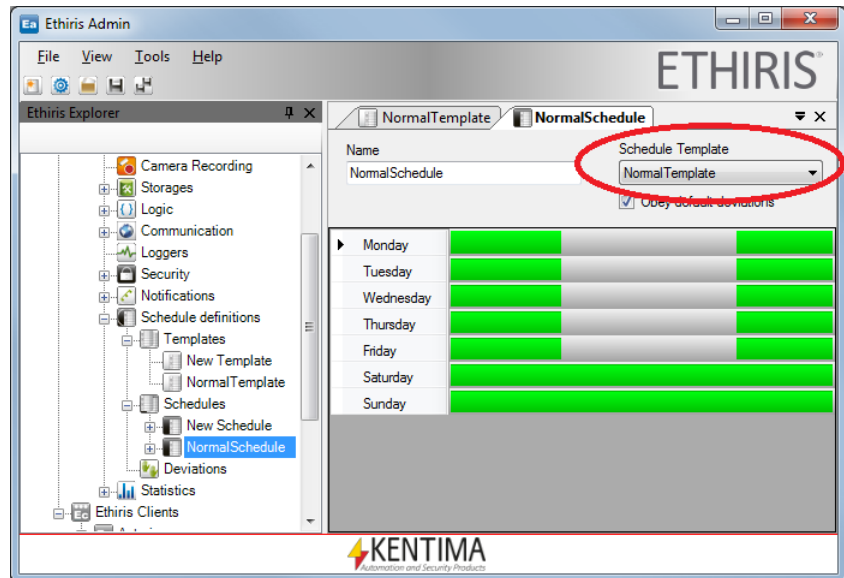
Figure 2.64 When creating a new schedule, the first template is automatically selected.

Linking the schedule to a camera

When we have created a schedule, we can use the associated input signal in various expressions for the system's outputs. In this case, we will use the schedule to control when live video is sent from our camera *Door*.

1. **Open** the *Script* panel in Ethiris Admin. It is located under the *Logic* node in the treeview.

2. At this point, the script editor window should be empty. Open the *Variable Browser* panel by holding the mouse pointer over the corresponding tab to the right of Ethiris Admin. **Locate and select** the camera *Door* in the *Variable Browser* panel, see *Figure 2.65*. **Double-click** on the signal *Enable* to copy this signal to the script.

3. **Manually enter** an equal sign, " = " after *Door.Enable* in the script.

4. **Locate** and **select** the *NormalSchedule* object under the *Schedules* node in the *Variable Browse* panel. **Double-click** the *Active* signal for the schedule to copy it to the script after the equals sign.

5. **End** the line with a semicolon. The script should look as in *Figure 2.66* on page 2:54.
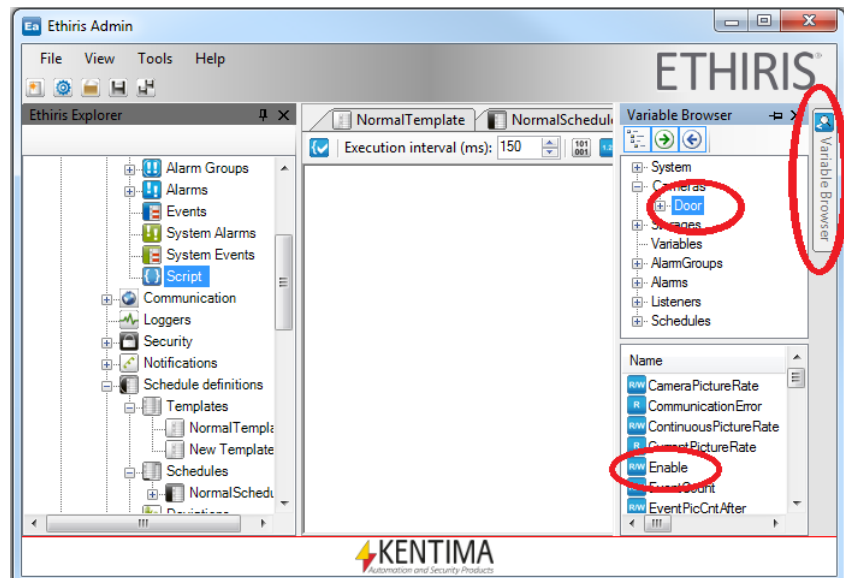
Figure 2.65 Variable Browser in Script with camera Door selected.
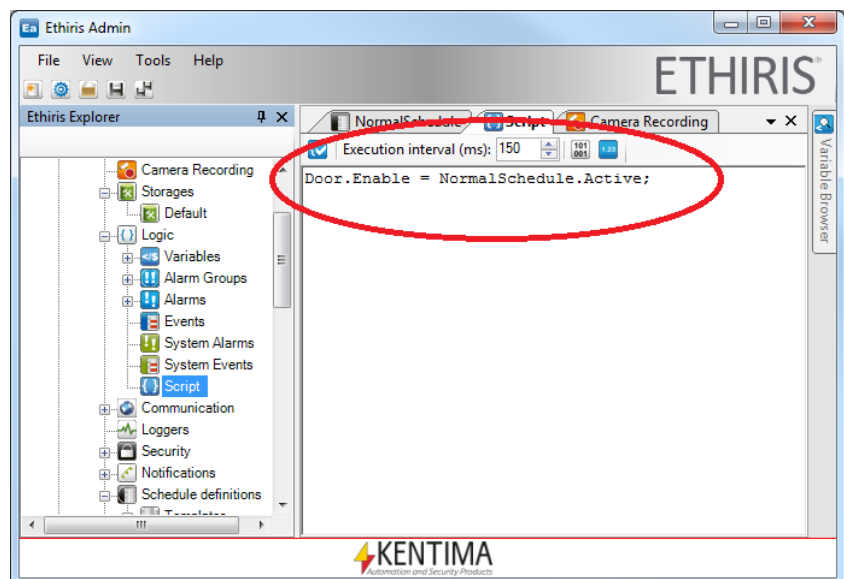
Figure 2.66 Schedule linked to the camera Door.

So far, we have not yet saved the new configuration and Ethiris Server knows nothing about the schedule and when to enable live video from the camera.

Before we send the new configuration to the server, we will look at the live video from the camera *Door* in Ethiris client. Start the client and select the live part to look at the live video from the camera Door. Verify that video is being displayed.

To send the new configuration to the server, **click** the *save icon* in the Ethiris Admin toolbar.

When the server receives the new configuration and discovers that the camera Door is to be inactive according to the schedule, the video will disappear, and the text *Camera Inactive!* will be displayed instead.
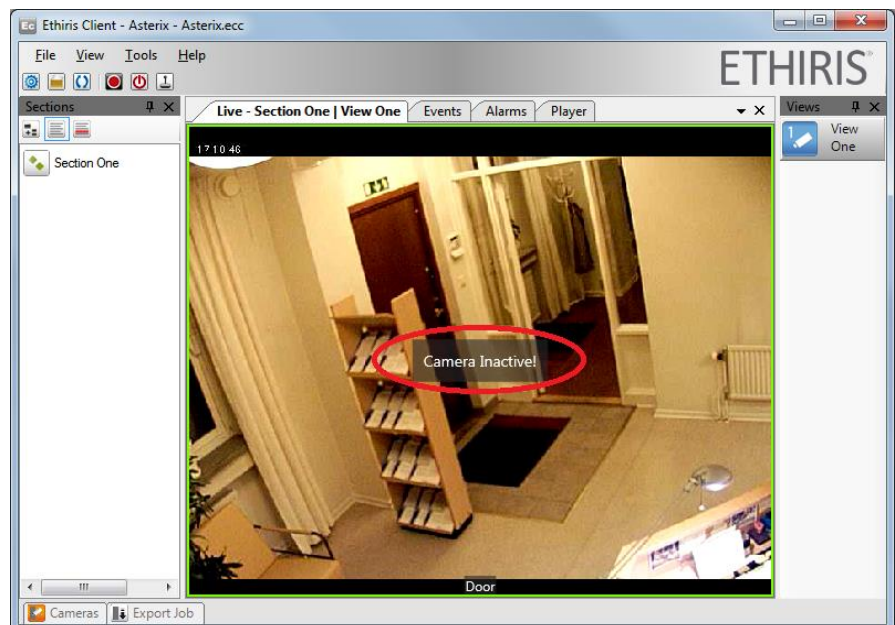
Figure 2.67 Camera Door is inactive according to the schedule.

Schedule deviations

A week-based schedule applies week after week, and a day-based schedule applies day after day. However, not all weeks may be the same. There may be a public holiday or some particular work that alters the standard working schedule.

For these cases, you can add deviations to the normal schedule. A deviation is a schedule that applies to a specific week or day. There are two types of deviations.

We call the first *Default deviation*. This is in the treeview under *Deviations*. A default deviation is available for all schedules. For each schedule, you can select whether default deviations are to be obeyed. It may be suitable here to insert, for example, Christmas week and Easter week.

The other type of deviation is specific to a specific schedule. A specific deviation is defined under the current schedule in the treeview. This type of deviation applies only to the schedule for which it is defined.

In our example, we will create a schedule, *LiveSchedule*, which has a deviation with an active period of time right now. The aim is to get live video from the camera *Door* even if the schedule template *NormalTemplate* is inactive. The effect will be that we can look at live video thanks to the deviation schedule, but recording remains deactivated via the normal schedule. So, even if motion occurs in front of the camera, no recording will start.

To achieve only this effect, it would have been simpler to remove the *NormalSchedule.Active* input signal from the camera *Door's* expression for live video, but again, this is for the sake of the exercise.

1. **Select** the *Templates* node in the treeview.

2. This time we will use the popup menu to create a new schedule template. Most commands are available from several different places, the menu, the toolbar, and the popup menu.
   Right-click the *Templates* node in the treeview. A popup menu is displayed.

3. **Select** *New->Template* in the popup menu. A new template called *New Template* (or *New Template 3* if you have followed all instructions up till now) is created in the treeview.

4. **Double-click** the new template in the treeview to open its panel.

5. **Enter** the name *LiveTemplate* in the *Name* text box. The name is immediately updated in the treeview as well.

6. **Select** type *Day*.

7. Ensure that there is an active period that extends at least from now and 15 minutes into the future so that we can look at live video.

8. We will now create a schedule called *LiveSchedule,* which looks just like the *NormalSchedule* schedule.

9. **Right-click** the Schedules node in the treeview and select **New->Schedule** in the popup menu. A new schedule called *New Schedule* is created in the treeview.

10. **Double-click** the new schedule in the treeview to open its panel.

11. **Enter** the text *LiveSchedule* in the *Name* text box. Change *Schedule Template* to *NormalTemplate*. So far, this schedule is the same as *NormalSchedule*, and it uses the *NormalTemplate*.
We will now add a deviation specific to this schedule.

12. In the treeview, under the new schedule, *LiveSchedule* **double-clicks** the *Deviations* node to bring up the *Deviations* panel for this schedule.

13. In the *Deviations* panel, **click** the *Add a new deviation* button. A new item is created in the list.

14. **Enter** the text *DoorDeviation* in the *Name* column.

15. **Double-click** the new deviation in the treeview to open its panel.

16. In the *Use this template…* frame, **select** *Schedule Template: LiveTemplate*.

17. In the *During this period…* frame, **select** *Date,* and enter the current date under *Month* and *Day*. The panel should look something like *Figure 2.68* below.
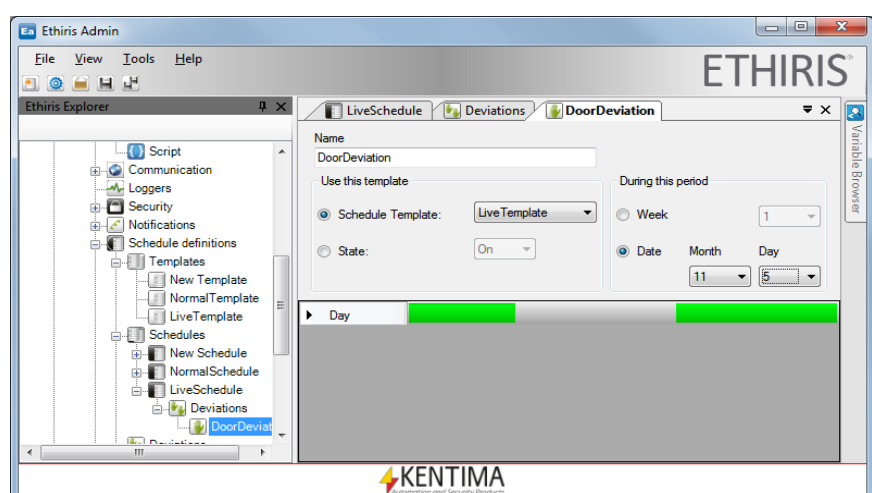
Figure 2.68 New deviation created.

18. We will now change the expression for displaying live video for the camera *Door*.
Open the *Script* panel.

19. **Change** the expression to the right of the equals sign for the *Enable* signal to *LiveSchedule.Active*.

Ensure again that you do not have live video viewing enabled in Ethiris Client. If everything is right, the image should display the text "*Camera Inactive!*".

Now save the new configuration to the server by **clicking** the *save icon* in the Ethiris Admin toolbar.

Hey presto, there should be live video from the camera *Door* again.

Try to create motion in front of the camera that would normally start recording. As the normal schedule, which has no deviation, still applies as the expression for event recording, this should not happen now.

However, manual recording works even if the schedule is inactive.

For the sake of completeness, let us also create a default deviation for Christmas week 2012. We find that Christmas Eve falls on a Monday and Christmas Day and Boxing Day on Tuesday and Wednesday in week 52. We assume that most people are off work on these three days. We will now make a schedule template that is active for all of Monday, Tuesday, and Wednesday but otherwise follows the default times.

20. **Right-click** the *Templates* node in the treeview.

21. **Select** *New->Template* in the popup menu.

22. **Double-click** the new template in the treeview to open the corresponding panel.

23. **Enter** the name *ChristmasTemplate 2012* in the *Name* text box.

24. **Create** appropriate inactive periods for *Thursday – Friday*. Remove transitions for *Monday – Wednesday* and *Saturday*. You can copy *Sunday* to these days. The schedule template should look as in *Figure 2.69* below.
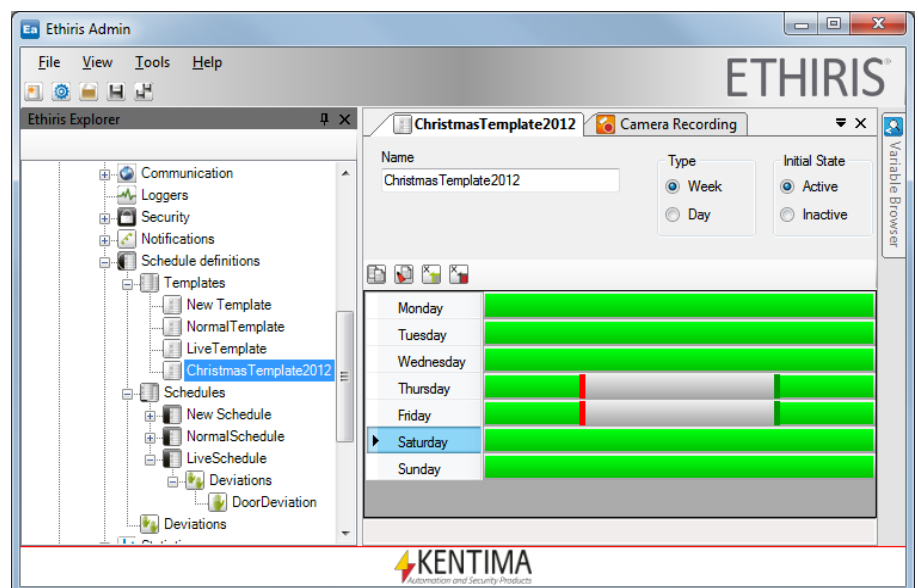
Figure 2.69 Schedule template for Christmas week 2012.

25. **Right-click** the *Deviations* node directly under the *Schedule definitions* node in the treeview and **select** *New->Deviation*.

26. **Double-click** the new deviation in the treeview to open the panel.

27. **Enter** the name *ChristmasDeviation* in the *Name* text box.

28. In the *Use this template…* frame, **Select** *ChristmasTemplate 2012* in the selection list for *Schedule Template*. A mini image of the schedule template selected is displayed.

29. In the *During this period…* frame, **select** Week *52*. See *Figure 2.70* below for an example of how it might look.
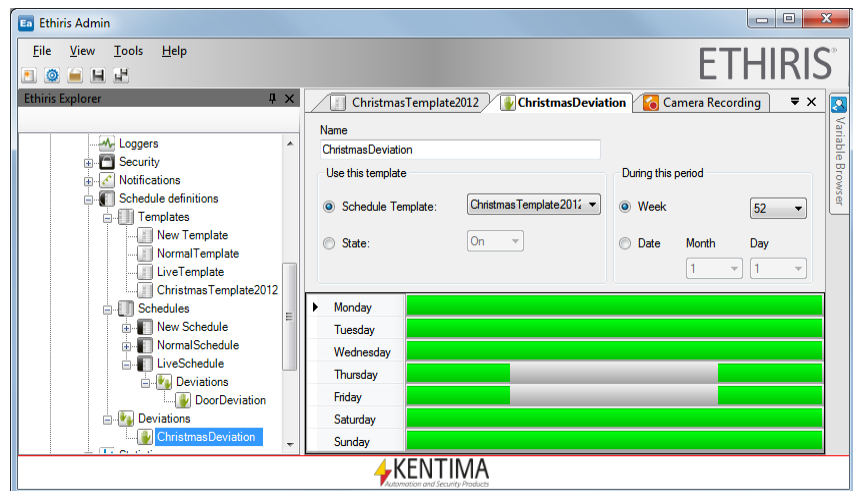
Figure 2.70 Deviation schedule for Christmas week.

The last step is to specify that the *NormalSchedule* schedule is to use default deviations. It is, of course, possible to create several weeks with default deviations. If you select a schedule so that it obeys default deviations, it obeys all default deviations that are defined under *Default deviations* in the treeview.

30. **Open** the schedule panel for the *NormalSchedule* schedule, by double-clicking the schedule in the treeview.

31. **Confirm** that the checkbox *Obey default deviations* is checked.
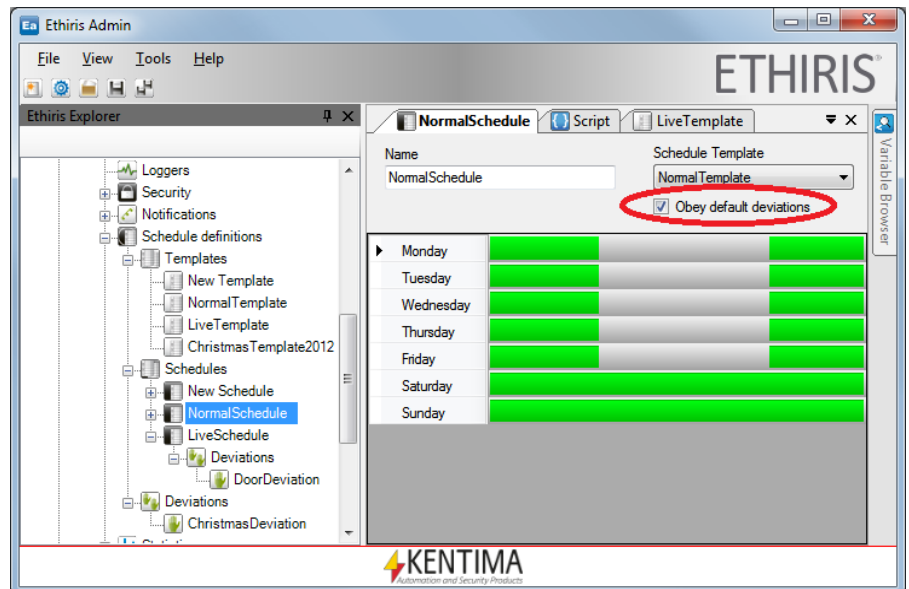
Figure 2.71 The schedule obeys default deviations.

To send the new configuration to the server, **click** the *save icon* in the Ethiris Admin toolbar.

What have you learned?

Task 3 is now complete. In this task, you have learned how to use schedules to limit live video viewing and recording of events.

You can freely define several different week-based or day-based schedule templates. Using the templates, you create schedules. The same template can be used several times. Each schedule created automatically generates an input signal with the name *Active*. These signals can be used to control when various functions in Ethiris are to be active, for example when live video may be displayed or when video from a camera may be recorded.

It is possible to define deviations from ordinary schedules. It is also possible to define deviations that are specific to one schedule. You can also define default deviations that can be applied to any schedule.

In the next task, we will look at how to set up automatic deletion of old video.

Task 4, Deleting Video

This task will teach us how to delete old video.

Instructions, Automatic Deletion of Video

The automatic deletion of video is defined in the server configuration. If Ethiris Admin has not yet been started, start it now.

There are two types of recorded video in Ethiris. The video has been recorded either in connection with an event or as continuously recorded video. Regardless of how the video has been recorded, the video is stored on disk in the same way. As a consequence, the automatic deletion of video is defined once for each camera.

Already in task 1, we saw that you can define a global setting for automatic deletion of old video that applies for all cameras in Ethiris Server. If you want, you can make exceptions from the global setting for specific cameras.

Defining automatic deletion of old video

We will now configure the server so that video more than 3 days old are automatically deleted.

To begin with, we will use the global setting.

1. **Double-click** the *Storages* node in the treeview for the server configuration.

2. In the frame *Clean up video – Global setting for all cameras*, **ensure** that the checkbox *Delete old images automatically* is checked.

3. **Set** *3* in the *Days* box.

4. **Set** *0* in the *Hours* and *Minutes* boxes. The panel now should look as in *Figure 2.72*.

To send the changes to the server, click on the *Save*-icon in the toolbar in *Ethiris Admin*. Old video is checked twice a minute automatically.
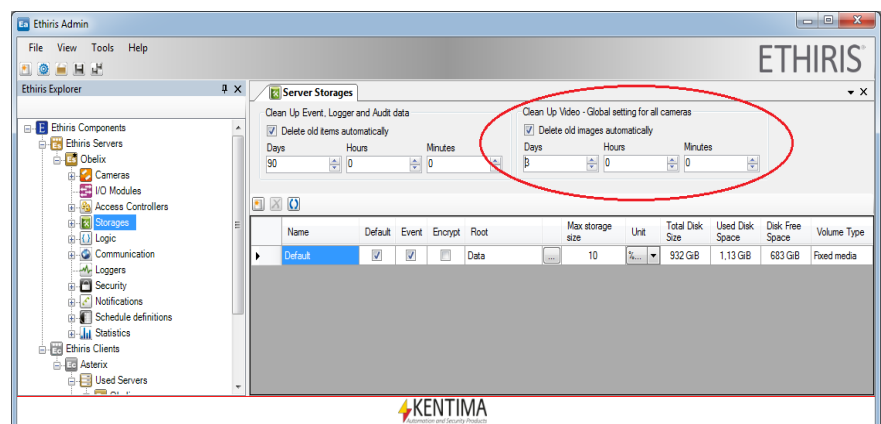

Figure 2.72 Global setting to delete video more than 3 days old for all cameras.

If you have followed this manual to the letter, there should remain a specific setting for the camera *Door* that overrides the global setting. We sat automatic deletion of old video to 1 hour. There is a simple way to check which cameras that respect the global setting and which have specific settings.

1. Beneath the node *Storages* in the treeview is the node *Default*, **double-click** this node to open the corresponding panel.

In this panel, there is an overview of the recording settings for all cameras that uses this storage. In *Figure 2.73,* an icon is marked. It is orange if the global clean up settings are overridden by this camera. If the global settings are respected, the icon is green.

You can also see the time for the oldest and newest recording, respectively for each camera.
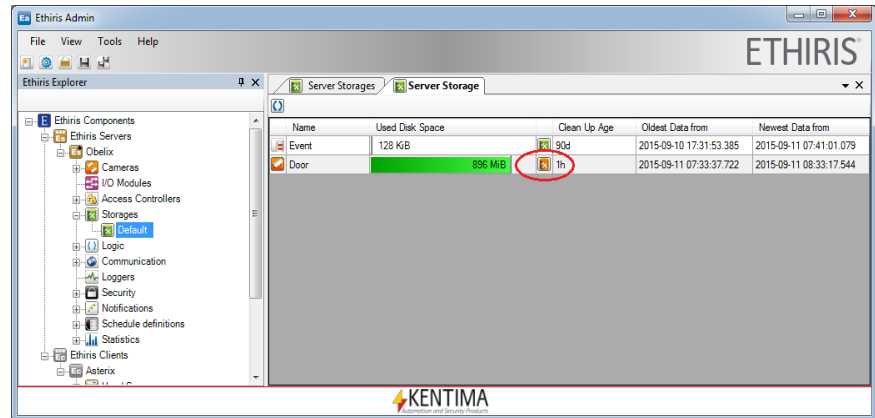
Figure 2.73 Overview of the storage for the cameras on storage Default.

As mentioned earlier, it is possible to set the clean up time for video individually for each camera. For the sake of practice, let's assume that we want the camera *Door* to delete old video after 5 days.

1. In the treeview of the Ethiris Server's configuration, **double-click** the *Storage* node for the camera *Door* to open the *Storage* panel.

2. **Ensure** that the checkbox *Override storage Clean up setting* is checked.

3. In the *Clean Up* frame, **ensure** that the *Delete old images automatically* checkbox is checked.

4. **Enter** *5* in the *Days* box.

5. **Enter** *0* in the boxes for *Hours* and *Minutes*. The panel now should look as in *Figure 2.74*.

To update the server, **click** the *save icon* in the Ethiris Admin toolbar.
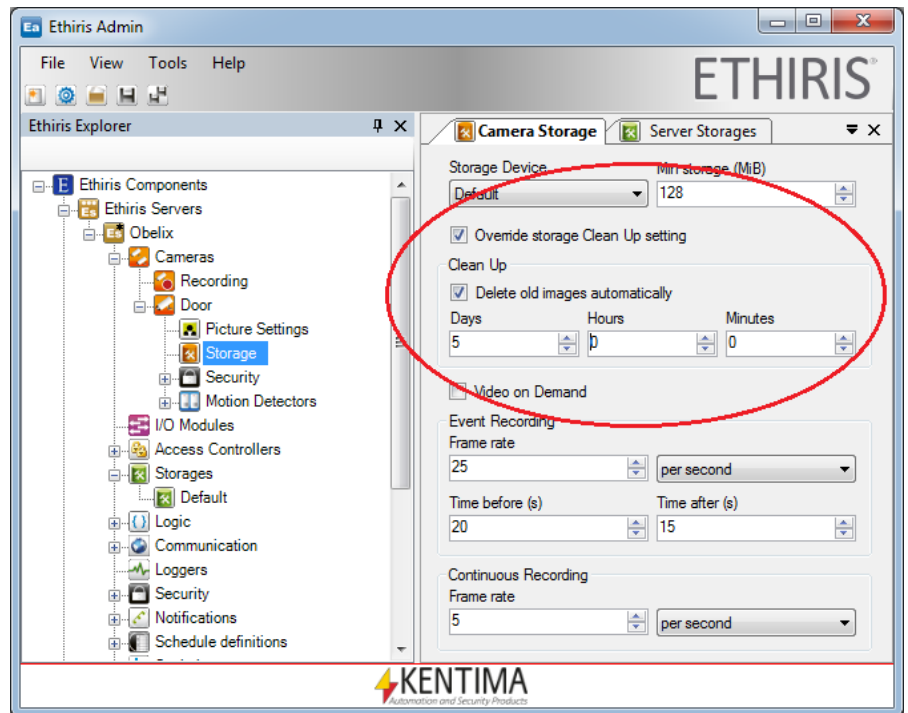
Figure 2.74 Setting for the camera Door to delete video more than 5 days old.

What have you learned?

In task 4, you have learned how to set up automatic video deletion from the hard disk and how to view an overview of the recording settings for all cameras at the same time.

In the next task, we will learn how to send emails and SMS with Ethiris.

Task 5, Email and SMS

Even if you are not at an Ethiris Client, you can be notified of important events. It is possible to receive a message via email and SMS on selected occasions.

In this task, we will learn how this works.

Instructions, Sending Email

Email management is entirely defined in the server configuration. If Ethiris Admin has not yet been started, start it now.

You can create the desired number of email definitions in the Ethiris Server's configuration. Each definition has its own unique name, its own unique text, and its own unique recipients.

Each email definition created in the Ethiris server configuration automatically generates an associated digital output in the Ethiris data store. Each time this digital output is enabled (set to *true*), an email message is sent. By defining suitable logical conditions, you determine when the output will be enabled. Of course, you also can define a button in Ethiris Client and connect the button to the email send signal for sending an email on button click in the client.

In this example, we will define two different email messages. We will use one of them to state that we have a communication error in our camera, and we will send the other when there is motion in front of the camera at times specified in the *NormalSchedule* schedule*.*

Email is configured in a number of steps. The first step involves creating your contacts, i.e., potential recipients. This is done in the form of Ethiris users. However, they do not have to be full-fledged users that can be used to login to Ethiris. These are common to both email and SMS.

We will create two contacts and an address list.

Use a valid email address for this test.

We will start by creating a list of recipients. In our example, we will create *test@kentima.se* and *test@ethiris.se* as recipients. Use an address of your own that can function as a test in this exercise.

1. In the treeview, under *Obelix*, there is a node called *Security*. **Expand** this node and **double-click** on the *Users* node to open the *Users* panel.

2. In the *Users* panel, **click** the *Add a new user* button to add a new contact. A new item is created in the list with *Name, In use, User name, Email,* and *SMS* columns.

3. **Enter** *KentimaTest* in the *Name* column. This is used as a reference in any address lists and when recipients for email messages and SMS are to be selected. You can choose a different name if you want.

4. We do not want to use this user definition to log in, so we can leave the *In use* checkbox unchecked and the *Username* column empty.

5. **Enter** *test@kentima.se* in the *Email* box. Again, this is only an example. You can use another suitable address. Remember that there must be a "@" sign in the address for it to be accepted.

6. Leave *SMS* blank for now.

7. **Repeat** items 2 – 5 for another recipient, *EthirisTest*, with the address *test@ethiris.se*.

8. For an example of what the panel may look like so far, see *Figure 2.75*.
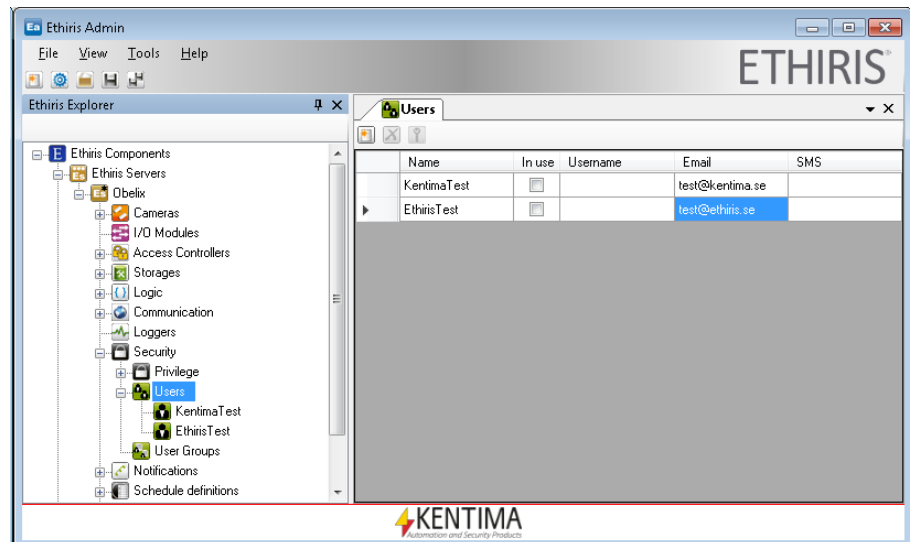
Figure 2.75 Example of a list of recipients.

We will now also create a contact list called *AllTest*.

1. In the treeview under *Notifications*, **double-click** the *Contact Lists* node to open the panel.

2. In the *Contact Lists* panel, **click** the *Add new contact list* button. A new item is created in the list.

3. **Enter** *AllTest* in the *Name* column for the new item.

4. In the treeview, a new item has been created under the node *Contact Lists*; **double-click** the node *AllTest* in the treeview to open the panel.

5. In the *AllTest* panel, **check** both *KentimaTest* and *EthirisTest* to mark them as selected contacts in the list.

6. The dialog should now look something like *Figure 2.76*.

Figure 2.76 Contact list created.

OK, the next step is to enter general details for sending emails.

1. In the treeview under *Notifications*, **double-click** the *Mails* node to open the *Mails* panel.

2. In the *Mails* panel at the top, **enter** *Ethiris* as the *Sender Name*. This is displayed as the sender in all email messages. You can use a different sender name if you want.

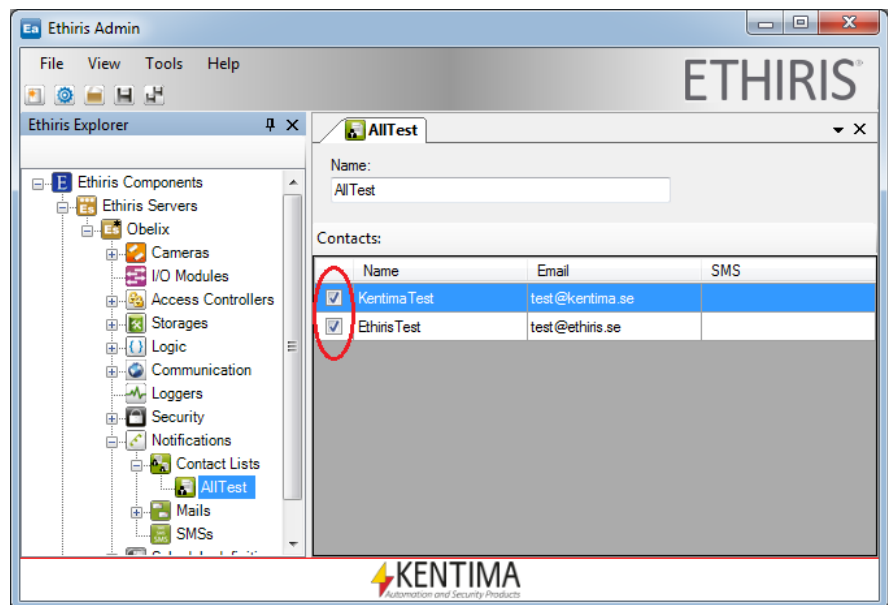3. **Enter** *obelix@ethiris.se* in the *Sender Address* box. Again, this is just an example. You can use a different address if you want. Remember that there must be a "@" sign in the address for it to be accepted.

4. In the *SMTP Server* box, **enter** the name of the email server used for outgoing mail. In a company, you probably have a local server for this, for example, an Exchange server. The network administrator at the company should be able to tell you what name to enter here. At home, you may have an Internet Service Provider, which can tell you what the email server is called. In our example, we enter *smtp.ethiris.se*. This does not work in reality.

5. *The SMTP Port* is *25* by default but can be changed if necessary.

6. Most email servers require a *User name* and *Password. Enter* them if needed.

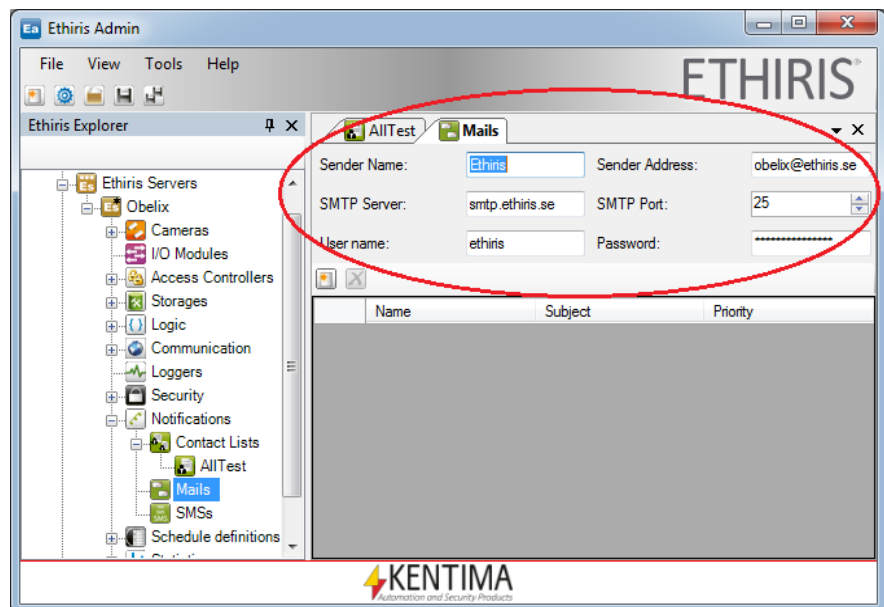7. The panel may look something like *Figure 2.77* below.

Figure 2.77 General email settings entered.

Now it is time to define our two email messages. Keep the panel for *Mails* open. Our first email message will be used if we have a communication error with the camera *Door*.

1. **Click** the *Add Mail* button, below the general settings, to add an email message. The *Name*, *Subject,* and *Priority* fields can be entered directly in the list. To be able to enter all required information, the mail has to be opened in its own panel.

2. In the treeview under *Mails*, **double-click** the *New Mail* node to open the panel.

3. **Enter** *ErrorCameraDoor* in the *Name* box. This name is used as the name of the digital output signal that is automatically created for an email message in Ethiris.

4. **Enter** *Communication error with the camera Door* in the *Subject* box.

5. **Select** *High* as the priority.

6. **Enter** *Ethiris has detected an error in communication with the camera Door* in the *Body box.*

7. **Select** appropriate recipients of the mail by checking the corresponding checkbox. In our example, we use the contact list *AllTest.*

8. **Check** the *Attachment* for camera *Door*. Even though there is a communication error, the last image sent from the camera will be attached to the email, which might be of interest. The panel now looks roughly as in *Figure 2.78* below.
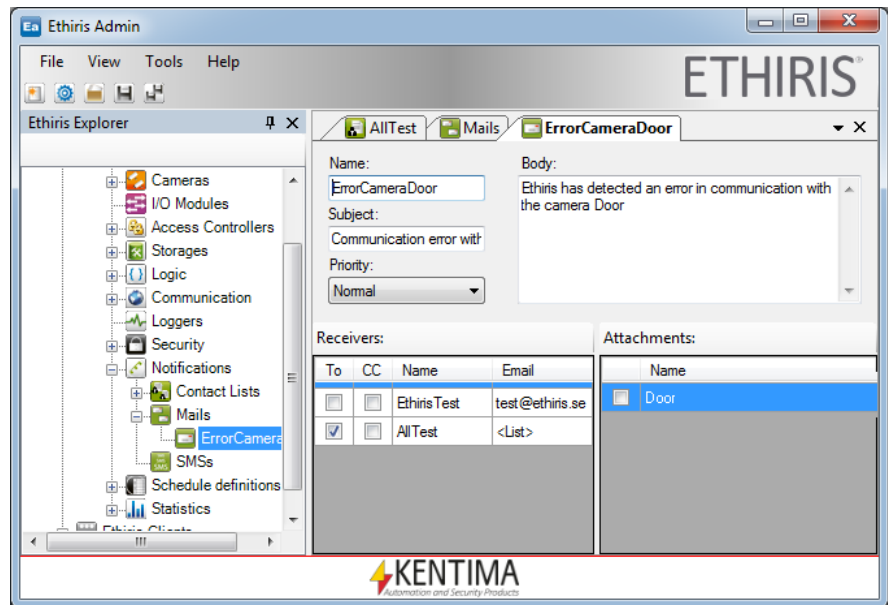
Figure 2.78 An email message for the communication error has been defined.

Now we will define the second email message, which will be sent in the event of motion in front of the camera *Door*.

1. **Switch back** to the *Mails* panel. **Click** the *Add Mail* button to add another email message.

2. **Double-click** the *New Mail* node in the treeview.

3. In the *New Mail* panel, **enter** *MotionCameraDoor* in the *Name* box. This name is used as the name of the digital output signal that is automatically created for an email message in Ethiris.

4. **Enter** *Motion in front of the camera Door* in the *Subject* box.

5. **Keep** *Normal* as the *Priority*.

6. **Enter** *Ethiris has detected motion in front of the camera Door* in the *Body* box.

7. **Select** appropriate recipients of the mail by checking the corresponding checkbox. In this example, we use the contact *KentimaTest*.

8. In this case, it may be worth attaching a frame. **Select** the camera *Door* by **checking** the checkbox in the *Attachments* frame. The panel now looks as in *Figure 2.79* below.

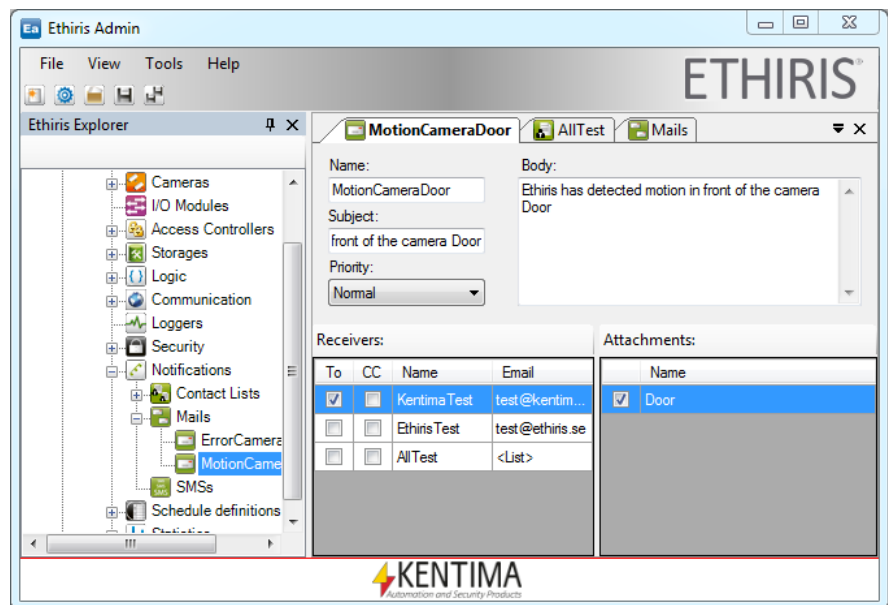*Figure 2.79 Email message for detected motion.*

The last step is to tell Ethiris when the email messages are to be sent.

1. Open the *Script* panel by **double-clicking** the *Script* node in the treeview.

2. We will start with the message for the communication error with the camera.

3. In the script**, enter** a couple of new lines at the end of the script. You can enter *comments* by using a double slash "//". This makes reading the script easier and can also serve as documentation of the script. **Enter** a line with the following text: *// Send mail on a communication error*. This text appears in green. **Press** *enter* to create a new line.

4. In the *Variable Browse* panel a new node, *Mail*, has appeared. **Click** the *+ sign* before *Mail* to display the email messages that are defined.

5. **Select** the mail *ErrorCameraDoor.*

   In the lower pane, **double-click** the *Send* signal. The signal is copied to the current location in the script.

   ```
   // Send mail on a communication error
   ErrorCameraDoor.Send
   ```

6. **Enter** an *equals sign, " = "* after *ErrorCameraDoor.Send*.

7. In the *Variable Browser* panel, **select** the camera *Door* under the *Network Cameras* node.

8. In the lower pane, **double-click** the *CommunicationError* signal. The signal is copied to the current location in the script. Alternatively, you can drag and drop the *CommunicationError* signal to the script editor after the equals sign to select this input signal as a condition for the output signal *Send.*

9. Finish the line with a semicolon, "**;**".

10. The text *ErrorCameraDoor.Send = Door.CommunicationError* should now be visible in the script editor. The script should look as in *Figure 2.80*.
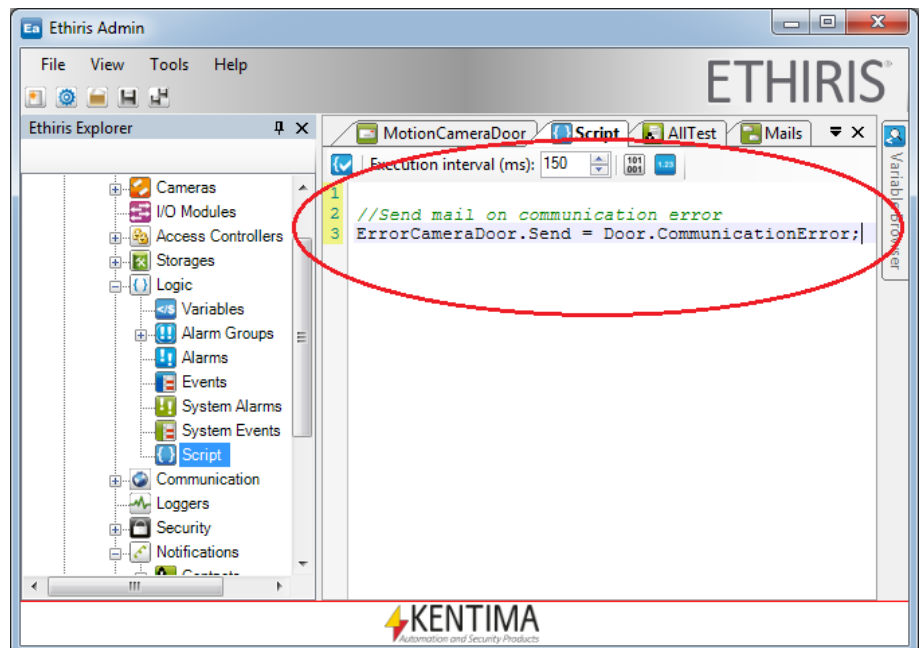

Figure 2.80 A communication error for the camera enables the transmission of an email message.

1. We will now connect together the logic for our second message as well when we still have the script open.

2. **Enter** a couple of new lines and a comment, like *// Send mail on motion*.

3. In the *Variable Browse* panel, **select** the email message *MotionCameraDoor.* In the lower pane, the output signal *Send* is displayed.

4. **Double-click** the *Send* signal to copy it to the script.

```
// Send mail on motion
MotionCameraDoor.Send
```

5. **Enter** an *equals sign, " = "* after *MotionCameraDoor.Send*.

6. In the *Variable Browse* panel, under the camera *Door*, there is a node called *Motion Detections*. Under this node, there is the motion detection *Motion at door*, **select** this object.

7. In the lower pane, **double-click** the signal *Motion*. The signal is copied to the script.

8. The idea is that this message should only be sent in connection with motion at certain times of the day. We will now combine motion detection with our schedule that we defined earlier. After the variable name *Door.Motion_at_door.Motion* in the script editor, **enter** a *space*, then *&&* and then another *space*. Two & signs mean AND, and is used to combine two input signals.

9. **Locate** the *Schedules* node in the *Variable Browse* panel. **Click** the *+ sign* before the text *Schedules.* The schedules we defined earlier appear.

10. **Select** the *NormalSchedule* schedule*.* The input signal *Active* is displayed in the lower pane.

11. **Drag and drop** the *Active* signal to the script editor after *&&* to combine this input signal with the motion detection.

```
// Send mail on motion
MotionCameraDoor.Send =
Door.Motion_at_door.Motion &&
NormalSchedule.Active
```

12. **Finish the line** with a semicolon, *";"*. The script should now look roughly as in *Figure 2.81*.
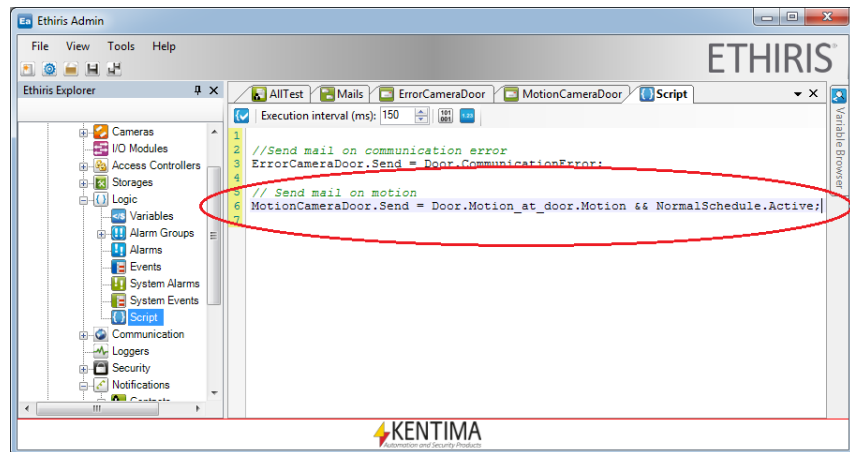

Figure 2.81 Send an email if we have motion, and the schedule is active.

We will test what we have configured for email so far.

Click the *save icon* in the Ethiris Admin toolbar to send the new configuration to the server.

Try to pull out the network cable for the camera *Door*. Provided that the various email settings are correct, an email message will be sent to the selected recipients after approximately 30 seconds. This is the default timeout for communication with the cameras.

To test the second message, it is necessary for motion to be detected during the time that the *NormalSchedule* schedule is active. To avoid working in the evening or at the weekend, it is a good idea to change the schedule so that it becomes active right now. One way of doing this is to create a deviation for the current day. See section *Task 3, Using Schedules* on 2:48 for a complete description of the schedules.

Ensure that there is motion in front of the camera *Door* that triggers the alarm. Verify that an email message with the associated frame has been sent to the address(es) you specified in the recipient list.

Ensure that the schedule does not prevent alarm monitoring.

In the next section, we will look at the possibilities of sending SMS.

Instructions, Sending SMS

This task requires a GSM modem from Westermo, GDW-11.

In the example below, we assume that we have access to a SIM card with the code *1234*. Insert this SIM card in the GSM modem according to the instructions supplied with the modem. Connect the modem to the computer running Ethiris server via a serial port. In our example, we assume that the modem is connected to port *COM1*.

The first thing we need to do is to supplement the contact details we defined earlier for sending an email. We will now add a mobile phone number so that we can send SMS to one of these contacts.

1. Start the Ethiris Admin if you have not already done so.

2. **Bring up** the *Users* panel by **double-clicking** the *Users* node in the Ethiris Server's configuration tree. Now. The current list of contacts is displayed in the panel.

3. In the list of contacts at the left of the dialog, select **KentimaTest**.

4. In the *SMS* column for the contact *KentimaTest*, **enter** a suitable mobile phone number, for example, *0705123456*.

The panel may look as in *Figure 2.82*.

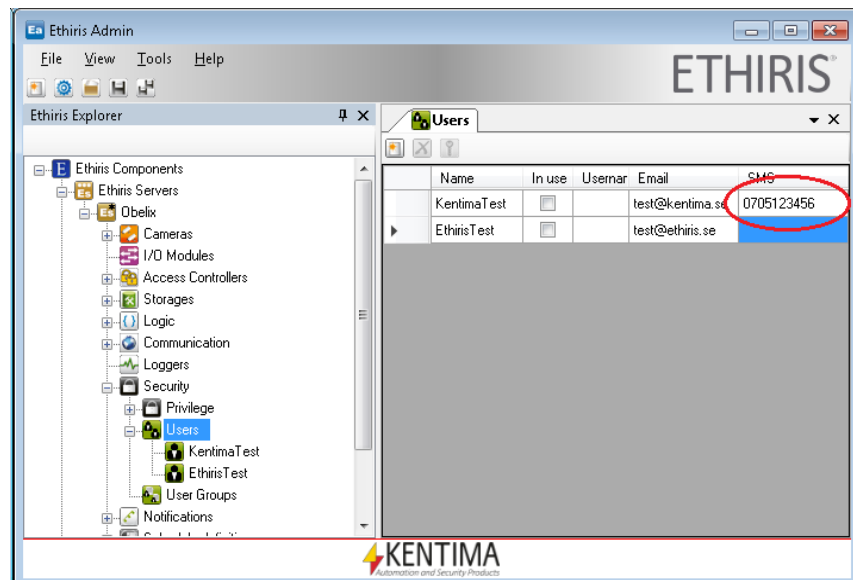*Figure 2.82 A mobile number is defined for one of the contacts.*

1. **Open** the *SMSs* panel by **double-clicking** the *SMSs* node in the treeview.

2. **Leave** the *Port* as *COM1*.

3. **Leave** the *Baud rate* as *115200*, *Data bits* as *8, Timeout* as *10000, Stop bits* as *1,* and *Parity* as *N*.

4. **Enter** the *PIN*, for example, *1234*.

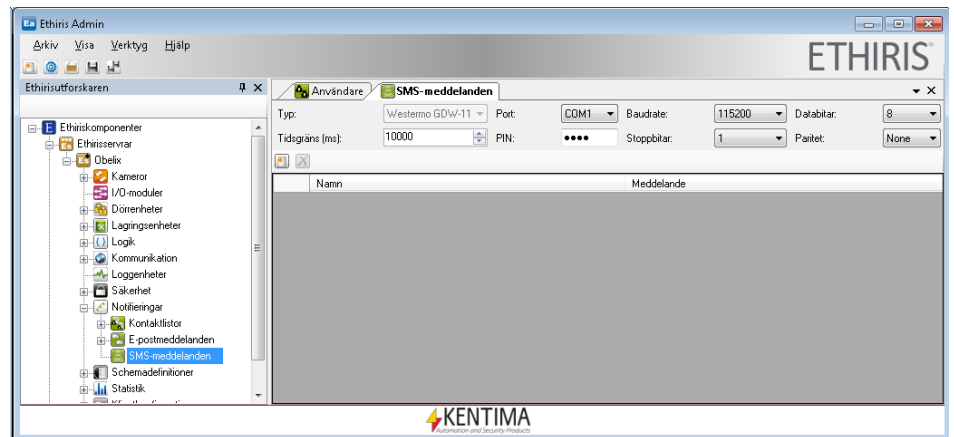The dialog now looks roughly as in *Figure 2.83*.

Figure 2.83 General SMS settings have been entered.

1. In the *SMS list* section, **click** the *Add New SMS* button to create a new SMS message. A new SMS is created.

2. **Enter** *SMSTest* in the *Name* column.

3. **Enter** *Ethiris sends SMS* in the *Message* column.

4. **Open** the panel for the new SMS *SMSTest* by **double-clicking** its node in the treeview.

5. **Select** *KentimaTest* as *Receiver*.

6. The panel should now resemble the one in *Figure 2.84*.

7. **Click** the *save icon* in the main toolbar of Ethiris Admin to send the new settings to the Ethiris server.

Figure 2.84 SMS message has been created.
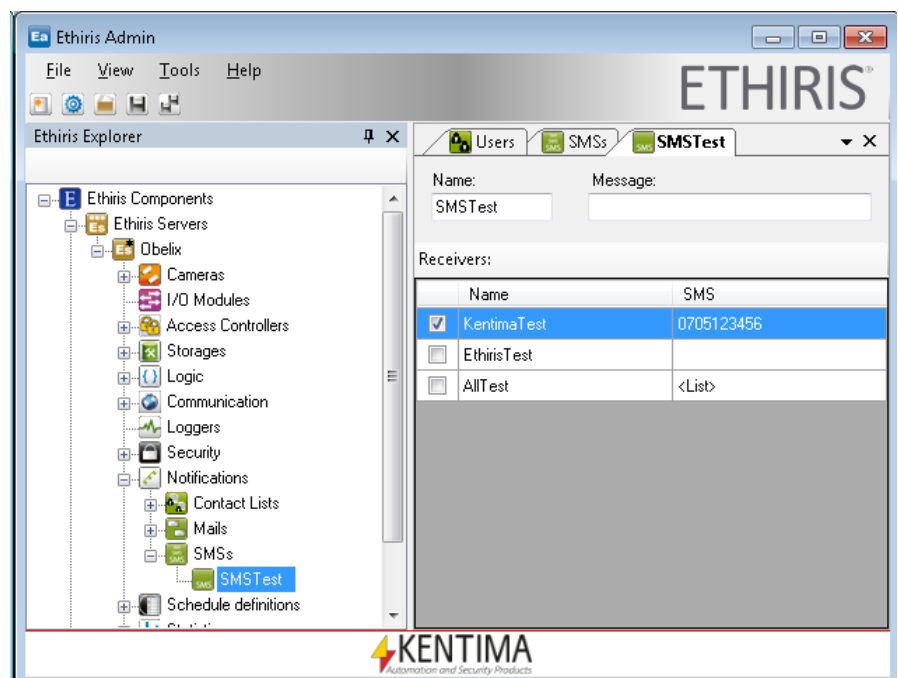
To test our SMS function, we will add a button to the client. In a real situation, we would probably send an SMS as a consequence of some form of an alarm signal. For example, motion detection in combination with a schedule, in a similar manner to what we did for email. See Figure 2.81. However, to introduce another element into the exercise, we will do the following instead.

1. In the client configuration part of the treeview in Ethiris Admin, **right-click** on the node *Section One* and **select** *New->Button->I/O* in the popup menu.

2. **Enter** *SMS* as the name of the button directly in the treeview.

3. **Double-click** the new node *SMS* in the treeview to open the corresponding panel.

4. **Uncheck** the checkbox *Toggle button*.

5. **Click** the browse button to the right of the *IO-signal* box. In alphabetic order, you will find the signal *SMSTest.Send*. **Select** this and **click** the *OK* button.

6. To save the new client configuration on the server, **click** the *Save icon* in the Ethiris Admin toolbar.
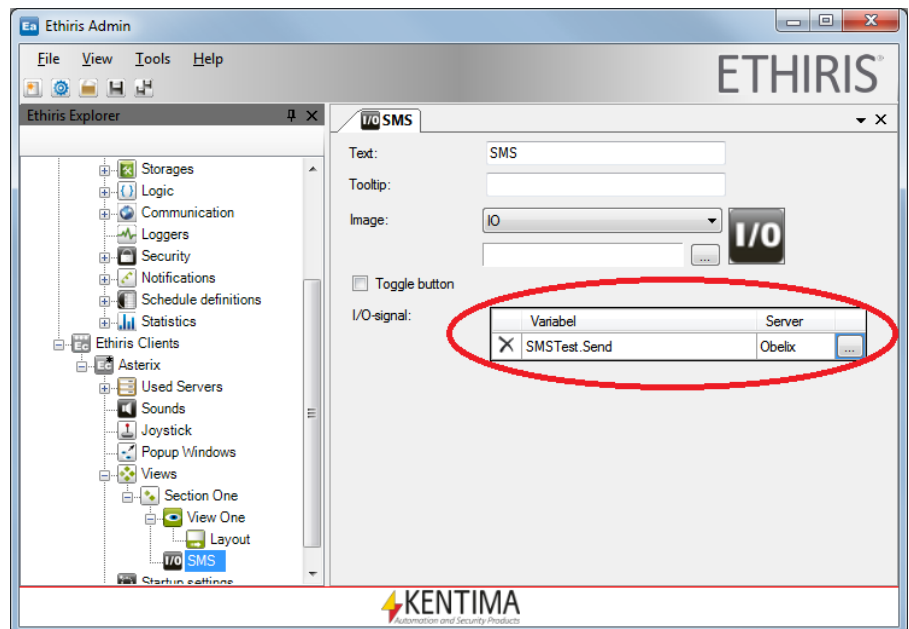

Figure 2.85 Settings for the button for sending SMS have been entered.

Finally, to test the SMS function, **start** Ethiris Client, and **click** the new *SMS* button. If everything is correctly set, an SMS should be sent to the selected recipient.

What have you learned?

In task 5, you have learned how to send email and SMS in connection with an alarm or other selected events. Ethiris flexible structure allows any available signals in the system to be combined to send email or SMS. We have only seen a few simple examples of how this may work.

In the next task, we will learn how to use FTP to reduce the traffic on the network.

Task 6, Alarms via FTP from the Camera

Ethiris normal working method is to continuously retrieve video from the cameras and video encoders connected to the server. The alternative is to put the camera in *FTP mode*.

In version 5.8 of Ethiris, there is also a possibility to use so-called *Video on Demand,* which is selected in the panel *Recording*. This choice means that the Ethiris server does not retrieve video continuously unless a client requests video for live video viewing. For more information about video on demand, see the Admin manual.

FTP mode means that the Ethiris server does not retrieve video continuously unless a client requests video for live video viewing. The advantage of this is that the network is not loaded unnecessarily.

The disadvantage is that, as no video is retrieved continuously, it is not possible to use motion detection in Ethiris. Nor is it possible to buffer video in Ethiris for pre-alarm for an event recording.

When you use FTP mode, and an alarm event occurs, the video has to be sent from the camera to Ethiris via FTP (File Transfer Protocol). The alarm must be defined in the camera or video encoder, together with the settings for the FTP transfer of the video. Furthermore, this function has to be activated in Ethiris Server.

Not all camera models or video encoders support FTP or alarm detection. Some models have digital inputs that can be used to trigger an alarm. Some models have built-in motion detection that can be used as an alarm. Their common feature is that they have a more or less limited buffer for the number of frames that can be sent via FTP in the event of an alarm.

In Ethiris, this buffer is relatively large and is determined principally by the primary memory in the computer. It is not possible to say in advance precisely how much memory is available to Ethiris as it depends on the other programs running on the computer.

In our example, we will use a video server called Axis 241QA.

Instructions, Activate FTP in Ethiris Server

Before FTP can be used, it has to be activated in Ethiris Server.

1. **Start** *Ethiris Admin*.

2. **Double-click** the node *Obelix* in the treeview.

3. **Select** the tab *FTP* in the Ethiris Server panel.

4. **Check** the checkbox *Enable reception of video via FTP*.

5. **Let** *21* remain as *FTP-port.*

6. If you want, you can change the *Login name (Ethiris)* and *Password (Pass)*.

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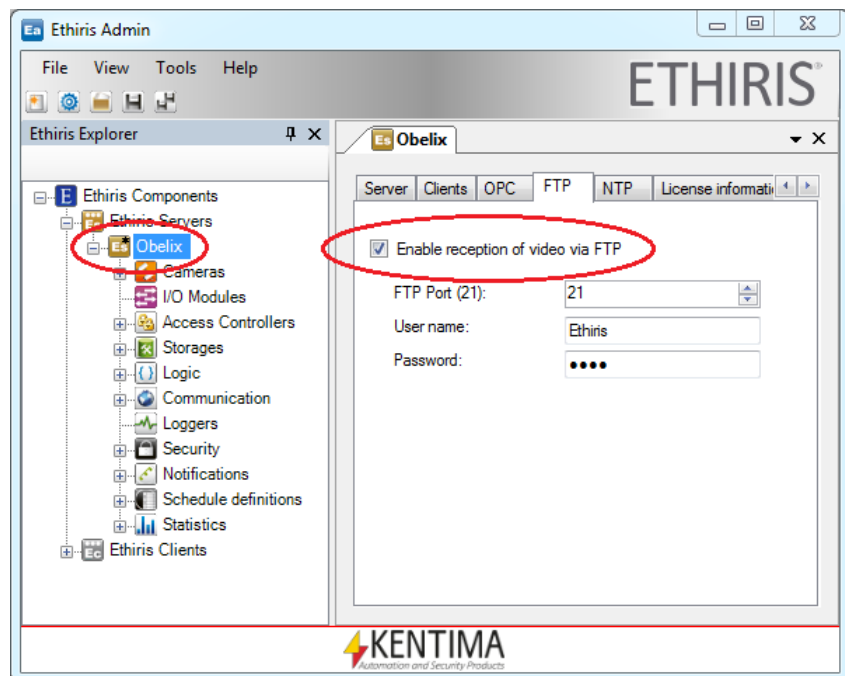*Automation and Security Products*

Figure 2.86 Activate FTP for Ethiris Server.

Instructions, Settings in the Video Encoder

When pressed, the pushbutton should connect inputs 2 and 3 on the green terminal block on the rear of the video server.

We will use a pushbutton to simulate an alarm. An Axis 241QA has 4 digital inputs, and we will have input no. 1 set via an external pushbutton. When the alarm comes via the digital input, the video will be sent via FTP to Ethiris. The video will be saved at a rate of 5 frames per second (0.2 seconds between frames), and we will send 20 frames before the alarm and 10 frames after the alarm.

In this exercise, we assume that an analog camera has been connected to video input no. 1 on the video server. Later in the exercise, we will add the video server to our configuration, but first, we will make the necessary settings in the video server.

We need to make several settings directly in the video server. For this, we use a standard web browser such as Internet Explorer.

1. **Start** your web browser and **enter** the IP address of your Axis 241QA video server, for example, *192.168.31.25*. Log on, if necessary.

2. **Select** *Setup* at the top right. Log on, if necessary.

3. To the left is a menu. **Select** *Event Configuration*.

4. In the submenu, **select** *Event Servers*.

5. **Click** the *Add FTP…* button.

6. **Enter** a *Name*, for example, *Ethiris*.

7. For *Network address*, **enter** the IP address of the computer on which your Ethiris server runs, for example, *192.168.31.1*.

8. **Leave** the *Upload path* blank.

9. **Verify** that the *port number* matches the setting in Ethiris under the *FTP* tab in the settings for the Ethiris server. This is *21* by default.

10. **Enter** the *user name* and *password* for the Ethiris FTP service according to the setting in Ethiris under the *Alerts and FTP* tab in the settings for the Ethiris server. By default, these are *Ethiris* and *Pass*.

11. **Leave** the other settings as they are.

12. It should look as in *Figure 2.87*. **Click** *OK* to save the new Event Server.

Figure 2.87 Dialog in the video server for adding an Event Server.

13. If everything has worked, a new line should have appeared on the list of Event Servers. See *Figure 2.88*.

Figure 2.88 A new Event Server has been added to the list.

14. **Select** *Event Types* in the menu to the left.

15. **Click** the *Add triggered…* button.

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16. **Enter** a *Name*, for example, *Pushbutton*.

17. In the *Triggered by…* section, **select** *Input ports*.

18. For *Input 1*, **select** *Active*.

19. *When triggered…* section, **check** the *Upload images* checkbox.

20. For *Select upload type*, **select** *FTP*.

21. For *Upload to FTP Server, Primary*, **select** *Ethiris*.

22. **Check** the *Include pre-trigger buffer* checkbox and **select** *5 seconds.*

23. **Select** a *Frame rate of 5 frames/second*.

24. **Check** the *Include post-trigger buffer* checkbox and **select** *2 seconds*.

25. **Select** a *Frame rate of 5 frames/second*.

26. *Base File Name* is important. This must display the *Cam<ID>*, where *<ID>* is a number that identifies the camera. As long as a camera has been added in Ethiris Admin and then saved to Ethiris Server, there is a unique ID for the camera. This ID can be found in the camera's general settings panel. Just double-click on the camera node in the treeview for the Ethiris Server's configuration. See Figure 2.89 on page 2:78 for information on where to find this ID. In this example, we assume that the camera has ID=3577. To avoid any problems with figures in the file name after the base name, we add an *underscore* after the base file name. It is then *Cam3577_*.
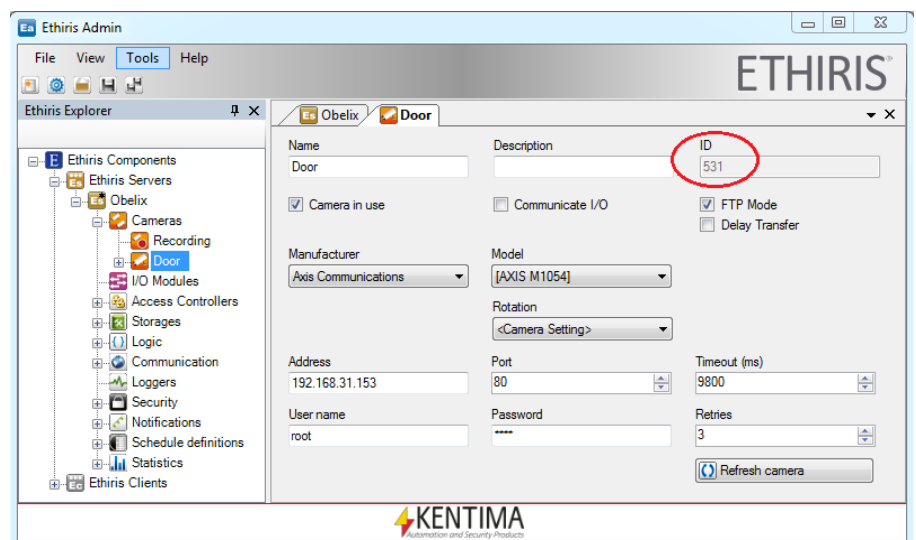

Figure 2.89 The camera ID is displayed in the camera's general settings panel.

27. **Check** the *Use event-specific image settings* checkbox.

28. **Leave** all other settings as they are.

29. It should look as in *Figure 2.90*. **Click** *OK* to save the new Event Type.

Figure 2.90 Dialog for adding a Triggered Event Type.

30. If everything has worked, a new line should have appeared in the list of Event Types. See *Figure 2.91*.
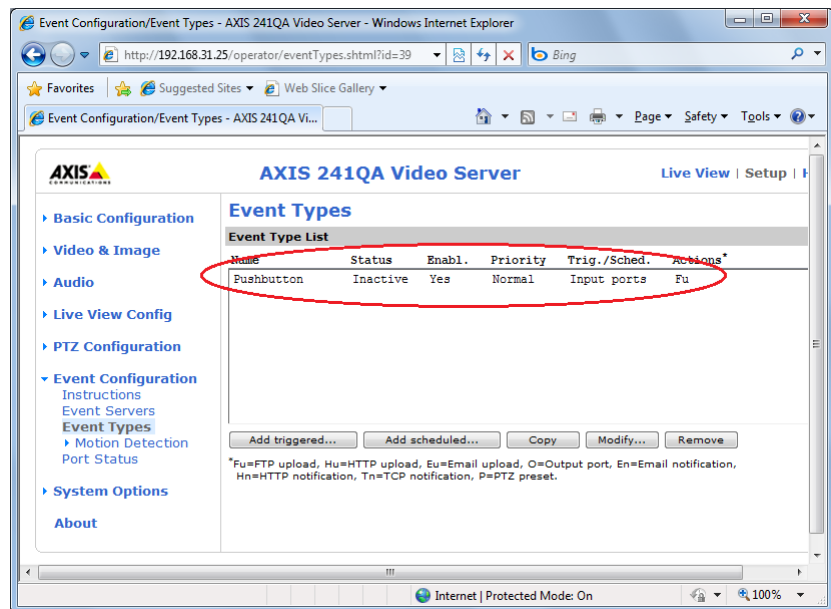
Figure 2.91 A new Event Type has been added to the list.

We have now finally finished the settings in the video encoder, and you can close the web browser.

Instructions, Adding a Video Encoder

As mentioned in the previous section, the camera ID must be included in the image name for the frames sent via FTP from the camera. This is so that Ethiris can work out which camera the frames belong to.

As we have not added the camera (video encoder) to the server configuration, we will do so now.
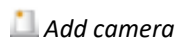
7. **Start** the *Ethiris Admin*.

8. In the treeview under *Obelix*, **double-click** the *Cameras* node.

Add camera

9. **Click** the *Add a camera* button. A new item is created in the cameras list.

4. **Enter** the *Name FTPTest*.

5. **Select** *Manufacturer Axis Communications*.

6. **Select** the *Type [Probe]*.

7. **Enter** the correct *IP Address*, for example, *192.168.31.25*.

8. **Enter** the *Login* and *Password* selected for the video encoder.

9. **Select** the whole line with the new camera and click the *Refresh camera* tool button.
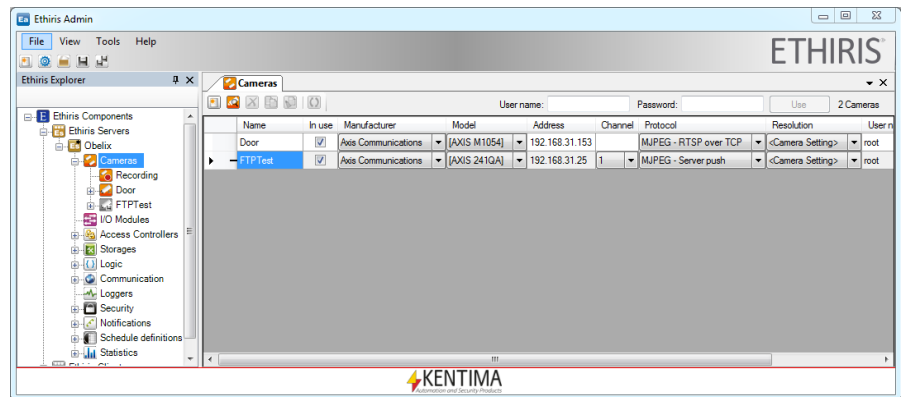
10. It may look as in *Figure 2.92*.

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Figure 2.92 Panel for adding a new video encoder.

The new video server has now been added to the treeview.

As mentioned earlier, we assume that the analog camera is physically connected to video input no. 1 on the video encoder.

1. **Leave** the *Channel* as *1*.

2. **Leave** *Protocol* unchanged as *MJPEG – Server push.*

3. In the treeview, a new node has been created under the *Cameras* node. **Double-click** this node *FTPTest* in the treeview to open the *Camera* panel. **Check** the *FTP Mode* box. This tells Ethiris that video is not to be retrieved continuously. If an alarm is detected in the camera/video encoder, the camera/video encoder will send video via FTP, and this is interpreted as an alarm by Ethiris, which will then create a record event that is displayed in the event list, and the recording is indicated in the timelines with red color.

4. The *Delay Transfer* box must also be checked in this case. This is because we selected *Include post-trigger buffer* in the settings for *Event type* in the video server. *Delayed transfer* specifies that the camera/video server does not send video via FTP until all video in the camera/video server, i.e., both the video in the *pre-alarm* buffer and those in the *post-alarm* buffer. Ethiris uses this information to calculate the time of the alarm.

5. See *Figure 2.93* for an example of what the panel should look like. Notice the *ID* and update the *Pushbutton* settings in the *Event Type List* for the video encoder if necessary. See *Figure 2.90* on page 2:79 for an example of how the dialog looks like.
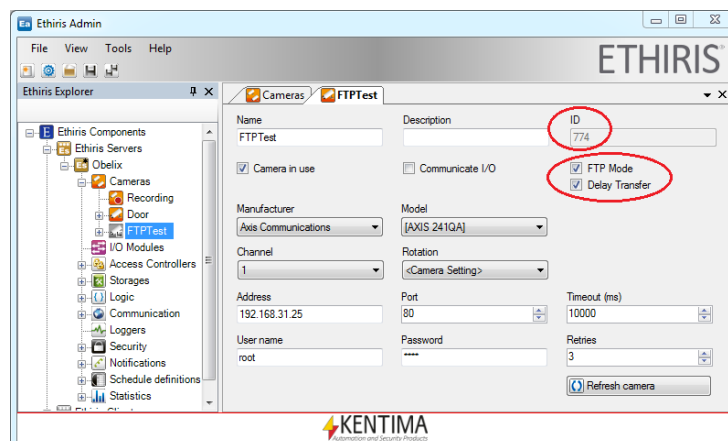

Figure 2.93 New camera with FTP mode selected.

6. **Open** the *Storage* panel for the new analog camera by **double-clicking** the *Storage* node in the treeview under the new camera.

7. It is important that the values for frame rate and the time before and after an event matches those selected in the camera settings in section *Instructions, Settings in the Video* on page 2:75. This information is used by Ethiris to calculate the time of the event. **Enter** *Frame rate 5 per second*, *Time before 5,* and *Time after* **2**. See *Figure 2.94* for an example of what it should look like. In this exercise, *Min. storage (MiB)* is not essential. Just ensure that it is sufficiently high to allow space for at least a few hundred frames. Please note that no expression for recording events needs to be entered in this case. The alarm detection is in the video server.
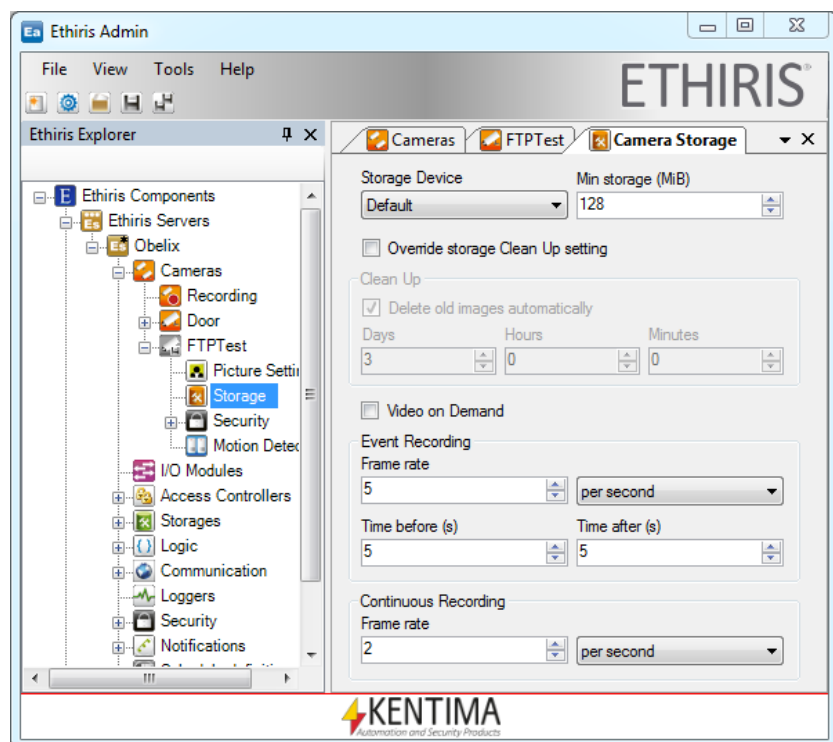
Figure 2.94 Settings for video storage.

8. **Click** the *save icon* in Ethiris Admin to send the new configuration to the server.

NB. Again, if the *ID* of the new camera is not *6837*, the *Base file name* in the video server has to be changed so that the name matches the *Cam<ID>_*. See *Instructions, Settings in the Video* on page 2:75.

All necessary settings in the camera and the server configuration should now be in place.

To be able to see more than just the event in the event list in the Ethiris Client, add the new camera to the client configuration.

1. In the client configuration's treeview in Ethiris Admin, **double-click** the *Obelix* node under the *Used Servers* node. In the panel, check the new camera *FTPTest*. See *Figure 2.95*.
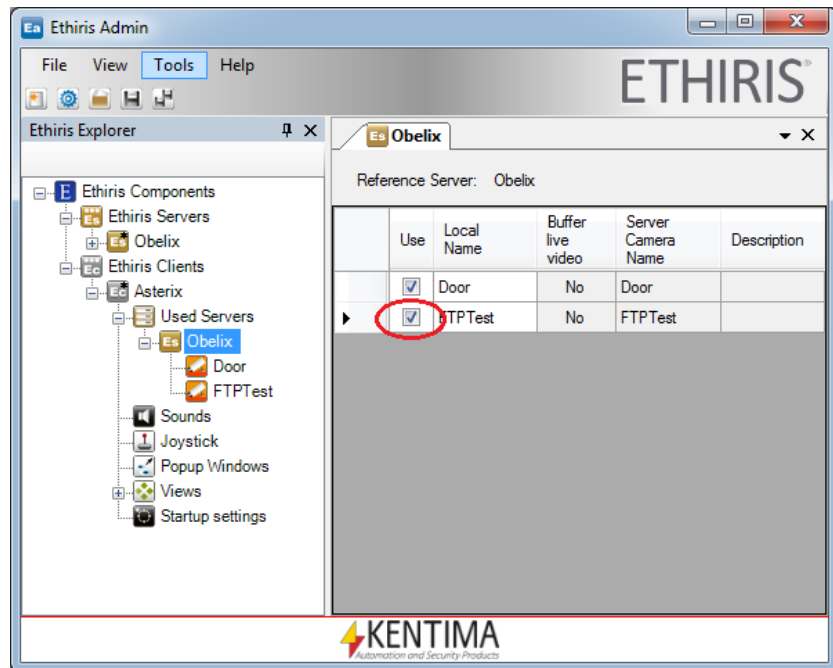
Figure 2.95 Add the new camera to the Ethiris Client configuration.

To test, generate an alarm by pressing the pushbutton. After approximately 2 seconds, an alarm should appear in the event list.

If everything works as expected, a new event should appear in the event list in Ethiris Client, each time the push button is pressed.
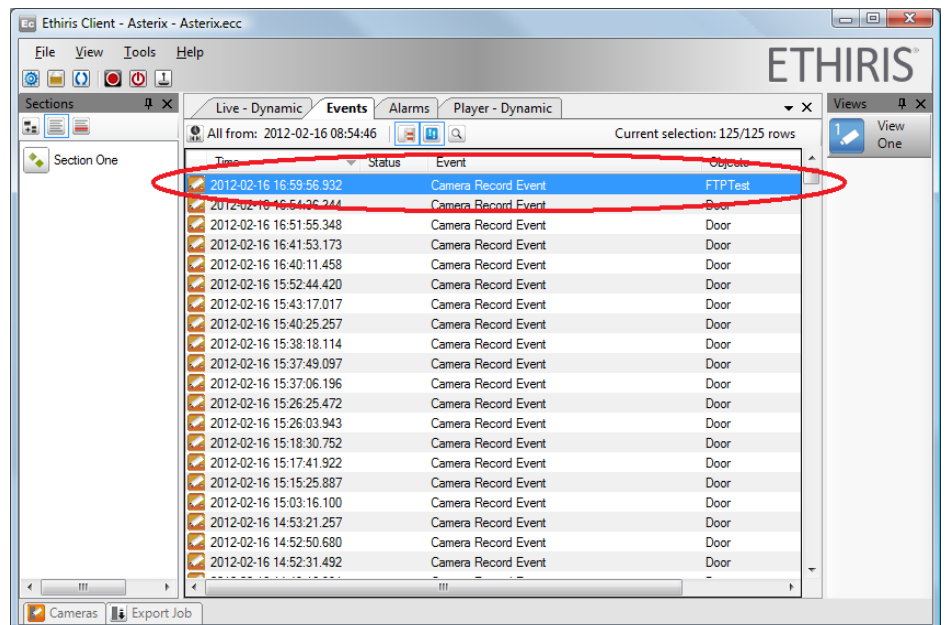
Figure 2.96 The FTP event appears in the Ethiris Client event list.

Simply double-click the event in the list to load the video player with the corresponding camera and time.

NOTE!. If the computer on which the Ethiris server is running has a firewall enabled, it may be necessary to open port 21, which is used to send files via FTP. In the video server in the dialog for *Event Server* settings, there is a button for testing the FTP server. In this case, the FTP server is the Ethiris server.

What have you learned?

In task 6, you have learned how to use FTP to generate an alarm from a camera or a video encoder.

This has the advantage of producing less strain on the network. The disadvantages are that the frame buffer is limited and that it is not possible to use Ethiris motion detection.

In the next task, we will learn how to disable cameras that are currently not physically connected.

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Task 6, Alarms via FTP from the Camera

Task 7, Disabling Cameras

In some instances, it may be practical to be able to configure a camera even if it is not physically connected to the system. This may be the case if you have several cameras that are moved around in an installation.

Let us say that you have 10 locations where you want to film, but only 6 cameras. You can configure 10 cameras and only enable the 6 cameras that are currently connected. If you want to move camera 1 to location 7, you disable camera 1 in the Ethiris Server's configuration and enable camera 7 instead. This means that you do not need to reconfigure the cameras every time they are moved. There may, of course, be a lot of settings for each camera, such as alarm conditions and the like.

In this task, we will disable the camera *FTPTest*, which we added in the previous task, and see what consequences this has in the client.

Instructions, Disabling a Camera

If Ethiris Admin has not yet been started, start it now.

1. **Open** the panel for the camera *FTPTest* by **double-clicking** the camera in the Ethiris Server's configuration tree.

2. **Uncheck** the *Camera in use* checkbox.
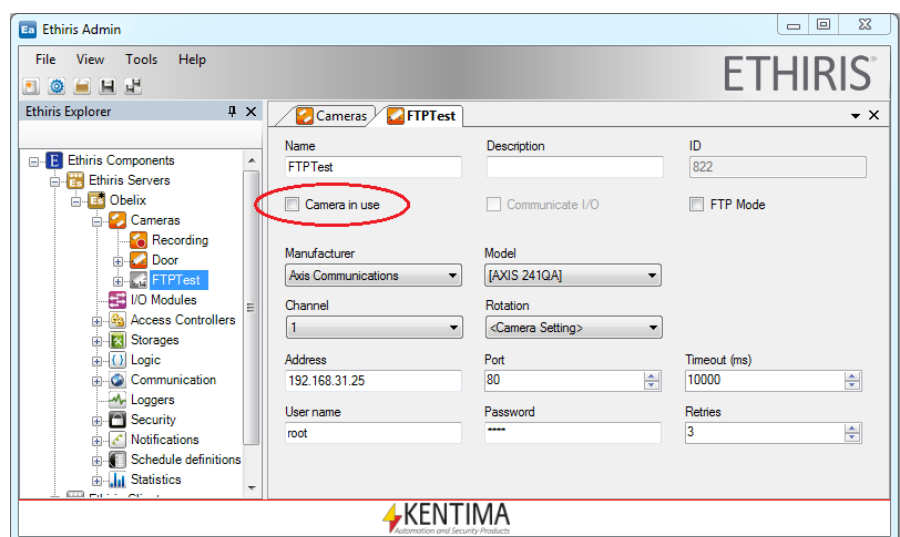
3. The panel should look as in *Figure 2.97*.

Figure 2.97 Camera disabled.

Click the *save icon* in the Ethiris Admin toolbar to save the configuration to the Ethiris server.

Instructions, a Disabled Camera in the Client

If Ethiris client has not yet been started, start it now.

1. Bring up the *Cameras* panel, by holding the mouse pointer over the *Cameras* panel's tab in the bottom left corner of Ethiris Client. The panel slides open. Disabled cameras are displayed in a grey, disabled manner. See *Figure 2.98*.
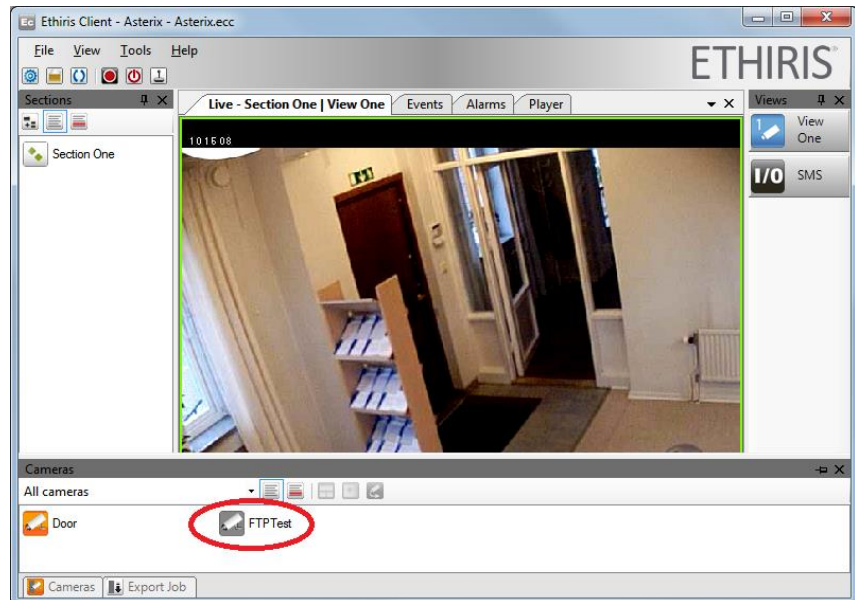
Figure 2.98 The camera FTPTest indicates that it is disabled.

2. **Select** the disabled camera and then **click** the *Show in Default Live Panel* button. See *Figure 2.99*
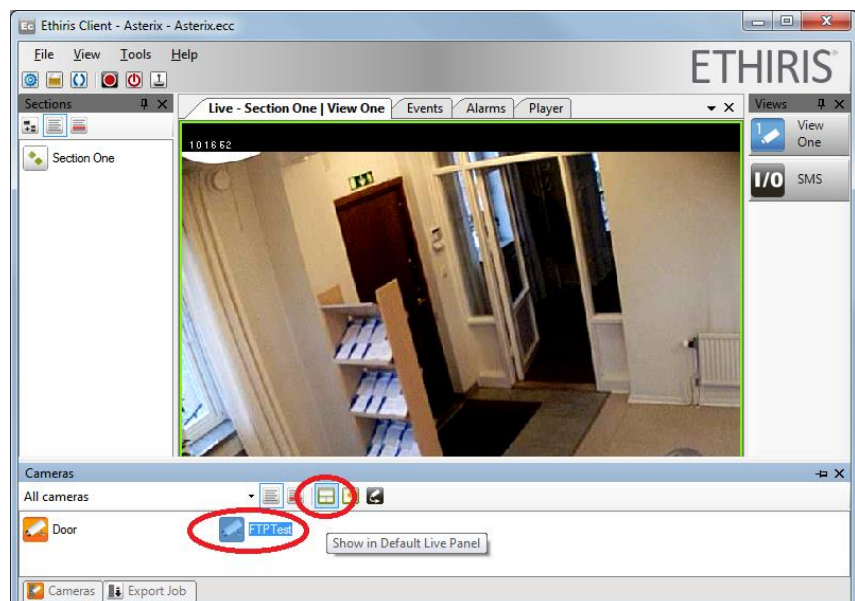
Figure 2.99 View a camera Live by selecting it in the Cameras panel.

No live video is displayed, but only a message that the camera is disabled. See *Figure 2.100*.

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Figure 2.100 A disabled camera live.

What have you learned?

In task 7, you have learned how to disable cameras that are currently not connected.

In the next task, we will learn how to use logon to enhance security.

Task 8, Security

There may be a need to limit user operations in Ethiris. For each user operation, you can, if you want, specify that the user who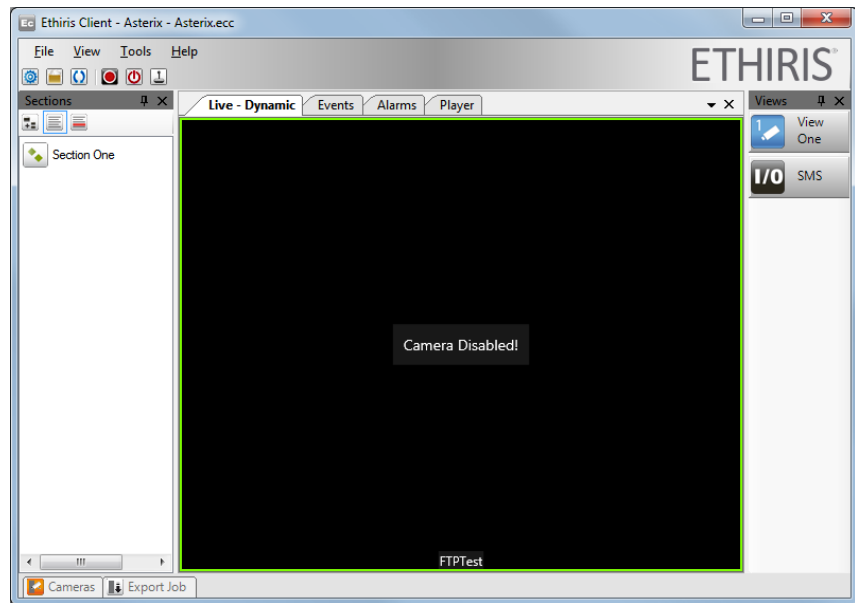 performs the operation must be a member of a certain user group in the Windows user system. This may be either a local user group on the computer running Ethiris Server or a global user group in a domain or Active Directory if the computers and users involved are members of a domain or AD. To be able to specify a user group in the domain, it is necessary for both the computer running Ethiris Server to be a member of the domain and the logon entered by the user to be for an account in the same domain.

No logon at all is required by default. Anyone can use Ethiris.

To access functions in Ethiris that requires a login, the user has to explicitly log on to the Ethiris Server where the privilege is defined. A user can logon both in Ethiris Client and in Ethiris Admin. The user enters a user name and password, after which Ethiris Server checks the password against the user name entered and checks that the user is a member of the group specified as a requirement in connection with the logon.

Ethiris can validate login and privileges in three different ways, and these can also be mixed:

- Log in as an Ethiris user. Users and user groups are created in Ethiris Admin, and validations of privileges are done against Ethiris user groups defined in the Ethiris Server configuration.

- Log in as a local Windows user. Users and user groups are administered using tools from the Windows control panel. Validation of privileges is done against Windows user groups defined on the server running Ethiris Server.

- Log in as a domain user. If the computer running Ethiris Server is a member of a Windows domain validation of privileges can be done against the users/user groups in the domain or Active Directory. These are administered by a Windows domain administrator.

Note! Full security functionality requires an *Advanced* license level in Ethiris. For all license levels, though, you can set a password for starting Ethiris Admin. You can also set privilege for *Show player in client*, *Show event list in client* and *Show alarm list in client*. This means that for all license levels it is possible to control who can see and change configurations in Ethiris Admin and also who can see recorded video, events, and alarms in Ethiris Client.

In this task, we will add two local Windows user groups, one for administrators and one for standard users. We will then create two Windows users, one administrator, and one standard user.

Instructions, Creating Groups and Users in Windows

1. **Open** the *Computer management* dialog. This dialog is under *Control panel\Administrative tools*. It can also be opened by right-clicking *Computer* in the *Start menu* and then selecting *Manage* in the popup menu.

2. **Select** the *Computer management (local)\System tools\Local users and groups\Users* node. See *Figure 2.101*.
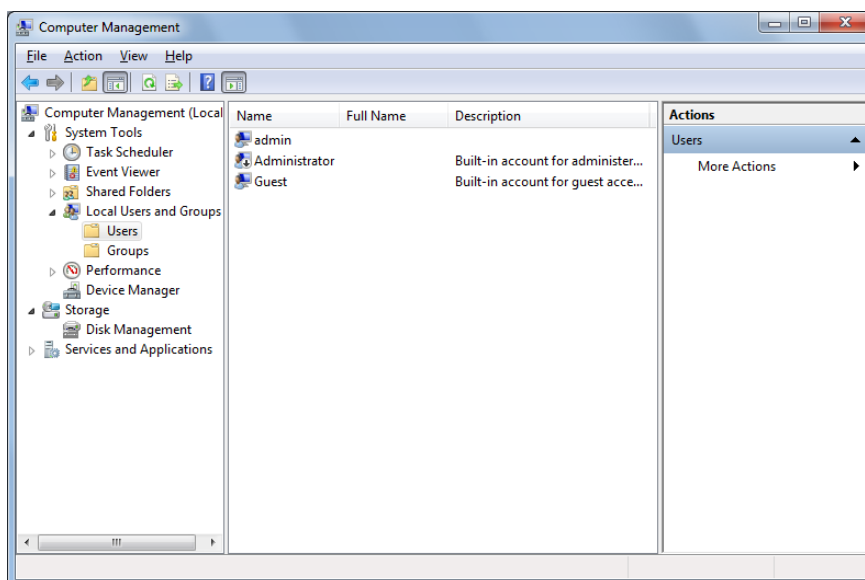
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Figure 2.101 Users in the Computer management dialog.

3. **Right-click** *Users* and **select** *New User…* in the popup menu.

4. **Enter** *EthirisAdmin* in the *User name* box. **Enter** a suitable *Description*. **Select** a *Password* and **enter** it again in *Confirm password*. **Uncheck** *User must change password at next logon*. Finally, **check** *Password never expires*. For an example of what it may look like, see *Figure 2.102*. **Click** the *Create* button to save the new user. Then **click** *Close* to close the dialog.
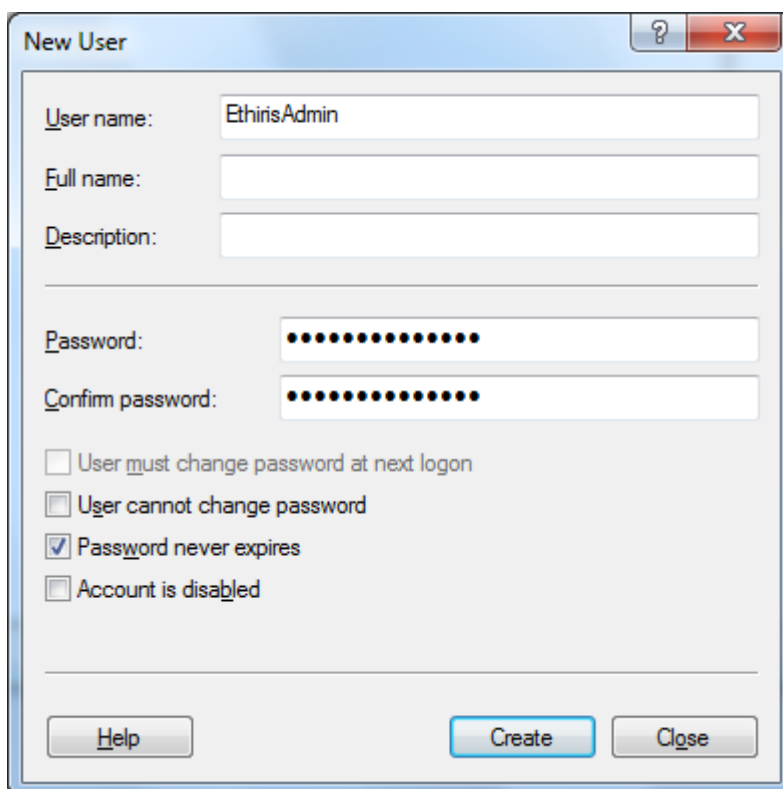

Figure 2.102 Dialog for adding a Windows user.

5. In the *Computer management* dialog, **right-click** *Groups* and **select** *New group…* in the popup menu.

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6. **Enter** *EthirisAdmins* in the *Group name* box. **Enter** a suitable *Description*.

7. **Click** the *Add…* button to add the user *EthirisAdmin*.

8. In the *Select Users* dialog, **click** the *Locations…* button. **Select** the computer on which the Ethiris server is installed. In our example, this computer is called *NEREID*.

9. **Enter** the name *EthirisAdmin* in the *Enter the object names to select* box. See *Figure 2.103*.
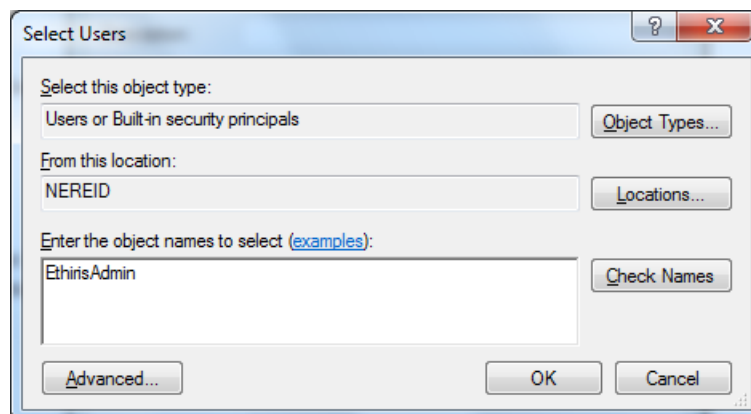

Figure 2.103 Dialog for adding a user to a group.

10. **Click** the *Check Names* button. If the name entered is found at the specified location, the dialog will look roughly like *Figure 2.104*.
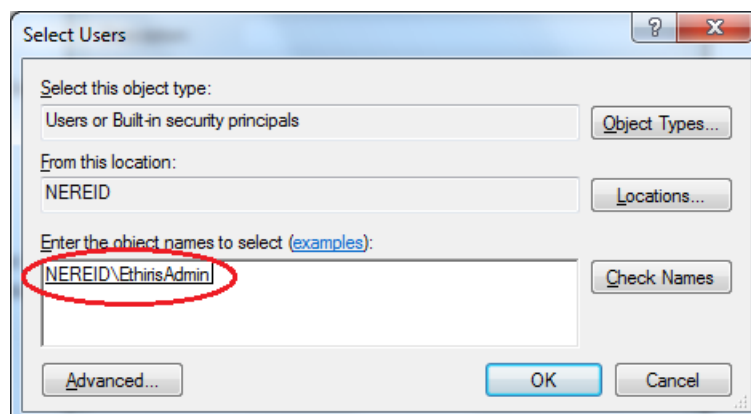

Figure 2.104 User name verified.

11. **Click** *OK* to add the user to the group.

12. The dialog should now look as in *Figure 2.105*. **Click** the *Create* button to save the new group.
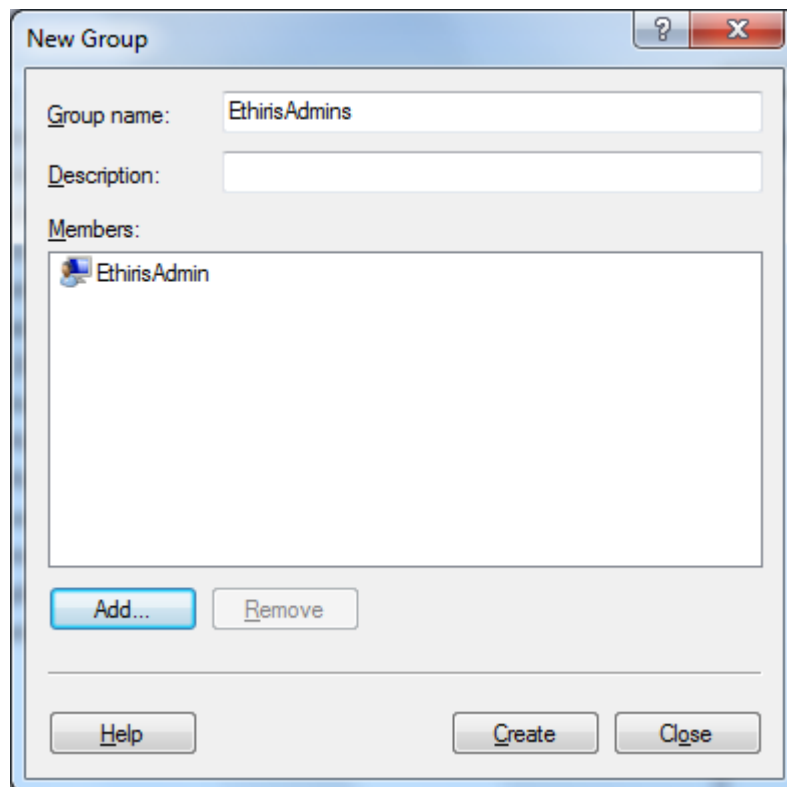
Figure 2.105 Dialog for adding a new group in Windows.

13. **Repeat** points 2 – 12 above to create a user called *EthirisUser* and a group called *EthirisUsers*. Add both the user *EthirisUser* and the user *EthirisAdmin* to the group *EthirisUsers*. This makes sense since an Ethiris administrator should be able to execute all operations that an Ethiris user can.

We have now created a group of administrators, *EthirisAdmins*, and a group of regular users of Ethiris, *EthirisUsers*.

We have also created a user that administrators of Ethiris must use when logging on, *EthirisAdmin*, and a user that regular users must enter, *EthirisUser*.

In the Ethiris server configuration, we will now limit the rights to updating the server configuration to users who are members of the *EthirisAdmins group.* We will also restrict the viewing of live video to users who are members of the *EthirisUsers* group.

Instructions, Security in Ethiris

1. **Start** Ethiris Admin.

2. In the Ethiris Server's configuration tree, under the server *Obelix*, expand the *Security* node and **double-click** the node *Privilege* to open the *Privilege* panel.

3. **Locate** the *Update Server Configuration* item on the list.

4. **Click** the button to the right of the *Required user group* text field for the *Update Server Configuration* item. See *Figure 2.106*.
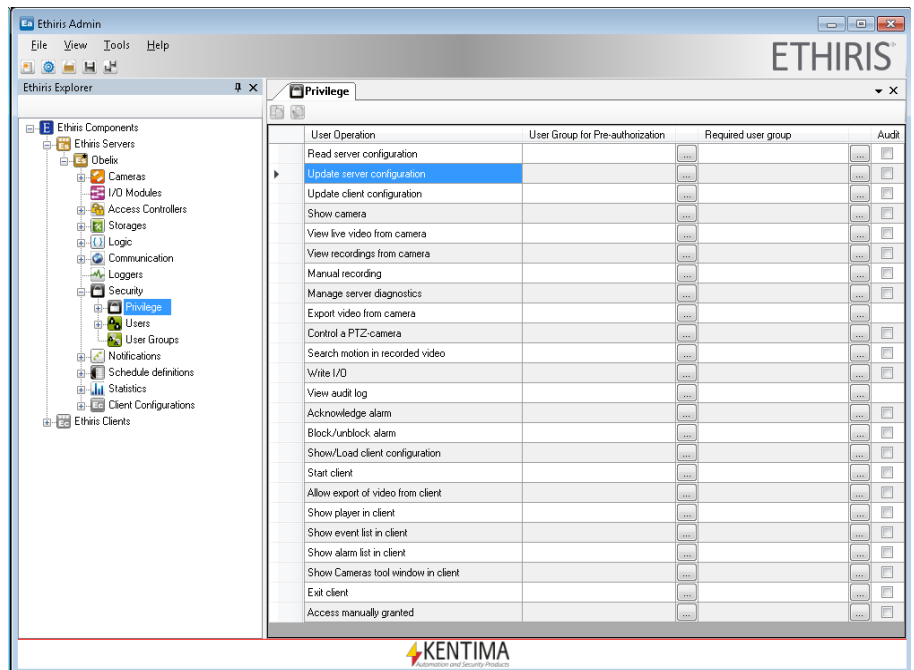
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Figure 2.106 Click the Browse button to select a user group.

5. In the *Browse for User Group* dialog, select the *Local users on <computer name> tab*.

6. **Select** the name *EthirisAdmins* in the *list of user groups*.

7. **Click** *Select* to add the name to the *Required user group* text field.

8. **Check** the *Audit* checkbox. This means that the system will save information on the time, the operation performed, who performed it, the client computer from which it was performed, and any other available information, depending on the operation performed.

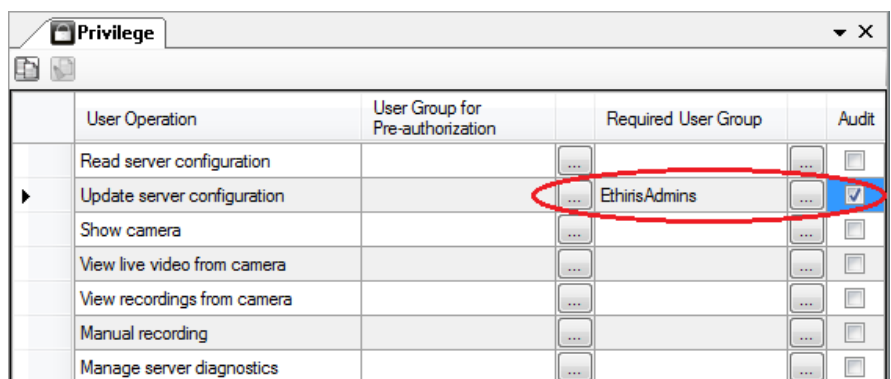9. The panel should look as in *Figure 2.107*.

Figure 2.107 Security settings in the Ethiris server's configuration with Update server configuration selected.

10. **Repeat** points 4 – 8 to add *EthirisUsers* as a required user group for the user operation *Show camera.*

11. The panel should look as in *Figure 2.108*.

Figure 2.108 Security settings in the Ethiris server configuration with Show camera selected.

Click the *save icon* in the Ethiris Admin toolbar to save the new configuration to the Ethiris server.

The next time the server configuration is saved, the login dialog is displayed. See Figure 2.109.
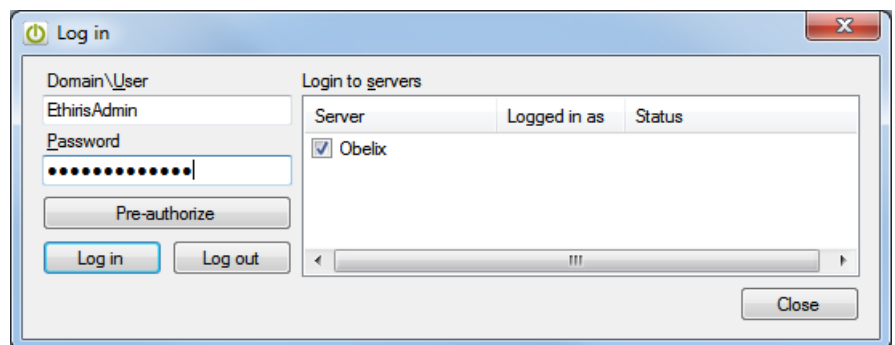
Figure 2.109 Ethiris logon.

You can also log on explicitly to one or several Ethiris Servers. In Ethiris Admin, right-click on the Ethiris Server in the treeview and select *Log in* in the popup menu. See *Figure 2.110*.
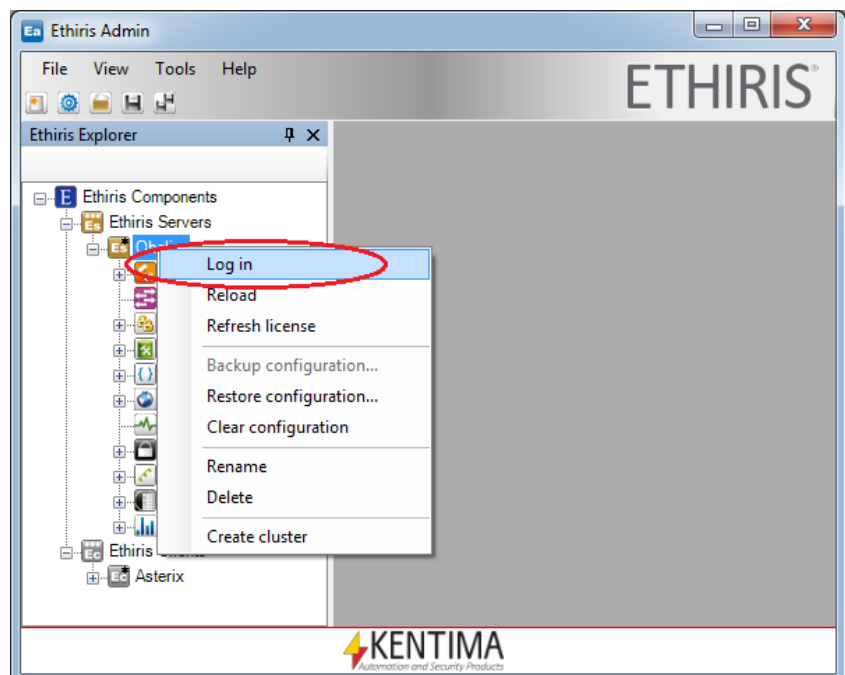
Figure 2.110 Explicit log on in Ethiris Admin.

In the log in dialog, status is displayed whether someone is already logged in to the server(s). See *Figure 2.111*.
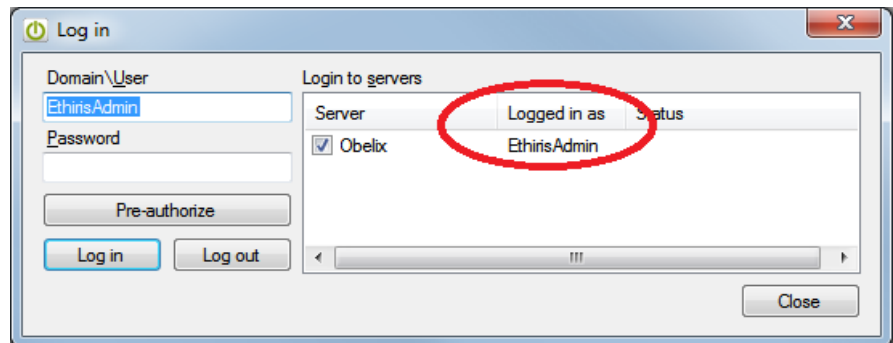
Figure 2.111 Log in dialog with someone already logged on to the Ethiris Server Obelix.

If you have logged on as a standard user, i.e., a user belonging to the *EthirisUsers* group and not *EthirisAdmins*, you will need to log on again if you want to save the server configuration.

In Ethiris Client you log on to one or several Ethiris Server by clicking the *Log in* button in the Ethiris Client toolbar. See *Figure 2.112*. The log in dialog looks the same as it does when logging in via Ethiris Admin.
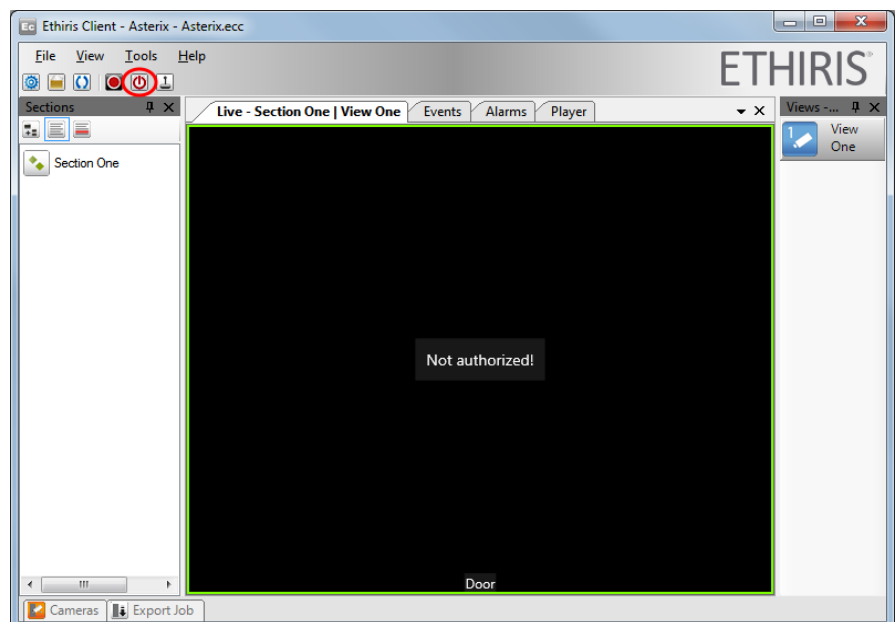
Figure 2.112 Log in button in Ethiris Client.

What have you learned?

In task 8 you have learned how to use Windows groups and users to enhance the security in Ethiris.

In the next task, we will learn how to troubleshoot Ethiris by using the logs in the system.

Task 9, Troubleshooting

We hope that this section will not need to be read very frequently. ☺ There may, of course, always be circumstances in which errors occur.

Severe system errors are automatically displayed as alarms in each Ethiris Client. Such errors can, for instance, be a communication error with cameras, access failure of storage, or Script runtime errors.

Whenever an alarm is active, this is clearly indicated in Ethiris Client by a flashing warning sign. In *Figure 2.113,* there is a communication error with the camera. This is indicated both in the live image and by the flashing warning sign.
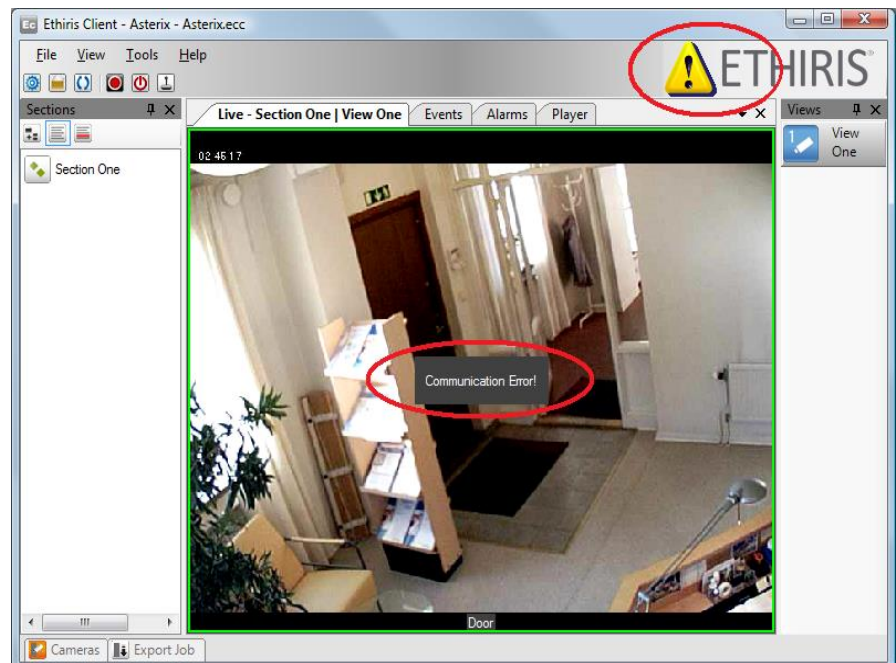
Figure 2.113 Active alarms are indicated in Ethiris Client by a flashing warning sign.

Active alarms are displayed in the *Alarm* list.
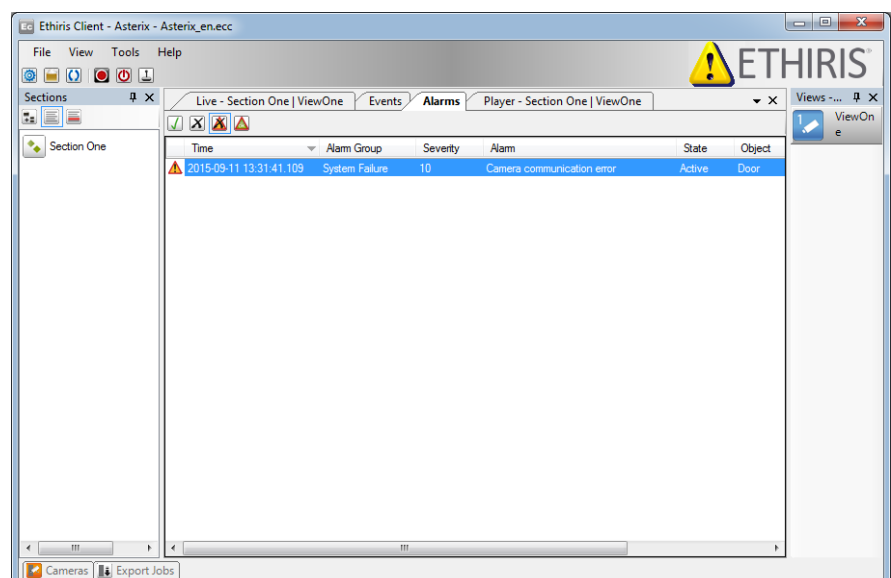
Figure 2.114 The Alarm list displays all active alarms.

Select one or more alarm(s) in the list and click the *Acknowledge* button to acknowledge the alarms. When there are no unacknowledged alarms left in the list, the warning sign stops flashing. When there are no alarms in the list at all, the warning sign disappears.
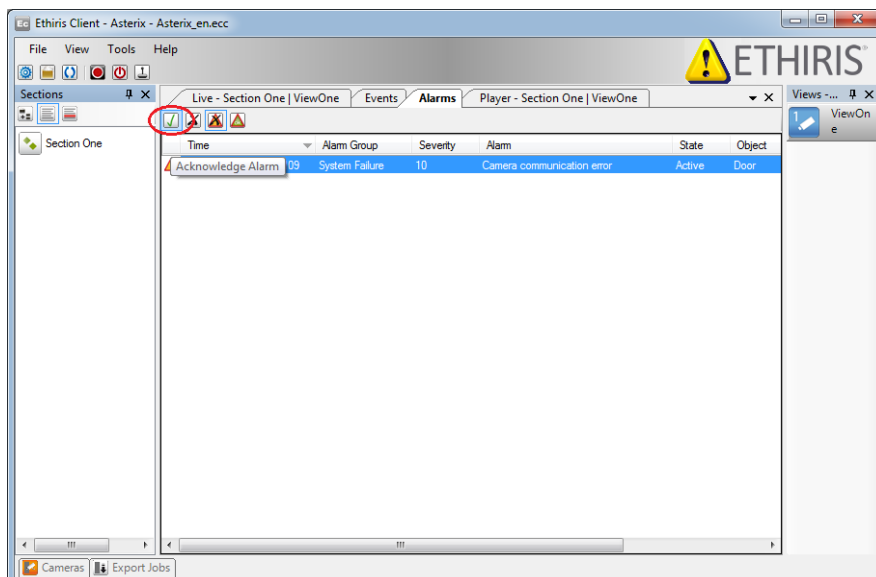
Figure 2.115 The Acknowledge alarm button in Ethiris Client.

There is also a log file for Ethiris Server that is stored on disk called *EthirisServer.log*. Ethiris Server also stores another five logs backward in time. These are called *backlogs*. These logs are called *EthirisServer1.log*, *EthirisServer2.log,* and so on. These log files log some system info at startup and then mainly log events that are considered not normal.

In addition to these six logs in the server, it is possible to obtain a more detailed log, *EthirisServerTrace.log*. This log file is much more verbose and logs a lot of information about what is going on in the server. This file can be very helpful if something seems to not work according to your desires.

All the logs are stored in the same directory as where EthirisServer.exe is installed. As a default on a 64-bit system, this directory is *C:\Program Files (x86)\Kentima AB\Ethiris*.

There is no client tool for viewing the log files, but they can easily be opened in Notepad or other suitable text editors.

EthirisServer.log is automatically created, and a backlog is created every time the Ethiris Server is restarted. The trace log, *EthirisServerTrace.log*, is nowadays active per default and is also created automatically. The setting for this can be found on the *Log Files* tab in the Ethiris Server panel in Ethiris Admin.
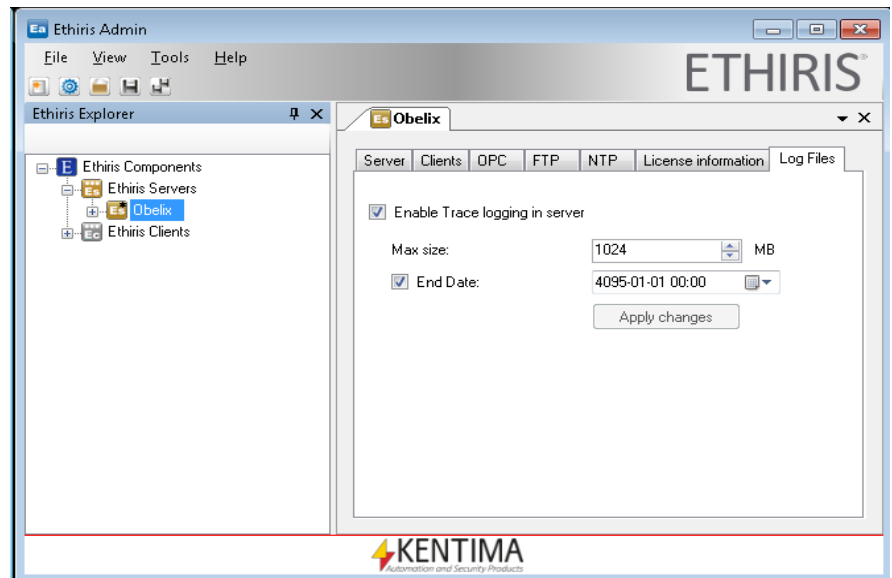
Figure 2.116 Settings for Trace logging in Ethiris Server.

What have you learned?

In task 9, you have learned about various alarms and logs in Ethiris.

The server has one normal log and five backlogs. In addition to these, you have the trace log. That produces a very detailed log file.

In the next task, we will learn how to use the control panel in Ethiris Client.

Task 10, Control panel

It is possible to display a control panel in specific camera views in the client's live part and also in the playback view in the client's player.

Instructions, Displaying the control panel

We will start by displaying the control panel in our 1x1 live view that we call *Door*.

1. **Start** *Ethiris Client* if you have not already done so.

2. **Select** *Live* and the client view *Door*.

3. **Right-click** anywhere in the camera view to open the menu.

4. **Select** *Always* under *Controlpanel visibility* on the menu. See *Figure 2.117*.

Scale Mode	▶	
✓ Digital PTZ		
Controlpanel visibility	▶	Always
Controlpanel placement	▶	✓ On demand
✓ Show Camera Name		Never
Show Center Cross		
Instant Replay	Alt+I	
Show Camera in Player		
Show View in Player		
Freeze image	Alt+F	
Buffer live video		
Talk	Alt+T	
Save Image as...		
Print Image...		

Figure 2.117 Popup menu for a camera view in live.

A control panel now appears at the bottom of the camera view. See *Figure 2.118*

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Figure 2.118 A control panel is displayed at the bottom of the camera view.

We will now take a closer look at the components of the control panel.

Figure 2.119 Maneuver panel in detail.

Starting from the left, we have the following functions:

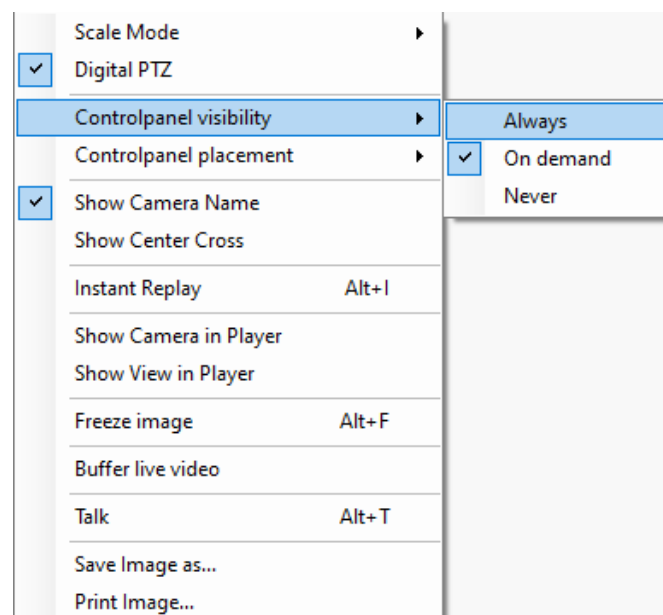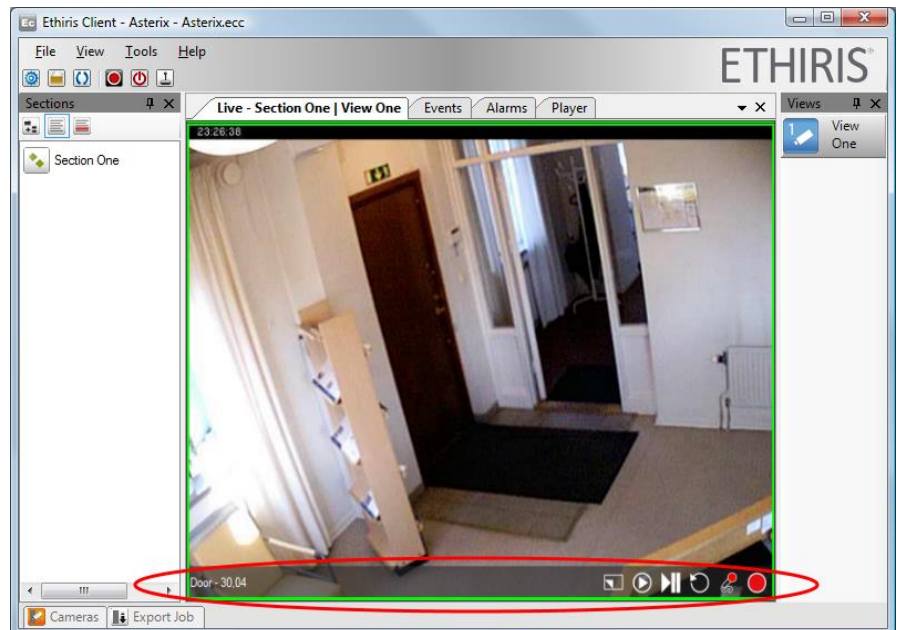|	
Kamera name - frame rate	The camera name is always displayed to the left. To the right of the camera name, the current frame rate is displayed. When the control panel is displayed in player views, instead of the frame rate, the timestamp of the current frame is displayed here
Show/hide overlay on cameras	Hides/shows overlay on cameras. This means that you can hide all items drawn on top of the camera image if they cover something in the image you want to see. What is hidden is the camera name, timestamp (in player views), and all interaction objects (buttons, LEDs, etc.). This button is shown both in live view and player views.
Show camera in player	Loads the current camera in the player. This button is only shown in live views.
Maximize/restore view	Is only visible if the view contains more than one camera view. Selecting the *Maximize view* menu item has the same effect as double-clicking the camera view. When active the camera view is enlarged to the whole view area, and when inactivated, the view is restored to the origin. This button is shown both in live view and player views.
Freeze image	Is used to simply freeze the current frame. Live video is temporarily stopped until *Freeze image* is released. When a camera is frozen, it is indicated by a flashing pause sign in the upper right corner of the image. It is also indicated by a tick mark to the left of the *Freeze image* menu item in the popup menu. The purpose of the freeze is to have better control over which image you get when you want to save or print an image from live video. This button is only shown in live views.

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Instant replay	Shows the current camera in an instant replay window. This button is only shown in live views.
Talk	Activates/inactivates the microphone and sends the audio the then connected audio devices of the current camera. This button is only shown in live views.
Manual event recording	Starts an event recording for the current camera. This button is only shown in live views.
Search motion	Opens the dialogue *Search motion* for the current camera. This button is only shown in player views.
Export selection	Opens the dialogue *Export* with the current camera and the current timespan selected. This button is only shown in player views.

What have you learned?

In task 10, you have learned how to use the control panel in Ethiris client.

In the next task, we will learn how to use a PTZ camera, both in the Ethiris client and automatically via the Ethiris server.

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Task 11, PTZ

In this exercise, we will use a PTZ camera from Axis called P5534. This camera has a 360° pan function and 90° tilt function. The camera has an 18x optical zoom.

The first thing we will do is to add the camera to our server configuration. For information on how to add a camera to Ethiris Server's configuration, see *Add a camera* on page *2:16*.

NOTE!. Do not forget to select the right type of camera. If you select a type that does not have a PTZ function, these functions will not be available in the client.

NOTE!. Do not forget to select the correct *Rotation*. Axis P5534 is a camera that is typically mounted upside down. This is considered to be *Rotation = 0*. In my case, however, the camera is located on a table and therefore needs to be rotated 180 degrees in the camera's *Picture Settings*.
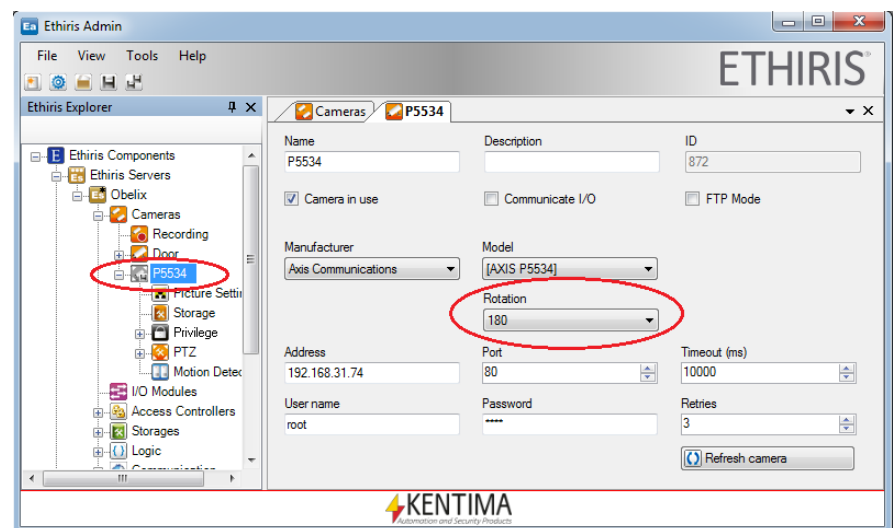
Figure 2.120 The PTZ camera is rotated 180 degrees.

When the camera is in the server configuration, all you need to do is select it in the client configuration as well.

Instructions, Selecting a new camera into the client configuration

1. After adding the PTZ camera to Ethiris Server's configuration, do the following, in the Ethiris Client's configuration tree, **double-click** the *Obelix* node under the *Used Servers* node. The newly added *P5534* camera should appear in the list of cameras. See *Figure 2.121*.
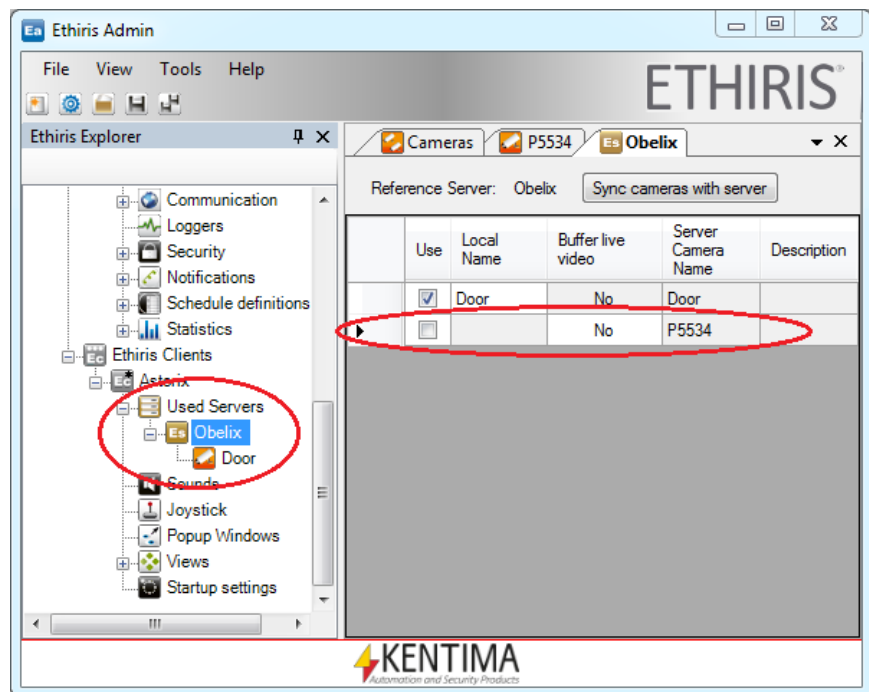
Figure 2.121 The list of available cameras in the client configuration contains a new camera.

2. **Check** the *Use* column for the new camera P5534. Notice how the new camera appears in the configuration treeview, see *Figure 2.122*. An alternative is to press the button "Sync cameras with server".
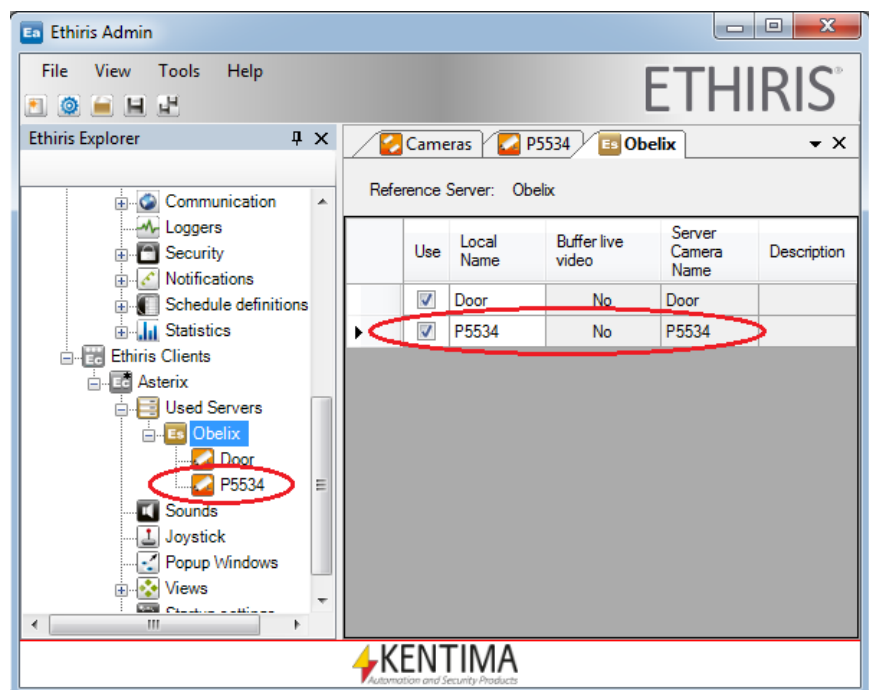
Figure 2.122 The new camera is selected in the client configuration.

Now the new camera is available everywhere in Ethiris Client, e.g., in views and the Player.

Feel free to create a new view containing the new camera. For instructions on how to do this, please refer to *Creating a section* and a view on page *2:24*.

As default for a PTZ camera, *optical mode* is selected. You can toggle between optical/digital PTZ by right-clicking in the camera image and select *Digital PTZ* in the popup menu.

Depending on which combination currently is selected, various PTZ operations are available.

The following operations are available for PTZ cameras:

Centre camera frame on mouse click – If you click with the middle mouse button in the frame, the frame is centered on the point you clicked. This works provided that you have not reached the limit for how much the camera can rotate. The command works both optically and digitally.

Pan/tilt continuously when the left mouse button is held down – This command works only with optical PTZ. If you click and hold the left mouse button down in the frame, the camera is moved in the direction of the location of the mouse pointer in relation to the center of the frame. The further from the center the mouse pointer is, the faster the camera moves in that direction. When you let the left mouse button go, the camera stops moving. In digital mode and when the picture is zoomed in, you can drag the picture around by a click-drag-release operation with the left mouse button.

Zoom by drawing a rectangle – By drawing a rectangle with the right mouse button, you can zoom in on the area of the rectangle. The zoom takes place so that the entire area covered by the rectangle is displayed in the frame. This means that parts of the frame can be displayed even if they are outside the rectangle. The command works both optically and digitally.

Zoom by scroll wheel – Zoom in by scrolling forwards and zoom out by scrolling backward. Each click on the scroll wheel is equivalent to one zoom step. The command works both optically and digitally.

Zoom continuously by clicking and holding the middle mouse button and moving the mouse forward to zoom in and move the mouse back to zoom out.

Now it is time to test the various PTZ commands.

Instructions, PTZ in Ethiris Client

1. **Bring up** the new PTZ camera in a live view in Ethiris Client.

2. **Click** anywhere in the picture so that the camera view receives focus (green rectangle around the camera view) if it does not already have focus.

3. **Move** the mouse pointer. Verify that the mouse pointer icon changes based on where in the picture it is.

4. **Click and hold down** the *left mouse button* to the right of the center of the picture (the mouse pointer is a right arrow). **Verify** that the camera moves to the right as long as the mouse button is pressed.

5. **While still pressing** the *left mouse button*, **move** the mouse pointer to the left of the center. Verify that the camera changes direction.

6. **Try moving** the mouse pointer around while still pressing the left mouse button. **Notice** that the camera moves faster the longer from the center, the mouse pointer is. When holding the mouse pointer near the center of the picture (mouse pointer is an arrow cross), the camera stops moving.

7. **Release** the mouse button to stop the camera.

8. Now, **click** somewhere in the picture with the center mouse button. **Verify** that the picture is centered on the clicked point.

9. **Try** to zoom with the *scroll wheel*. Scroll forward to zoom in and scroll backward to zoom out.

10. **Switch** to *digital* PTZ mode by **clicking** the *Digital PTZ* in the popup menu.

11. **Try** out the different PTZ commands a little and verify that they only affect the frame digitally.

12. **Switch** back to *optical* PTZ mode.

We have now learned how to control a PTZ camera manually from the client. The next step is to learn how to control the camera automatically. To be able to control the camera automatically, we have to define *Preset Positions*.

Instructions, Creating Preset Positions

Preset positions are named optical PTZ positions for a camera. Many preset positions can be created for each camera.

1. **Start** *Ethiris Admin*.

2. In the Ethiris Server's configuration tree, **locate** the PTZ camera P5534 and **click** the + sign to the left of the camera name to expand the tree. **Click** the + sign to the left of the *PTZ* node and finally **double-click** the *Preset Positions* node.

3. Using the commands you learned in the previous section, **move** the camera to the preferred position.

4. To save the position under a name: **Click** the *Add a new Preset position* button. When the new position is created, the current PTZ-position is read from the camera and is automatically copied to the columns *Pan, Tilt,* and *Zoom*.
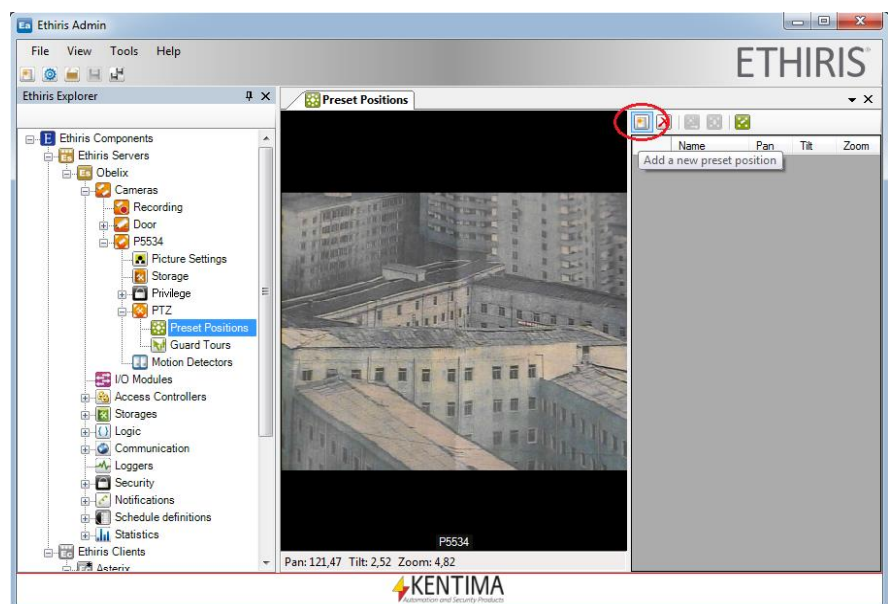

Figure 2.123 Add a new Preset position.

5. **Enter** a descriptive name in the *Name* column, for example, *City*.

6. If you want to alter the coordinates for a position after it is created, you can simply move the camera to the desired position, select the desired preset position in the list and then click the *Use current position* button. See the red ring in *Figure 2.124*.
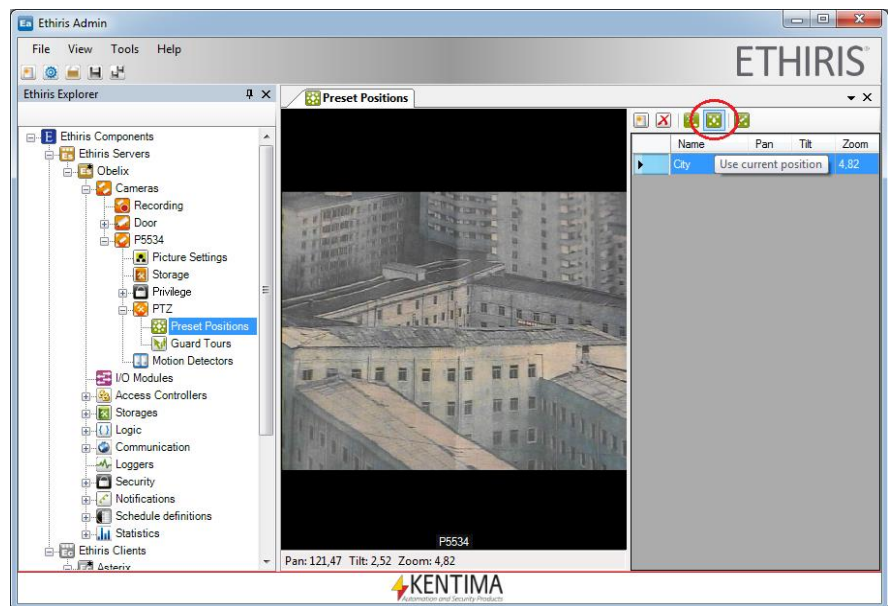
Figure 2.124 Use the current position from the camera.

7. **Add** another 2-3 positions. When you are happy, **click** the *Save* icon in Ethiris Admin's toolbar to send the new configuration to Ethiris Server.

We can enable the new preset positions manually from Ethiris client.

1. **Start** Ethiris Client if you have not already done so.

2. **Select** a live view containing the *PTZ* camera.

3. **Right-click** anywhere in the camera picture to open the menu. **Move** the mouse pointer to the menu item, *Go to Preset*. All the preset positions that you defined earlier are now displayed. It may look as in *Figure 2.125*.

4. **Try out** a few different positions from the client.
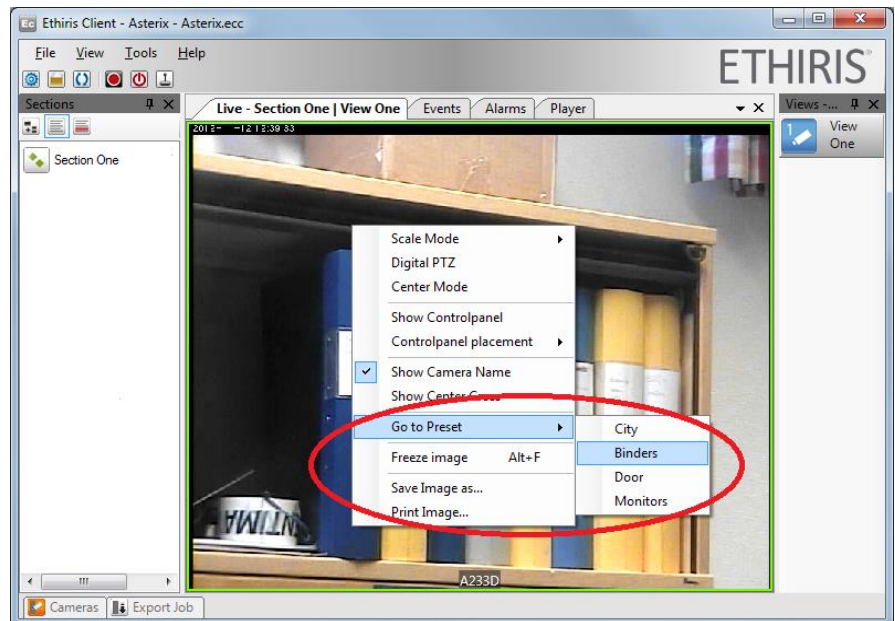
Figure 2.125 Example of a selection of preset positions in Ethiris Client.

Instructions, Controlling the PTZ Camera Automatically

We will now introduce a little automation.

We will use the pushbutton that is connected to the video server and we will use motion detection to move the PTZ camera to two different pre-set positions.

1. In Ethiris Admin, **bring up** the *Script* panel. For clarity, we have removed all previous scripts. To do so, simply select all scripts and press the *Delete* button.

2. In the *Variable Browse* panel, **select** one of the preset positions and **double-click** the *Preset* signal in the lower pane. See *Figure 2.126.* The signal is copied into the script.

Figure 2.126 A pre-set position has been selected.

3. **Add** an *equals* sign " = " to the end of the line.

4. In the *Variable Browse* panel, **locate and select** the camera P5534.
   In the lower pane, **double-click** the *Input1* signal. Add a *semicolon ";"* to the end of the line.
   It may now look like
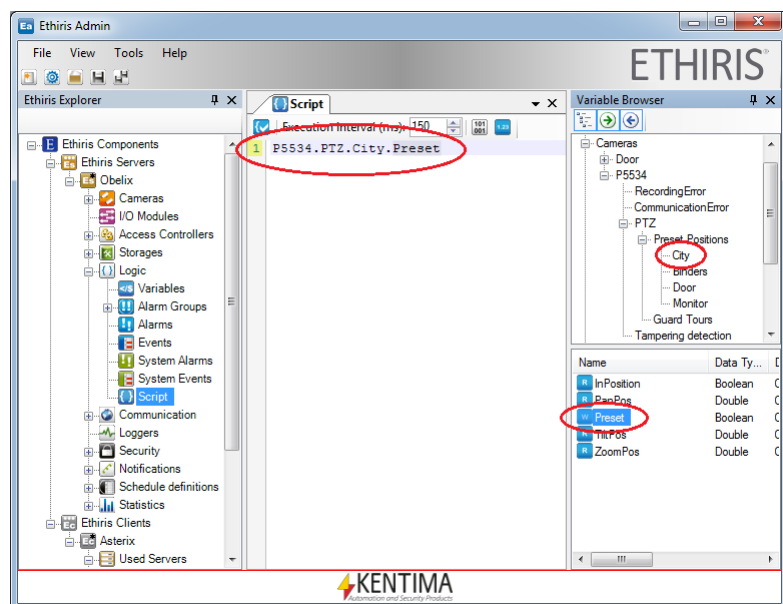
   ```
   P5534.PTZ.City.Preset = P5534.Input1;
   ```

5. Now **repeat** the above for one of the other Preset signals, but with the camera Door's *Motion Detector* as the condition instead.
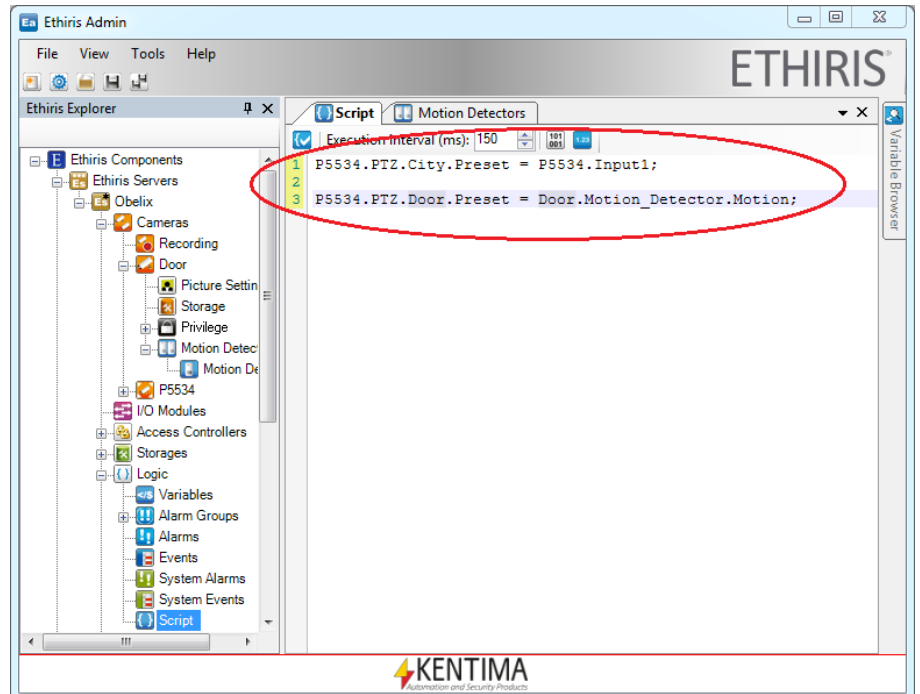
Figure 2.127 A couple of expressions have been entered to move the PTZ camera to different preset positions.

6. Ethiris needs information about status changes on digital inputs from cameras and/or video encoders. To enable this feature, you need to check the *I/O* box for P5534, see *Figure 2.128*.

7. When you have linked the required preset output signals to suitable input signals, **click** *Save* icon in the Ethiris Admin toolbar to send the changes to Ethiris Server.

Figure 2.128 Check the I/O box to read digital inputs in Ethiris.

Now try to enable the various input signals to see that the camera moves between the different preset positions correctly.

Remember that different input signals can be combined to achieve the desired effect. A common example involves adding a schedule signal with *&&* to enable the output only during specific times.

In the next example, we will use our preset positions to create a Guard Tour list.

Instructions, Creating a PTZ Guard Tour

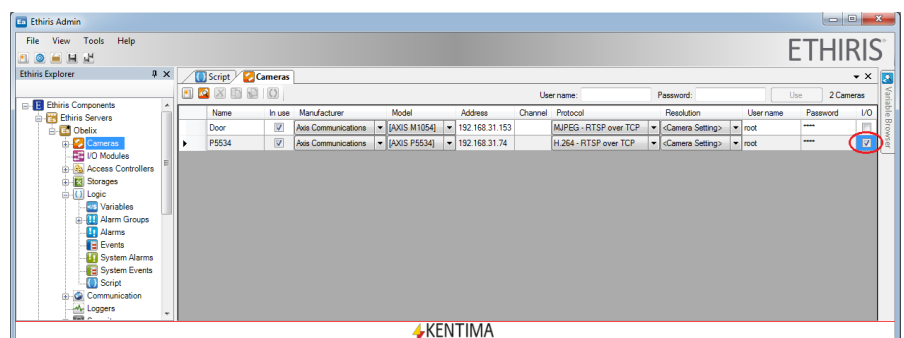You can create many guard tours for each PTZ camera. Each list automatically generates two output signals, one called *Sequential* that is used to run the tour according to the list order, and one called *Random* that is used to tour between the preset positions in the list in random order.

1. **Start** *Ethiris Admin***.**

2. In the Ethiris Server's configuration, **locate** the PTZ camera *P5534* and **click** the + sign to the left of the camera name to expand the tree. **Click** the + sign to the left of the *PTZ* node and finally **double-click** the *Guard Tours* node in the treeview.

3. **Click** the *Add a new Guard Tour* button at the top left of the panel.

4. **Enter** *PTZ Tour* in the *Tour Name* column.

5. In the treeview, a new node appears under the *Guard Tours* node. **Double-click** this new *PTZ Tour* node to open the *Guard Tour* panel.

   To the right in the panel, there is a list with the available preset positions. See *Figure 2.129*. Above this list is a list with the selected presets that shall comprise the Guard Tour. This second list is empty in the example below. Hence the angry red color that indicates that the configuration is not complete. No point in having an empty tour!

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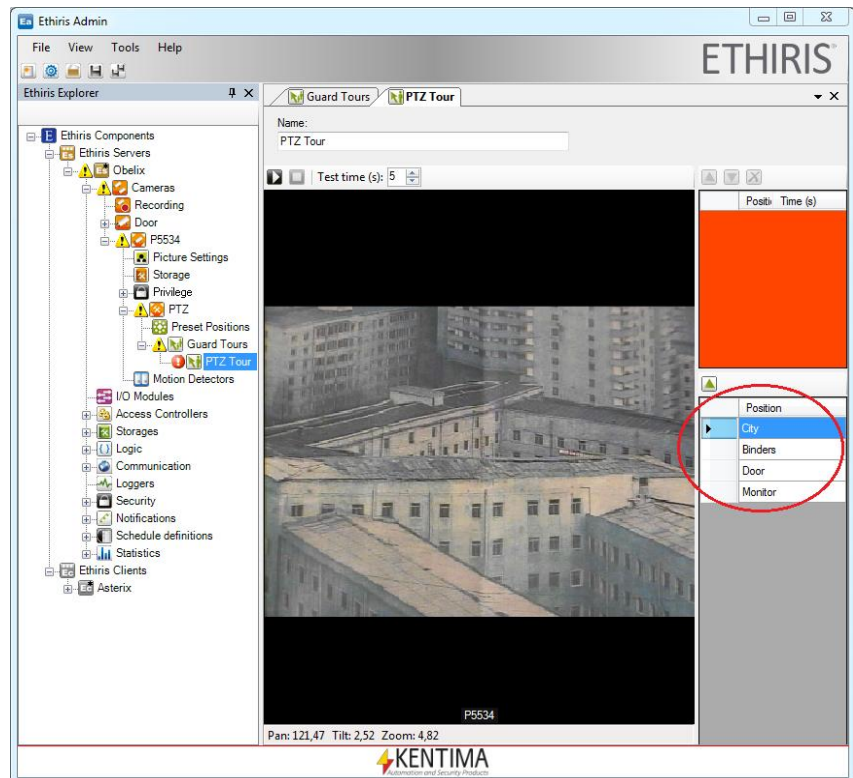
Figure 2.129 The list with available Preset positions.

6. **Double-click** desired pre-sets to select them into the Guard Tour list.

   You can select the same position several times. The current list is displayed in the top list.

   Delete positions by selecting the corresponding row in the list and then click the *Delete* button.

7. If you want to have time other than 10 seconds in any of the positions, simply change the value directly in the list. An example of a Guard Tour is *Figure 2.130*.

Figure 2.130 A Guard Tour list has been created.

8. **Click** the *Save* icon in the Ethiris Admin toolbar to send the changes to the Ethiris server.

To test our new tour, we will add a function button to the client to activate the tour.

1. In the client configuration's tree in Ethiris Admin, **right-click** on the *Section One* section under the *Views* node and **select** *New->Button->I/O* in the popup menu.

2. **Enter** *Tour* as name directly in the treeview.
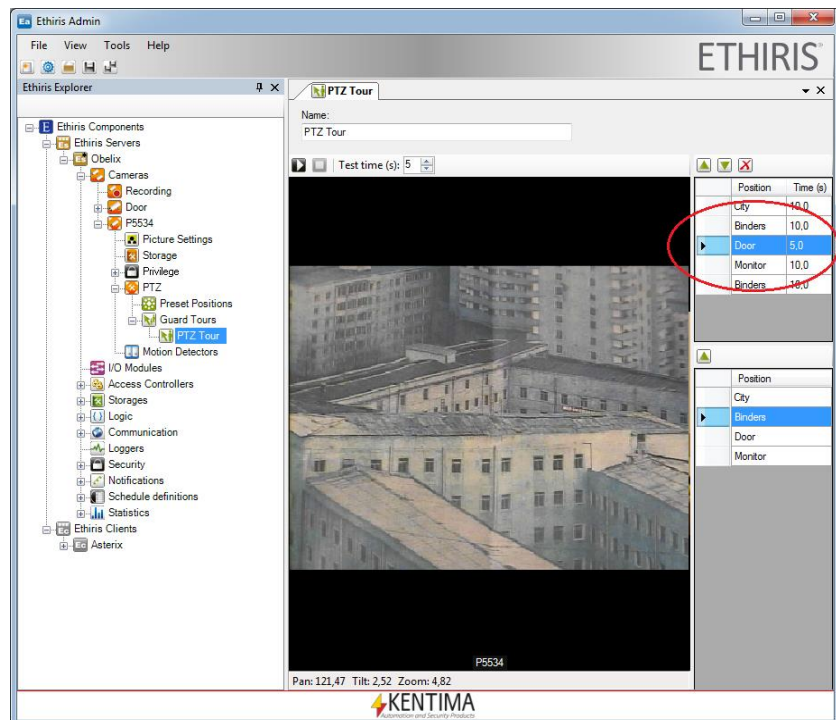
3. **Double-click** the new node *Tour* in the treeview to open the corresponding panel.

4. **Browse** *IO-signals* and **select** the P5534*.PTZ.PTZ_Tour.Sequential* signal in the list. It may look as in *Figure 2.131*.

5. Finally**, click** the *Save* button in the Ethiris Admin toolbar to save the new client configuration.

6. **Start** *Ethiris Client* if not already started.

7. **View** the camera *P5534* live so that you see video from it.

8. **Press** the new *Tour* button so that it is depressed. It may look as in *Figure 2.132*. The PTZ camera will now start its tour and keep going until you release the *Tour* button again.
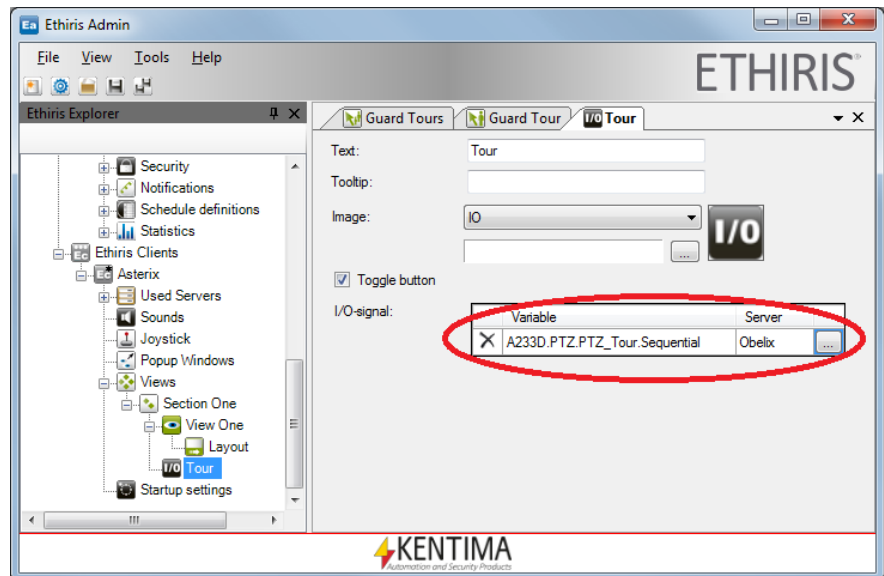
Figure 2.131 Variables have been selected for the new button.
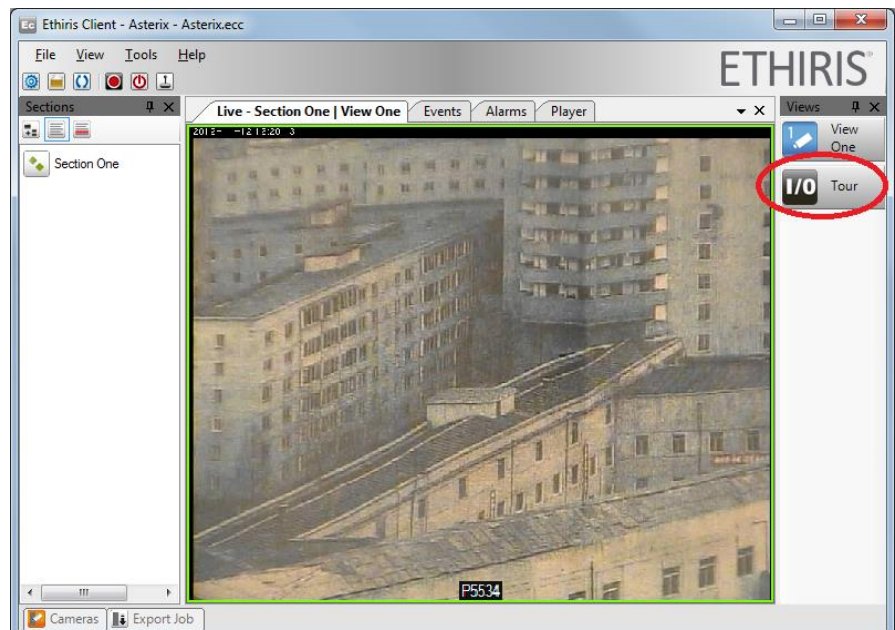

Figure 2.132 The tour has been enabled via the button in the client.

What have you learned?

In task 11, you have learned how to use and configure various PTZ functions in Ethiris.

In the next task, we will learn how to export recorded video.

Task 12, Exporting video

In this exercise, we will learn how to export recorded video from Ethiris server to an AVI file or to multiple JPG images.

Video can be recorded in Ethiris in two different ways. These are event recording or continuous recording. Regardless of the type of recording, the video is played back in the video player in Ethiris Client.

Recorded video can be exported from the *Player* in several different ways. We will go through a couple of examples in this exercise.

Instructions, Exporting Event Video

We will start by exporting video that has been recorded by event recording. In an earlier exercise, we set up an event-based recording for the camera *Door* when we have motion in front of the camera in accordance with the motion detector *Motion Detector*.

1. In Ethiris Client, **select** the *Events* panel.

2. **Search** for the recording you want in the events list and upload the video to the video player by **double-clicking** the event line. As a default, events for the latest hour are displayed in the list. Click the *Select time* button for setting another time span, see below.
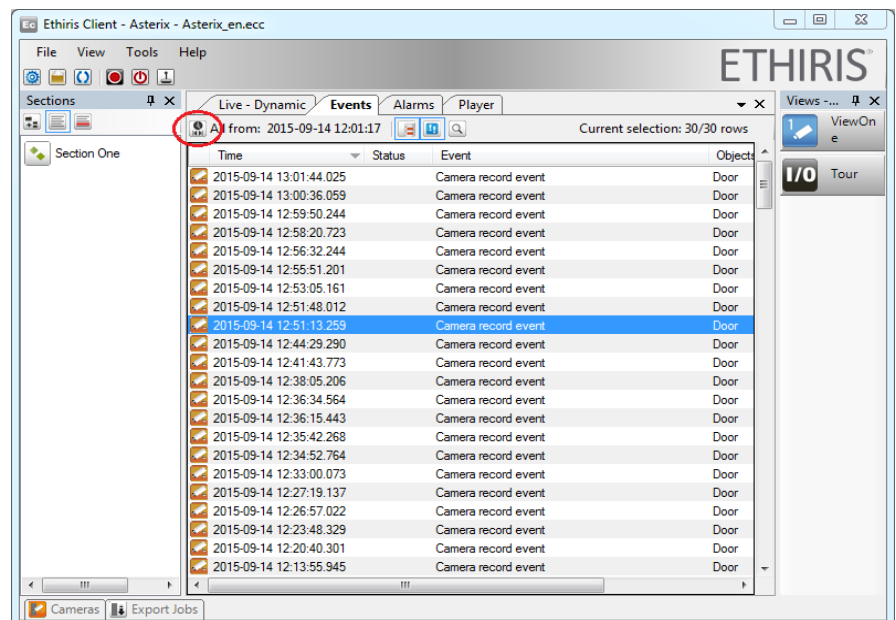
Figure 2.133 Click the Select time button to change the time span in the Events list.

3. When double-clicking an event associated with a camera, the Player is automatically loaded with the associated camera(s) and the time corresponding to the event time. **Right-click** the *red color* in the timeline where the ruler is and **select** *Export recording…* in the popup menu. See *Figure 2.134*.

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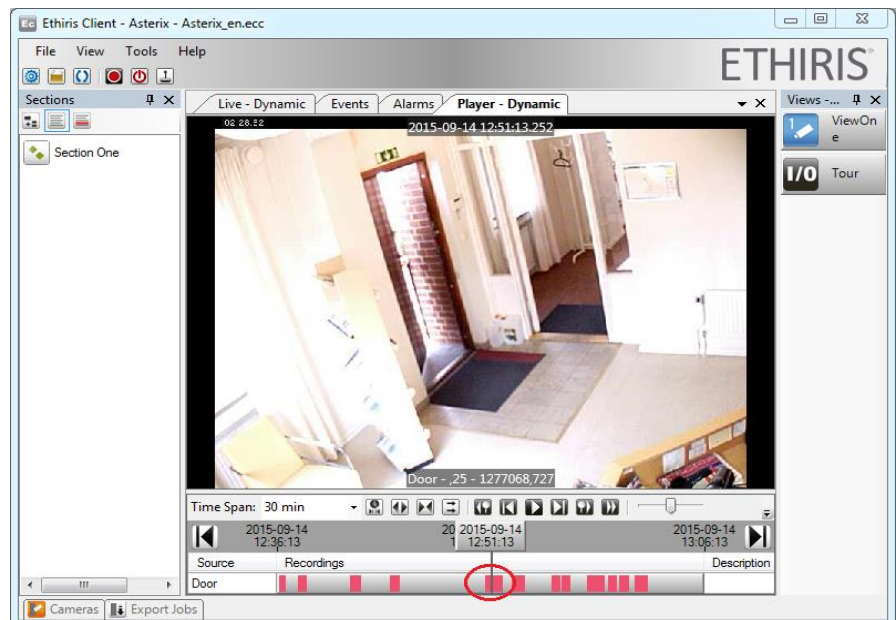*Automation and Security Products*

Figure 2.134 Right-click the event recording in the timeline to export video.

4. The *Export* dialog appears. The *Start* and *End* time is pre-selected, matching the event you clicked. The camera *Door* is also pre-selected. In this case, we will choose to export to single jpg frames. So **select** *JPEG pictures* in the *Export format* dropdown list. A few new input fields now appear.

5. **Enter** *Test* in the *Prefix* box. **End** with a *space*.

6. **Enter** *Ethiris* in the *Postfix* box. **Start** with a *space*.

7. **Click** the *browse button* to the right of the *Directory* box to select a folder in which to save the frames.

8. It is possible to "burn-in" the camera name, date, and time into the exported pictures. Tick the corresponding checkboxes *Camera name in exported frames* and *Timestamp in exported frames* if you want this information in the pictures.

9. When you are happy with the settings, it may look as in *Figure 2.135*. **Click** the *Start* button to start the export of frames.

In our example, 119 jpg images are created in the *selected* folder. To view the images, you can use any image viewer software that can handle JPEG images, for example, Windows *Preview* directly in *Explorer*.
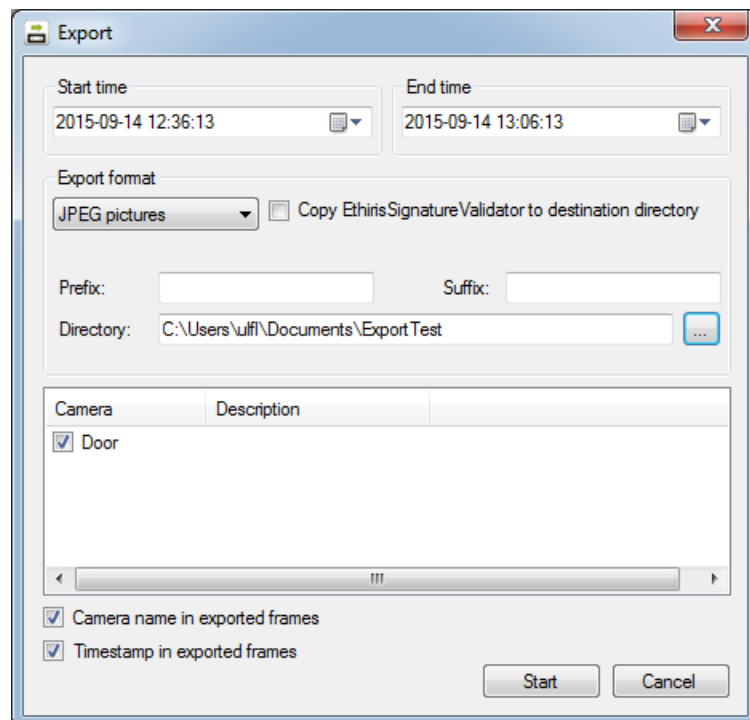
Figure 2.135 The settings are ready for export from the video player.

In the next example, we will export a slightly larger number of frames from continuously recorded material. In a previous exercise, we set the camera *Door* so that it continuously records frames at 2 frames per second. Ensure that these recording settings are still active.

Instructions, Exporting Video in general

In this exercise, we assume that there is continuously recorded material on the server hard drive.

1. In Ethiris Client, **select** the *Player* panel. **Find** some relevant video for one or several cameras.

Export selection button

2. **Click** the *Export selection* button to the right in the Player toolbar. The export dialog now opens. Notice that all cameras that are selected in the Player also are preselected in the export dialog, and the preselected time matches the start and end time of the timeline. If you want, you can change the time span.

3. This time we will export to an AVI file. **Click** the *browse button* to the right of the *File name* box. **Select** a suitable folder, for example, the one you used for the jpg images. **Enter** *Ethiris* in the *File name* box in the file name dialog.

4. **Click** the *Save* button to select the folder and file name. The search path and file name are now copied to the *File name* box in the export dialog.

5. When all selections have been made for export, **click** the *Start* button.

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6. When the first frame is to be written to the AVI file, a dialog appears for you to select the *Codec*. In some versions of Windows, the list of available codecs is not visible if you click the arrow button by the list. However, it is possible to scroll with the up arrow key. **Select** a suitable Codec, for example, *Microsoft Video 1*. It is also possible to select the compression quality. Then **click** the *OK* button. The export job is added to the *Export Job* list. See *Figure 2.136*. More exports can be added, and they are executed one by one and eventually disappear from the job list as they are executed.

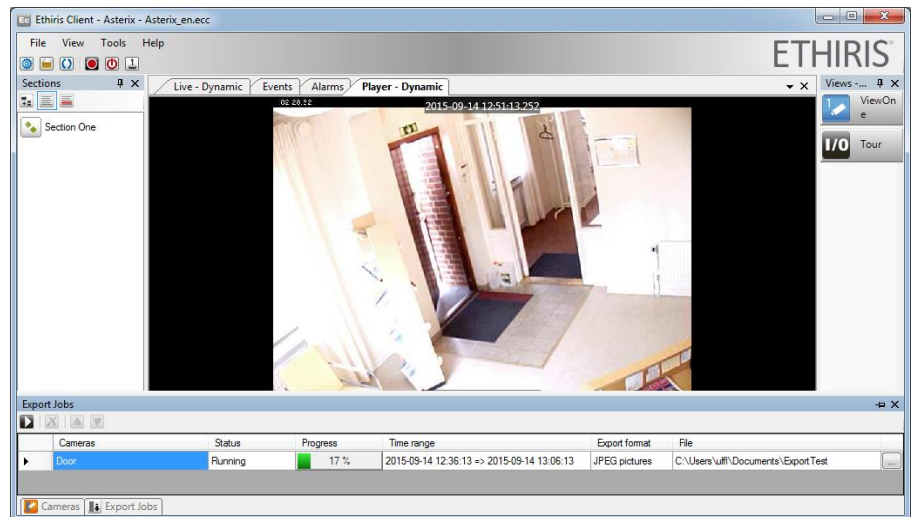*Figure 2.136 Export jobs are added to the Export Job list.*

Double-click the AVI file in Explorer to run it in Windows Media Player.

What have you learned?

In task 12, you have learned how to export video from recorded material in Ethiris.

In the next task, we will learn how to add control objects to a camera view.

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Task 13, Control objects

In a camera view, you can insert control objects of six different types.

Pushbuttons – These are used to set digital (Boolean) output signals or internal variables in the Ethiris server.

LEDs – These are used to indicate the status of a digital signal in the Ethiris server.

Cameras – These are used to symbolize a camera. Clicking the camera symbol produces live video from the corresponding camera in a hotspot camera view.

Texts – These are used to present text or values other than digital, e.g., a counter value or a temperature.

Image - These are used to present smaller static images on top of a background image or a camera view.

Door - These are used to present status for a door handled by an *Access Controller* in Ethiris Server.

In the first part of this exercise, we will create a new client view *Map*. This client view is a 2*2 view in which we will insert a background image in the bottom right camera view. The image may be a site plan or some type of map.

We will then insert small pushbuttons in the frame, each of which will move the PTZ camera to a pre-set position.

Instructions, Creating Pushbuttons in a Camera View

1. In Ethiris Admin, **right-click** *Section One* and **select** *New->View* in the popup menu.

2. **Name** the view *Map* and **create** a *2x2 layout* of camera views.

3. In the layout editor, **select** the camera view at the top left so that it becomes grey.

4. **Right-click** on the *camera view* and **select** *Type->Background picture* in the popup menu.

5. **Select** a suitable background image by browsing for the image.

   NOTE! The image may be of type *bmp*, *jpg*, *gif,* or *png*.

6. **Right-click** on the *camera view* again and **select** *Controls…* in the popup menu. A control editor now opens in which the selected background image is displayed. If there is not enough room on the screen, it is scaled down to a smaller size.

7. At the top left of the control editor is a toolbar with buttons for the six different control objects. **Click** the *Add Button* button at the far left. A small button is created and added to the background image at the top left corner.
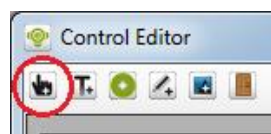

Figure 2.137 The Add Button button in the control editor toolbar.

8. You can move the button by dragging it with the left mouse button. **Place** the *button* where you want it.

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9. **Right-click** the *button* and **select** the *Properties…* menu item. A dialog for setting the button's properties is now displayed.

10. In the *Text* box, **enter** a letter or figure that symbolizes one of the pre-set positions for the PTZ camera, for example, *C* for *City*.

Enter a & sign before the letter so you can enable the button from the keyboard with Alt+<Letter>

11. **Leave** the *Toggle button* unchecked. In this case, we just want to have a short signal that enables the preset position.

12. **Leave** *Image* empty and **leave** *Size* as *User defined*.

13. **Click** the *browse button* to the right in the *Variable* box. A dialog is now displayed for selecting the variable in the Ethiris server.

14. **Search** for a suitable preset position, **select** the *Preset* signal, and **click** *OK*. The button properties dialog may look roughly like *Figure 2.138*.
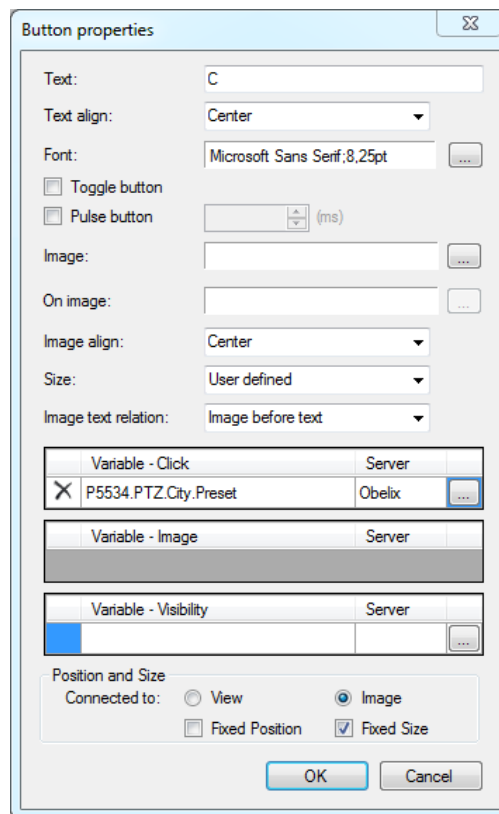

Figure 2.138 Dialog for the button properties.

15. **Repeat** *points 7 – 14* to add more buttons. The end result may look as in *Figure 2.139*.
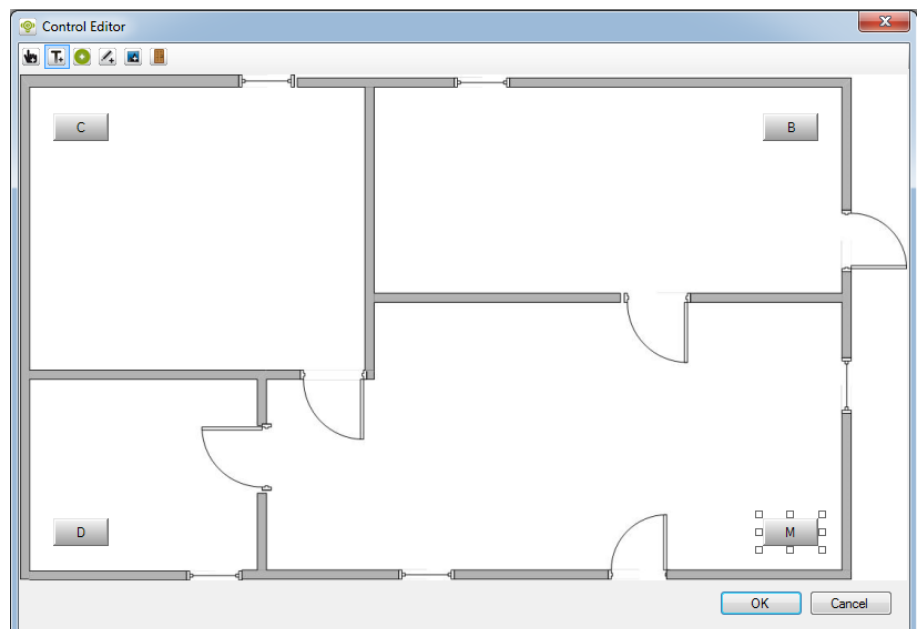
Figure 2.139 Four buttons have been created, one in each corner.

16. **Click** the *OK* button in the control editor to save the new pushbuttons.

17. To be able to see what happens when pushing the buttons on the map, add the PTZ camera to one of the three available camera views. Now, the layout may look like *Figure 2.140*.
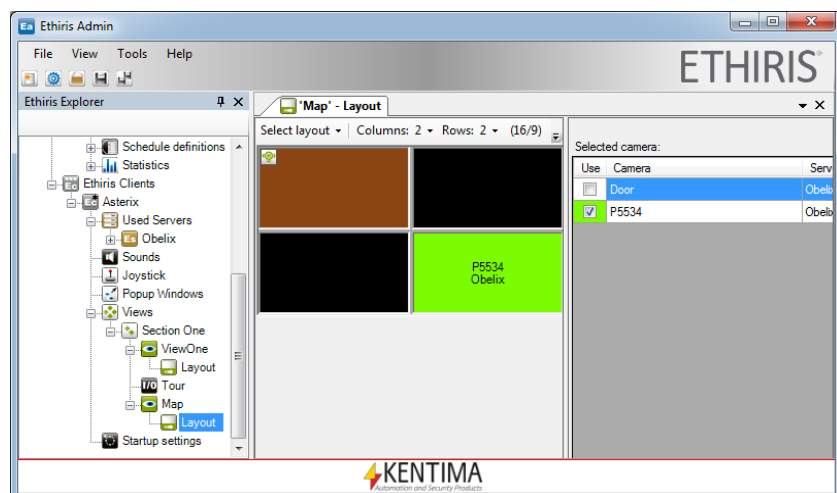

Figure 2.140 Layout is now complete.

18. Finally, **click** the *Save* button in the Ethiris Admin toolbar to save the changes to the client configuration file.

19. Start Ethiris Client and test the buttons. It may look as in *Figure 2.141*.

NOTE! In all likelihood, the background image will need to be scaled. The pushbuttons, as default, retain their original size and are not scaled with the image. However, the default behavior is that the positions of the buttons are scaled with the image. This may mean that parts of a button may be outside the image if they are near the edge of an image that has been reduced. In that case, the button is not displayed. You then need to adjust the position of the button or deselect the *Fixed size* checkbox in the button properties dialog.
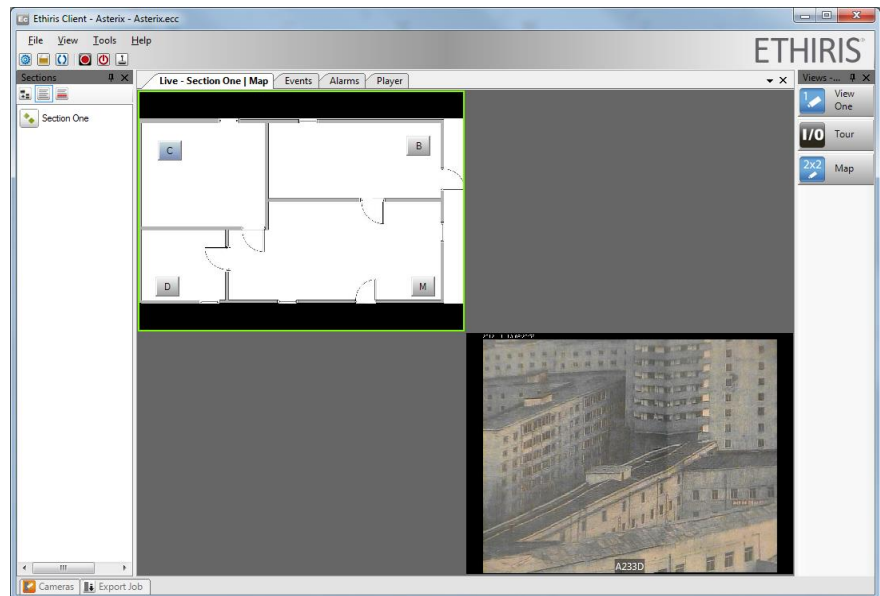
Figure 2.141 Pushbuttons on the background image in Live mode.

In the next part of the exercise, we will create two LEDs and insert them in the background image to indicate the status of two of the signals in the Ethiris server.

One LED will indicate when the tour of the PTZ camera is active, and the other LED will indicate when the pushbutton that we connected to the P5534 is depressed.

Instructions, Creating LEDs in a Camera View

1. In Ethiris Admin, **bring up** the *control editor* for the map again.

2. This time, **click** the *Add LED* button. In the same way as a pushbutton, the object is created on top of the background image at the top left.
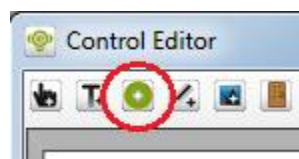

Figure 2.142 The Add LED button in the control editor toolbar.

3. **Drag** the LED to where you want it in the image.

4. **Right-click** the *LED* and **select** *Properties…* in the menu. A dialog for setting the properties of the LED is displayed.

5. **Select** the *On image Red*. The on image determines the image that is displayed when the underlying signal is 1/True.

6. **Let** the *Off image* be *Grey*. The off image determines the image to be displayed when the underlying signal is 0/False.

7. **Click** the *browse button* to the right in the *Variable* box to display the dialog for selecting the variable in the Ethiris server.

8. **Search** for the variable *P5534.PTZ.PTZ_Tour.Sequential*. **Select** this and **click** the *OK* button. The dialog for *LED properties* may now look as in *Figure 2.143*.
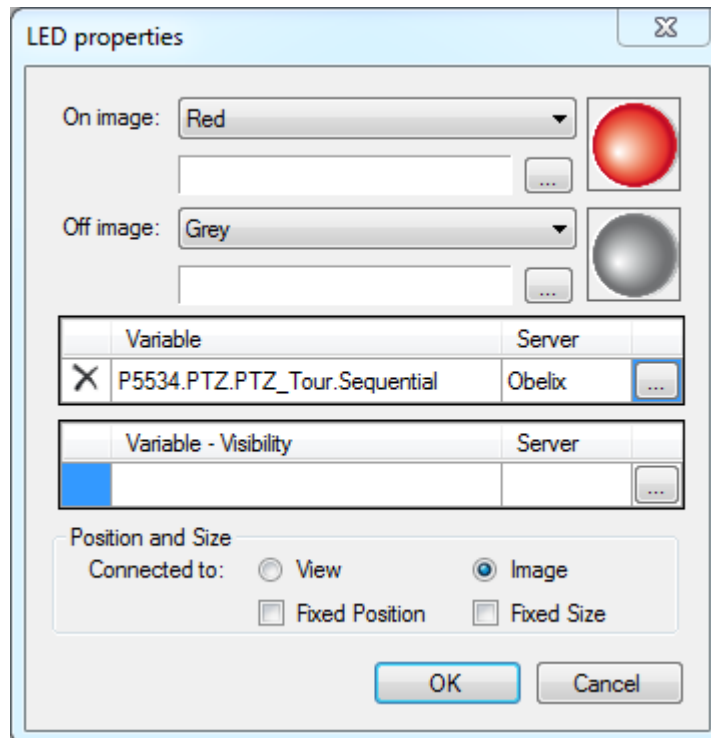
Figure 2.143 Dialog for properties for an LED.

9. **Click** the *OK* button and verify that the LED is now displayed in red. The current *On image* is used to draw the LEDs in the control editor.

10. **Repeat** *points 2-9* to add another LED, this time connected to the signal *P5534.Input1*.

11. The control editor may now look as in *Figure 2.144*. **Click** the *OK* button to save the new LEDs.

12. **Click** the *Save* button in the Ethiris Admin toolbar to update the client configuration.

13. **Check** the result in *Ethiris Client*.

Click the *Tour* function button to verify that the associated LED lights up red while the *Tour* button is depressed. Test the pushbutton that is connected to the P5534 as well.
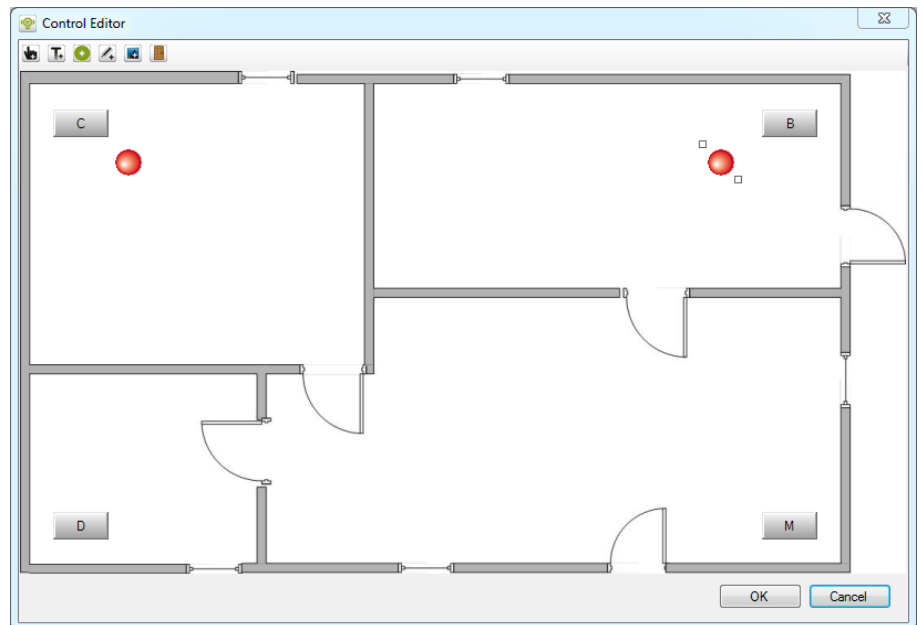
Figure 2.144 Two LEDs have been created in the control editor.

Now we will create a few camera symbols in the background image.

A camera symbol represents a camera and, if you click the camera symbol, you can display live video from the camera in a hotspot camera view.

To introduce a new feature in Ethiris, we will create a *Popup Window* and a view with no corresponding view button. The view will, when activated, be opened in the popup window.

Instructions, Creating a Popup Window

1. In the client configuration's treeview in Ethiris Admin, **double-click** the node *Popup Windows*.

2. In the *Popup Windows* panel, add a new item by clicking the *Add new popup window* button.

3. Enter the name *HotPop* in the *Name* column. See *Figure 2.145*.
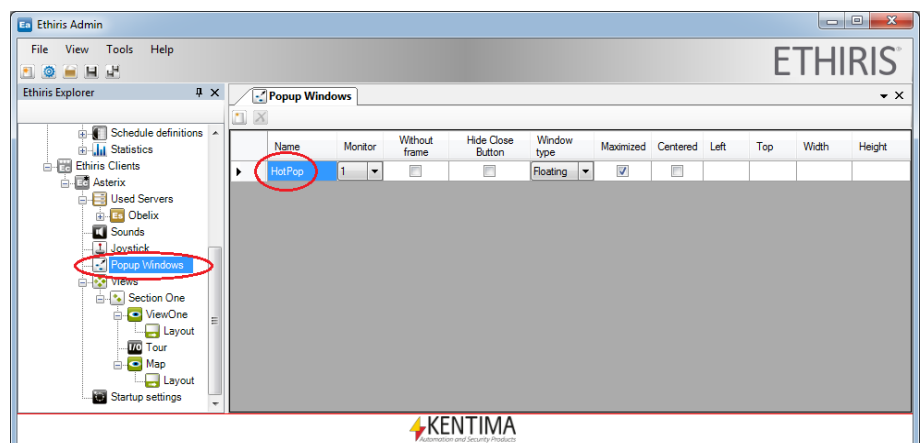

Figure 2.145 A new Popup window with the name HotPop is created.

4. The settings for the popup window are default settings that are used the first time the window is opened. When the window is open, the user can move and resize it. The next time it is opened, the latest position and size are used.

Alright, now we have a popup window called *HotPop*. The next step is to create a new view with a hotspot camera view.

Instructions, Creating a view with no view button

1. In the client configuration's treeview in Ethiris Admin, **right-click** the node *Section One* and **select** *New->View* in the popup menu.

2. **Enter** the name *Hot* directly in the new node in the treeview.

3. **Double-click** the new node *Hot* to open the panel.

4. **Check** the checkbox *Hide View in Client*. The effect of this is that there will be no view button for the view in Ethiris Client.

5. **Check** the checkbox *Activate on Hotspot Camera activation*. This means that the view will automatically be activated when a hotspot camera is activated that is defined in a Hotspot camera view in the layout of the view.

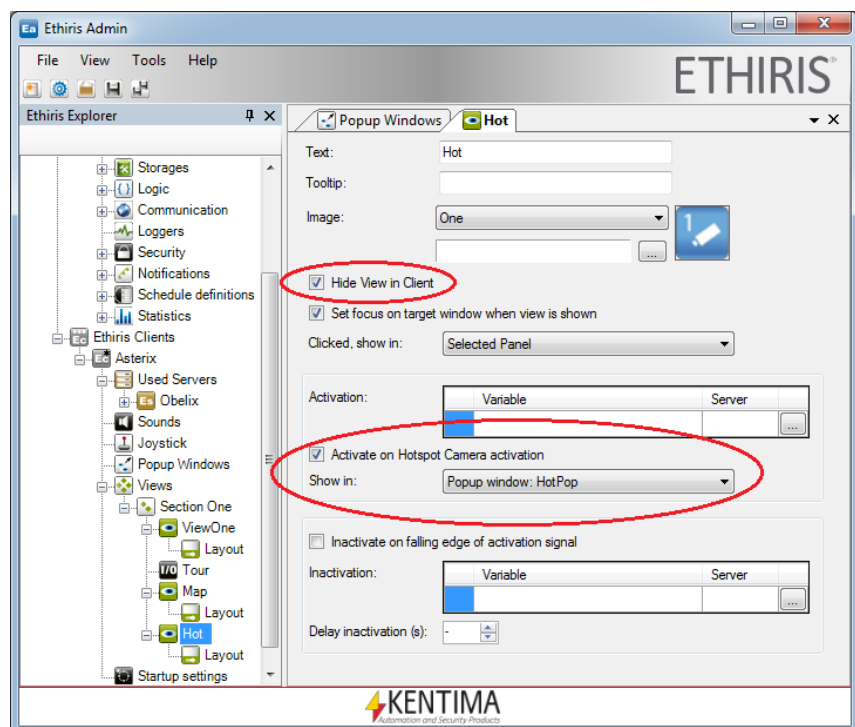6. **Select** *Popup window: HotPop* in the *Show in* list. The panel looks like *Figure 2.146*.

Figure 2.146 Properties for a view with no view button.

7. **Double-click** the *Layout* node under the new view *Hot* in the treeview.

8. In the black camera view**, right-click** and **select** *Type->Hotspot* in the popup menu. See *Figure 2.147*.
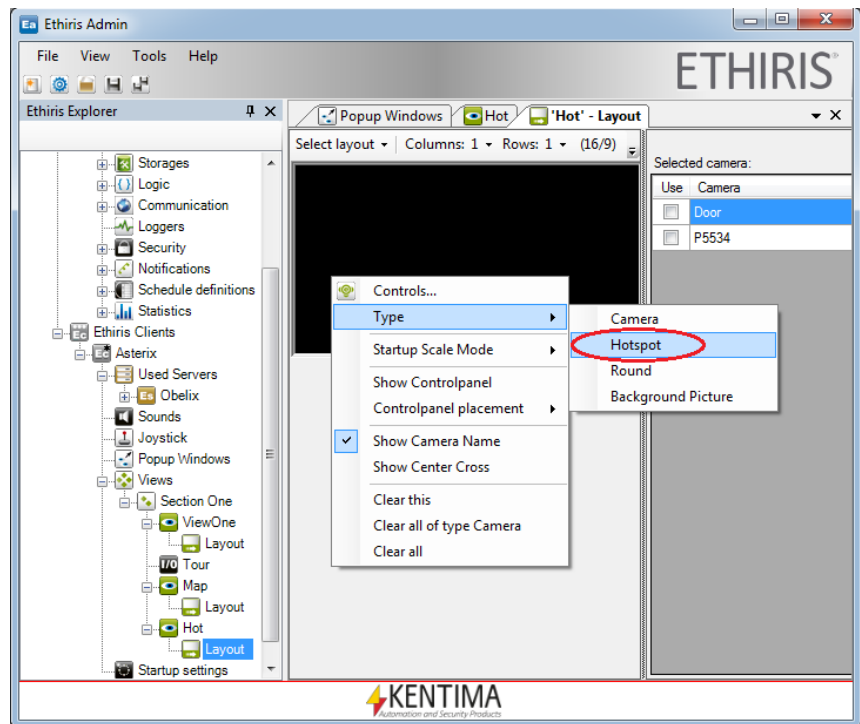
Figure 2.147 Select Type Hotspot in the camera view.

9. In the rightmost panel, **check** the checkbox *Hotspot is globally sensitive*. This means that the view will react when a hotspot camera is activated (clicked on) in another view.

10. **Check** the *Click* column for every camera that you want to show live video from when the corresponding camera symbol is clicked on. The panel may look like *Figure 2.148*.

Figure 2.148 The view is globally sensitive for Hotspot activation, and all cameras are selected as potential hotspot cameras.

Now it's time to add some camera symbols to the map we added earlier.

Instructions, Creating Camera Symbols in a Camera View

1. **Bring up** the *Control editor* for the *Map* camera view in the view *Map*.

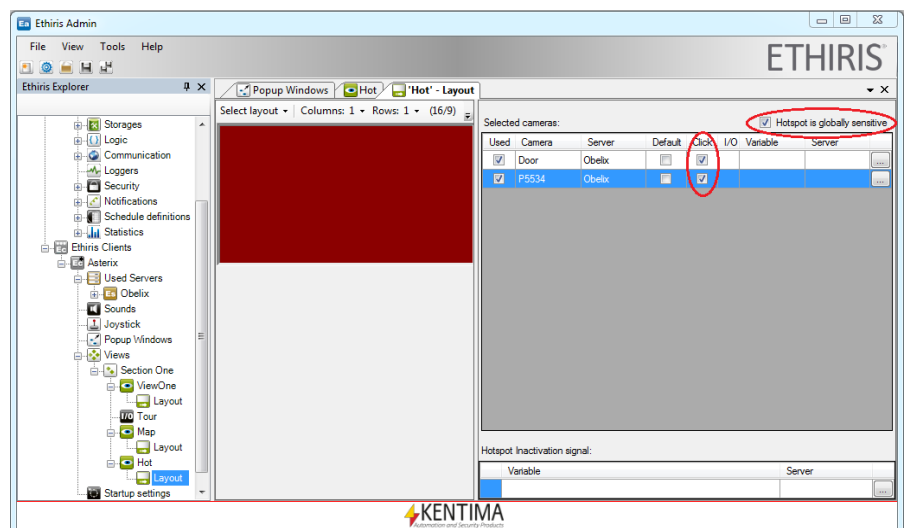2. **Click** the *Add camera* button. A camera symbol is added to the control editor in the upper left corner.

3. **Drag** the *camera symbol* to where you want it in the image.

4. **Right-click** the *camera* and **select** *Properties…* in the menu. A dialog for setting the properties of the camera is displayed.

5. *Angle* defines how the camera symbol will be displayed. Drag the slider for the angle you want.

6. **Select** the *Camera Door*. This is the camera that the camera symbol will represent.

7. **Leave** the other settings for now. **Click** the *OK* button when you are happy with the settings.

8. **Repeat** *points 2-7* to add more camera symbols.
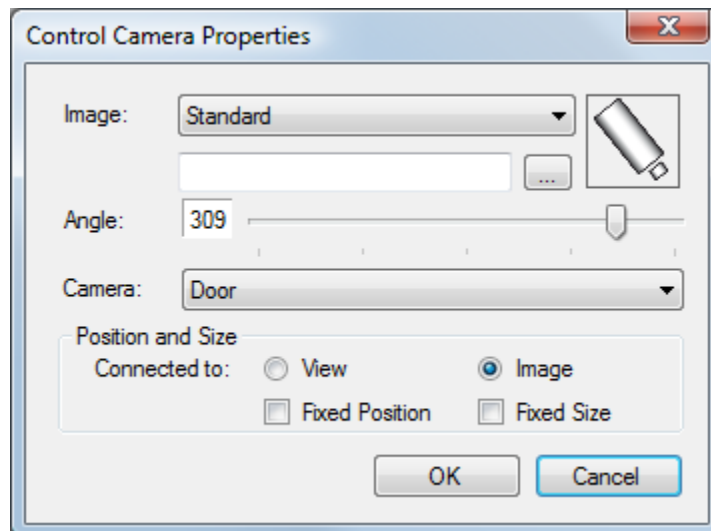
Figure 2.149 Dialog for setting properties for a camera symbol.

9. An example of how this may look is displayed in *Figure 2.150*. **Click** the *OK* button in the control editor when you are happy with your cameras.
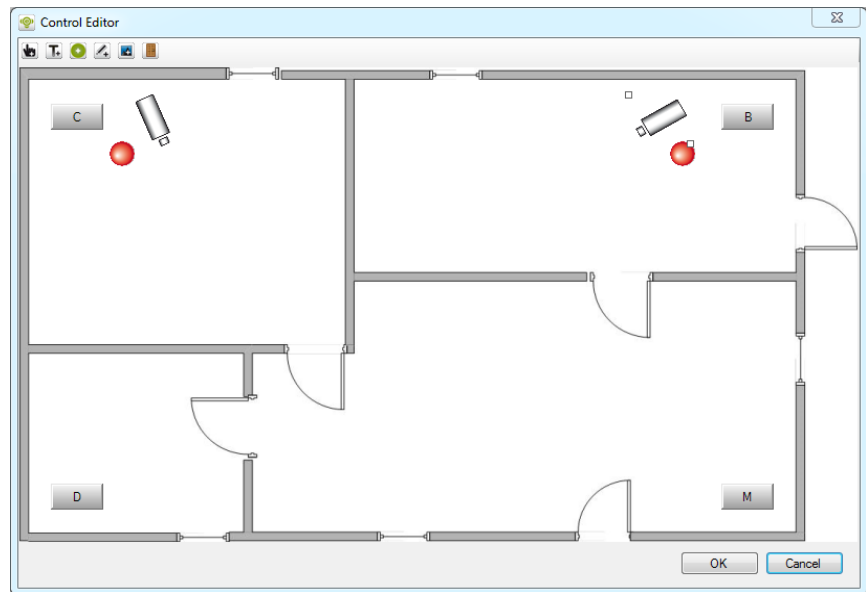
Figure 2.150 Cameras have been added to the control editor.

10. **Click** the *Save* button in the Ethiris Admin toolbar to save the changes to the client configuration file.

11. **Switch** to *Ethiris Client* to test the new camera symbols. Click them and verify that live video is displayed in the intended popup camera view.

What have you learned?

In task 13, you have learned about various maneuver objects that can be added to camera views in Ethiris Client, such as buttons, LEDs, cameras, and labels.

In the next task, we will learn how to create custom events for tracking various events in the system.

Task 14, Custom events

In Ethiris, some *System Events* are automatically created, such as a *Record Event* for each camera in the configuration. When an event is triggered, a log item is created and can be viewed in the *Events* panel in *Ethiris Client*. E.g., whenever an event recording starts for a camera, this event is logged in the *Events log* and can be viewed in Ethiris Client.

Besides the automatically generated system events, you can create custom events. These, too, are logged on activation and can be used for tracking various events in the system.

In this section, we will create a custom event pretending that a door to a bank vault is connected to a digital input in such a way that every time the vault is opened, the digital input is activated. We will use the digital input on the Axis P5534 camera we have used in previous exercises.

Instructions, Creating a custom event

1. In Ethiris Admin in the server configuration part of the treeview, **expand** the *Logic* node and then **double-click** the *Events* node to open the *Events* panel.

2. In the *Events* panel, **click** the *New Event* button. A new row is created in the list of custom events.

3. In the *Name* column, **enter** a name for the new event, e g *VaultOpen*.

4. **Enter** a *Text,* e.g., *The bank vault is open*. This text will be displayed in the *Event log* in Ethiris Client when the event has been triggered.

5. **Leave** the checkbox *Momentaneous* checked. This means that the event can be automatically inactive. E.g., our *VaultOpen* event, when the digital input is set to 0, the event is inactivated again. The vault is no longer open. If the event were named *VaultOpened*, it would be another matter. Even when the vault is closed, it was opened before, and that event cannot be undone.

6. In the treeview, **expand** the *Events* node and **double-click** the new *VaultOpen* node to open the *VaultOpen* event panel.

7. **Check** both the *P5534* and the *Door* camera in the *Associated cameras* list. See *Figure 2.151*. Associating one or several cameras for an event opens the possibility to automatically load the *Player* with appropriate cameras when double-clicking the corresponding event in the event log.
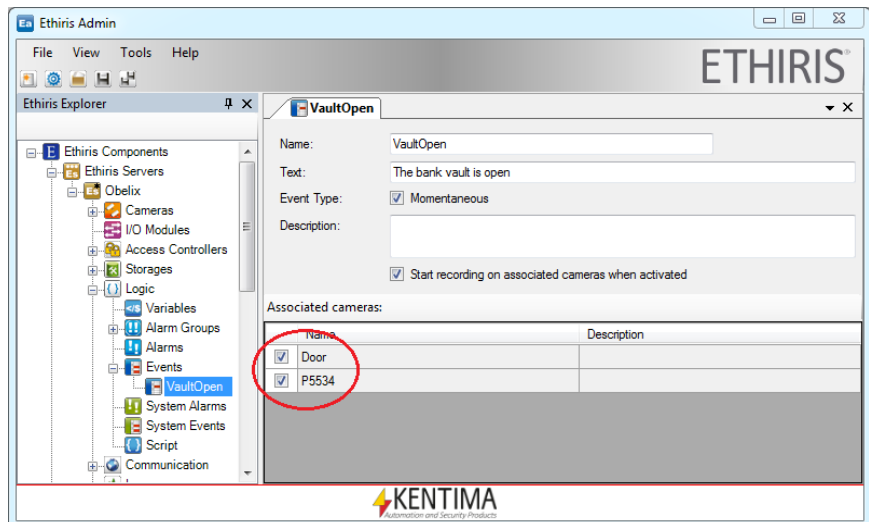
Figure 2.151 Cameras have been associated with the event.

OK, now we have created a custom event that is associated with 2 cameras. The next step is to configure when the event should be triggered/activated.

Instructions, Activating an event via script

1. In Ethiris Admin in the server configuration part of the treeview, **expand** the *Logic* node and then **double-click** the *Script* node to open the *Script* panel.

2. In the *Variable Browser*, a new node, *Event,* has appeared. **Select** the new *Events* node in the *Variable Browser*.

3. In the lower pane in the *Variable Browser*, the event *VaultOpen* is displayed. **Double-click** the *VaultOpen* item to copy the variable to the *script editor*.

4. Directly after the text `VaultOpen` in the script editor, **enter** " = ".

5. In the *Variable Browser*, **click** the *P5534* camera and in the lower pane, **double-click** *Input1* to copy the *Input1* variable to the script editor. **Finish** the line by **entering** "`;`". The script should resemble the one in *Figure 2.152*.
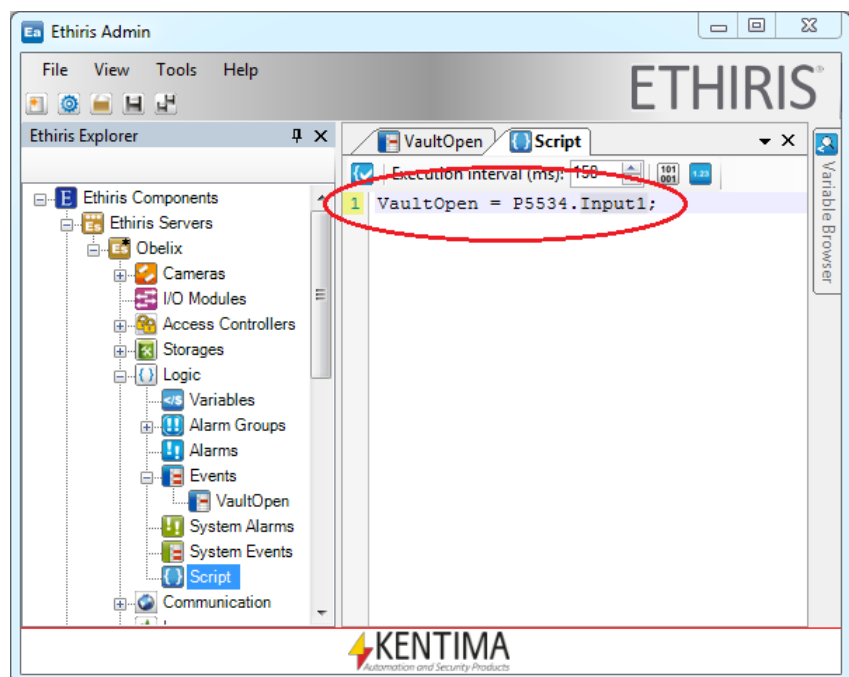

Figure 2.152 Script for activating the VaultOpen event.

The script above means that every time *Input1* is activated, the event is also activated, and a new log item is entered into the event log.

Naturally, any condition possible by the script can be used to activate an event, such as combining several signals in the system.

NOTE! As *Start recording on associated cameras when activated* is checked in event definition, both cameras will automatically start recording when the event is activated and continue record as long as the event is active.

Alright, now we are ready to test the new event. You need some way of activating the digital input on the camera. I will use a push-button myself for simulating the bank vault is open.

Instructions, Testing the event

1. **Start** the *Ethiris Client*.

2. **Select** the *Events* panel.

3. **Activate** the *Input1* signal. Immediately, a new event appears in the event log. See *Figure 2.153*.
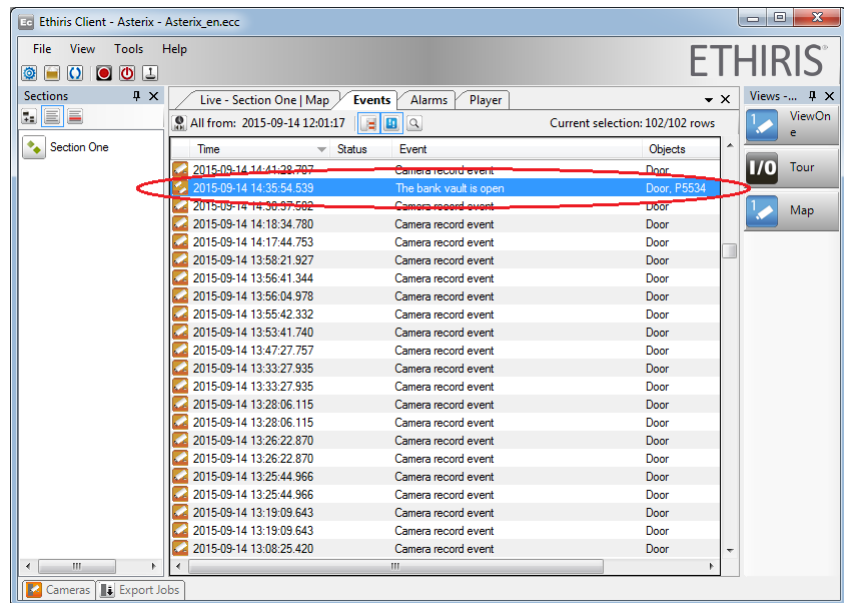

Figure 2.153 A new event appears in the event log.

4. **Double-click** the *event* to automatically load the *Player* with these two cameras and the correct time. See *Figure 2.154*.
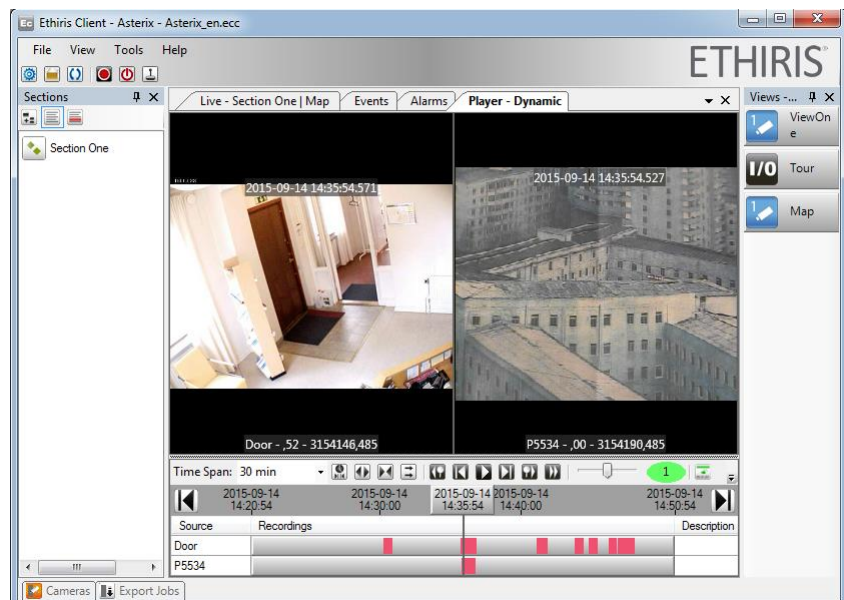
Figure 2.154 The Player panel is automatically loaded with the associated cameras and the event time.

What have you learned?

In task 14, you have learned how to create your own specific custom events for logging important events in the system. You also have learned how to quickly retrieve video associated with the event by double-clicking the event in the *Events* panel in Ethiris Client.

In the next task, we will learn how to create custom alarms and alarm groups.

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Task 15, Custom alarms

In the previous section, we had a look at custom events. In this section, we will have a closer look at alarms. Just as in the case with events, there are quite a few system alarms that are automatically created by Ethiris. Examples of system alarms include *communication error* for each camera, various problems with *storage devices,* and *script runtime error*.

The difference between an alarm and an event is that an alarm must be acknowledged. The idea is that alarms are more serious than events. When an alarm is active, this is indicated in Ethiris Client by a flashing warning icon that is nearly impossible to miss.

The alarm list in Ethiris Client displays the status of active or unacknowledged alarms, whereas the event list displays a history of events that have occurred in the system. When everything is as it should be, the alarm list is empty.

However, every status change for every alarm is logged in the event log. E.g., when an alarm goes active, a log item is created in the event log. When the alarm is acknowledged, there is another log item in the event log. And finally, when the alarm goes inactive, this is logged in the event log by a third log item.

Every alarm belongs to a specific *Alarm group*. One alarm group, *System Failure*, is automatically created by Ethiris, and all automatically created system alarms belong to this group.

Besides the automatically generated system alarms and alarm groups, you can create your own custom alarms and custom alarm groups. These behave just like their system counterparts.

In this section, we will create a custom alarm group and a custom alarm. We will continue with the bank vault example and activate the alarm if the vault is open to long. So, we continue to use the digital input from the Axis P5534 camera. You may, of course, use another camera model or another kind of signal for the same purpose.

If you don't have access to any physical digital input, you may create an internal variable, connect it to a button in Ethiris Client and use the button for triggering the *VaultOpen* signal.

Instructions, Creating an alarm group

1. In Ethiris Admin in the server configuration part of the treeview, **expand** the *Logic* node and then **double-click** the *Alarm Groups* node to open the *Alarm Groups* panel.

2. **Click** the *New Alarm Group* button. A new row is added to the list of alarm groups.

3. **Enter** a name in the *Name* column, e.g., "*Vault alarms*".

4. **Select** a *Display Color* different from red, e.g., *blue*. This background color will be used in the alarm list to make it easier to differentiate various alarms.

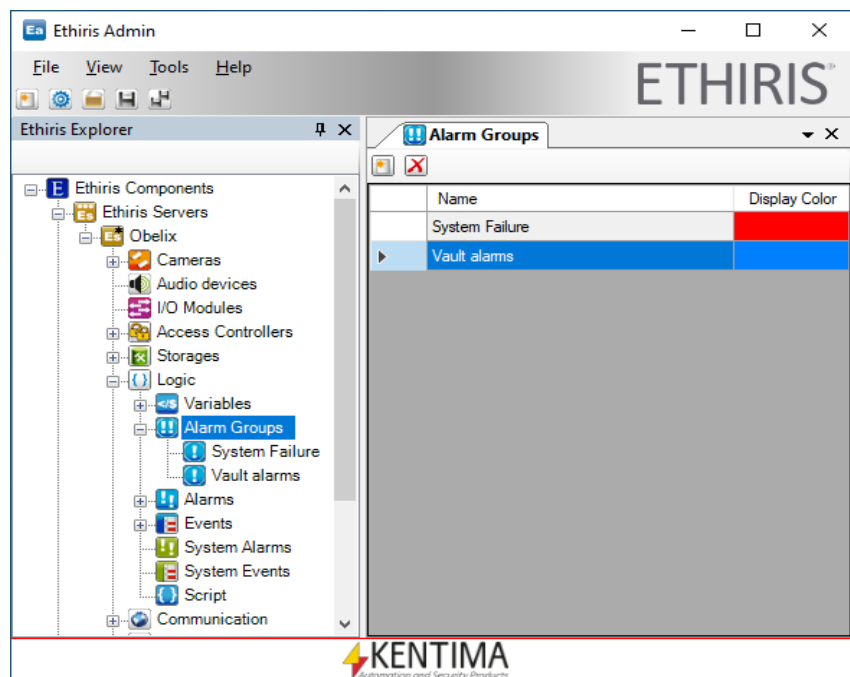   The *Alarm Groups* panel should look like *Figure 2.155*.

Figure 2.155 A new Alarm group, Vault alarms, is created.

OK, the next step is to create the alarm.

Instructions, Creating an alarm

1. In Ethiris Admin in the server configuration part of the treeview, **expand** the *Logic* node and then **double-click** the *Alarms* node to open the *Alarms* panel.

2. **Click** the *Add new Alarm* button. A new row is created in the list of alarms.

3. In the *Name* column, **enter** a name for the alarm, e.g., *VaultOpenTooLong*.

4. In the *Text* column, **enter** a suitable text, e.g., *The vault has been open more than 1 minute*.

5. **Leave** *Severity* and *Acknowledge* as default.

6. In the *Alarm Group* column, **select** the group *Vault alarms*. It should look like *Figure 2.156*.
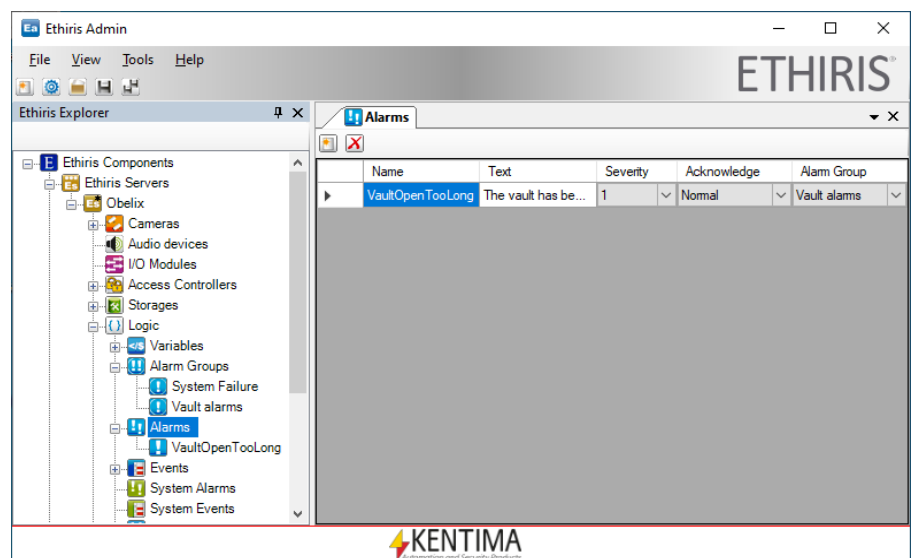

Figure 2.156 A new Alarm, VaultOpenTooLong, is created.

7. To be able to associate cameras to the alarm, you have to open the panel for the alarm as opposed to the whole list of all alarms. **Expand** the node *Alarms* in the treeview and **double-click** the *VaultOpenTooLong* node.

8. Check desired cameras in the *Associated cameras* list. In *Figure 2.157*, the *P5534* is checked.
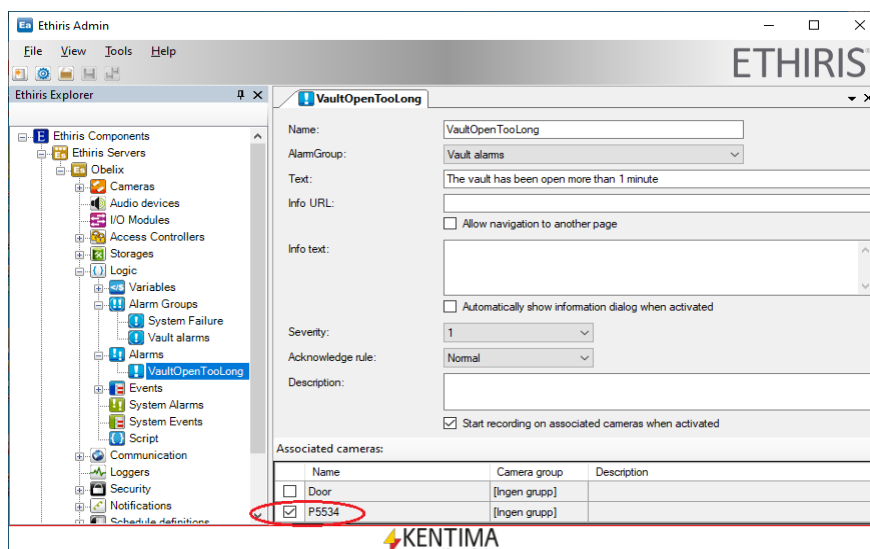
Figure 2.157 The P5534 camera is associated with the alarm.

At this point, we have defined both a new alarm group for all our vault alarms, and we have also defined a specific alarm for when the vault has been open too long.

Now we come to a somewhat tricky part, the activation of the alarm. As a bonus, you get to learn how to use *timers* in Ethiris script.

In this example, we assume that the vault is allowed to be open no more than 1 minute. If the time is exceeded, the alarm should be activated.

To make the script code more clear, it's a good practice to use *comments* to describe various parts of the script. Comments are not executed by the script engine and can contain any text. There are two types of comments; *Single line comments* and a *Block* of comments. Single line comments start with two slashes, "//". Everything after the slashes on the same line is considered a comment. A block of comments is everything between "/*" and "*/". Such a comment can span multiple lines. In the script editor, comments are displayed in green color.

The script in Ethiris is executed over and over again in a cyclic manner. The default execution interval is 150 ms. This fact demands specific precautions. The idea in our example is to start a timer as soon as the input signal from the camera goes high. But since the script is executed cyclically, we have to make sure that the timer is only started once, on the edge of the input signal getting high. For this purpose, we use a local variable to keep track of the current state of the input signal. We also exploit the fact that the script is executed from top to bottom, line by line.

Enough talk, let's get going with the activation of our alarm

Instructions, Activating the alarm

1. In Ethiris Admin in the server configuration part of the treeview, **expand** the *Logic* node and then **double-click** the *Script* node to open the *Script editor* panel. There are already some existing lines of script. **Keep** these lines intact and just **enter** a *few new lines* after the last line in the script.

2. This time we need to declare some local variables in the script, which we have to write manually. We will also make use of comments. **Enter** the following lines:

```
// Declare a timer for detecting vault open
// 1 minute (60 000 ms)
var vaultTimer;

// Declare a variable for detecting edge of
// input going high
// Otherwise the timer restarts every 150 ms
var inputEdge;
```

3. Now we will, if necessary, create the timer object and start the timer <u>once</u> when the input goes high. We will use an *if*-statement for this purpose. Note the exclamation mark "`!`", it inverts the signal. In this case, the code in the *if*-block executes if the input signal on the camera is active (high), <u>and</u> the variable *inputEdge* is <u>not</u> active (low). **Enter** the following lines last in the script:

```
// Start timer on edge of Input1
if (P5534.Input1 && !inputEdge)
{
   // Create timer if not done already
   if (vaultTimer == undefined)
   {
      vaultTimer = new Timer();
   }

   // Start timer with 1 minute timeout
   vaultTimer.start(60000);
}
```

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4. In the next, if-block, we will check if the timer has entered timeout. If so, the alarm will be activated. Enter the following lines last in the script:

```
// If the vault is open…
if (P5534.Input1)
{
    // … and we have timeout
    if (vaultTimer.timeout())
    {
        // Activate alarm, will also start
        // recording
        VaultOpenTooLong = true;
    }
}
else
// Input1 is low -> Reset alarm &
// stop recording
{
    VaultOpenTooLong = false;
}
```

5. The final step is to update the edge variable with the current status of the input signal. Enter the following lines:

```
// Update status of input edge
inputEdge = P5534.Input1;
```
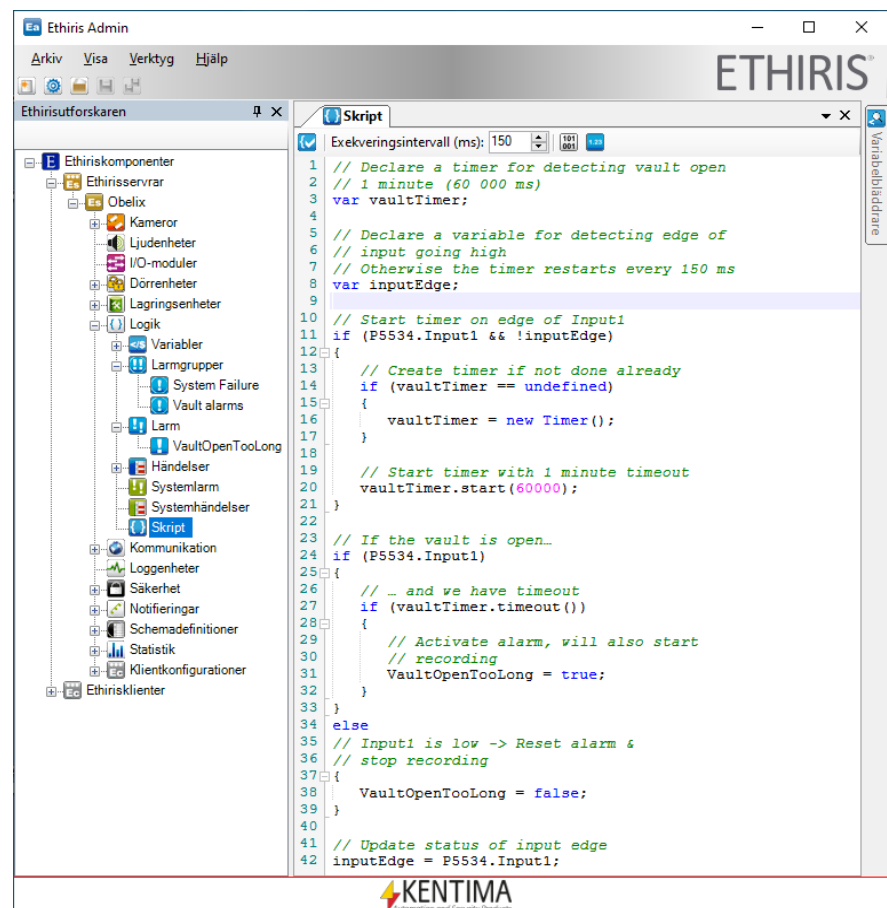
The script looks like the one in *Figure 2.158*.

Figure 2.158 Script for activation of the alarm is entered.

Then, finally, it is time to test the new alarm. Turn to the next page for instructions.

Instructions, Testing the alarm

1. **Start** *Ethiris Client*. You can select any panel (*Live*, *Events*, *Alarms* or *Player*). **Activate** the *input signal* on the camera. After 1 minute, the alarm icon starts flashing in the upper right corner of Ethiris Client.

2. **Select** the *Alarms* panel. An alarm has appeared, see *Figure 2.159*.
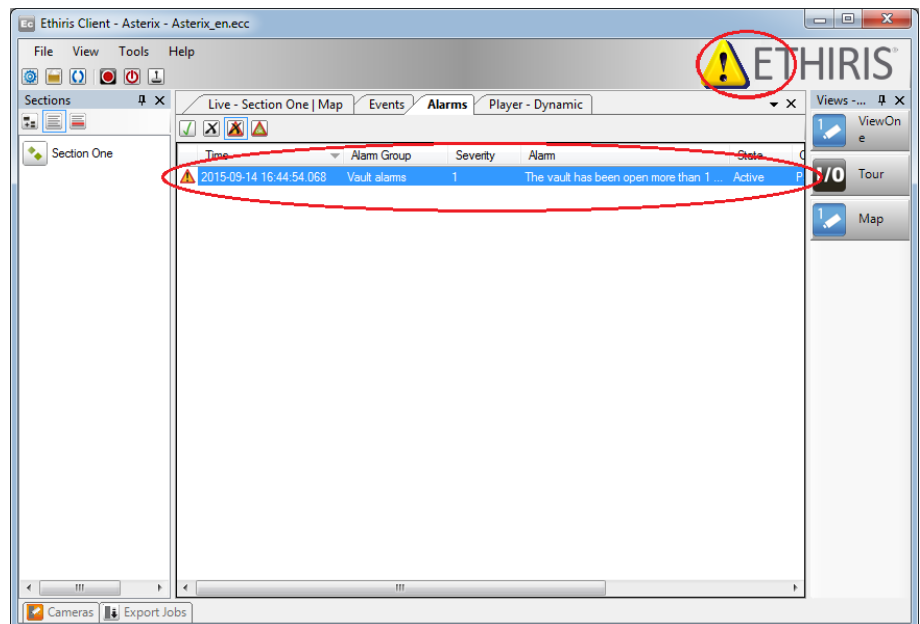

Figure 2.159 Active alarm in the alarm list and flashing alarm icon in Ethiris Client.

3. **Select** the *alarm* by **clicking** somewhere on the alarm item in the alarm list. **Click** the *Acknowledge Alarm* button (green tick) to acknowledge the alarm. The alarm icon is now displayed without flashing.

4. **Reset** the *input signal*. The alarm disappears from the alarm list, and the alarm icon also disappears.

5. **Select** the *Events* panel. In the event list, you can see the history of all status changes for alarms. In *Figure 2.160*, you can see the time when the alarm got *activated*, *acknowledged,* and finally *inactivated*.

6. If you want to retrieve video from the associated camera, simply **double-click** an *event* in the event list. The player panel is automatically selected and loaded with video from the associated camera(s), and the time ruler is set to the time of the event.
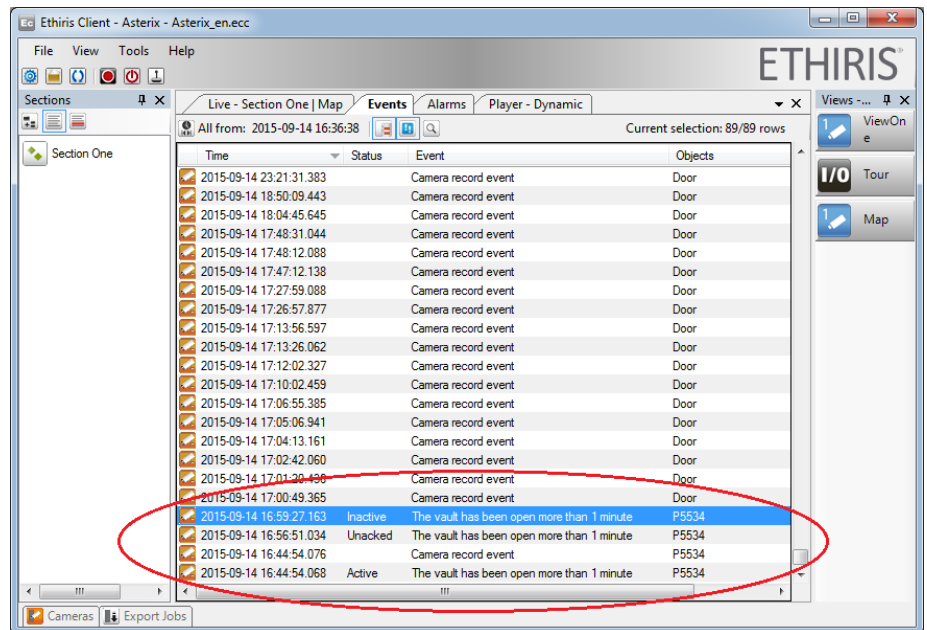
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Figure 2.160 The Event list logs all status changes for alarms.

What have you learned?

In task 15, you have learned how to create your own specific custom alarms and alarm groups. An alarm is considered an important serious condition in the system. An operator will immediately be notified in case of any alarm by the flashing alarm icon in Ethiris Client.

You have now completed all the exercises. We hope that you have learned a lot about Ethiris.

For more detailed information about different parts of Ethiris, please read the *Ethiris Client User´s Guide* and *Admin - Configuration for Ethiris*.

3 Explanation of Terms

AVI

Audio Video Interleaved. File format for video sequences. Ethiris can export frames to such a file, which can then be played in Windows Media Player, for example.

Camera view

A view that can display frames from a camera. A live view can display up to 64 camera views simultaneously.

Client view

A client view can contain between 1 and 64 camera views. Each client view can be linked to a function button that is displayed in the live view.

COM

Component Object Model. A binary communication standard from Microsoft that can be used in communication between various program components. COM is the basis of OPC.

Command port

In communication via TCP/IP, the recipient of data must be identified with both an IP address and a port number. We call the port number on which an Ethiris server listens for commands from clients the command port. By default, this is 1235. If necessary, the number can be changed in the system configuration for each Ethiris server. A port number can assume values between 1 and 65535.

Continuously recorded frames

A type of recorded frames that are recorded continuously from a camera at a specific time interval between each frame. The video is recorded regardless of whether alarm events occur.

Control panel

A panel with some function buttons and text information that can be displayed at the bottom of a camera view.

Data store

The data store is located in Ethiris Server and contains all variables and their current state in the system.

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Document window

This is a window that is used for presenting the various types of information, such as live and recorded video. In Ethiris Client, there are four document windows by default. These are *Default Live panel*, *Events panel*, *Alarms panel,* and *Player panel.*

Default Live panel

This is the window where live video is displayed by default. However, it is possible to create additional live windows as well.

Floating window

A floating window has been torn away from the main frame and is floating freely. In a floating state, a window can be positioned on another monitor and can be resized as desired.

Function button

A function button in this context is a button in the live view that, when you click it, either selects a predefined layout of camera views or starts recording from the camera selected.

FTP

File Transfer Protocol. In Ethiris, it is possible for certain camera models to specify that on an alarm, the images shall be sent by FTP. In that case, images are not sent continuously which is the normal behavior, but images are sent only when an alarm is detected in the camera. An event is created in Ethiris just as it was a normal event-triggered recording. In this way, you can conserve a lot of bandwidth in your system.

H.264

A video compression standard built on similar technology as MPEG-4. H.264 is also called MPEG-4 part 10. It is even more compact then MPEG-4, about half the size for a comparable quality. But on the other hand, it is very demanding for the hardware, especially when it comes to high-resolution frames.

Hotspot

A type of camera view that displays frames from the camera manually selected and/or automatically from a camera linked to a Boolean variable in Ethiris Server's data store.

I/O

Input/Output, exist both as digital and analog signals. Several camera models have a number of digital inputs and outputs that can be used to connect extern equipment to the system.

IP address

Each device connected to a computer network has a unique IP address that consists of 4 groups of digits. Each group can be 0-255, for example, 192.168.30.29.

License key

A key that is received from Kentima Solutions after a registration key has been submitted. The license key is used to "unlock" Ethiris via the license dialog.

Live frames

Video from a camera that is being filmed right now, as opposed to recorded frames.

Main frame

The main frame is the area in Ethiris Client available for various windows such as the *Default Live panel*, the *Player,* and tool windows.

MJPEG

Motion JPEG, a video compression format where each frame is a separate JPEG image.

MPEG-4

A video compression format where a complete image (i.e., I-frame) is followed by several smaller images depicting the difference compared to the last image (P-frames or B-frames). This is a more compact format compared to MJPEG.

Network camera

A type of camera that can be directly connected to a network. The camera device has a unique IP address.

OPC

OLE for Process Control. A communication standard developed within the automation industry for communication between different systems.

Pin

A tool window can be pinned, which means that it will not slide into the edge when it loses focus, but it stays open.

Preset position

For a camera with a PTZ function, you can define pre-set positions in Ethiris. A pre-set position is a named position with pre-set coordinates for pan, tilt, and zoom. A preset position can be activated manually in Ethiris client by an operator, but also automatically through a script in the Ethiris server. PTZ tours are built up by a list of preset positions.

Product code

A key following each Ethiris license. The key shall be entered at installation time. The Ethiris server requires a product code at installation.

Protocol

The selected protocol specifies what method to use when Ethiris requests images from a camera. Today the choices are MJPEG, MPEG-4, H.264, and H.265.

PTZ

Pan, Tilt & Zoom. The standard designation for cameras with these functions.

Receive port

When communicating over RTP, the images are sent from the camera to a specific port number on the computer where Ethiris server runs. If you don't specifically set a port number, Ethiris will randomly select an available port number. In some cases, e.g., if you have to open the port in a firewall, you want to specify this port number.

Registration key

The key that uniquely identifies an instance of a program. The key is generated by clicking the *Register* button in the license dialog. This key must be sent to Kentima Solutions AB to unlock Ethiris.

Round

A type of camera view in which a list of cameras is created for automatic switching between cameras at a specific time interval.

RTP

Real-Time Protocol. The video transport protocol used on TCP/IP networks, most common for MPEG4 and H264 video.

Scale mode

It indicates how the frame in a camera view is to be displayed. The options are: *Keep Aspect Ratio*, *Fill Display area,* and *Original size*. The default scale mode is *Keep Aspect Ratio,* where the image is as large as possible without distorting the proportions (aspect ratio).

Section

A part of the system with its own set of view buttons and function buttons. Each section is represented by an item in *Sections Explorer*. A *Section* can consist of other sections making it possible to build hierarchies.

Tab group

Both *Document windows* and *Tool windows* can be grouped together and become tabs in a group. In this state, only one window at a time in the group can be visible. Click a tab to make the corresponding window visible.

TCP/IP

Transmission Control Protocol/Internet Protocol.

Test license

When Ethiris is installed, a test license is received with which you can test the product free of charge.

Timelines

Ethiris timelines are used in the *Player* for graphically visualize when there is recorded video for various cameras. *Event* recordings are indicated with red color, and *continuous* recordings are indicated with blue color.

Tool window

A Tool window is used for supplying the user with various tools such as a list of available sections, views, or cameras. In Ethiris Client, there are four Tool windows. These are Sections Explorer, Views Explorer, Cameras, and Export Jobs.

Trigger level

The level of motion required in a frame for it to be interpreted as a motion alarm. Indicated in % of pixels with motion in relation to all pixels monitored in the frame.

Unpin

When you *unpin* a tool window, it will slide into the edge of the main frame when it loses focus, leaving visible only a tag with the name of the window.

User interface

The elements in a computer program with which a user works when using the program. What is visible on the screen, such as forms, dialogs, etc.

User operation

There are 30 various user operations for which you can require authorization in Ethiris. Examples of user operations are "View live video" and "Update server configuration".

Video encoder

A device that can be directly connected to a computer network. Its purpose is to convert one or more video signals to a format that can be sent on the network, for example, MJPEG.

Video request port

When communicating over RTP, the camera might require video requests on a port different from the normal communication port over TCP. In that case, you can specify the correct video request port. The default value for this port is automatically selected by Ethiris based on the selected camera model.

Viewing area

The area in the live view that is used to display frames from different cameras, i.e., excluding menu and function buttons.

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Mailing address:
PO BOX 174
SE-245 22 Staffanstorp
Sweden

Phone: +46 (0)46-25 30 40

E-mail: info@kentima.com

Visiting address:
Kastanjevägen 2
245 44 Staffanstorp
Sweden

Fax: +46 (0)46-25 03 10

www.kentima.com

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