AxxonSoft

The Axxon Smart

Software Package

User Guide

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Appendix 1. Glossary 234

1 Introduction

1.1 General Information

This document contains current information as of the time of publishing. AxxonSoft may change the document without advance notice to third parties.

1.2 Purpose of This Document

The Axxon Smart Software Package User Guide contains the information necessary for building, implementing and operating a security system based on the Axxon Smart software package.

The structure of this document enables the user to get acquainted with the software package and then, depending on the user's level of training, choose sections of interest for more detailed study. The chapters in this guide, whether they are informative or serve as a reference, have their own internal structure.

The chapters "Introduction and "Description of the Software Package" are intended to generally acquaint the user with the technical features and functionality of the Axxon Smart software package, as well as with the key stages of building a security system based on the software package.

Recommendations to the user/administrator for installing the software and configuring equipment are presented in detail in the chapter "Installing the Axxon Smart Software Package". The chapter "Licensing the Software Product" contains instructions on how to register a license to use the Axxon Smart software package.

Startup and shutdown of the software package are described in the Configuration of the Axxon Smart Software Package chapter.

The chapter "Configuration of the Axxon Smart Software Package" presents step-by-step instructions on configuring user-specific settings and activating the required functionality. This information is useful both for system administrators and for operators with permission to manage system settings.

Recommendations on configuring the user interface, working in various video surveillance modes, and utilizing the functional capabilities of the Axxon Smart software package are presented in the chapter "Creating and Configuring the Role and User System Objects".

The chapter "Description of Utilities" contains a description of additional software utilities employed when working with the software package.

The appendix contains a glossary of the product's basic terms and definitions. It also lists all known issues that you may encounter while using Axxon Smart.

1.3 Purpose of the Axxon Smart Software Package

The Axxon Smart software package is an entry-level product in the Axxon product line developed by AxxonSoft. Security systems based on Axxon Smart range from home security systems (for an apartment or house) to professional security systems for small and midsize businesses (hotels, automotive service centers, shops, parking structures, etc.).

Video and audio surveillance of guarded locations, video analysis and rapid response to suspicious situations without operator involvement, and storage and export of obtained data are just a few of Axxon Smart's many functions.

The Axxon Smart software package enables the user to accomplish a wide spectrum of tasks, as it works both with digital equipment and with analog video cameras (through Stretch cards), and also makes it possible to create a hybrid security system containing both kinds of equipment (Fig. 1.3—1).

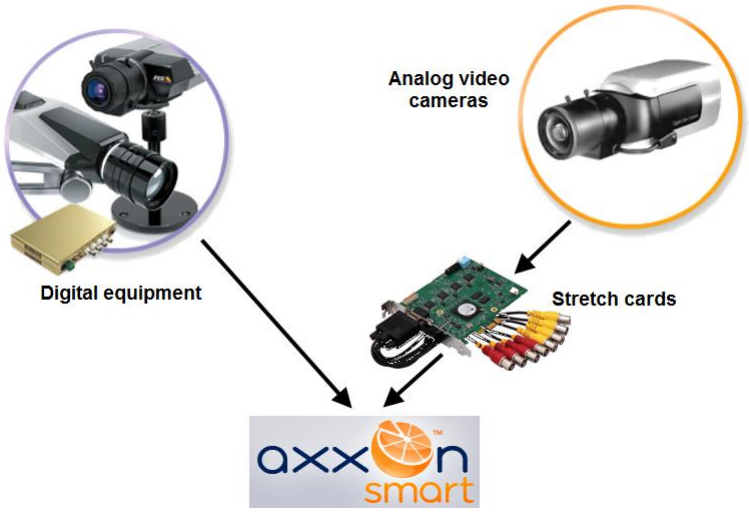


Fig. 1.3—1 A hybrid security system based on the Axxon Smart software package

The Axxon Smart software package supports touch-sensitive monitors.

2 Description of the Software Package

2.1 Basic Principles of Building a Security System Based on the Axxon Smart Software Package

Building a security system based on the Axxon Smart software package includes the following recommended stages:

1. Selecting a configuration for the security system (with the help of professionals).
2. Building a separate local area network with restricted access.
3. Calculating the sufficient bandwidth required for each segment of the local area network.
4. Selecting and configuring the software and hardware platform on which the selected security system configuration will be implemented (selecting and configuring personal computers to act as servers and clients in accordance with requirements (see the section titled *Implementation Requirements for the Axxon Smart Software Package*, *Operating system requirements*).
5. Selecting and connecting reliable equipment that is optimally suited for a specific security system (with the help of professionals).
6. Training personnel to work with the Axxon Smart software package in accordance with requirements (see the section titled *Note. At the moment of writing of this documentation, the Stetch cards are compatible with all Windows OS versions that run with Axxon Smart, except for 64-bit ones.*
7. Requirements for Personnel Quantity and Qualifications).

2.2 Basic subsystems of the Axxon Smart software package and their functions

In order to determine the required configuration for a security system, first you must become familiar with the functional capabilities of the Axxon Smart software package. The following subsystems provide these capabilities:

1. The video subsystem
2. The audio subsystem
3. The analytics subsystem
4. The PTZ subsystem
5. The event registration subsystem
6. The notification subsystem
7. The sensor/relay subsystem

These subsystems can interact in either a single-server or multi-server (distributed) system.

This section presents information about the main functions offered by Axxon Smart's subsystems.

2.2.1 The Video Subsystem

The video subsystem encompasses all the tools that provide for the collection of video data, its processing, and its storage on media.

Video data comes in from IP devices connected over TCP/IP or from analog video cameras connected through Stretch cards.

Video data in the Axxon Smart software package is processed automatically by the analytics subsystem or manually by an operator. Depending on the task, the results of the video data processing are transferred to and utilized by other subsystems of the software package, such as the event registration subsystem, the notification subsystem, and others.

The following system objects enable the functions of the video subsystem:

1. **Camera**
2. **IP server**

The functions of the video subsystem take place through the following user interfaces:

1. Video surveillance monitor
2. Viewing tile
3. Control elements accessible to the user when working with **Layouts**.

Thanks to *Axxon Smart*'s video subsystem, the user can utilize the following functions:

1. Viewing video images in a supported resolution from a video camera while simultaneously listening to the audio from a microphone linked to that camera (if it is connected to an IP server) or connected to it physically.
2. Displaying information in a viewing tile:
   2.1. Current time
   2.2. Identification number and name of video camera
   2.3. Audio volume
   2.4. Indicator of recording of video image from a camera.
   2.5. Video stream parameters (when configured accordingly; see the section titled Configuring Display of Video Statistics).
3. Video image processing:
   3.1. Digital zooming
   3.2. Contrast adjustment

3.3. Deinterlacing

3.4. Sharpness adjustment

4. Modifying layouts, including changing the sizes of viewing tiles.
5. Displaying a magnified video image from a selected video camera (viewing tile).
6. Displaying a snapshot initiated by an operator without interrupting video recording.
7. Color coding a viewing tile (video camera) to indicate its status: **Alarm**, **No alarm**, **Snapshot**, etc.
8. Video recording can be performed in the following modes:

   8.1. Continuous recording.

   8.2. Video recording initiated by a detector or by an operator, with a pre-event recording option.
9. Recording to archive (video and audio streams are written to one file).
10. Storage and export of single frames and video sequences.
11. Playback of video image recorded to the archive from one or more video cameras (in the latter case, playback will be synchronous) with simultaneous playback of sound recorded together with the video.

NOTE. In the case of synchronous playback of video from several video cameras, the sound is played back only from the microphone of an active video camera.

12. Working with alarms registered by one or more video cameras:

    12.1. Navigating in archive recordings of alarms.

    12.2. Viewing brief information on an alarm and its recording in the archive.

    12.3. Filtering alarms.
13. Using any client to view video footage from all servers over TCP/IP

2.2.2 The Audio Subsystem

Audio subsystem encompasses all the tools that provide for the collection of audio data, its processing, and its storage on media.

Audio data come in from microphones which are either linked to video cameras (only for video cameras connected to IP servers) or physically connected to video cameras (embedded and external microphones).

NOTE. The indicator that a microphone is linked/physically connected to a video camera is that it will be a child of the video camera object.

Audio data is processed both automatically by the analytics subsystem and manually by the operator. Depending on the task, the results of the audio data processing are transferred to and utilized by other

subsystems of the software package, such as the event registration subsystem, the notification subsystem, and others.

The **Microphone** system object enables the functions of the audio subsystem. You can access these functions through the Viewing tile context menu.

Thanks to Axxon Smart's audio subsystem, the user can utilize the following functions:

1. Listening to audio from a microphone linked to a video camera while simultaneously viewing video images from that camera.
2. Recording to archive (video and audio streams are written to one file).
3. Simultaneous playback of the video and audio recordings of an event.
4. Using any client to listen to audio from all servers over TCP/IP.

2.2.3 The Analytics Subsystem

The analytics subsystem encompasses all the tools that provide for automatic analysis of incoming video and audio data.

NOTE. The operator also has the option of analyzing video and audio data manually.

Depending on the task, results of the data analysis are transferred to and utilized by other subsystems of the software package, such as the event registration subsystem, the notification subsystem, the relay subsystem, and others.

Integrated use of the following types of detectors enables the functions of the analytics subsystem:

1. Situation analysis detectors
2. Basic video detectors
3. Basic audio detectors
4. Built-in detectors of video cameras (video stream processing)
5. Embedded detectors (processing signals from a "dry contact" sensor of a video camera).

Results of the video data processing appear on the video surveillance monitor.

Thanks to *Axxon Smart*'s analytics subsystem, the user can utilize the following functions:

1. Setting detection zones and/or masks.
2. Detecting motion and/or stopping of an object in the set area within a camera's field of view.
3. Detection of an object crossing a set line within a camera's field of view.
4. Detecting the appearance and/or disappearance of an object in the set area within a camera's field of view.
5. Detecting abandoned items in the set area within a camera's field of view.

6. Detecting loitering of an object in a set area of a video camera's field of view.
7. Detecting changes in the position of a video camera.
8. Detecting loss of image quality.
9. Detecting the absence/presence of an audio signal from a microphone.
10. Detecting noise.
11. Video stream processing functions provided by the embedded detectors of video cameras which have been integrated into the *Axxon Smart* software package.
12. Processing of signals (non-contact/contact) from embedded "dry contact" sensors of video cameras with the possibility of configuring for the execution of a specific action when such signals are received (see next item).
13. Setting the responses automatically executed when a detector is triggered (individually for each detector).
14. Simultaneous use of various types of detectors.

2.2.4 The PTZ Subsystem

The PTZ subsystem encompasses all the tools that provide for remote control of a PTZ device and the lens of a video camera.

In the Axxon Smart software package, the **Telemetry** system object enables the functions of the PTZ subsystem. You can access these functions through the PTZ device control panel.

NOTE. You can also control a PTZ device with a physical USB joystick (the system automatically determines when such a device is connected to a computer with Axxon Smart installed).

Thanks to Axxon Smart's PTZ subsystem, the user can utilize the following functions:

1. Setting and using preset video camera positions (presets).
2. Automatic modification of a video camera position along the route offered in the camera's list of presets (patrolling).
3. Controlling a video camera's lens: Modifying the parameters of the iris, focus, and optical zoom.
4. Manual modification of a video camera's horizontal and vertical tilt angle using a virtual joystick.

2.2.5 The Event Registration Subsystem

The event registration subsystem encompasses all the tools that provide for the collection of data about system events, its processing, and its storage on media.

In the Axxon Smart software package, the system (internal) journal, which is kept by default, along with the utility for managing optional external journals, enables and implements the functions of the event registration subsystem.

Thanks to Axxon Smart's event registration subsystem, the user can utilize the following functions:

1. Real-time displaying of error data.
2. Storage of system event data in a local database on the server.
3. Viewing the system event data stored in the system journal.
4. Searching for data about system events which occurred within a certain time period.
5. Filtering by event type when searching the system journal.
6. Filtering by a key phrase found in the system description of an event when searching the system journal.
7. Exporting system event data in the required format.
8. Logging the data about required events to external journals, archiving and storing it on media.

2.2.6 The Notification Subsystem

The notification subsystem encompasses all the tools that provide for notification of the user about events which have occurred in the system.

In the Axxon Smart software package, the following system objects enable the functions of the notification subsystem:

1. **Speaker**
2. **SMS**
3. **E-mail**

The notification subsystem does not require a user interface.

Thanks to Axxon Smart's notification subsystem, the user can utilize the following functions when detectors are triggered:

1. Audio notification
2. SMS notification
3. E-mail notification

2.2.7 The Relay Subsystem

The relay subsystem encompasses all the tools that provide for the triggering of an execution device connected to the embedded relay port of a video camera or IP server when a detector (including one which processes the embedded sensor of a video camera or IP server) is triggered.

In the Axxon Smart software package, the **Relay** system object enables the functions of the relay subsystem.

The relay subsystem does not require a user interface.

Thanks to Axxon Smart's relay subsystem, the user can configure the triggering of a video camera's or IP server's built-in relay when a detector is triggered.

2.2.8 Forensic Search Subsystem

The Forensic Search subsystem is a set of tools for searching the video recordings in the archive using video image metadata. The video image metadata include information on the trajectories of object motion in the video camera's field of view, object color, etc. (depending on the algorithms being executed on the video camera).

In the *Axxon Smart* software package, the functions of the Forensic Search subsystem are enabled by the object trajectory database (created when the software package is installed). These functions can be accessed through the video surveillance monitor.

Thanks to *Axxon Smart*'s Forensic Search subsystem, the user can utilize the following functions:

1. Selection of a video camera from which it is necessary to record video image metadata to the object trajectory database.
2. One-time searching by one of the criteria related to the video camera's field of view:
    2.1 motion in an area;
    2.2 crossing of a virtual line;
    2.3 loitering of an object in an area;
    2.4 simultaneous presence of a large number of objects in an area;
    2.5 motion from one area to another.
3. Searching by the following parameters (optional):

3.1 minimum object size;
3.2 maximum object size;
3.3 object color;
3.4 minimum object speed;
3.5 maximum object speed;
3.6 direction of object motion;
3.7 maximum number of objects in an area;
3.8 length of time an object remains in an area;

2.2.9 Functions of the Distributed Security System

You can create a distributed system within the Axxon Smart domain.

A domain is a selected group of computers on which the server configuration of the Axxon Smart software package is installed. Linking the servers in a group makes it possible to set up interaction between them, thus organizing a distributed system.

This version of Axxon Smart allows for 4 servers only to be added to the domain Only servers which belong to one domain can interact (Fig. 2.2—1).

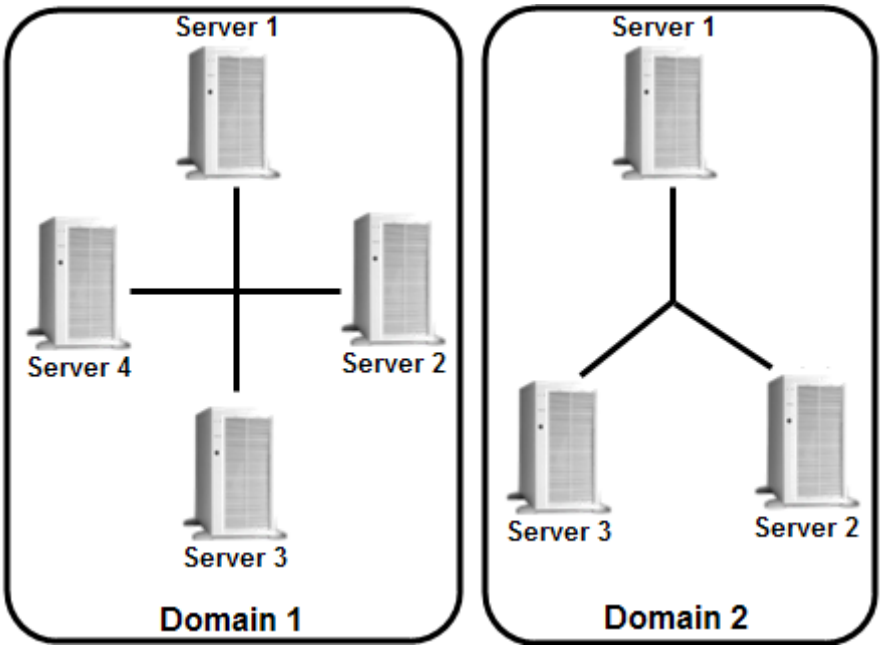


Fig. 2.2—1 Setup of servers interaction within a domain

A distributed security system based on the Axxon Smart software package offers the user the following functional capabilities:

1. Viewing and manual processing of video and audio data from several servers on one client.
2. Controlling video cameras connected to various servers from one client.
3. Configuring all servers of the distributed system on one client.
4. Execution of automatic responses when detectors are triggered (audio notification, triggering of relays, SMS and e-mail notification, etc.) within the distributed system.

To set up domains, please refer to the section titled XXX.

2.3 Specifications of the Axxon Smart Software Package

Security systems based on the Axxon Smart software package have the following specifications (Table 2.3—1).

Table 2.3—1 Specifications of the Axxon Smart software package

Specification	Value
Number of servers in the system	up to 4
Number of clients which support simultaneous connection to the server	unlimited
Number of servers which simultaneously transmit video images to a client	up to 4
Number of video capture channels for live video processing on one server	up to 64

Specification	Value
Number of simultaneously processed signals from microphones	up to 64
Number of audio output channels (to speakers, headphones, etc.)	depends on the sound card used for playback
Number of PTZ devices used	up to 64
Number of tiles displayed simultaneously on a client's screen	up to 25
Analog video camera support	yes (through Stretch cards)
IP device support	IP cameras and IP video servers. The list is constantly growing; you can add support for new devices to the system by updating the Axxon Driver Pack software
Number of archives in the system	unlimited
Video compression algorithms	MJPEG, MPEG-4, MxPEG, H.264, Motion Wavelet
Hardware decompression of video	H.264 on NVIDIA graphics cards which support CUDA
Available video image resolutions	resolutions supported by the video cameras
Support of embedded video camera analytics	yes
Support of touch-sensitive monitors	yes

2.4 Implementation Requirements for the Axxon Smart Software Package

2.4.1 Limitations of the Axxon Smart Software Package

When working with Axxon Smart, the user must keep in mind the limitations that the developer imposed on the system in order to ensure its operability (Table 2.4—1).

Table 2.4—1 Limitations of the Axxon Smart software package

№	Limitation	Single-server system	Multi-server system
1	The *Axxon Smart* software package must be installed with Windows OS administrator permissions	+	+
2	The computer name can contain only Latin characters and/or Arabic numerals	+	+
3	For correct installation of Axxon Smart, there should be no spaces at the beginning of the name of the directory which contains the installer	+	+
4	Once Axxon Smart has been installed, the computer name cannot be changed	+	+
5	Time must be synchronized among all computers in	+	+

№	Limitation	Single-server system	Multi-server system
	the system (to be configured by the user)		
6	When using NOD32 antivirus, it is strongly recommended that you either disable the Web Access Protection service or add the IP addresses of IP cameras into the list of exceptions for antivirus scans	+	+
7	Before installing Axxon Smart, make sure the video card drivers on the computer are fully up to date	+	+
8	Users should access computers remotely using a NetBIOS name	+	+
9	Length of the computer NetBIOS name cannot exceed 15 symbols.	+	+
10	When configuring the firewall, limiting the network activity by ports is not allowed, as Axxon Smart uses the entire range of TCP ports	+	+
11	Launching a client on a remote computer using the standard Windows OS utility **Remote Desktop Connection** is not possible	+	+
13	In the current implementation, all users of the *Axxon Smart* software package should fulfill the role of **Administrators** (see the section titled *Creating and Configuring the Role and User System Objects*).	+	+

2.4.2 Operating system requirements

Axxon Smart software package is compatible with 32-bit and 64-bit licensed versions of Microsoft Windows operating system (Table 2.4—2).

Table 2.4—2 Supported operating systems

Windows version	Supported edition	Note
Windows XP SP2 (x64)	Windows XP Professional	OS edition, enabling to use all realized product features
Windows XP SP3 (x86)	Windows XP Home Edition	Restrictions, imposed by OS edition (1 physical processor, 5 SMB connections) – see http://www.microsoft.com
	Windows XP Professional	OS edition, enabling to use all realized product features
	Windows XP Tablet PC Edition	OS edition, enabling to use all realized product features
	Windows XP Media Center Edition	OS edition, enabling to use all realized product features
	Standard Edition	OS edition, enabling to use all realized product features

	Enterprise Edition	OS edition, enabling to use all realized product features	
	Datacenter Edition	OS edition, enabling to use all realized product features	
	Web Edition (x86)	Restrictions, imposed by OS edition (2 Gb RAM, 2 physical processors) – see http://www.microsoft.com	
Windows Vista SP2 (x86, x64)	Home Basic	Restrictions, imposed by OS edition (1 physical processor, 5 SMB connections) – see http://www.microsoft.com	
	Home Premium	Restrictions, imposed by OS edition (1 physical processor) – see http://www.microsoft.com	
	Business	OS edition, enabling to use all realized product features	
	Enterprise	OS edition, enabling to use all realized product features	
	Ultimate	OS edition, enabling to use all realized product features	
Windows Server 2008 SP2 (x86, x64)	Enterprise	OS edition, enabling to use all realized product features.	Full Installation type is supported.Server Core Installation type is not supported
	Datacenter	OS edition, enabling to use all realized product features.	
	Standard	OS edition, enabling to use all realized product features.	
	Web	OS edition, enabling to use all realized product features.	
	HPC	OS edition, enabling to use all realized product features.	
Windows Server 2008 R2 SP1 (x64)	Enterprise	OS edition, enabling to use all realized product features.	Full Installation type is supported.Server Core Installation type is not supported
	Datacenter	OS edition, enabling to use all realized product features.	
	Standard	OS edition, enabling to use all realized product features.	
	Web	OS edition, enabling to use all realized product features.	
	HPC	OS edition, enabling to use all realized product features.	
Windows 7 SP1 (x86, x64)	Starter (x86)	Restrictions, posed by OS edition (2GB of main memory, 1 physical processor, 1 monitor) - see http://www.microsoft.com	Stretch cards are supported in 32-bit version only
	Home Basic	Restrictions, posed by OS edition (1 physical processor) - see http://www.microsoft.com	
	Home Premium	Restrictions, posed by OS edition (1 physical processor) - see http://www.microsoft.com	
	Professional	OS edition, enabling to use all realized product features.	
	Enterprise	OS edition, enabling to use all realized product features.	
	Ultimate	OS edition, enabling to use all realized product features.	

Note. At the moment of writing of this documentation, the Stetch cards are compatible with all Windows OS versions that run with Axxon Smart, except for 64-bit ones.

2.4.3 Requirements for Personnel Quantity and Qualifications

The following roles have been defined for operating the Axxon Smart software package:

1. security system administrator
2. security system operator

In special cases, one person could perform the functions of both the administrator and the operator.

The main duties of the administrator are to:

1. Update, configure, and monitor the operability of the security system's hardware.
2. Install, update, configure, and monitor the operability of basic and system software.
3. Install, configure, and monitor software applications.
4. Manage user accounts (this duty can be carried out by a user entrusted with system administrator permissions).

An administrator must be highly qualified and have practical experience installing, configuring, and administering the software and hardware employed in the software package.

The software package is structured so that all accessible functionality can either be managed by one administrator, or administration responsibilities can be divided among several users.

The main duties of an operator are to:

1. Work with the software's GUI (graphical user interface).
2. Optimize the performance of the personal computer to carry out tasks using the functionality provided in the software package.
3. Create roles and users of the system (if the operator has been granted the appropriate permissions).

A system operator must have experience with and be a qualified user of PCs running Microsoft Windows and must be able to easily perform basic operations.

2.5 Interface of the Axxon Smart Software Package

The Axxon Smart software package's interface consists of three expanding menus:

1. **Layouts** 
2. **Alerts** 
3. **Settings** 

A menu expands when you click the corresponding icon, while the previously expanded menu collapses. One of the menus is always expanded.

Access to any given menu is configured individually for each role in the system (See the section titled *Configuring Archives*).

If the appropriate settings are enabled (see the section titled *Configuring Autohide for Panels*), when there is no activity in the system, the system first shrinks and then hides the panel for switching between menus, i.e., the control panel.

3 Installing the Axxon Smart Software Package

3.1 Installing Devices

3.1.1 Types of Devices Used

An IP device is the source of the video signal (video data) for the Axxon Smart software.

NOTE. You can connect analog video cameras to Axxon Smart via Stretch cards, which the software defines as IP devices.

The following types of equipment are IP video and audio surveillance devices:

1. IP video cameras
2. Various types of IP video servers

IP video servers which use analog video cameras directly connected to them, digitize the analog video signal, and transmit it to users via TCP/IP. When working with analog video cameras connected to IP video servers, users can utilize the same video image viewing and transmission functions as with IP video cameras.

3.1.2 Connecting IP Devices

To work with IP devices, you need to connect the Axxon Smart server to the local network where the required IP devices are enabled (Fig. 3.1—1).

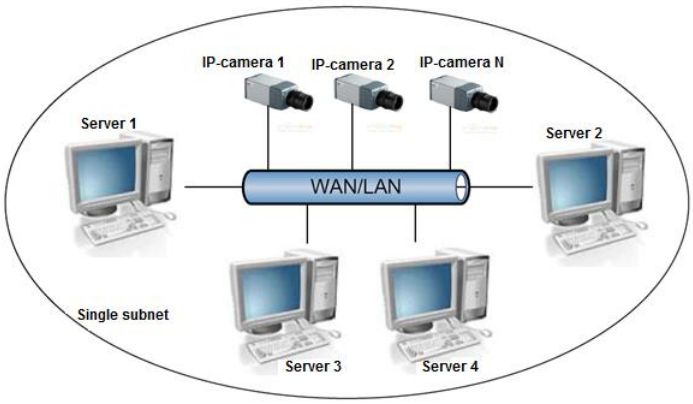


Fig. 3.1—1 Diagram of IP device connection

Based on the video signal coming in from the IP device, an assessment is made of the guarded location and the system responds to events registered for that location. The content and quality of the obtained video information depends on how the IP device is installed and configured. There are a number of rules that must be followed to obtain a high-quality video signal. In particular, high-quality peripheral equipment (hubs/routers) must be used, i.e. Home/Office devices, which are not intended for use in these kinds of security systems, are unacceptable.

NOTE. IP devices connected to the Home/Office equipment will transmit a video stream with an unacceptably long delay (from 1.5 to 3 seconds per frame).

Detailed information about creating a local network and connecting IP equipment to it is presented in the corresponding reference documents.

3.1.3 Configuring IP Devices in Windows OS

IP devices can be configured in Windows OS using the following software:

1. Software included with the IP device. This software is used to accomplish the following tasks:

    1.1. Searching for network devices connected to the local network.

    1.2. Preliminary IP address assignment (without consideration for routing).

Important! Without assigning preliminary IP addresses to the devices, it is not possible to access their Web interface.

2. Web interface of the IP device. This interface is used to accomplish the following tasks:

    2.1. Configuring the IP devices with consideration for routing.

    2.2. Configuring modes for the IP devices to work with video and audio signals.

    2.3. Viewing video images coming in from IP devices in standard Web browser mode.

Configuring IP devices in Windows OS is described in detail in the official reference documentation for the devices in question.

3.1.4 Particulars of Configuration of Devices

3.1.4.1 *Axis IP Devices*

For Axis IP devices on which the *Bonjour* function is supported and enabled, changing the default value of the **Friendly name** parameter is strongly discouraged. If an arbitrary **Friendly name** value is set for an Axis IP device, a search for connected equipment in the *Axxon Smart* software package will give incorrect results for this IP device.

*NOTE 1. The **Friendly name** parameter is configured through the Web interface of the IP device: **Setup** -> **System options** -> **Network** -> **Bonjour**.*

*NOTE 2. The **Friendly name** parameter has the following default value: AXIS <model name> - <mac address>, where <model name> is the model of the Axis IP device and <mac address> is its MAC address (for example, AXIS 214 - 00408C7D2610).*

3.1.4.2 *Stretch Cards*

Only video cameras supporting the same television standard, PAL or NTSC, can be simultaneously connected to VRC6004, VRC6008, and VRC6416 Stretch cards. The TV standard used in video cameras connected through a Stretch card is set automatically at the time of launching in the *Axxon Smart* software package. Changes in the **TV standard** parameter are invalid.

*NOTE. The **TV standard** parameter is located in the **Video stream settings** group in the properties of a **Camera** object which is the child of a **Stretch card** object.*

3.1.4.3 *IP devices which partially support the ONVIF protocol*

To connect IP devices which only partially support ONVIF functions to the *Axxon Smart* software package, you must use an ONVIF driver (Fig. 3.1—2, 1) with compatibility mode enabled.

NOTE. Such video cameras include Hikvision models and early versions of firmware from Sony, Samsung and others.

Compatibility mode makes it possible to receive a video image from video cameras; however, some capabilities of the Axxon Smart software package will be unavailable.

Enabling compatibility mode for a video camera (Fig. 3.1—2, 2) connected using the ONVIF protocol (Fig. 3.1—2, 1) is recommended if the connection settings are correct, but there is no video image.

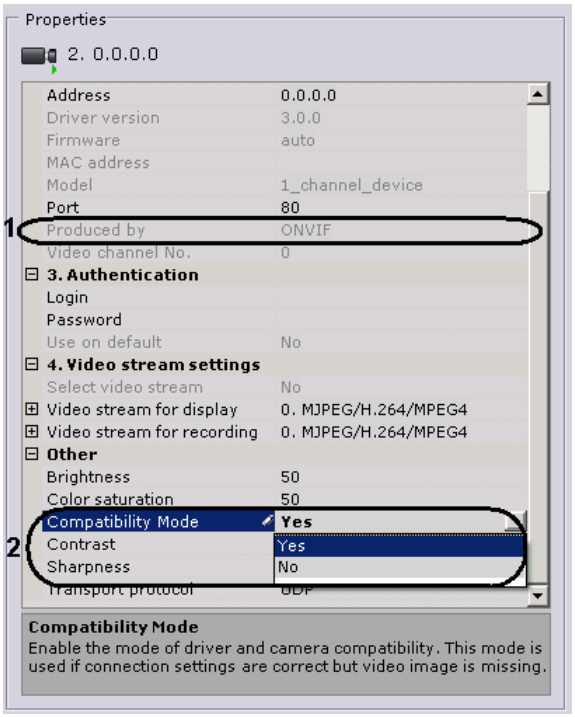


Fig. 3.1—2 The ONVIF compatibility mode

3.1.4.4 *Sony IP Devices*

Some Sony models support encoding of the video signal in two formats simultaneously. To use this option you must perform the following steps (Fig. 3.1—3):

1. Select the value **Yes** for the **Video stream selection** and **Dual encoding** settings.
2. From the **Codec priority** list, select the codec which will take priority when dual encoding.

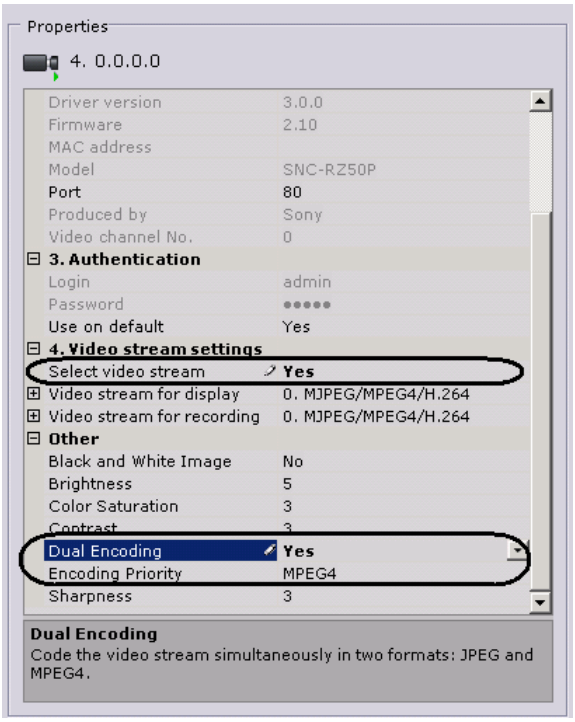


Fig. 3.1—3 Configuring Dual Encoding in Sony video cameras

3.2 Installation and Removal of the Axxon Smart Software Package

3.2.1 Types of Installation

The following two types of installations are available when installing Axxon Smart to a personal computer:

1. **Server and Client** — This type of installation is used to accomplish the following tasks:

   1.1. Physical connection to a personal computer and software configuration of video and audio capture devices (video cameras, microphones), event generation devices (sensors, relays, etc.), and hard disks for organizing data archives.

   1.2. Configuring the security system architecture (creating the necessary system objects and defining the connections between them).

   1.3. Installing the software's user interfaces, which enable any user to connect to any server within a single security system and to perform administration/management/monitoring of a guarded location based on the permissions granted by the administrator.

2. **Client** – This type of installation is used for installing the software's user interfaces, which enable any user to connect to any server within a single security system and to perform administration/management/monitoring of a guarded location based on the permissions granted by the administrator.

How the basic properties of a computer in the security system depend on the type of Axxon Smart installation is presented later (Table 3.2—1).

Table 3.2—1 Characteristics of installation types of the Axxon Smart software package

Properties \ type of installation	Client	Server and Client
A constant connection to another machine is required	+	-
Devices are connected locally	-	+
A local user interface is available	+	+

3.2.2 Installation

To install Axxon Smart, regardless of the type of installation, you must perform the following steps:

1. Insert the Axxon Smart installation CD into the CD-ROM drive. A dialog box will display the disk contents (Fig. 3.2—1).

Fig. 3.2—1 Contents of the installation disk

2. Run the Setup.exe file (see Fig. 3.2—1).

3. In the dialog box, choose the desired language from the list and click **OK** (Fig. 3.2—2).

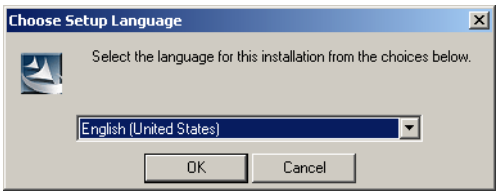


Fig. 3.2—2 Choosing the installation program language

The setup wizard will now prepare for installation (Fig. 3.2—3).

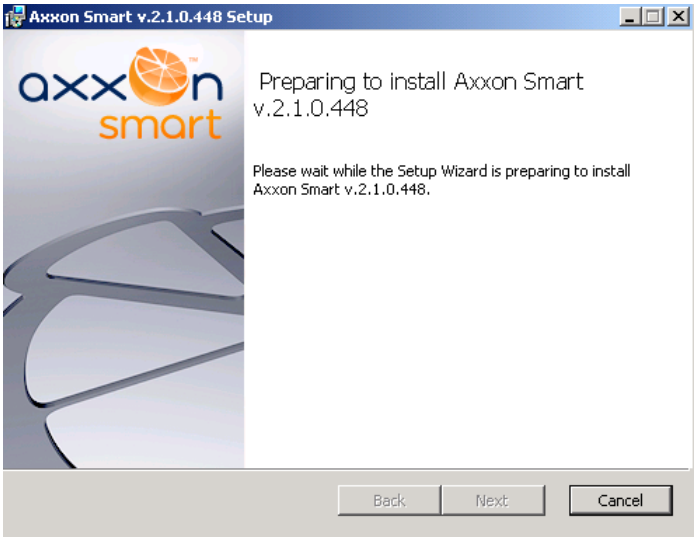


Fig. 3.2—3 Setup wizard preparation screen

If the *.NET Framework 3.5 SP1* software is not installed in the operating system, you will be prompted to install it. To do this, you must agree with the license agreement in the *.NET Framework 3.5 SP1* installation program and then follow its interactive instructions.

NOTE. Originally, the .NET Framework 3.5 SP1 software is available only in Windows 7.

4. Click **Next** on the setup wizard's welcome screen (Fig. 3.2—4).

Fig. 3.2—4 Setup wizard welcome screen

5. To proceed with the installation, accept the terms of the license agreement by selecting "I accept the terms of the License Agreement" and click **Next** (Fig. 3.2—5).

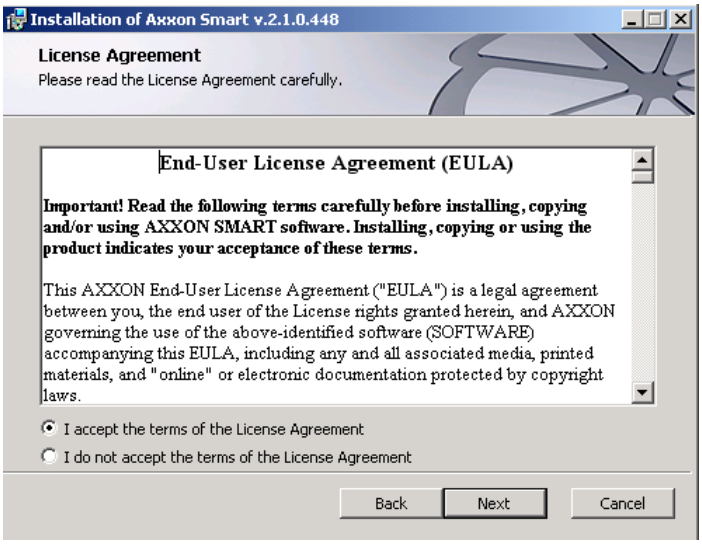


Fig. 3.2—5 Dialog box with license agreement

6. Select the Axxon Smart software installation type in the dialog box (Fig. 3.2—6) by clicking the appropriate option button and click **Next**.

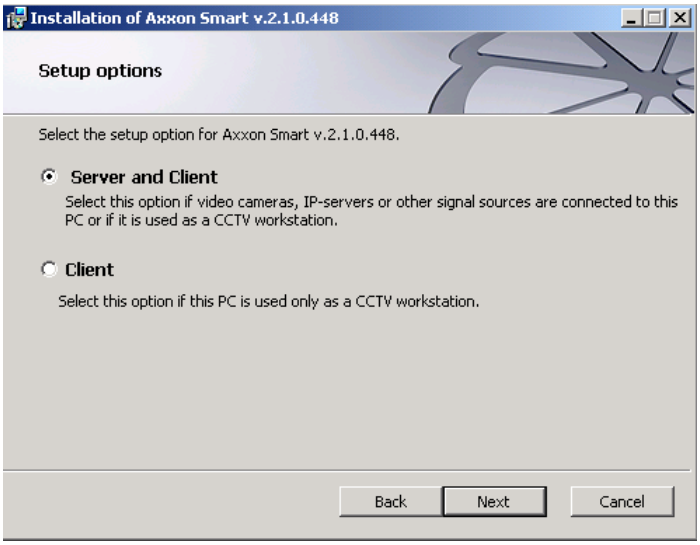


Fig. 3.2—6 Selecting installation type

7. Specify the directory in which to install the Axxon Smart software kit onto your computer and click **Next** (Fig. 3.2—7). The package includes Axxon Smart and the Journal BD and the Object Path BD

*NOTE 1. By default, Axxon Smart will be installed to the directory C:\Program Files\Axxon Smart\ (Fig. 3.2—7) and the BDs into the **pg_tablespace** and **vmda_db** folders in C:\Program Files\Axxon Smart\Metadata.*

NOTE 2. In order to add shortcuts to the quick launch toolbar or to the desktop, select the appropriate check boxes (Fig. 3.2—7).

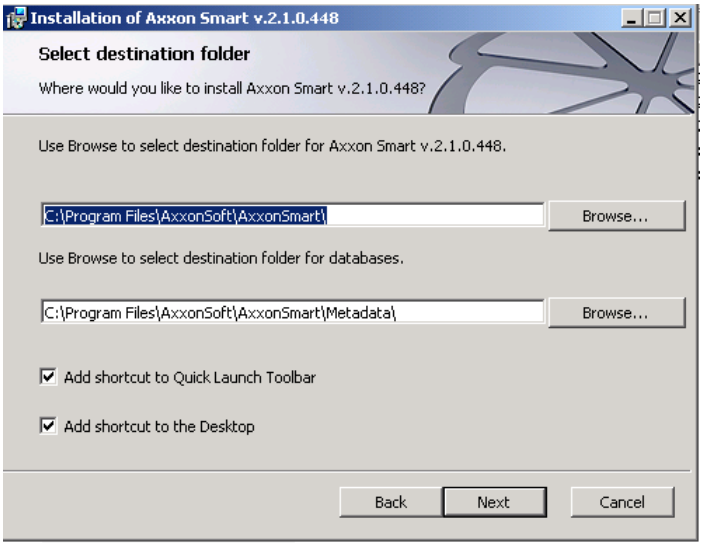


Fig. 3.2—7 Selecting location for software installation

8. Enter a domain name to create a new group of computers around this PC. to which this computer should be connected, or enter a domain name to create a new group and click **Next** (Fig. 3.2—8). If you want to add a domain later, select **Do not add to domain**

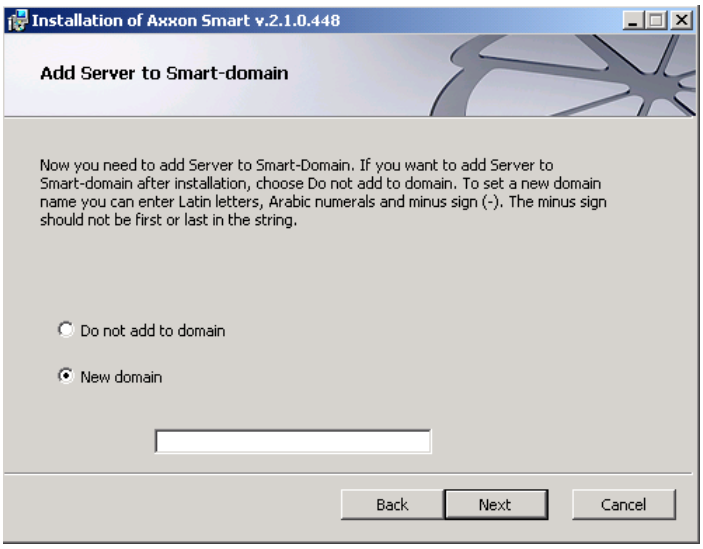


Fig. 3.2—8 Entering a domain name

This will launch the search for and installation of a PostgreSQL 8.3.6 database server.If there is an earlier version of PostgreSQL installed on the computer, it will be updated to version 8.3.6 in the background A new journal database will be automatically created with the name "ngp", user name "ngp", and password "ngp".

A dialog box then appears showing the installation parameters corresponding to the selected type of installation (for example, Fig. 3.2—9).

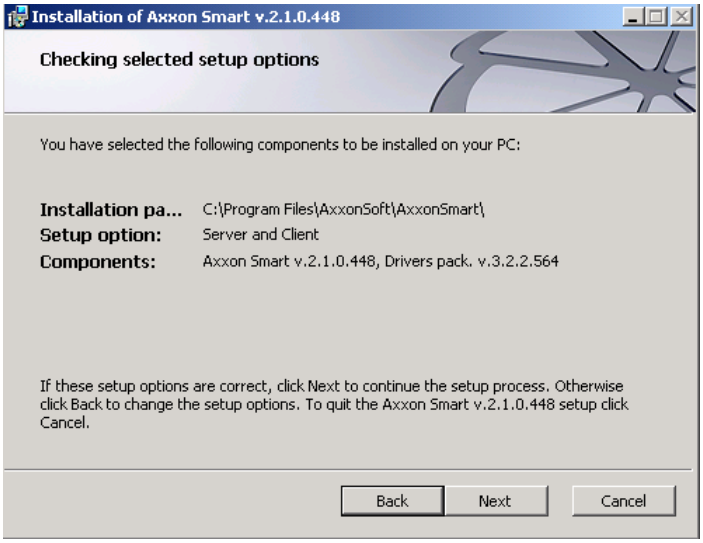


Fig. 3.2—9 Confirming preliminary settings

9. Verify the selected installation parameters and click **Install** to launch the installation of Axxon Smart (Fig. 3.2—10).

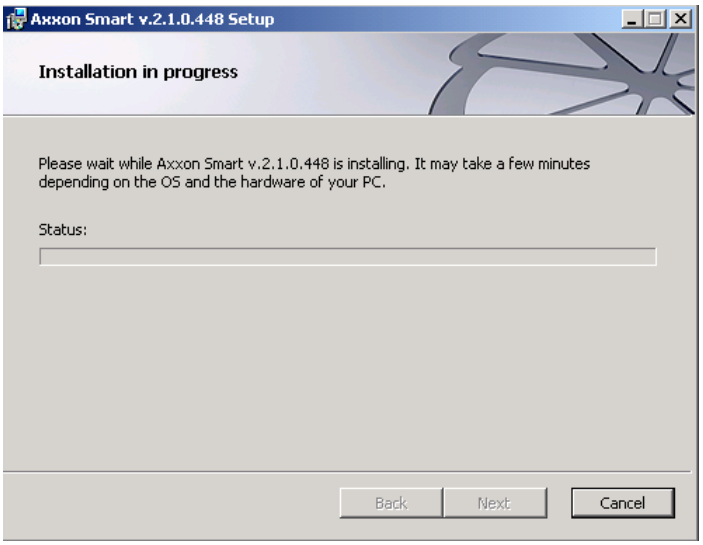


Fig. 3.2—10 Axxon Smart software installation process

A message indicating the completion of Axxon Smart installation will appear in a new dialog box (Fig. 3.2—11).

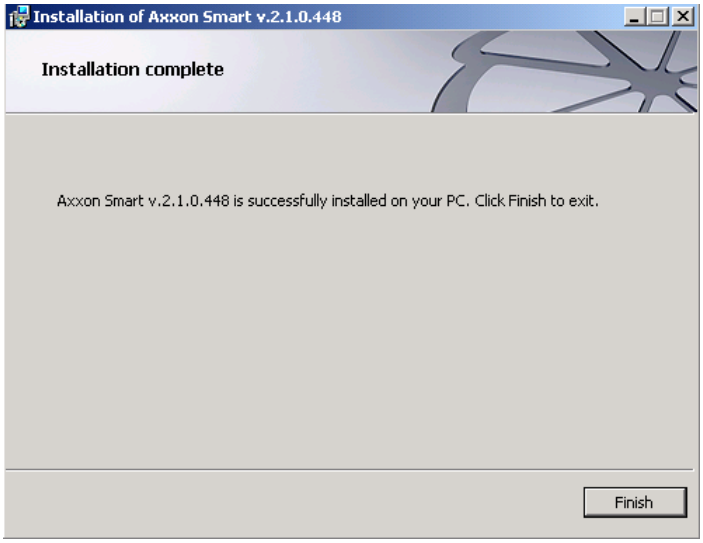


Fig. 3.2—11 Setup wizard completion message

10. Click **Finish** to confirm completion of the installation.

Installation of Axxon Smart is now complete.

3.2.3 Repair Installation

A repair installation is used to re-install all components of the Axxon Smart software package.

To start a repair installation, launch the Axxon Smart software installer from the installation CD without removing the previous version of the program.

NOTE. To ensure that Axxon Smart is re-installed correctly, all its applications should be closed before starting the repair installation.

To run a repair installation of the Axxon Smart software, you must perform the following steps:

1. Insert the Axxon Smart installation CD into the CD-ROM drive. A dialog box will display the disk contents (Fig. 3.2—12).

Fig. 3.2—12 Contents of the installation CD

2. Run the Setup.exe file (see Fig. 3.2—12).

3. Click **Next** on the setup wizard's welcome screen (Fig. 3.2—13).

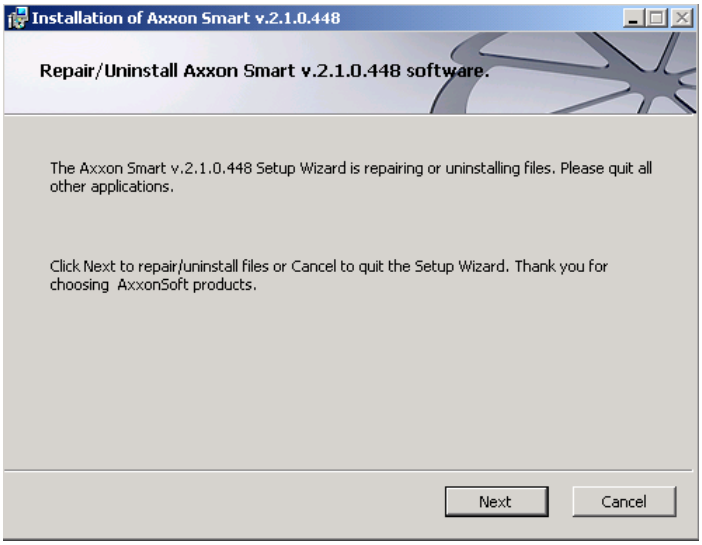


Fig. 3.2—13 Welcome dialog box

A dialog box will appear allowing you to choose the type of a procedure (Fig. 3.2—14).

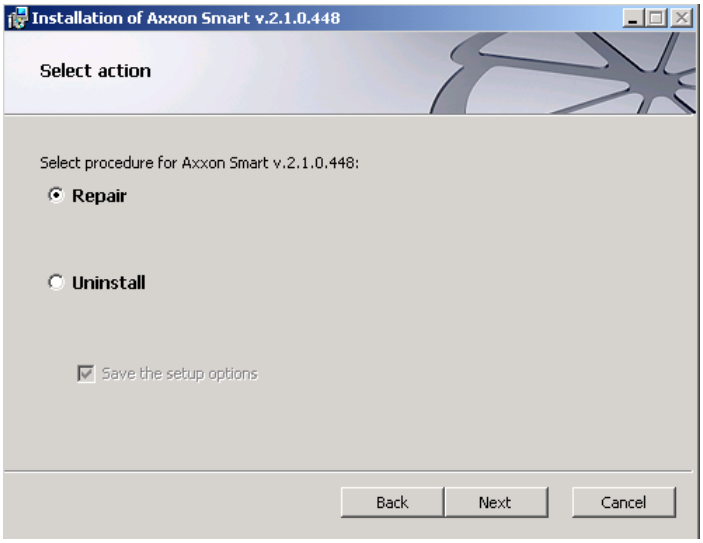


Fig. 3.2—14 Reinstallation type selection dialog box

4. Select the **Repair** option and click **Next** (see Fig. 3.2—14).

A dialog box will appear showing the Axxon Smart repair process (Fig. 3.2—15).

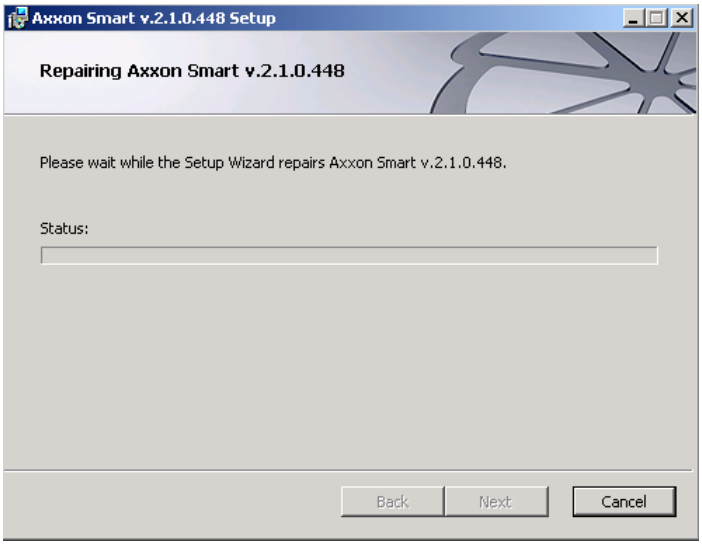


Fig. 3.2—15 Dialog box showing file copying process

A dialog box will appear indicating the completion of the repair process. Click **Finish**. Repair of Axxon Smart is now complete.

3.2.4 Removal

The Axxon Smart installation program can also remove the software. Use this option when you need to remove all components of Axxon Smart from your computer.

NOTE. All Axxon Smart applications should be closed before launching removal of Axxon Smart software.

You can launch the Axxon Smart removal process using one of the following methods:

1. From the **Start** menu
2. Using the **Add or Remove Programs** application in the Windows control panel
3. Using the installation CD (by launching the Setup.exe file).

When you do this, the setup wizard's welcome screen appears (Fig. 3.2—16). To remove Axxon Smart, you must observe the following procedure:

1. Click **Next** on the setup wizard’s welcome screen (Fig. 3.2—16).

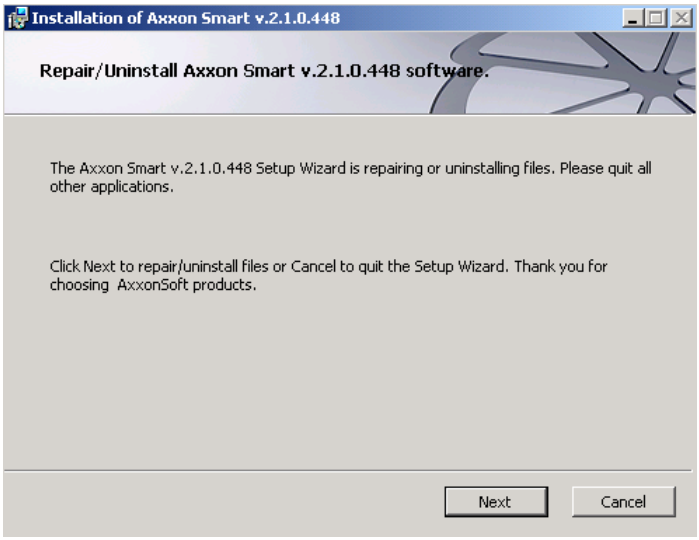


Fig. 3.2—16 Welcome dialog box

A dialog box will appear allowing you to choose the type of a procedure (Fig. 3.2—17).

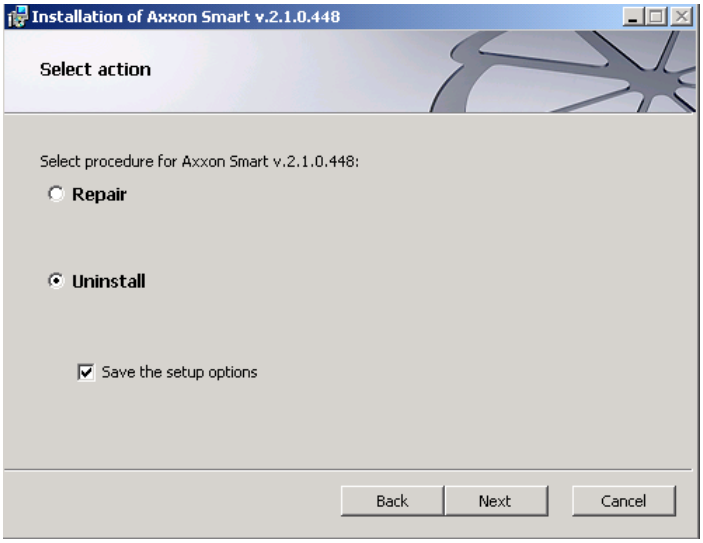


Fig. 3.2—17 Reinstallation type selection dialog box

2. Select **Remove** (see Fig. 3.2—17).
3. To save your Axxon Smart settings in a database, select the **Save configuration** check box (see Fig. 3.2—17). This option may be useful when updating the product.
4. Click **Next** (see Fig. 3.2—17).

A dialog box will appear showing the Axxon Smart removal process (Fig. 3.2—18).

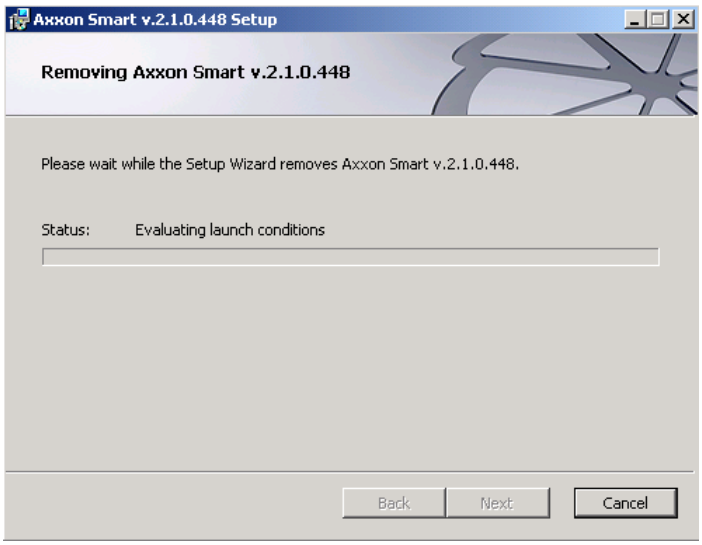


Fig. 3.2—18 Dialog box showing the removal process

A dialog box will appear indicating the completion of the removal process. Click **Finish**. Removal of Axxon Smart is now complete.

4 Licensing the Software Product

4.1 Types of Licenses

The Axxon Smart software package must be activated in order to utilize the full functionality of the security system. Activation of the software product consists of the distribution of an activation key in the system; this key can be generated independently through the Internet using the product code or received from an *AxxonSoft* representative by sending him an activation request file.

Data on the types of Axxon Smart licenses is presented below (Table 4.1—1).

Table 4.1—1 Axxon Smart software package license types

Type of license	Number of servers in the system	Number of video cameras per server
Smart Start	1 (fixed)	16 (fixed)
Axxon Smart	up to 4 (determined by the specific license)	up to 64 (determined by the specific license)

The Smart Start license is free if you use archives with a total volume of less than 1 terabyte. To increase the size of the system's archives, you must purchase an update (a supplementary license) (Table 4.1—2).

In the case of an Axxon Smart license, an update may be purchased for increasing the number of servers and video cameras in the system (Table 4.1—2). This licensing policy does not place limits on the total archive size.

Table 4.1—2 Updating the Axxon Smart software package

Type of license	Additional system components acquired
Smart Start	Terabytes of archives
Axxon Smart	Servers and/or video cameras

Information about the type of license you are using is displayed in the server properties in the **Product Type** field: Smart Start or Axxon Smart.

Immediately after installation of the product or after distribution of the demo key in the system (see the section titled *Switching to a Different Type of License*), the software will be launched in demo mode. The demo mode will be valid for 30 days from the first installation of the system. The operating hours of the system are 08.00 - 18.00. No other limitations, including functional limitations, are placed on the software when working in demo mode.

After the demo mode validity period expires, the software product will stop working. It can be uninstalled or activated for further use.

4.2 General Information on Activating Primary Licenses

A primary license is a license activated from the demo mode. Subsequently the system may be updated by purchasing an update for servers and/or video cameras in the case of an Axxon Smart license or for terabytes of archives in the case of a Smart Start license.

4.2.1 The Smart Start License

A primary Smart Start license is free and allows the use of a fully functional system consisting of one server, 16 video cameras, and 1 terabyte of archives (see the section titled *Types of Licenses*).

To activate a primary Smart Start license, you must send an activation request (for details see the section titled *The Smart Start License*).

4.2.2 The Axxon Smart License

A primary Axxon Smart license must be purchased and allows the use of a fully functional system including up to 4 servers, up to 256 video cameras, and unlimited archives (see the section titled *Types of Licenses*).

There are two ways to activate a primary Axxon Smart license:

1. By entering the product code in a special field of the product activation utility (for users who have already purchased a system – see the section titled *Activation of a Purchased Primary License*).
2. By generating an activation request which will then be processed by an AxxonSoft representative (for users who plan to purchase a system – see the section titled *Generating an Activation Request for a Primary License*). After payment, the user will receive either a product code (after which he or she should use method 1), or an activation key which the AxxonSoft representative has already received on the basis of the product code. Choose one of these options according to your convenience.

4.3 General Information on Activating Updates

An update is a license activated when buying additional components if an activation key (Axxon Smart or Smart Start) has already been distributed in the system. Updates for both licenses must be purchased. Updates can be purchased for servers and/or video cameras in the case of an Axxon Smart license or for terabytes of archives in the case of a Smart Start license.

There are two ways to activate updates both for Axxon Smart licenses and for Smart Start licenses:

1. By entering a new product code in a special field of the product activation utility (for users who have already purchased an update).
2. By generating an update activation request which will then be processed by an AxxonSoft representative (for users who plan to purchase an update). After payment, the user will receive either a new product code (after which he or she should use method 1), or an activation key which the AxxonSoft representative has already received on the basis of the new product code. Choose one of these options according to your convenience.

4.4 Launching the Product Activation Utility

License activation for the Axxon Smart software package is carried out through the product activation utility.

You can launch the product activation utility from the Windows OS **Start** menu: **Start** -> **Programs** -> **Axxon Smart** -> **Utilities** -> **Product activation**.

NOTE. The activation utility program file LicenseTool.exe is located in the folder <Directory where Axxon Smart is installed>\Axxon Smart\bin\.

Next you should select the name of one of the servers in the domain in which the activation key is to be distributed (the key will be distributed on all servers of this domain which are running at the moment of

activation) and connect to the system using the name and password of the *Axxon Smart* software package administrator to continue the activation process (Fig. 4.4—1).

Fig. 4.4—1 Connecting to the server

The activation method selection dialog box will then appear (see the section titled *Selecting an Activation Method in Demo Mode*).

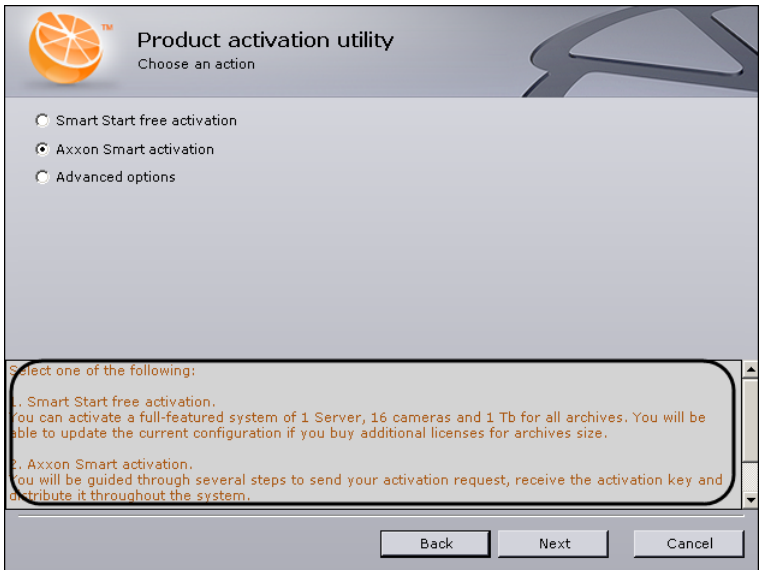


Fig. 4.4—2 Prompts in the product activation utility

Here and further in the product activation process, it is recommended that you use the prompts displayed in the utility's dialog boxes (see Fig. 4.4—2). This chapter to a great extent repeats the content of the prompts.

4.5 Selecting an Activation Method in Demo Mode

In the activation method selection dialog box, select the one of the following options (Fig. 4.5—1):

1. **Smart Start free activation**. Takes you to free activation of the fully-functioning Smart Start system, which consists of 1 server, 16 video cameras, and archives with a total volume of 1 terabyte (see the section titled *The Smart Start License*). Subsequently you can update the existing configuration repeatedly by purchasing additional licenses for archive volume.

2. **Axxon Smart activation**. Takes you through the steps needed to send a request and receive an Axxon Smart activation key, as well as to distribute the activation key within the system (see the section titled *The Axxon Smart License*). Subsequently you can update the existing configuration repeatedly by purchasing additional licenses for servers and/or video cameras.
3. **Advanced options** (for experienced users). Gives you quick access to the main activation options, and also takes you to additional system activation options (see the section titled *Advanced Options in the Product Activation Utility*).

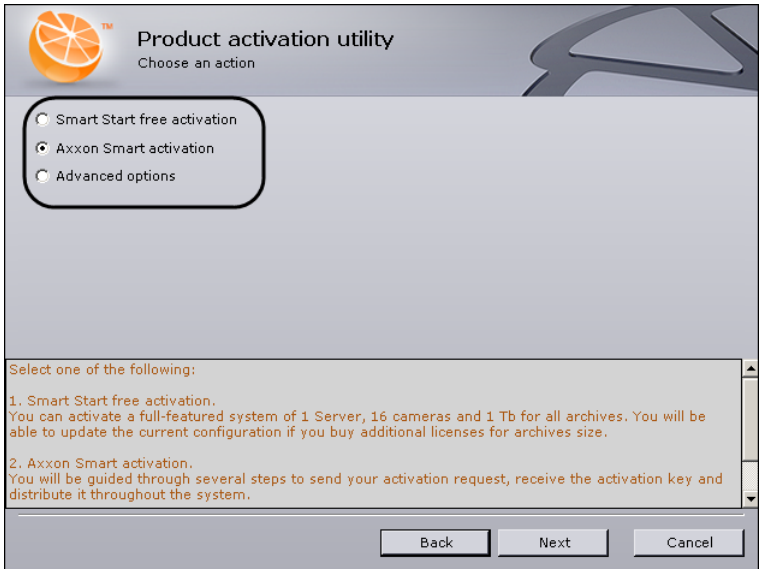


Fig. 4.5—1 Selecting an activation method

4.6 The Smart Start License

4.6.1 Primary License Activation

4.6.1.1 *Ways to Activate a Primary License*

You can activate a primary (free) Smart Start license in one of the following ways:

1. By automatically sending a request and downloading an activation key.
2. By sending a request and downloading an activation key to the system manually.

4.6.1.2 *Automatic Activation*

Important! You must be connected to the Internet.

To activate a primary Smart Start license automatically, you must perform the following steps:

1. In the activation method selection window, select the **Smart Start free activation** option. Click the **Next** button (Fig. 4.6—1).

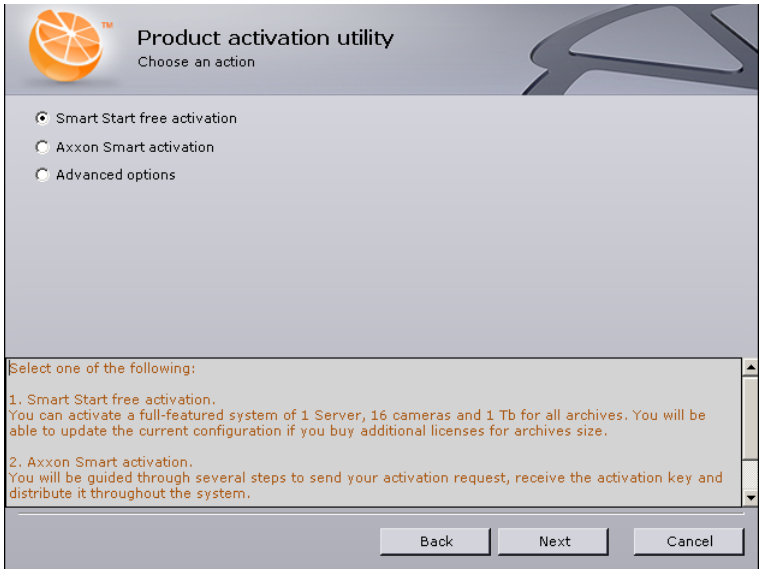


Fig. 4.6—1 Selecting primary Smart Start license activation

2. The **Activation key** dialog box will appear (Fig. 4.6—2). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.6—2 Sending an activation key request

3. The activation request dialog box will then appear; select **Activate online** (Fig. 4.6—3). Click the **Next** button.

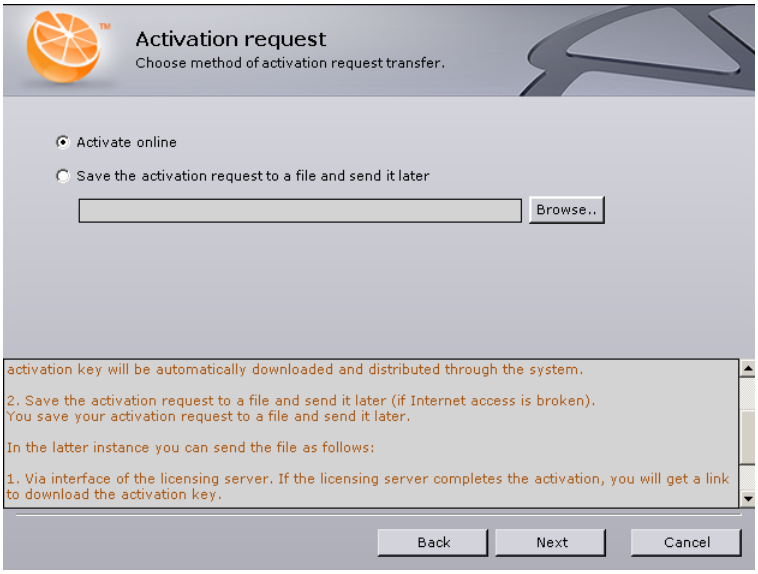


Fig. 4.6—3 Selecting an automatic activation request

4. Your activation request will be sent online. If activation is completed successfully on the licensing server (https://sale.axxonsoft.com), the activation key will be automatically downloaded and distributed within the system.

Automatic activation of the primary Smart Start license is now complete.

4.6.1.3 *Sending a Request and Downloading an Activation Key to the System Manually*

NOTE. This option is convenient to use when you are not connected to the Internet.

To send a request and download a primary Smart Start license activation key to the system manually, you must perform the following steps:

1. In the activation method selection window, select the **Smart Start free activation** option. Click the **Next** button (Fig. 4.6—4).

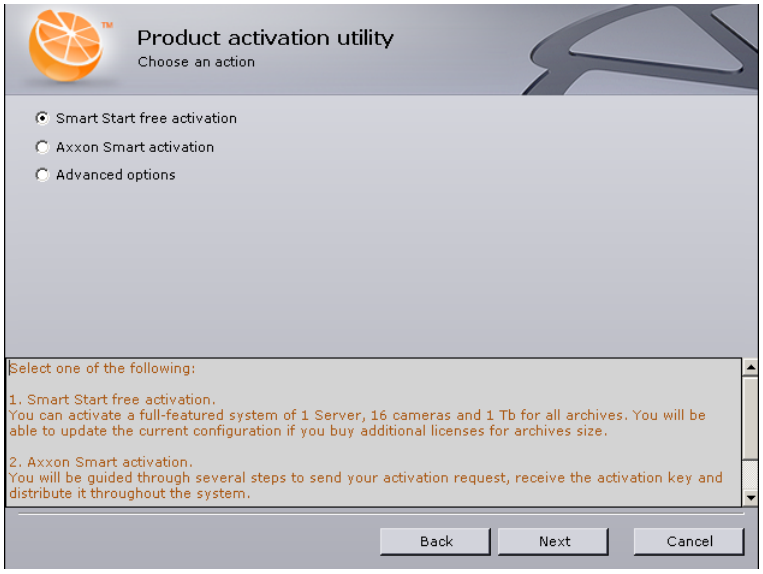


Fig. 4.6—4 Selecting primary Smart Start license activation

2. The **Activation key** dialog box will appear (Fig. 4.6—5). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.6—5 Sending an activation key request

3. The activation request dialog box will then appear; select **Save the activation request to a file and send it later** (Fig. 4.6—6).

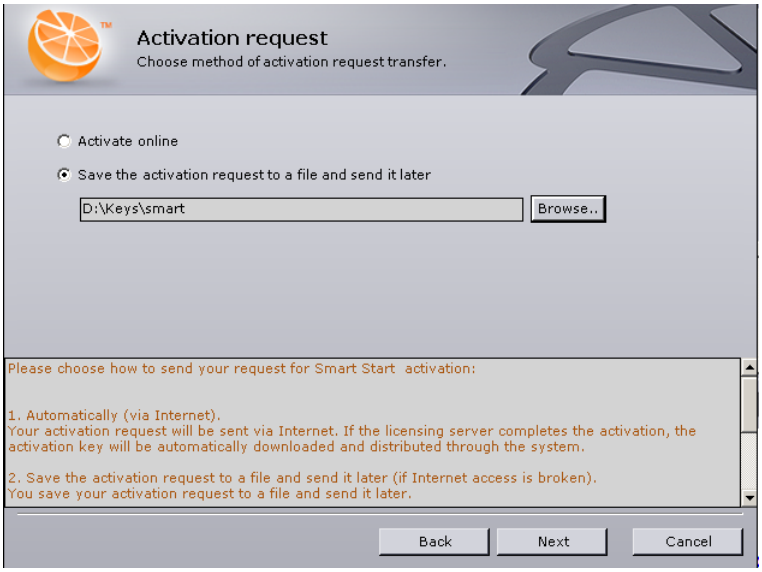


Fig. 4.6—6 Selecting manual sending of an activation request

4. Click the **Browse** button (see Fig. 4.6—6); when the dialog box appears, enter the desired path and file name to which you wish to save the activation request. Click the **Next** button.
5. When the file with the activation request has been successfully saved, a confirmation message will appear (Fig. 4.6—7). Exit the product activation utility by clicking **Finish** (Fig. 4.6—7).

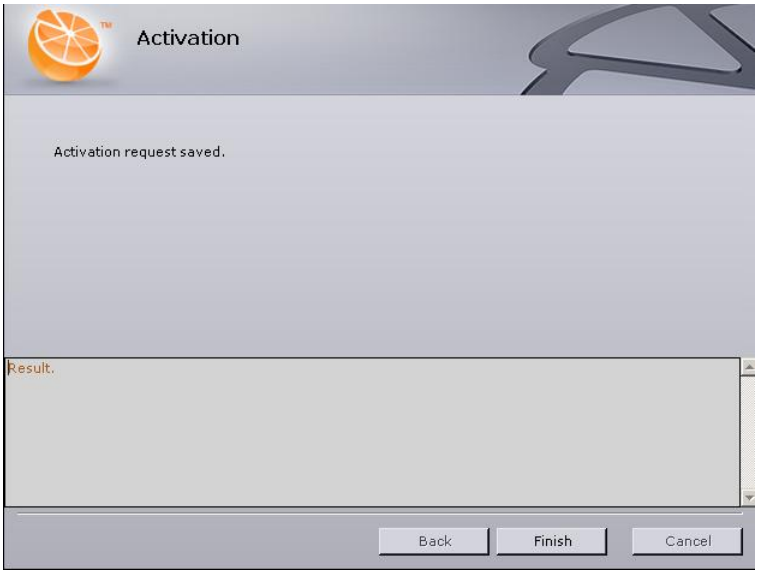


Fig. 4.6—7 Activation request successfully saved

6. Send the activation request file in one of two ways:
   6.1. On your own using the licensing server's Web interface https://sale.axxonsoft.com/. If activation is completed successfully, you will receive a link for downloading the activation key (see the section titled *Generating an Activation Key for a Free License*).
   6.2. Through an AxxonSoft representative. The representative will activate the product on the licensing server and give the activation key to the user.
7. To enter the activation key you have downloaded or received from an AxxonSoft representative, launch the activation utility again (see the section titled *Launching the Product Activation Utility*).
8. Repeat step 1 of these instructions.
9. The **Activation key** dialog box will appear (Fig. 4.6—8). Here you should load the Smart Start activation key you have received from the file for distribution in the system. To do this, select **Enter activation key** and click **Browse** to search for the corresponding file.

Fig. 4.6—8 Entering the activation key

10. After selecting the file with the activation key, click the **Next** button. The utility will then activate the free Smart Start license. If license activation is successful, a confirmation message will appear. Otherwise the errors that occurred during activation will be displayed.

Sending a request and downloading a primary Smart Start license activation key to the system manually is now complete.

4.6.2 Activating Updates

4.6.2.1 *Instances of Activating Updates*

One has the option of purchasing additional Smart Start licenses (updates) for the system's total archive size.

Instances of activating Smart Start updates are as follows:

1. The user has purchased an update and received a product code.
2. The user plans to purchase an update and needs to fill out an activation request.

4.6.2.2 *Activating a Purchased Update*

To activate a purchased update, you must perform the following steps:

1. In the activation method selection window, select the **Smart Start Update** option. Click the **Next** button (Fig. 4.6—9).

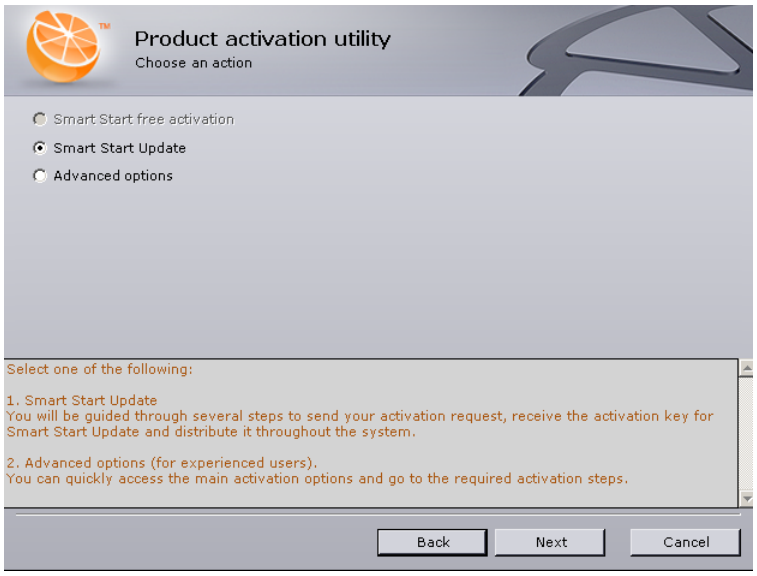


Fig. 4.6—9 Selecting a Smart Start update

2. The **Activation key** dialog box will appear (Fig. 4.6—10). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.6—10 Sending an activation key request

3. The **System configuration** dialog box will then appear, in which you should indicate how you would like to receive the system configuration (Fig. 4.6—11):

   3.1. **Use the current configuration**.

   The current configuration (total size of archives in the system) will be analyzed.

   3.2. **Set required configuration**.

   Takes you to a dialog box where you can enter the desired maximum total archive size in the updated system.

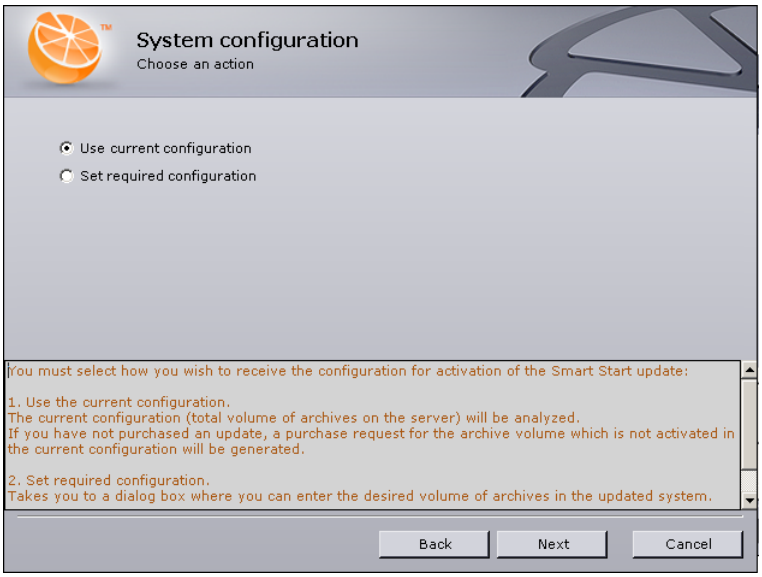


Fig. 4.6—11 Receiving the system configuration

4. Click the **Next** button.
5. If you select the **Set required configuration** method, the **Configuration setup** dialog box will appear, in which you should enter the desired maximum archive size in the updated system in terabytes (Fig. 4.6—12).

   You should enter the size registered in the purchased update or less.

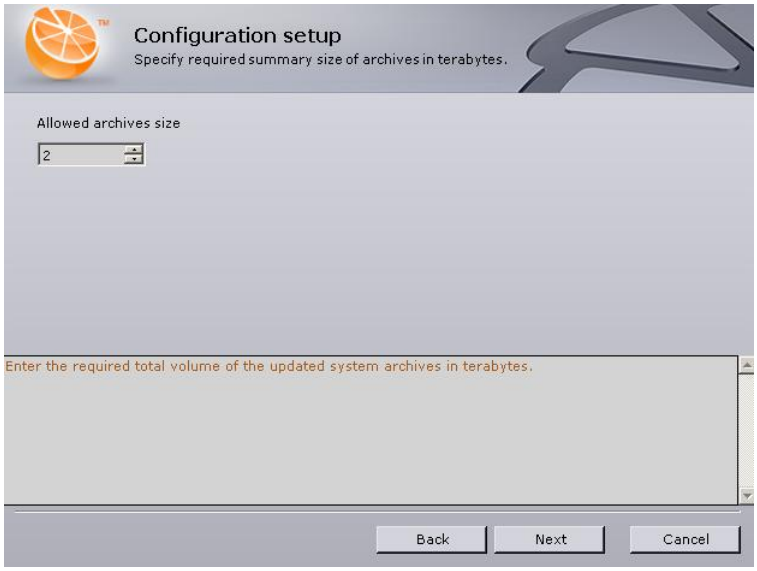


Fig. 4.6—12 Setting up the necessary Smart Start configuration

6. Click the **Next** button. After you select **Use current configuration** or set up the desired configuration, the **Product code** dialog box will appear, in which you should enter the code of the update purchased (Fig. 4.6—13).

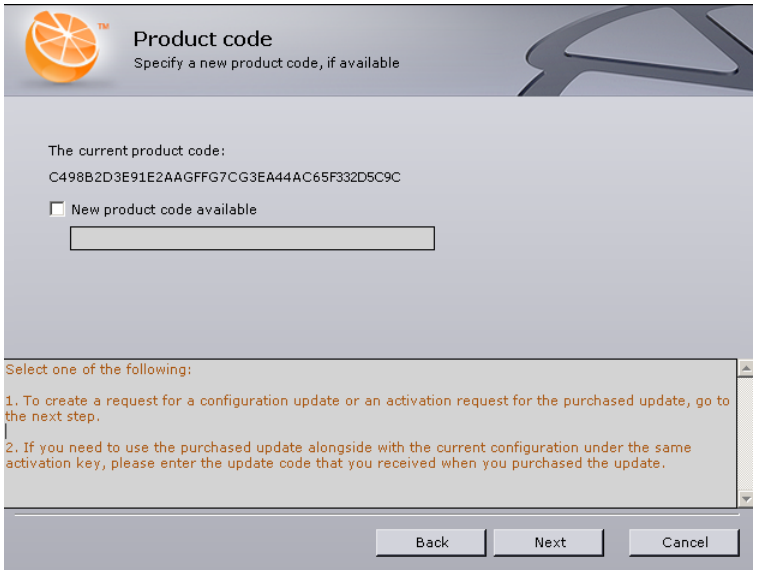


Fig. 4.6—13 Entering the code of the update purchased

7. Click the **Next** button. The activation request dialog box will then appear; select the desired activation method (Fig. 4.6—14):
   7.1. Activate online
   7.2. Save request to file

NOTE. It is recommended that you use the second method when you are not connected to the Internet.

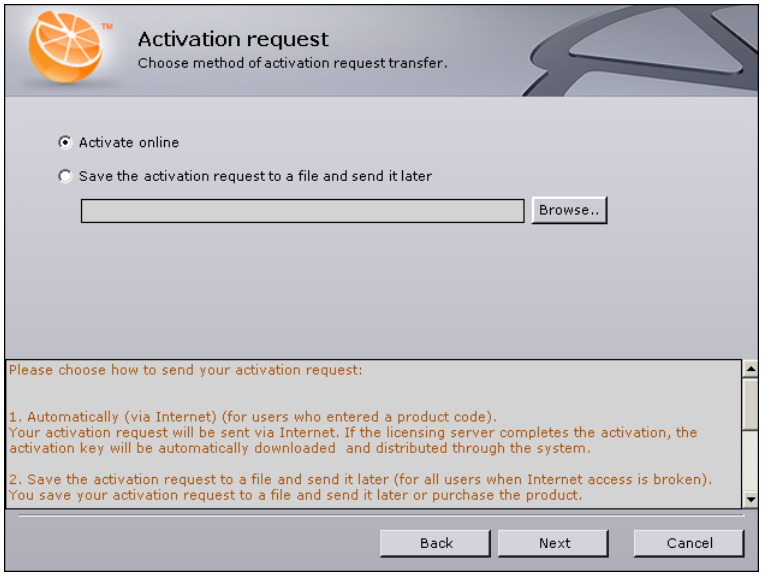


Fig. 4.6—14 Selecting a method of sending an activation request

8. Click the **Next** button. Depending on which method you have chosen for sending your activation request, one of the following will occur:
   8.1. Your activation request will be sent online. If activation is completed successfully on the licensing server, the new activation key will be automatically downloaded and distributed within the system.
   8.2. The request will be saved to a file for sending later.
9. You can send the request yourself in one of two ways:
   9.1. On your own using the licensing server's Web interface https://sale.axxonsoft.com. If activation is completed successfully, you will receive a link for downloading the activation key (see the section titled *Generating an Activation Key for a Paid License*).
   9.2. Through an AxxonSoft representative. The representative will activate the update on the licensing server and give the activation key to the user.

To enter an activation key you have downloaded or received from an AxxonSoft representative, you must launch the utility again, select **Smart Start Update** in the activation method selection dialog box, and open the activation key from the file (Fig. 4.6—15).

Fig. 4.6—15 Entering the activation key

Activation of a purchased Smart Start update is now complete.

4.6.2.3 *Generating an Update Activation Request*

To generate an activation request for a Smart Start update, you must perform the following steps:

1. In the activation method selection window, select the **Smart Start Update** option. Click the **Next** button (Fig. 4.6—16).

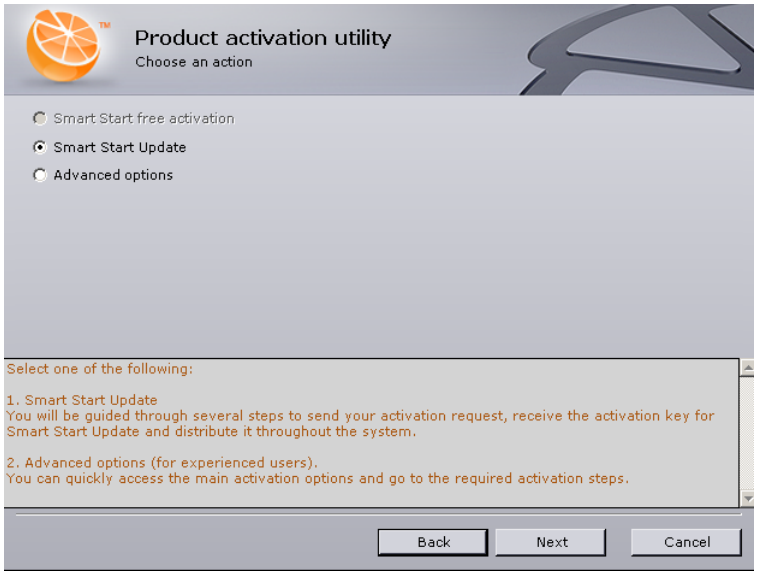


Fig. 4.6—16 Selecting a Smart Start update

2. The **Activation key** dialog box will appear (Fig. 4.6—17). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.6—17 Sending an activation key request

3. The **System configuration** dialog box will then appear. Here you should indicate a method for receiving the configuration of the updated system for which you need to purchase an update (Fig. 4.6—18):

   3.1. **Use the current configuration**.

   The current configuration (total size of archives in the system) will be analyzed.

   3.2. **Set required configuration**.

   Takes you to a dialog box where you can enter the desired maximum total archive size in the updated system.

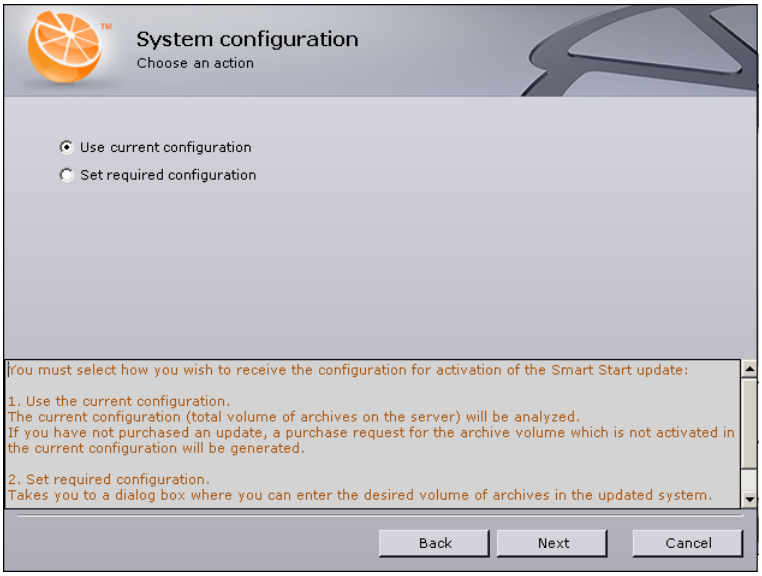


Fig. 4.6—18 Receiving the system configuration

4. Click the **Next** button.
5. If you select the **Set required configuration** method, the **Configuration setup** dialog box will appear, in which you should enter the desired maximum archive size in the updated system in terabytes (Fig. 4.6—19). Click the **Next** button.

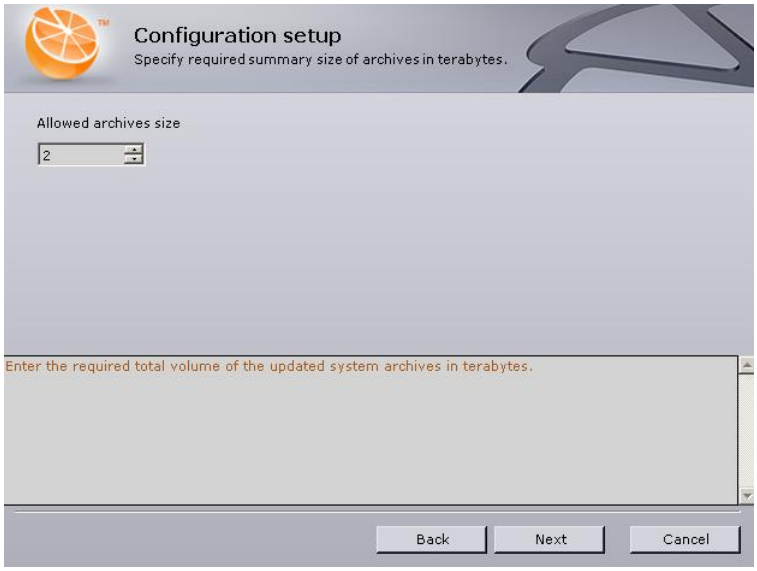


Fig. 4.6—19 Setting up the necessary Smart Start configuration

6. After you select **Use current configuration** or after you have set up the desired updated configuration, the **Product code** dialog box will appear. Click the **Next** button (Fig. 4.6—20).

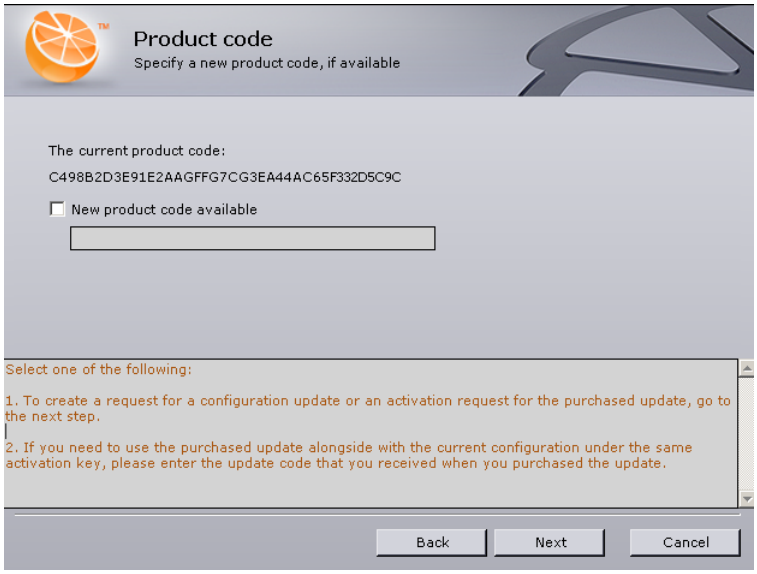


Fig. 4.6—20 Going to the next step

7. The activation request dialog box will then appear; select **Save the activation request to file and send it later** (Fig. 4.6—21). Select the desired path and file name for the request using the **Browse** button.

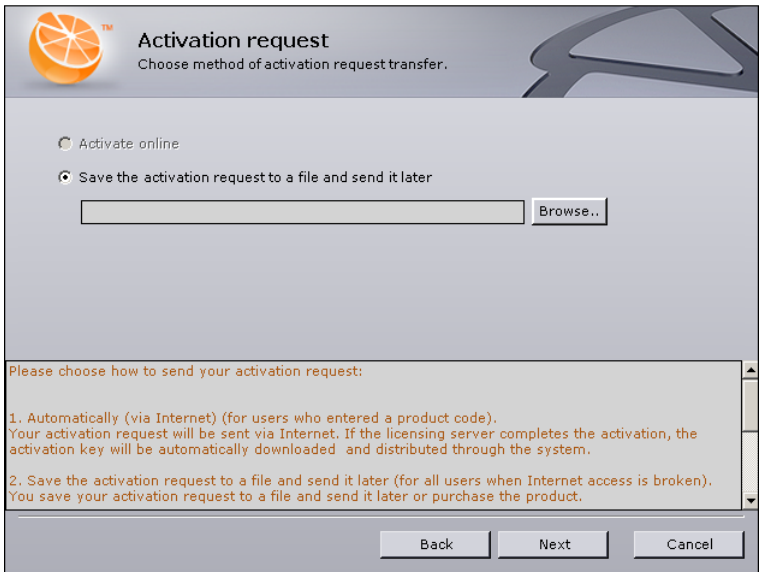


Fig. 4.6—21 Selecting a method of sending an activation request

8. Click the **Next** button. The request will be saved to a file for sending later.

Generating an activation request for a Smart Start update is now complete.

You must send the request file to an AxxonSoft representative, who will then generate a product code and present an invoice for payment. After confirmation of payment, the user will be sent either a product code or an activation key.

To create an activation key based on a product code you have received, follow the instructions in the section titled *Activating a Purchased Update*.

To distribute an activation key you have received, launch the product activation utility again, select **Axxon Smart update** in the activation method selection dialog box, and then open the activation key from the file (Fig. 4.6—22).

Fig. 4.6—22 Entering the activation key

4.7 The Axxon Smart License

4.7.1 Primary License Activation

4.7.1.1 *Instances of Activating a Primary License*

One needs to activate a primary Axxon Smart license in the following cases:

1. The user has purchased a license and received a product code.
2. The user plans to purchase a license and needs to generate an activation request.

4.7.1.2 *Activation of a Purchased Primary License*

To activate a purchased primary Axxon Smart license, you must perform the following steps:

1. In the activation method selection window, select the **Axxon Smart activation** option. Click the **Next** button (Fig. 4.7—1).

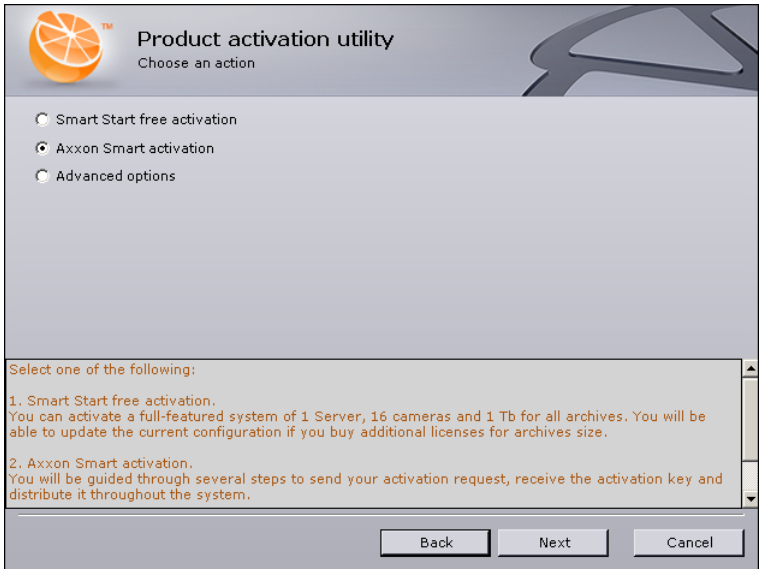


Fig. 4.7—1 Selecting primary Axxon Smart license activation

2. The **Activation key** dialog box will appear (Fig. 4.7—2). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.7—2 Sending an activation key request

3. The **System configuration** dialog box will then appear, in which you should indicate how you would like to receive the system configuration (Fig. 4.7—3):
   3.1. **Use current configuration** (for users who have already configured the system in demo mode). The current configuration (running servers and video cameras) will be analyzed.
   3.2. **Set required configuration** (for users who have planned one, but have not yet configured it or have partly configured it).
   Takes you to a dialog box where you can enter the desired number of servers (only running servers of the domain are accessible) and video channels for activation.

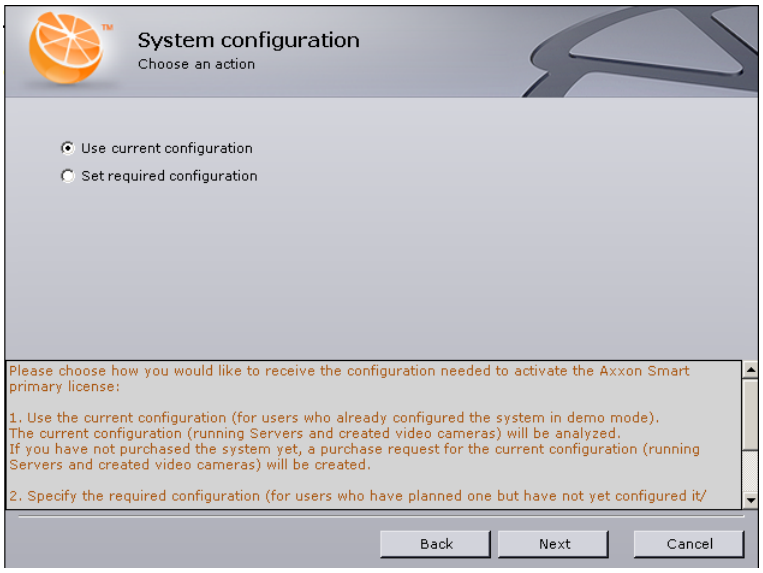


Fig. 4.7—3 Receiving the system configuration

4. Click the **Next** button.
5. If you select the **Set required configuration** method, the **Configuration setup** dialog box will appear, in which you should enter the desired number of servers and video cameras for activation (Fig. 4.7—4). Click the **Next** button.

The desired number of devices should not exceed the number allowed for activation (indicated in the purchased license).

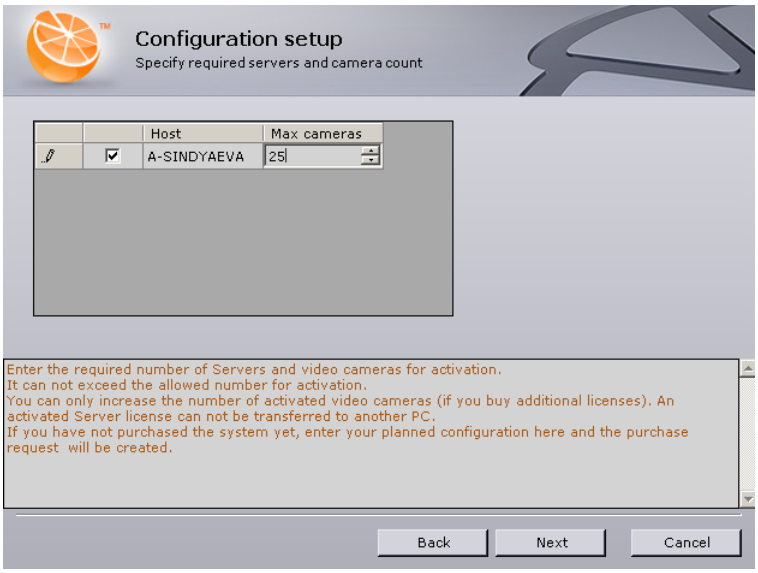


Fig. 4.7—4 Configuration setup

6. After you select **Use current configuration** or after you have set up the desired configuration, the **Product code** dialog box will appear. Enter the code of the product purchased (Fig. 4.7—5).

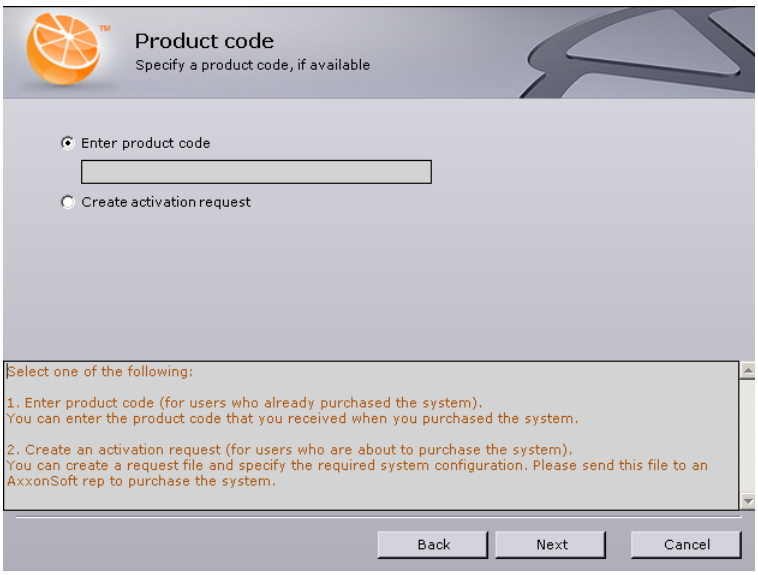


Fig. 4.7—5 Entering the product code

7. Click the **Next** button. The **Activation request** dialog box will then appear. Select the desired method for sending the request (Fig. 4.7—6):

7.1. Activate online

7.2. Save request to file

NOTE. It is recommended that you use the second method when you are not connected to the Internet.

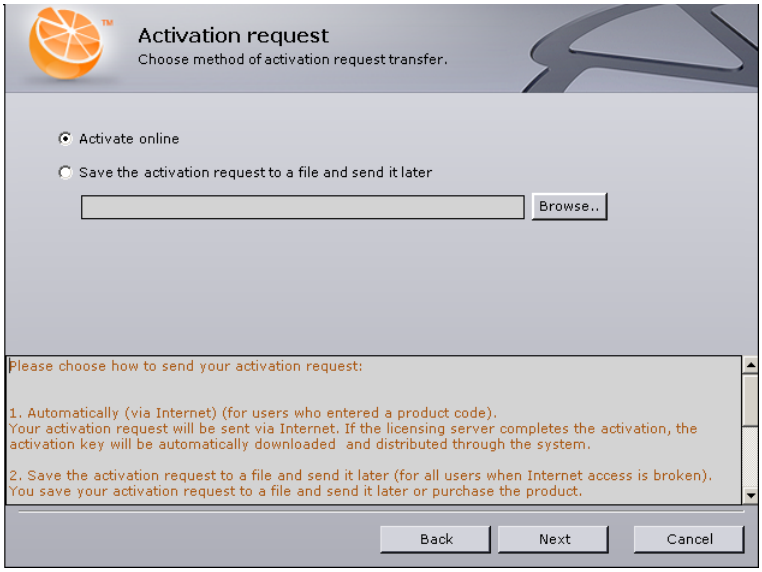


Fig. 4.7—6 Selecting a method of sending an activation request

8. Click the **Next** button. Depending on which method you have chosen for sending your activation request, one of the following will occur:
   8.1. Your activation request will be sent online. If activation is completed successfully on the licensing server, the activation key will be automatically downloaded and distributed within the system.
   8.2. The request will be saved to a file for sending later.
9. You can send the request yourself in one of two ways:
   9.1. On your own using the licensing server's Web interface https://sale.axxonsoft.com. If activation is completed successfully, you will receive a link for downloading the activation key (see the section titled *Generating an Activation Key for a Paid License*).
   9.2. Through an AxxonSoft representative. The representative will activate the product on the licensing server and give the activation key to the user.

To enter an activation key you have downloaded or received from an AxxonSoft representative, you must launch the utility again, select **Axxon Smart activation** in the activation method selection dialog box, and open the activation key from the file (Fig. 4.7—7).

Fig. 4.7—7 Entering the activation key

Activation of the purchased primary Axxon Smart license is now complete.

4.7.1.3 *Generating an Activation Request for a Primary License*

To generate an activation request for an Axxon Smart license, you must perform the following steps:

1. In the activation method selection window, select the **Axxon Smart activation** option. Click the **Next** button (Fig. 4.7—8).

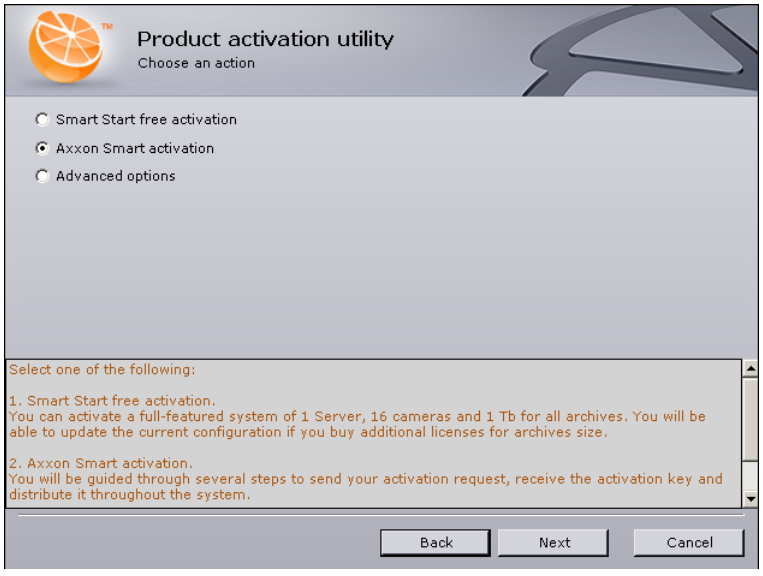


Fig. 4.7—8 Selecting Axxon Smart license activation

2. The **Activation key** dialog box will appear (Fig. 4.7—9). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.7—9 Sending an activation key request

3. The **System configuration** dialog box will then appear. Indicate how you would like to receive the configuration of the system you need to purchase (Fig. 4.7—10):
   3.1. **Use current configuration** (for users who have already configured the system in demo mode). The current configuration (running servers and all video cameras) will be analyzed.
   3.2. **Set required configuration** (for users who have planned one, but have not yet configured it or have partly configured it).
   Go on to enter the desired number of servers (only running servers of the domain are accessible) and video cameras to be purchased.

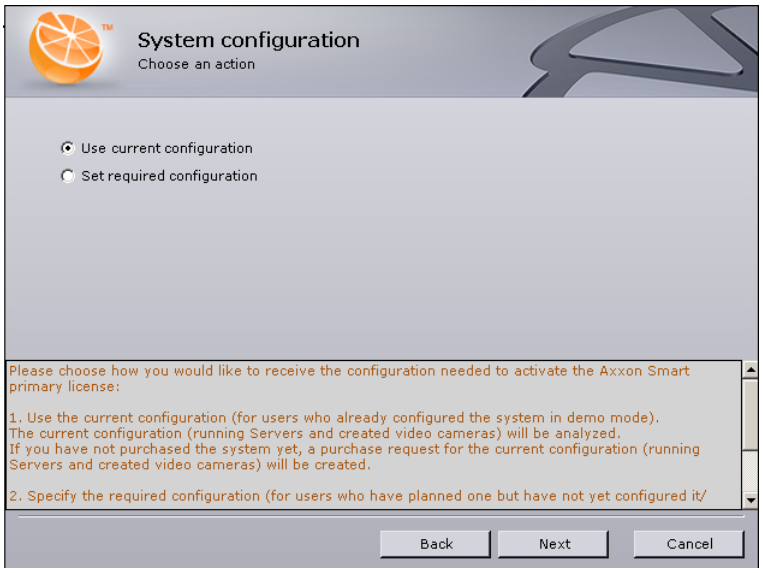


Fig. 4.7—10 Receiving the system configuration

4. Click the **Next** button.
5. If you select the **Set required configuration** method, the **Configuration setup** dialog box will appear, in which you should enter the desired number of servers and video cameras for purchase. Click the **Next** button (Fig. 4.7—11).

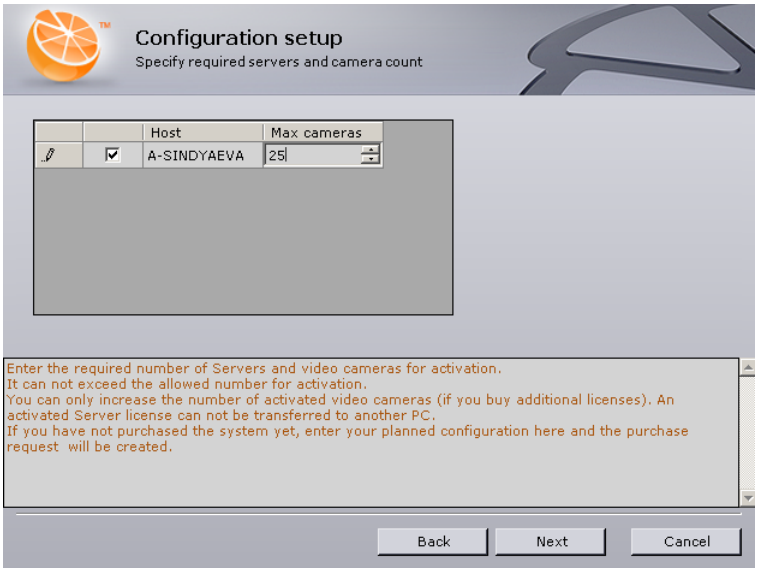


Fig. 4.7—11 Configuration setup for a system to be acquired

6. After you select **Use current configuration** or after you have set up the desired configuration, the **Product code** dialog box will appear. Select **Create activation request**. Click the **Next** button (Fig. 4.7—12).

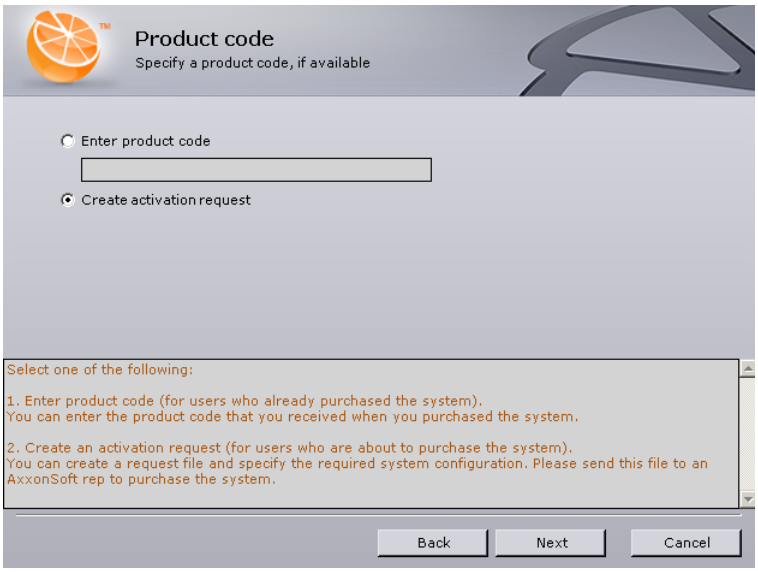


Fig. 4.7—12 Creating an activation request

7. The activation request dialog box will then appear; select **Save the activation request to file and send it later** (Fig. 4.7—13). Select the desired path and file name for the request using the **Browse** button.

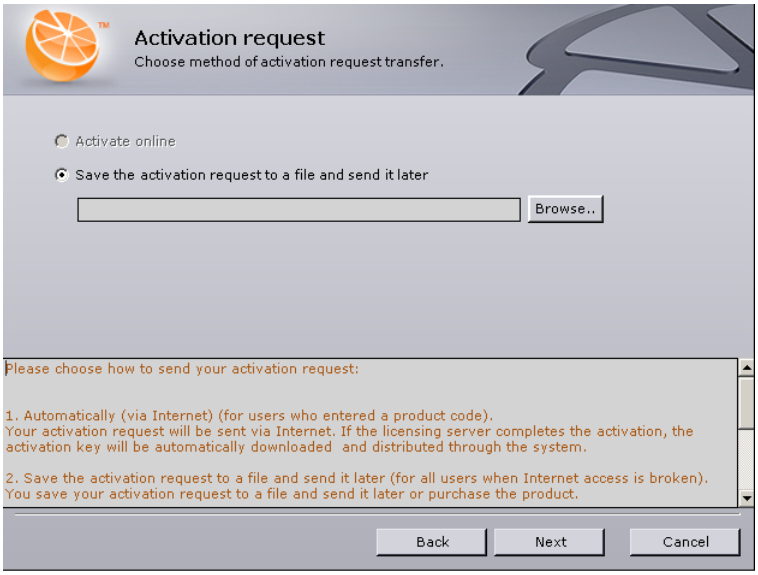


Fig. 4.7—13 Selecting a method of sending an activation request

8. Click the **Next** button. The request will be saved to a file for sending later.

Generating an activation request for a primary Axxon Smart license is now complete.

You must send the request file to an AxxonSoft representative, who will then generate a product code and present an invoice for payment. After confirmation of payment, the user will be sent either a product code or an activation key.

To enter a product code received from an AxxonSoft representative, follow the instructions in the section titled *Activation of a Purchased Primary License*.

To enter an activation key you have downloaded or received from an AxxonSoft representative, launch the product activation utility again, select **Axxon Smart activation** in the activation method selection dialog box, and then open the activation key from the file (Fig. 4.7—14).

Fig. 4.7—14 Entering the activation key

4.7.2 Activating Updates

4.7.2.1 *Instances of Activating Updates*

One has the option of purchasing an Axxon Smart update for servers and/or video cameras.

Instances of activating Axxon Smart updates are as follows:

1. The user has purchased an update and received a new product code.
2. The user plans to acquire an update and needs to generate an activation request.

4.7.2.2 *Activating a Purchased Update*

To activate a purchased update, you must perform the following steps:

1. In the activation method selection window, select the **Axxon Smart update** option. Click the **Next** button (Fig. 4.7—15).

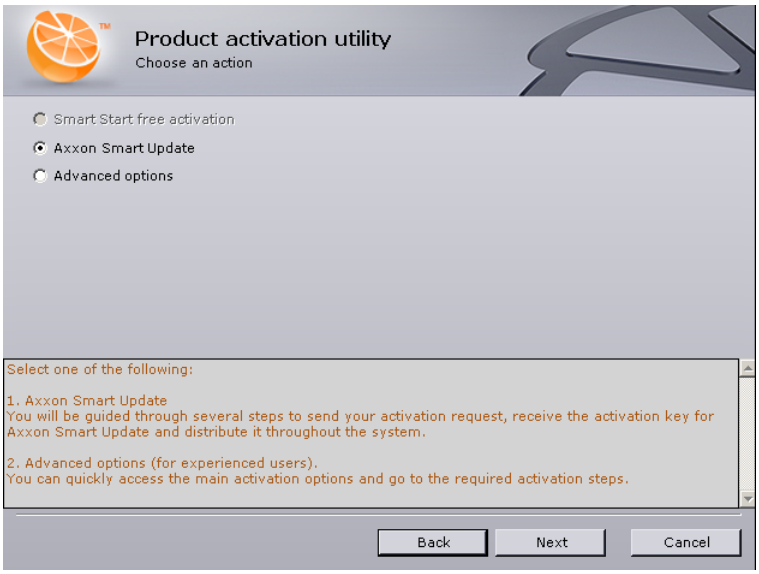


Fig. 4.7—15 Selecting Axxon Smart update activation

2. The **Activation key** dialog box will appear (Fig. 4.7—16). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.7—16 Sending an activation key request

3. The **System configuration** dialog box will then appear, in which you should indicate how you would like to receive the updated system configuration (Fig. 4.7—17):

   3.1. **Use the current configuration**.

   The current configuration (running servers and all created video cameras) will be analyzed.

   3.2. **Set required configuration**.

   Takes you to a dialog box where you can enter the desired number of servers (only running servers of the domain are accessible) and video cameras in the updated system.

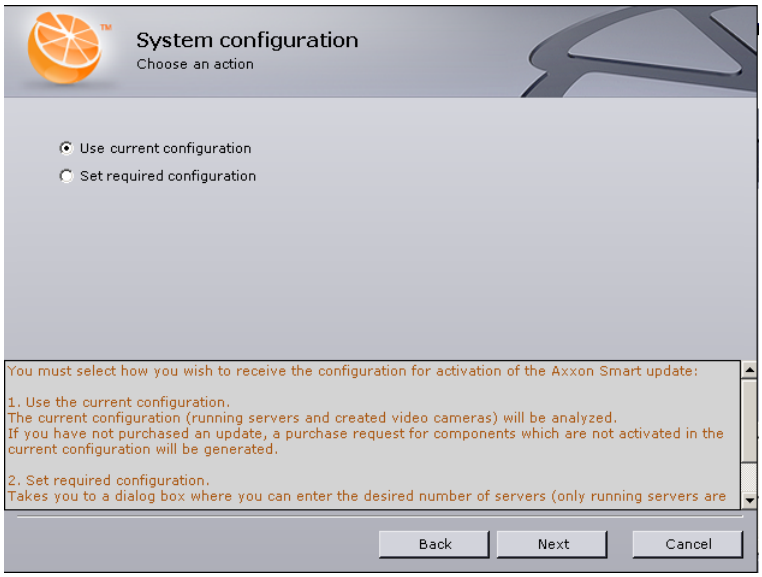


Fig. 4.7—17 Receiving the system configuration

4. Click the **Next** button.
5. If you select the **Set required configuration** method, the **Configuration setup** dialog box will appear, in which you should enter the desired number of servers and video cameras in the updated system (Fig. 4.7—18).

   You should set the number of video channels registered in the purchased update or fewer.

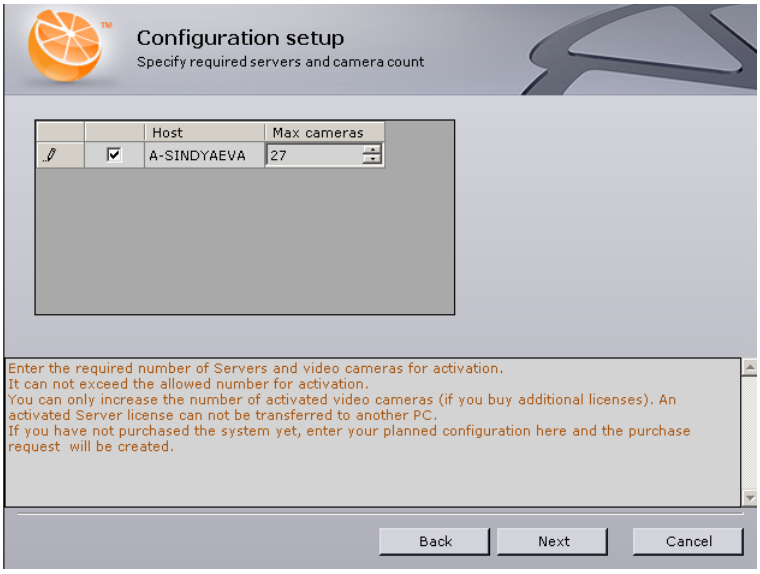


Fig. 4.7—18 Configuration setup

6. Click the **Next** button. After you select **Use current configuration** or after you have set up the desired configuration, the **Product code** dialog box will appear. Enter the code of the update purchased (Fig. 4.7—19). In this case the purchased update will be used together with the current configuration.

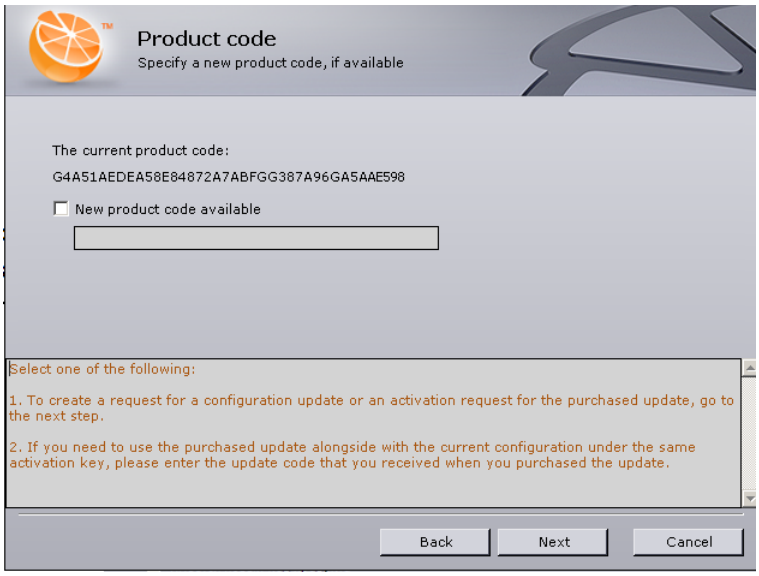


Fig. 4.7—19 Entering a new product code

7. Click the **Next** button. The activation request dialog box will then appear; select the desired activation method (Fig. 4.7—20):

7.1. Activate online

7.2. Save request to file

NOTE. It is recommended that you use the second method when you are not connected to the Internet.

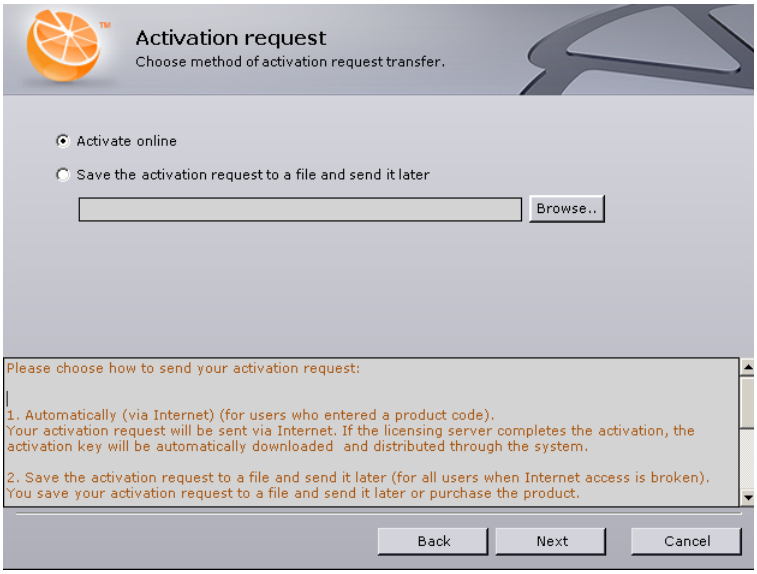


Fig. 4.7—20 Selecting a method of sending an activation request

8. Click the **Next** button. Depending on which method you have chosen for sending your activation request, one of the following will occur:
   8.1. Your activation request will be sent online. If activation is completed successfully on the licensing server, the new activation key will be automatically downloaded and distributed within the system.
   8.2. The request will be saved to a file for sending later.
9. You can send the request yourself in one of two ways:
   9.1. On your own using the licensing server's Web interface https://sale.axxonsoft.com. If activation is completed successfully, you will receive a link for downloading the activation key (see the section titled *Generating an Activation Key for a Paid License*).
   9.2. Through an AxxonSoft representative. The representative will activate the update on the licensing server and give the activation key to the user.

To enter an activation key you have downloaded or received from an AxxonSoft representative, you must launch the utility again, select **Axxon Smart activation** in the activation method selection dialog box, and open the activation key from the file (Fig. 4.7—21).

Fig. 4.7—21 Entering an activation key

Activation of a purchased update is now complete.

4.7.2.3 *Generating an Update Activation Request*

To generate an activation request for an Axxon Smart update, you must perform the following steps:

1. In the activation method selection window, select the **Axxon Smart Update** option. Click the **Next** button (Fig. 4.7—22).

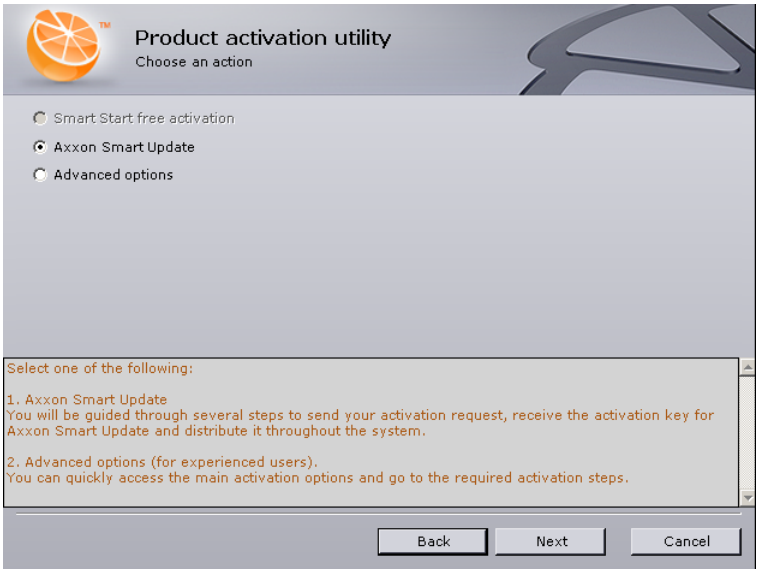


Fig. 4.7—22 Selecting Axxon Smart update activation

2. The **Activation key** dialog box will appear (Fig. 4.7—23). In this dialog box, select the **Request activation key** option. Click the **Next** button.

Fig. 4.7—23 Sending an activation key request

3. The **System configuration** dialog box will then appear. Here you should indicate a method for receiving the configuration of the updated system for which you need to purchase an update (Fig. 4.7—24):
   3.1. **Use the current configuration**.
   The current configuration (running servers and all created video cameras) will be analyzed.
   3.2. **Set required configuration**.
   Takes you to a dialog box where you can enter the desired number of servers (only running servers of the domain are accessible) and video cameras in the updated system.

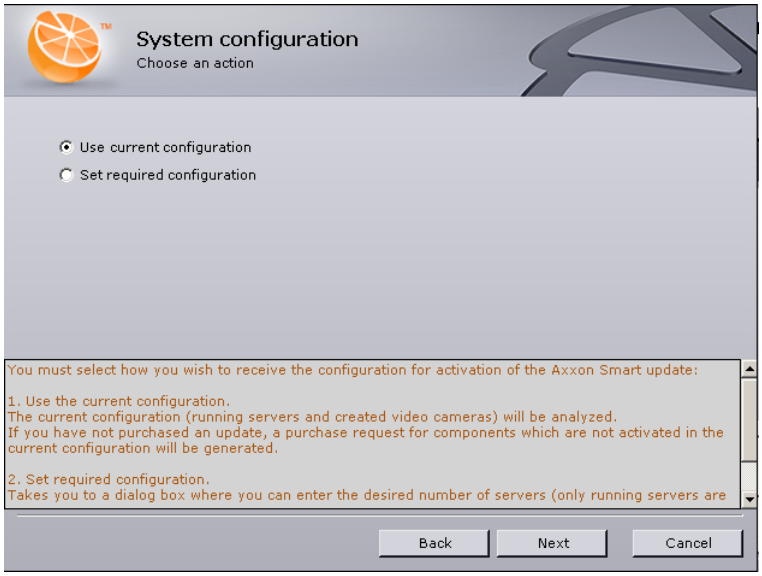


Fig. 4.7—24 Receiving the system configuration

4. Click the **Next** button.
5. If you select the **Set required configuration** method, the **Configuration setup** dialog box will appear, in which you should enter the desired number of servers and video cameras in the updated system (Fig. 4.7—25). Click the **Next** button.

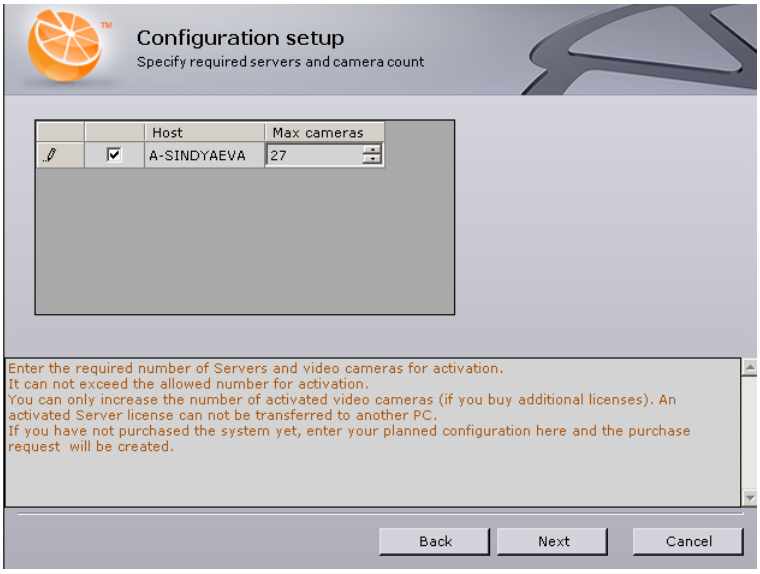


Fig. 4.7—25 Configuration setup for a system to be acquired

6. After you select **Use current configuration** or after you have set up the desired updated configuration, the **Product code** dialog box will appear. Click the **Next** button (Fig. 4.7—26).

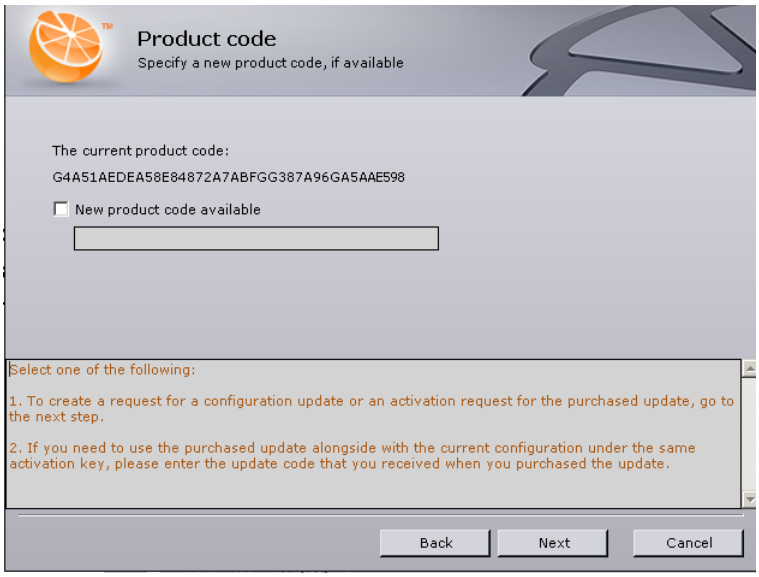


Fig. 4.7—26 Going to the next step

7. The activation request dialog box will then appear; select **Save the activation request to a file and send it later** (Fig. 4.7—27). Select the desired path and file name for the request using the **Browse** button.

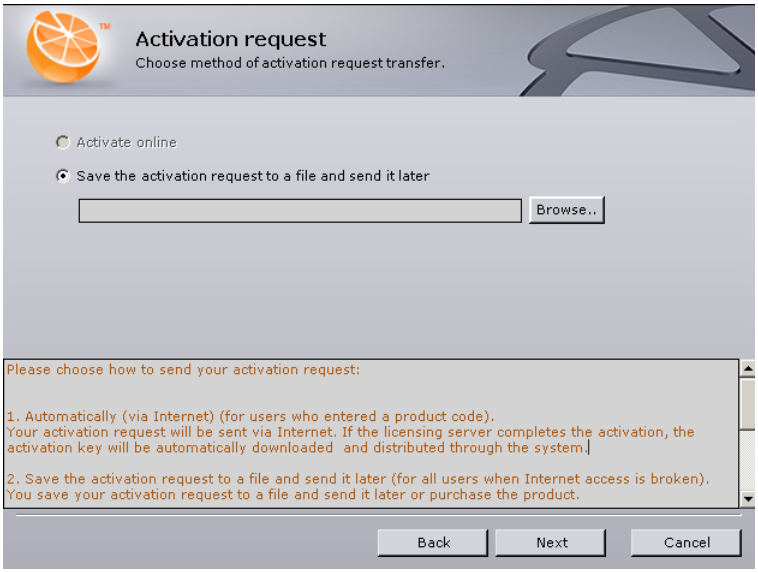


Fig. 4.7—27 Selecting a method of sending an activation request

8. Click the **Next** button. The request will be saved to a file for sending later.

Generating an activation request for an Axxon Smart update is now complete.

You must send the request file to an AxxonSoft representative, who will then generate a product code and present an invoice for payment. After confirmation of payment, the user will be sent either a product code or an activation key.

To enter a product code received from an AxxonSoft representative, follow the instructions in the section titled *Activating a Purchased Update*.

To enter an activation key you have downloaded or received from an AxxonSoft representative, launch the product activation utility again, select **Axxon Smart Update** in the activation method selection dialog box, and then open the activation key from the file (Fig. 4.7—28).

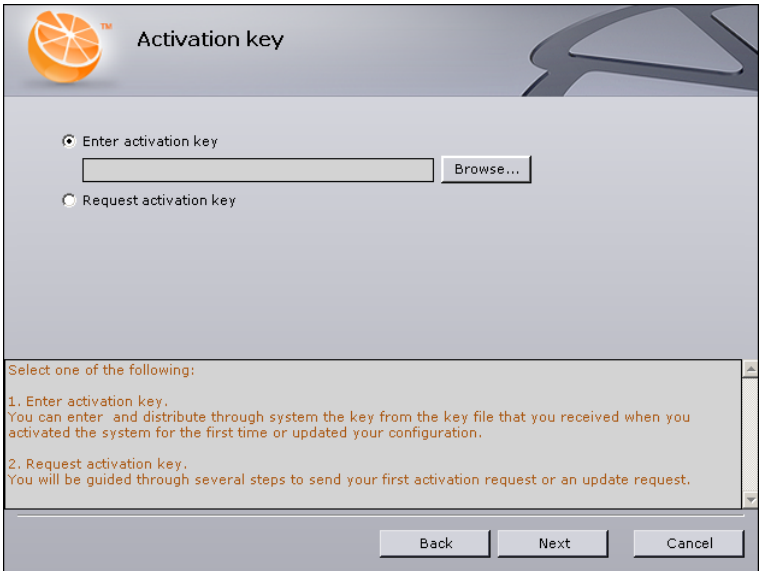


Fig. 4.7—28 Entering the activation key

4.8 Advanced Options in the Product Activation Utility

For quick access to the main activation options or to access advanced options for system activation, select **Advanced options**. Click the **Next** button (Fig. 4.8—1).

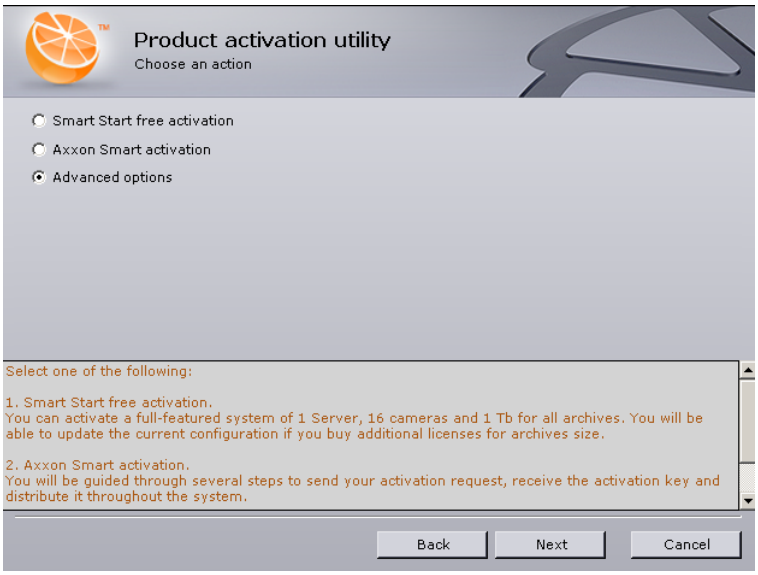


Fig. 4.8—1 Selecting advanced options

The **Advanced options** dialog box will then appear (Fig. 4.8—2).

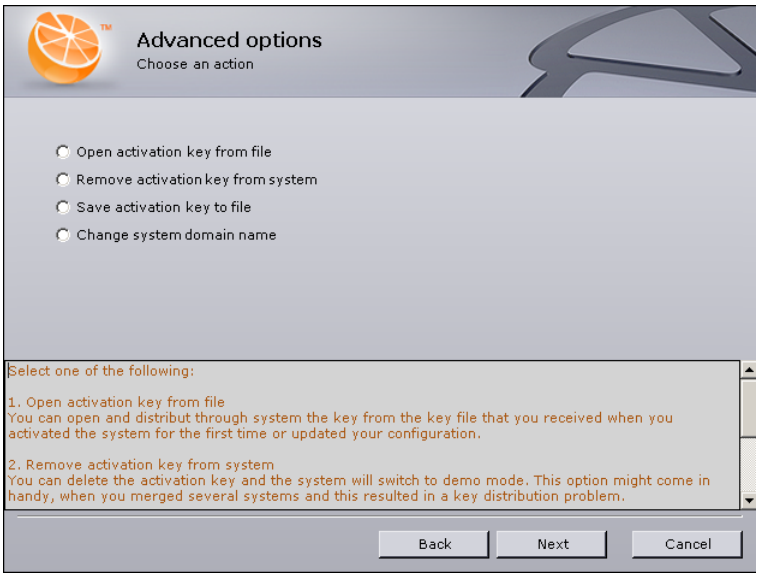


Fig. 4.8—2 The Advanced options dialog box

In this dialog box the following functions are available (see Fig. 4.8—2):

1. Opening an activation key from a file received during the first launching of the product activation utility and distributing it in the system(within the domain).
2. Removing an activation key from the system. The system will then switch to demo mode.
3. Saving an activation key to a file. This option can be useful when reinstalling a system or when it is necessary to distribute a key manually. It is recommended to do this in case the system breaks down.

4. Changing the domain name set at system installation.

To open an activation key from a file, select **Open activation key from file** and then click the **Next** button (see Fig. 4.8—2). A dialog box will then appear from which you can select the desired file; to distribute the activation key in the system, click the **Open** button.

To remove an activation key from the system, select **Remove activation key from system** and then click the **Next** button (see Fig. 4.8—2). The **Deleting the license key** dialog box will then appear, in which you should confirm the operation by clicking the **Yes** button (Fig. 4.8—3).

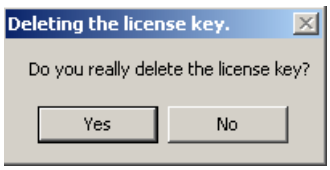


Fig. 4.8—3 Deleting a license key

To save an activation key to a file, select **Save activation key to file** and then click the **Next** button (see Fig. 4.8—2). A dialog box will then appear in which you can indicate the desired path and file name; to save the activation key to this file, click the **Save** button.

To change the domain name set at system installation, select **Rename system domain** and then click the **Next** button (see Fig. 4.8—2). The **Rename system domain** dialog box will then appear. In the **Specify a new name for system domain** field, indicate the desired name (Fig. 4.8—4) and then click the **Next** button.

Important! The domain renaming function cannot be used to unite several domains into one. Before renaming a domain, make sure the new name does not coincide with the name of another domain located in the same local network.

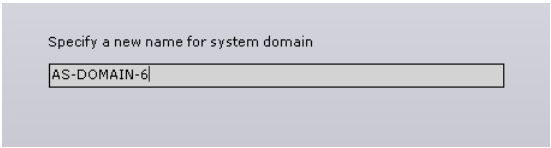


Fig. 4.8—4 Renaming the system domain

When any of these advanced operations is completed successfully, a confirmation message will appear (for example, Fig. 4.8—5). Otherwise the errors that occurred will be displayed.

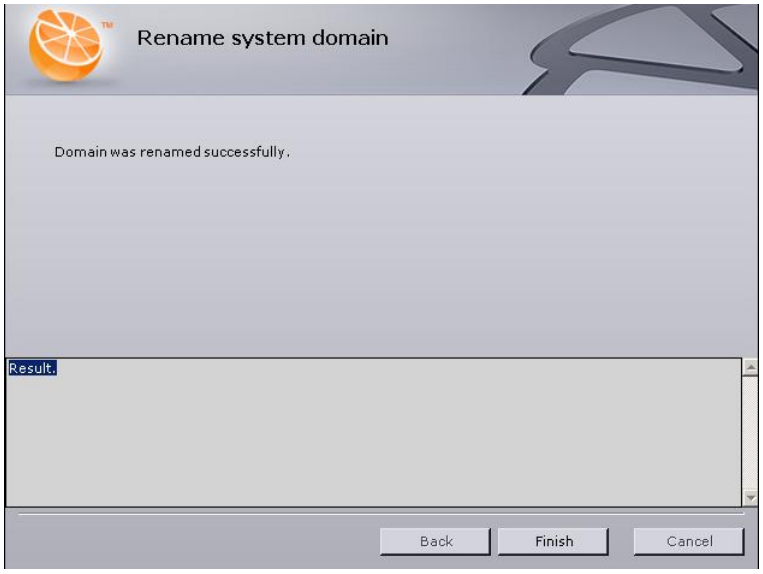


Fig. 4.8—5 The result of an operation

Click the **Finish** button to exit the product activation utility (see Fig. 4.8—5).

4.9 Switching to a Different Type of License

To switch from a Smart Start license to an Axxon Smart license or vice versa, you must first distribute a demo key in the system. To do this, you must do the following:

1. Launch the product activation utility.
2. Select **Advanced options** -> **Open activation key from file** and in the dialog box which appears, select the demo key named demo-license.key located in the folder <Directory where Axxon Smart is installed>\AxxonSmart\Tickets.
3. After distributing the demo key in the system, you must relaunch the utility to activate the desired Axxon Smart license.

Switching to a different type of Axxon Smart license is now complete.

4.10 Generating Activation Keys Through the Licensing Server's Web Interface

To generate an activation key through the licensing server's Web interface, you need a request file for the activation of the desired license for the *Axxon Smart* software package. This file must be created through the product activation utility according to its interactive instructions.

4.10.1 Generating an Activation Key for a Free License

You can generate an activation key for a primary *Smart Start* license on your own through the licensing server's Web interface.

To use this option you must perform the following steps:

1. Use your Web browser to go to https://sale.axxonsoft.com (Fig. 4.10—1).

Fig. 4.10—1 Generating an activation key for a free license

2. Go to the **Generate demo** link (see Fig. 4.10—1).

3. In the form which appears on the page, indicate the path to the request file for activation of the primary *Smart Start* license. Load this file to the licensing server by clicking **Upload** (Fig. 4.10—2).

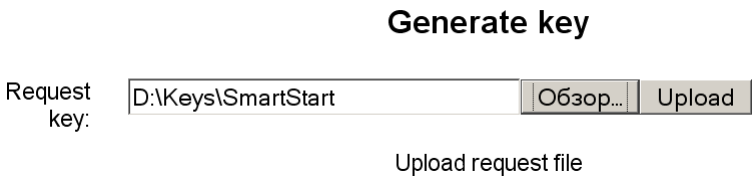


Fig. 4.10—2 Selecting a request file

4. Click the **Generate** button.

5. Download the primary Smart Start license activation key (Fig. 4.10—3).

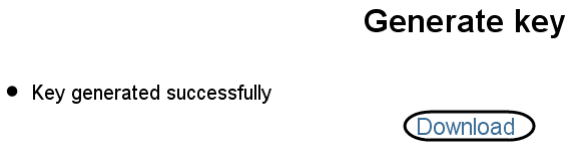


Fig. 4.10—3 Link for downloading an activation key

Generation of a primary *Smart Start* license activation key is now complete.

4.10.2 Generating an Activation Key for a Paid License

You can generate activation keys for the following paid licenses on your own:

1. A primary *Axxon Smart* license

2. A *Smart Start* update

3. An *Axxon Smart* update

To use this option you must perform the following steps:

1. Use your Web browser to go to https://sale.axxonsoft.com (Fig. 4.10—4).

Fig. 4.10—4 Generating an activation key for a paid license

2. Go to the **Generate** link (see Fig. 4.10—4).

3. In the form which appears on the page, indicate the path to the request file for activation of the desired paid license. Load this file to the licensing server by clicking **Upload** (Fig. 4.10—5).

Important! The activation request file should contain the product code you received when you purchased the given license.

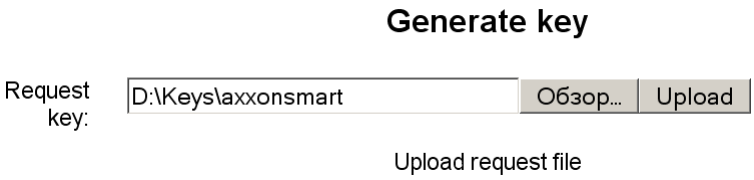


Fig. 4.10—5 Selecting a request file

4. Click the **Generate** button.

5. Download the paid license activation key (Fig. 4.10—6).

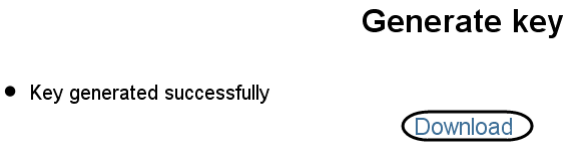


Fig. 4.10—6 Link for downloading an activation key

Generation of an activation key for a paid license is now complete.

5 Launching and Closing the Axxon Smart Software Package

5.1 Launching

Axxon Smart can be started manually using the **Start** menu, which is intended for launching user programs in Windows. To start working with the software, you must perform the following steps:

1. Go to **Start** ⇒ **All Programs** ⇒ **Axxon Smart** ⇒ **Axxon Smart**.

NOTE. The Axxon Smart software package program file AxxonSmart.exe is located in the folder <Directory where Axxon Smart is installed>\Axxon Smart\bin\.

Axxon Smart will then launch and an authorization window will appear. (Fig. 5.1—1)

Fig. 5.1—1 Entering your user name and password at Smart Startup

2. Enter your user name and password and click **Connect** (see Fig. 5.1—1, 1-3).

*NOTE 1. If a remote user is accessing the software, the NetBIOS name or the IP-address of the computer with which the connection is being established should be indicated in the **Computer** field.*

*NOTE 2. When logging into the system for the first time, use the user name "root", which has administrator permissions. Enter "root" into the **User name** and **Password** fields. The administrator then needs to configure the system for multi-user access (for more details, see the section titled Configuring Archives).*

If authorization is successful, a video surveillance monitor will be displayed on the screen (Fig. 5.1—2).

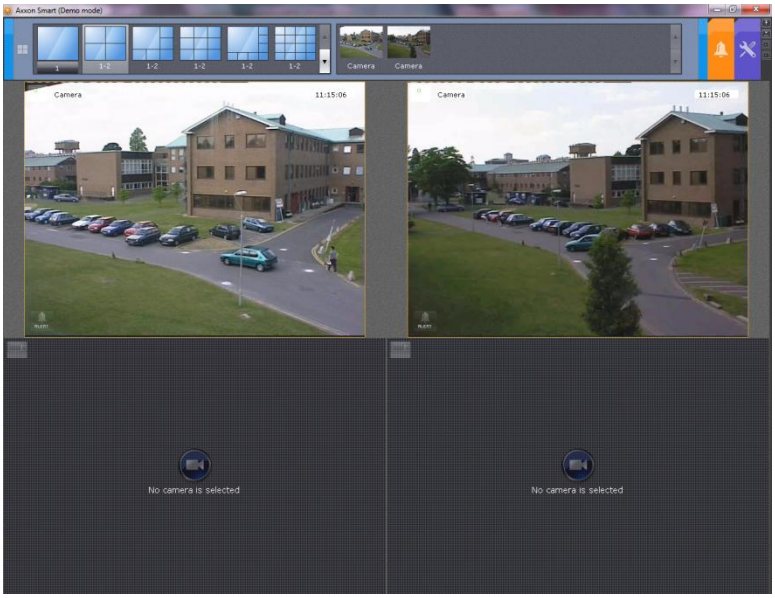


Fig. 5.1—2 Video surveillance monitor displayed after launching Axxon Smart

*NOTE. If Axxon Smart is launched in demo mode, then after you enter the authorization parameters, a message to this effect will appear (Fig. 5.1—3). To continue launching Axxon Smart, click **OK**.*

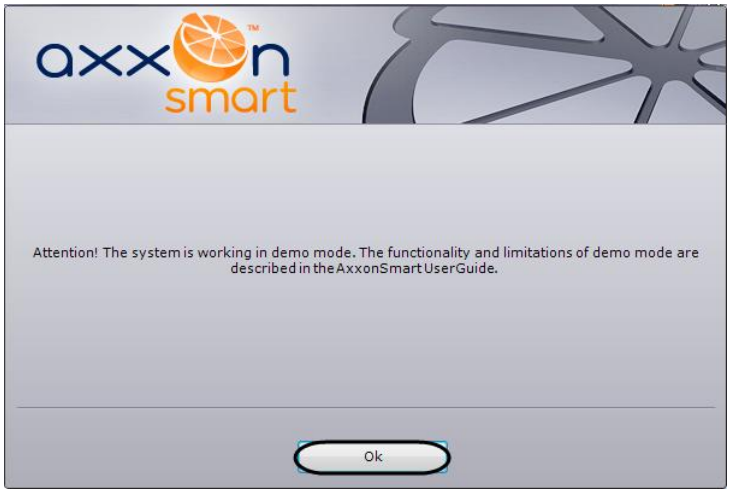


Fig. 5.1—3 Demo mode message

If the Server to connect to, does not belong to any domain, you will see the following message after clicking **Connect** (Fig. 5.1—4)**.**

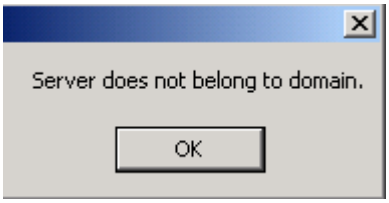


Fig. 5.1—4 The Server does not belong to domain message

To connect to the Server, you need to either create a new domain on its basis or add the server to another domain.

If you want to create a new domain, click **OK** (see Fig. 5.1—4) and folow the Creating New Domain instructions.

To add the server to another domain instead, click ✕ and folow the Adding New Domain instructions.

5.2 Closing

Before closing Axxon Smart, you need to exit the user interfaces. To do this, you need to do one of the following:

1. Click the ✕ button located in the top-right corner of the program window.

NOTE. If the client is opened in full-screen mode (enabled by default), the ✕ button is not displayed. In this case you can exit the user interfaces using actions 2 and 3.

2. Click the Exit button located under **Settings**.
3. Select **Exit** in the context menu of the Axxon Smart icon, which is located on the Windows toolbar when the program window is minimized.

When you perform one of these actions, the authorization window will appear (Fig. 5.2—1). To close Axxon Smart (completely exit the client), click **Close**.

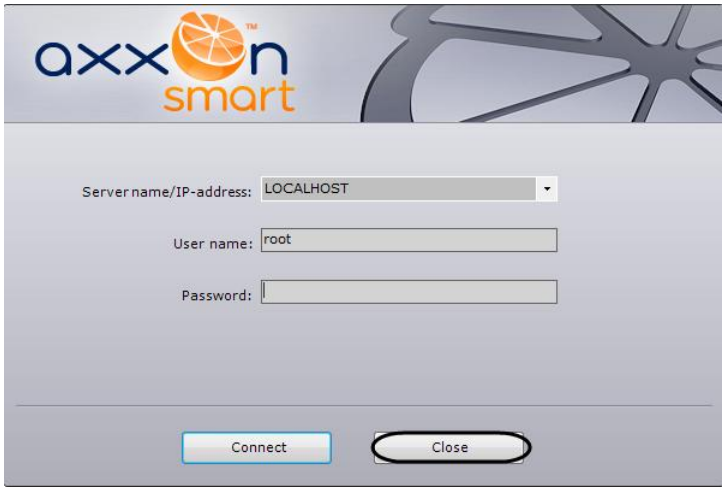


Fig. 5.2—1 Closing the Axxon Smart software package

5.3 Switching Users Quickly

You can switch Axxon Smart users quickly without fully exiting the client.

To do this, you must do the following:

1. Exit the Axxon Smart user interface (see the section titled *Closing*).

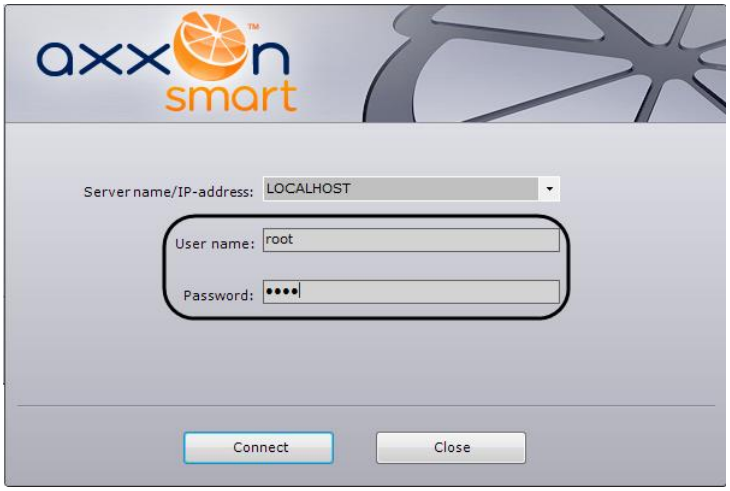


Fig. 5.3—1 Switching users quickly

2. When the authorization window appears, enter the user name under which you need to log in and the corresponding password and click **Connect** (see Fig. 5.3—1).

Switching users is now complete.

5.4 Connecting to Another Server Quickly

You can connect to another server without fully exiting the client.

To do this, you must do the following:

1. Exit the Axxon Smart user interface (see the section titled *Closing*).
2. When the authorization window appears, select the server to which you need to connect the client from the **Computer** list.
3. Enter the user name under which you need to log in and the corresponding password and click **Connect**.

Connection to another server is now complete.

6 Configuration of the Axxon Smart Software Package

6.1 General Information on Configuring System Objects

6.1.1 Procedure for Configuring System Objects

System objects form the basis for configuring the Axxon Smart software package; you can set them up on the **Devices** tab under **Settings** (Fig. 6.1—1).

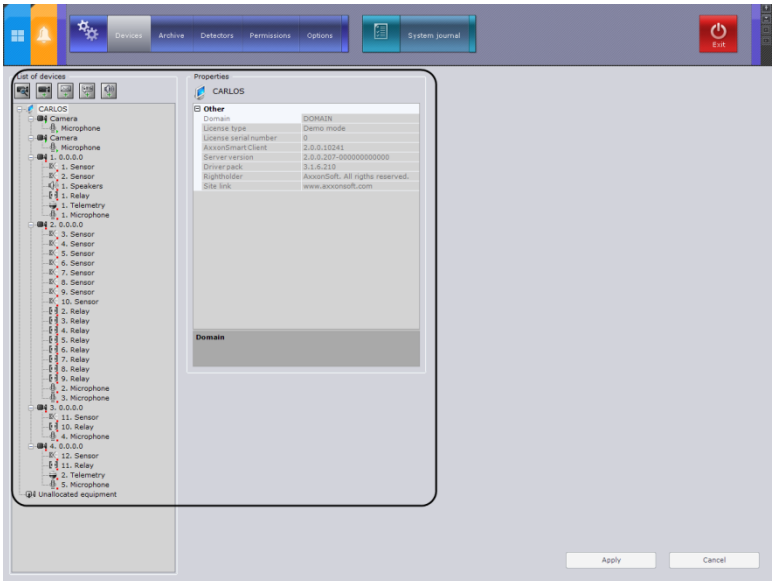


Fig. 6.1—1 The Devices tab

Identifying and managing devices physically connected to a server, creating users with varying permissions, and creating rules and automatic reponses are just a few of the things the user can do by creating and configuring system objects.

The procedure for working with system objects varies slightly depending on their type, but generally you should adhere to the following sequence of actions:

1. Create an object.
2. Configure its parameters.
3. Save changes.
4. Edit the values of parameters.
5. Save changes.
6. Delete the object.

Some system object parameters have a set range of values, in which case you must select the appropriate value from a list. Other parameters serve to display information, while yet others must be set manually according to the recommendations in the parameter's description.

NOTE. As a rule, the parameter description is displayed in a special area under the object properties table when the parameter is selected (Fig. 6.1—2).

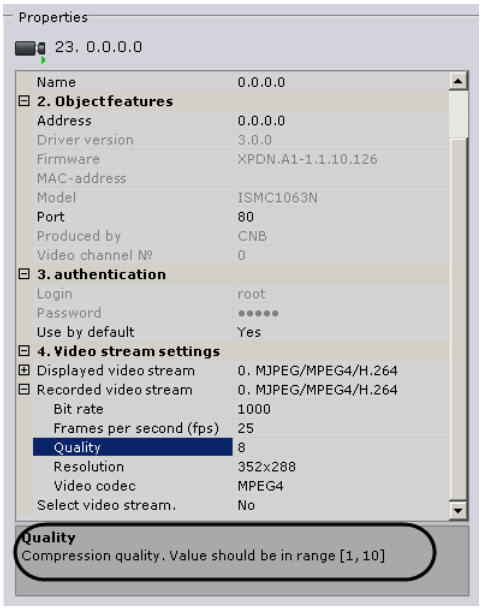


Fig. 6.1—2 Area for displaying parameter descriptions

As is evident from the sequence listed above, any changes made during configuration should be saved by clicking the **Apply** button. Before you click the **Apply** button, the changes may be cleared using the **Cancel** button. Otherwise the changes will be applied without having to restart the software.

6.1.2 The list of Servers for a Domain

All servers under the same domain that the server you connected to are displayed in a the hardware list (Fig. 6.1—3).

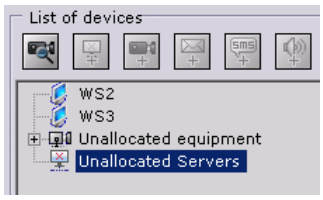


Fig. 6.1—3 Unallocated equipment

You can configure servers from any Client workstation, provided you have the appropriate permissions (see the section *Creating and Configuring the Role and User System Objects*).

6.1.3 Searching for Devices

Unallocated Servers i.e.server that do not belong to any domain and system objects corresponding to physically connected devices appear in the system as a result of the device search. To search for a device, use the  button.

NOTE. Since multicast packets are used for device searh, the search results may not contain the devices from another sub-network.

Unallocated servers found are displayed in the **Unallocated Servers** list (Fig. 6.1—4). Please refer to section XXX to find out how to add them to a domain.

Fig. 6.1—4 Unallocated Servers list

Devices found are displayed with their IP addresses as an **Unallocated equipment** list (**Fig.** 6.1—5). To view more detailed information about a device (manufacturer, model, firmware, etc.), you must select the corresponding line in the list.

Depending on the status of the devices found, the corresponding video camera icons will be of different colors (**Table** 6.1—1).

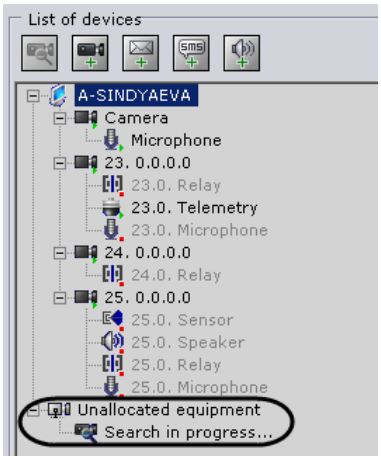


Fig. 6.1—5 Unallocated equipment

Table 6.1—1 Color coding of video camera icons

Color of video camera icon	Description
Black	The device's manufacturer, model, and firmware have been definitely determined; it can be added to the list of devices on the server as is.
Yellow	When adding the device to the list of devices on the server, the manufacturer, model, and firmware version used should be checked.
Red	The device's manufacturer, model, and firmware have not been determined. The video camera can only be added to the list of devices on the server manually (using the tool).

The desired unallocated equipment marked with and icons must be linked to a server, after which it will be displayed in the list of devices on the server and will be accessible for further configuration. Devices marked with the icon can be linked to a server using the tool after selecting the server in the object tree (**Fig.** 6.1—6).

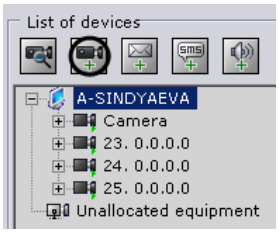


Fig. 6.1—6 Manual addition of a device

Important! The operation of devices marked with the icon with the Axxon Smart software package is not guaranteed.

If you remove a server from a domain, the server automatically enters the **Unallocated Servers** list, if the current Client was connected to another server under this domain. If the current Client was connected to the removed Server, the user interfaces will close.

When a device is deleted from the list of devices on a server, it is automatically placed into the **Unallocated Equipment** list.

The system does not check if the servers and devices placed into the **Unallocated Equipment** and **Unallocated Servers** lists are in the network. To refresh these lists, you must launch the device search (using the button).

6.1.4 Creating Device Objects Manually

You can create objects in Axxon Smart either using the tools located above the object tree or using the Create... button, depending on the object type. You can then configure the objects and save changes.

NOTE. If the settings of a newly created object have not been saved, the icon will appear on the tab, literally indicating that the changes to the tab have not been saved. Then, when you are exiting the program, a message will appear (Fig. 6.1—7) asking whether you want to exit without saving changes.

Fig. 6.1—7 Message displayed when exiting the program without saving changes

6.2 Configuring *Axxon Smart* domains

A distributed system based on the *Axxon Smart* software package is created within a domain, i.e., a selected group of *Axxon Smart* Servers.

When configuring domains, the following operations are used in the necessary combinations:

1. creating a new domain;
2. adding a Server to an existing domain;
3. excluding a Server from the current domain.

To configure domains, you must have the appropriate permissions (see the section *Creating and Configuring the Role and User System Objects*).

This section gives step-by-step instructions for each operation used in configuring domains, and then describes typical instances of their use.

6.2.1 Operations with domains

6.2.1.1 *Creating a new domain*

A new domain can be created in one of two ways:

1. During installation of the *Axxon Smart* software package with the Server and Client configuration type (see step 8 of the instructions in the section **Ошибка! Источник ссылки не найден.**).
2. When attempting to connect to a Server which does not belong to a domain.

In the second case a message will appear (Fig. 6.2—1) in which you should click **OK** (see also the section *Launching*).

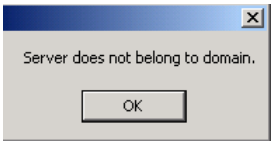


Fig. 6.2—1 Message informing that the Server does not belong to a domain

The **Name new domain** window will appear (Fig. 6.2—2). In the **New domain name field**, enter the domain name to create a new group of computers based on the Server and click **Apply**.

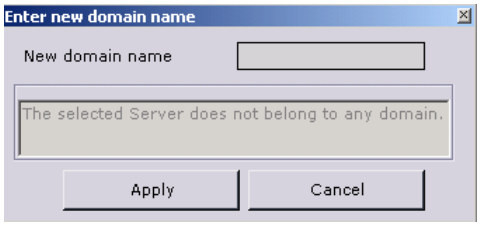


Fig. 6.2—2 Naming a new domain

Important! It is not possible to use the above steps to add a Server to an existing domain. Before naming a new domain, make sure the name does not coincide with the name of another domain located in the same local network.

This will create a new domain based on the Server. The Axxon Smart software package will then be launched with the entered authorization parameters (see the section *Launching*).

6.2.1.2 *Adding a Server to an existing domain*

A Server can be added to an existing domain from any Server within that domain.

Important! Only unallocated Servers, i.e., Servers which do not already belong to a domain, can be added.

There are two ways to add a Server to a domain, depending on whether or not it is present in the search results *(*in the **Unallocated Servers** group*).*

If a Server is present in the search results, you can use the following procedure to add it to a domain:

1. Select the Server in the **Unallocated Servers** group (Fig. 6.2—3, 1).

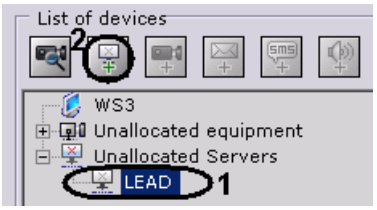


Fig. 6.2—3 Adding a Server to a domain from the Unallocated Servers group

2. Click the button  (see Fig 6..2.-3, 3)

The Server will then be added to the domain from the **Unallocated Servers** group.

Since the search for unallocated Servers is conducted using multicast packets, the results may not include Servers located in a different subnetwork (for example, beyond a router which blocks multicast packets).

In this case the option of manually adding a Server to a domain can be useful; this option can be used with all unallocated Servers, including those present in the **Unallocated Servers** group.

A Server can be manually added to a domain as follows:

1. Select the option **Add Server to a domain** (Fig. 6.2—4) in the context menu of the **Unallocated Servers** group (the menu can be brought up Fogby right-clicking the name of the group).

Fig. 6.2—4 The Add Server to a domain option

2. When you do this, the **Enter Server name** window appears (Fig. 6.2—5)

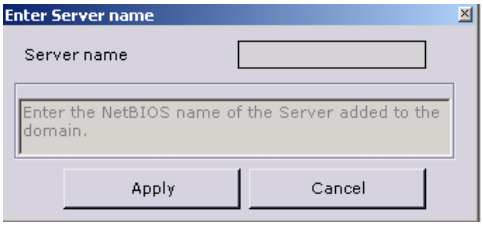


Fig. 6.2—5 Adding a Server to a domain

3. In the **Server Name** field, enter the NetBios name of the Server to be added to the domain (see Fig. 6.2—5).
4. Click **Apply** (see Fig. 6.2—5).

The Server will then be manually added to the domain.

After a Server is added to a domain using any of the methods described, it will appear in the object tree (Fig. 6.2—6).

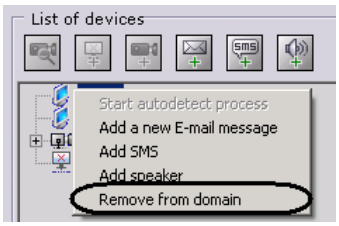


Fig. 6.2—6 The added Server in the objects tree

6.2.1.3 *Excluding a Server from a domain*

A Server can be excluded a domain from any Server within that domain.

To exclude a Server from a domain, you must perform the following steps:

1. Select the option **Exclude from domain** (Fig. 6.2—7) in the context menu of the Server (the menu can be brought up by right-clicking the name of the Server).

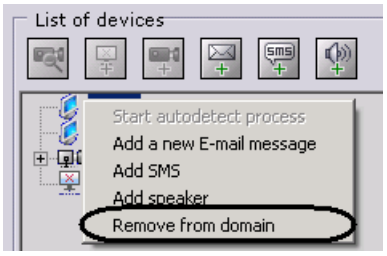


Fig. 6.2—7 The Exclude from domain option

2. In the window which appears, confirm that you want to exclude the Server from the domain by clicking the **Yes** button (Fig. 6.2—8).

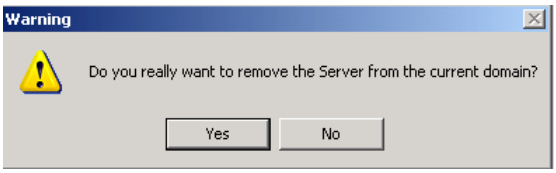


Fig. 6.2—8 The Exclude from domain option

6.3 Preliminary Configuration of Devices

When you launch the Axxon Smart software package for the first time, you can perform the following preparatory operations:

1. Selecting IP devices to register as objects.
2. Configuring a default archive for the selected IP devices.

NOTE. A default archive is one in which records are made when an operator initiates an alert.

To do this, click **Yes** in the **IP device configuration application** dialog box (Fig. 6.3—1, 1).

*NOTE. To skip the preparatory stage when launching Axxon Smart, click **No** (Fig. 6.3—1, 2).*

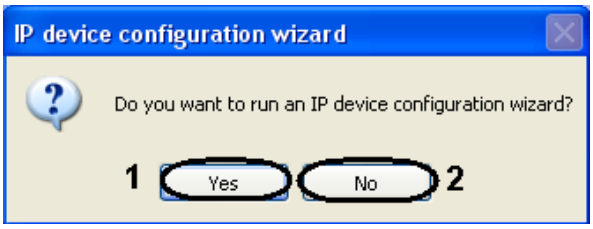


Fig. 6.3—1 Launching the IP device configuration application

When you do this, the IP device configuration application will launch (Fig. 6.3—2).

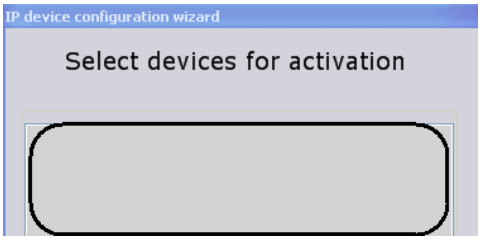


Fig. 6.3—2 Selecting an IP device

When you launch this application, the program will automatically search for connected IP devices. Devices which are found are displayed in the **Select devices for activation** list.

*NOTE. IP devices for which the vendor, model, and/or firmware cannot be determined are displayed in the **Advanced settings required** list (Fig. 6.3—3).*

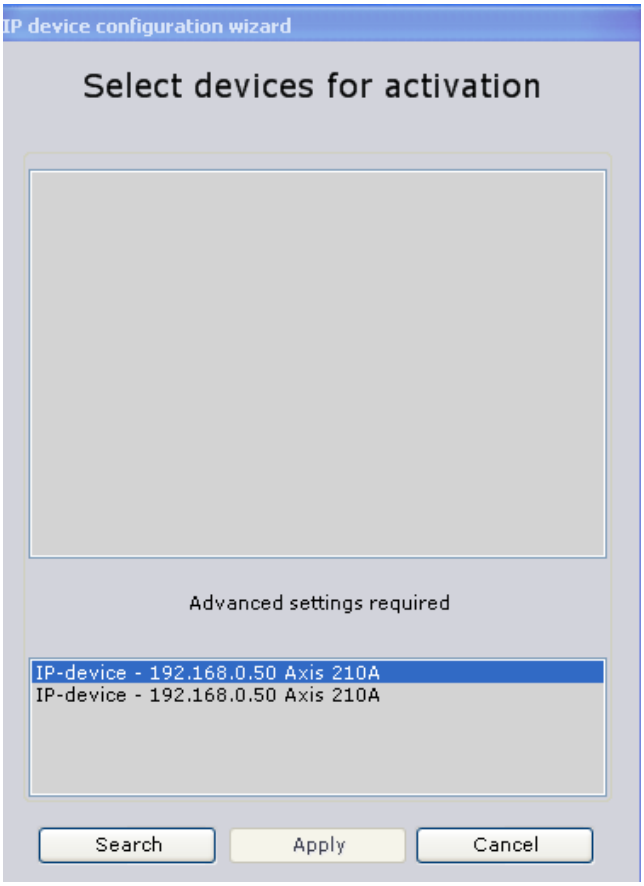


Fig. 6.3—3 IP devices requiring additional configuration

In the **Select devices for activation** list, select the check boxes for those devices which need to be registered as Axxon Smart objects and then click **Apply** (see Fig. 6.3—3).

If you need to launch the search for IP devices again, click **Search** (see Fig. 6.3—3).

After clicking **Apply**, the user will be prompted to configure the default archive for the video cameras (IP devices) selected in the first step (Fig. 6.3—4).

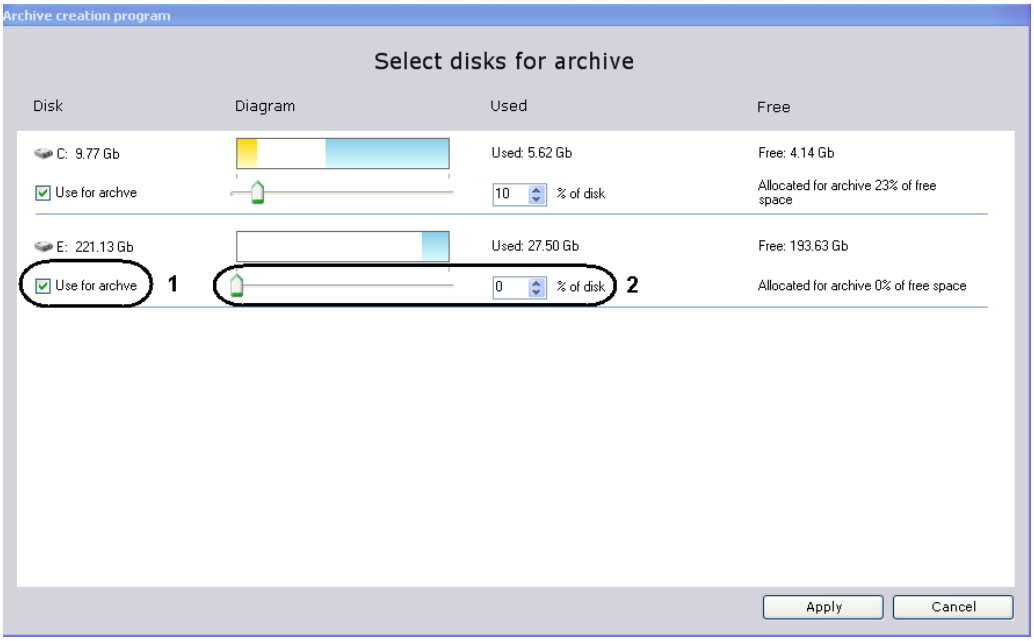


Fig. 6.3—4 Configuring the default archive

To skip the stage of configuring the default archive for selected video cameras when launching Axxon Smart, click Cancel (see Fig. 6.3—4).

To configure the archive, you must perform the following steps:

1. Select the **Use for archive** check boxes for the disks which are to be used to store the default archive (see Fig. 6.3—4, 1).

2. For each selected disk, move the slider (see Fig. 6.3—4, 2) to the position indicating the volume of disk space to be allotted for the archive. You can also set the allotted volume in a field (see Fig. 6.3—4, 2) as a percentage of the total disk volume.

NOTE 1. The field and the slider are dynamically linked: when you move the slider, the field shows the volume of disk space allotted for the archive, and vice versa.

NOTE 2. The diagram over the slider serves as a graphic representation of the disk space used: blue represents the volume of files which already exist on the disk, and yellow represents the volume allotted for the archive being created.

NOTE 3. To allot an entire volume for an archive, you must first manually delete the file system on the disk. To do this, you must do the following:

1. *Launch the Windows OS Disk Management utility.*
2. *Delete the required volume.*
3. *Create a new volume in the resulting unformatted area.*
4. *Assign a letter to the volume, but do not format it.*

Important! The system disk cannot be allocated in its entirety to an archive.

3. Click **Apply** (see Fig. 6.3—4, 3).

Configuration of the default archive is complete.

6.4 Configuring System Objects for Devices

6.4.1 The Server Object

A server is a system object on which other system objects, such as a video camera or IP server, are based. The server name corresponds to the network name of the computer on which Axxon Smart is installed. The configuration field of the **Server** object is used to display the specifications of the software (such as the type of license, driver version, etc.) and is not editable.

6.4.2 The Camera Object

Creation and configuration of the **Video camera** object is done in the **Hardware** tab. The object tree of a video camera is generated automatically according to its functions which are integrated into the *Axxon Smart* software package (the presence of alarm inputs, relay outputs, a pan/tilt unit, etc.).

Objects detected in video cameras' networks are first displayed in the **Unallocated equipment** list. After these objects have been moved to the list of server equipment, their configurations will be accessible for editing.

In the **Object settings** group, the following video camera parameters are displayed (Fig. **6.4—1**):

1. MAC-address
2. IP address (determined automatically, can be changed if necessary).
3. Manufacturer, model, Firmware
4. Driver information
5. The port through which data exchange between the video camera and the *Axxon Smart* software package takes place (by default set at a value of **80**, can be changed if necessary).

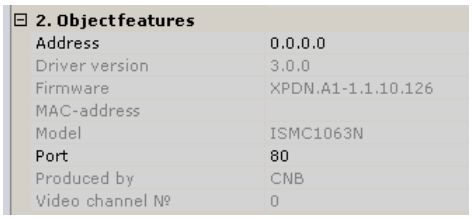


Fig. 6.4—1 **Video camera settings**

To configure a **Camera** object, you must:

1. Highlight the object in the list of devices on the server (Fig. 6.4—2, 1).

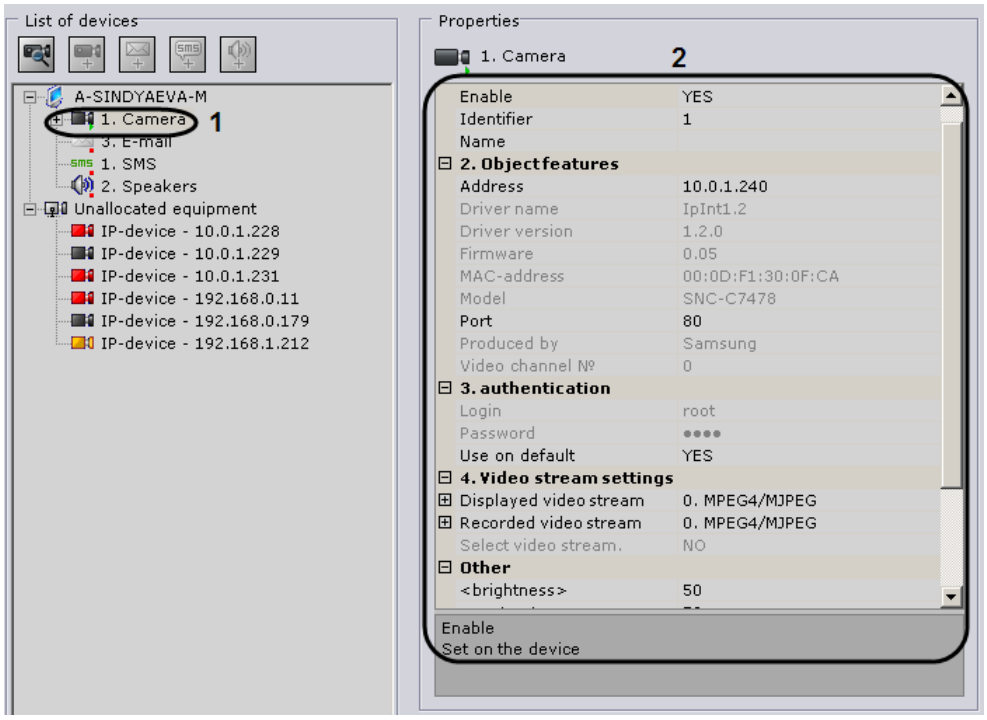


Fig. 6.4—2 Configuring a Camera Object

The configuration field for the selected object will be displayed in the area on the right (see Fig. 6.4—2, 2).

2. Select **Yes** from the list in the **Enable** field to enable the video camera (Fig. 6.4—3).

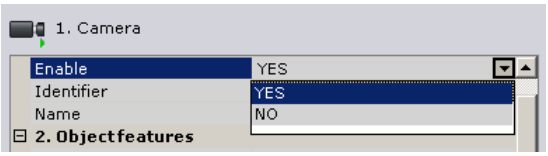


Fig. 6.4—3 Enabling a video camera

3. Assign the video camera a name which will be displayed in the objects tree and in the viewing tile in the **Name** field (Fig. 6.4—4).

The object identifier of a video camera is assigned automatically when it is created, but is accessible for editing in the field with the same name (Fig. 6.4—4). The identifier is also the serial number of the video camera: in the **Monitor** interface window and in the equipment tree of the server, the video cameras are placed in ascending order by identifier.

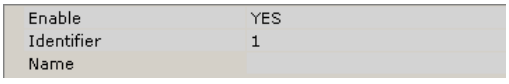


Fig. 6.4—4 The Name field

4. Enter the number of the network port through which data exchange between the video camera and the software will take place, if needed (Fig. 6.4—5). By default a value of **80** is set.

NOTE. At first the port number is set through the camera's Web interface.

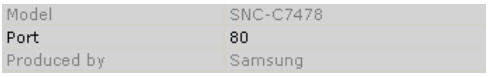


Fig. 6.4—5 The Port field

5. If the login and/or password for connecting to the video camera differ from the factory-set ones, select **No** in the **Use by default** field within the **Authentication** parameter group and define the connection parameters (Fig. 6.4—6).

NOTE. The login and password can be changed in the Web interface of the given video camera.

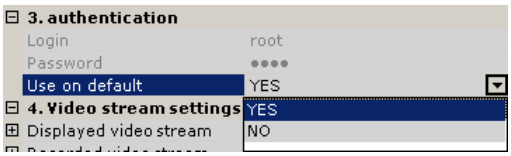


Fig. 6.4—6 The Authentication parameter group

When this method of authentication is selected, the software package will connect to the video camera using the indicated login and password.

6. If the video camera supports the simultaneous transmission of several video streams, you can separately configure a video stream for recording to the archive and a video stream for display in the viewing tiles. To do this, select **Yes** from the **Select video stream** list (Fig. 6.4—7). If this function is not supported by the video camera, the value of this parameter will not be active.

Fig. 6.4—7 The Select video stream field

If the video camera does not support simultaneous transmission of several video streams, the parameters of the video streams for recording and display are identical. In this case only the parameters of the video stream for recording are accessible for editing (the parameters of the video stream for display change automatically) (Fig. 6.4—8).

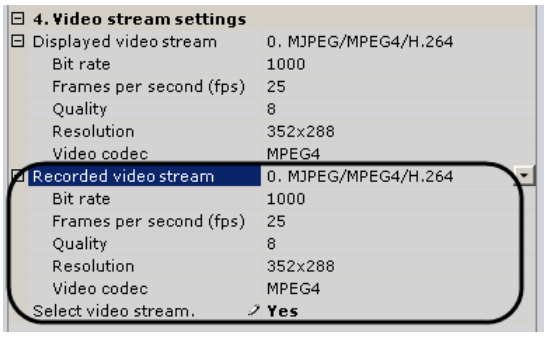


Fig. 6.4—8 Configuring a video stream for recording

NOTE 1. As a rule, the following parameters must be set for a video stream: bit rate, compression rate, frame rate, and resolution. Detailed information on configurable parameters can be found in the official reference documentation for the video camera.

NOTE 2. When some video stream parameters are changed, the video camera may automatically restart, in which case it will become unavailable for some time (depends on the video camera).

7. Configure additional video camera parameters (e.g., contrast, brightness, color saturation, etc.) in the **Other** group (Fig. 6.4—9) using their descriptions in the interface of the *Axxon Smart* software package or, for more detail, in the official reference documentation of the video camera.

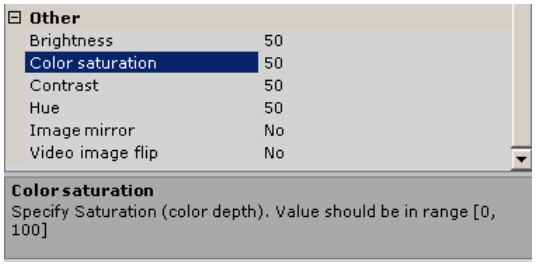


Fig. 6.4—9 The Other group

8. Click **Apply** in the bottom-right corner of the program window to apply the new settings (Fig. 6.4—10).

Fig. 6.4—10 The Apply button

After applying the settings, the video camera will be enabled and switched to the operation mode corresponding to the set parameters. The **Camera** icon indicator will turn green (Fig. 6.4—11, 1), and the image from the camera will be displayed in the preview window (Fig. 6.4—12, 2).

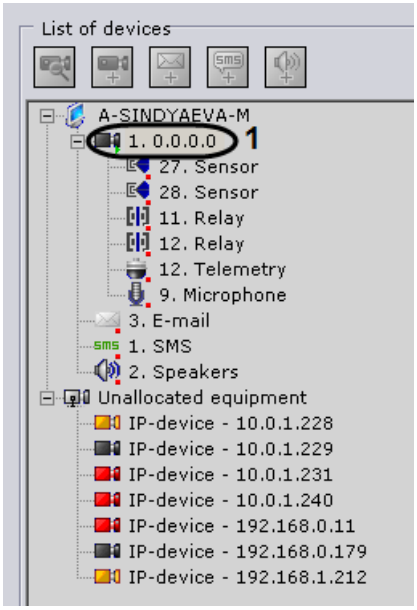


Fig. 6.4—11 Camera icon indicator

Fig. 6.4—12 Video image from an enabled camera in the preview window

6.4.3 The IP Server Object

Each channel for connecting analog video cameras to an IP server corresponds to a **Video camera** object which is a child of the **IP server** object. Configuration of these objects represents the configuration of the IP server's channels.

To configure an **IP server** object, you must:

1. Select an **IP server** object in the objects tree (Fig. 6.4—13, 1).

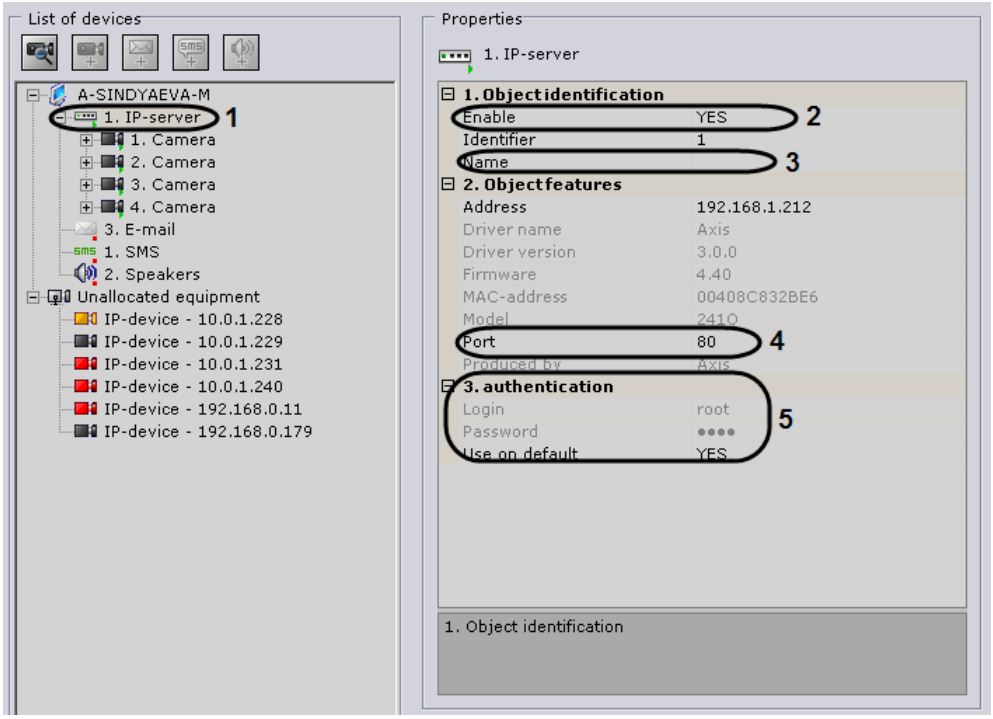


Fig. 6.4—13 Configuring an IP server object

2. Select **Yes** from the list in the **Enable** field to enable the object (Fig. 6.4—13, 2).
3. Enter the name of the IP server into the **Name** field (Fig. 6.4—13, 3).
4. Specify the number of the network port (Fig. 6.4—13, 4). By default a value of **80** is set.

NOTE. At first the port number is set through the IP server's Web interface.

5. Set authentication mode (Fig. 6.4—13, 5).

NOTE. The login and password for connecting to the IP server are set through its Web interface.

6. Click the **Apply** button.

The IP server and its corresponding video cameras will then be enabled, and the icon indicators for the IP server and video cameras in the objects tree will turn green (Fig. 6.4—14).

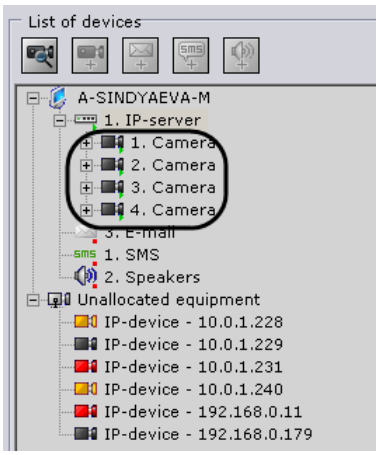


Fig. 6.4—14 An IP server object in the objects tree

The channels of the IP server must be configured separately for each enabled channel (using the child **Video camera** objects).

6.4.4 The Microphone Object

If a microphone is physically connected to the system independently of a video camera, then you must specify the video camera to which it will be linked in the settings of the given microphone. When you do this, the **Microphone** object will become a child of the specified **Camera** object.

NOTE 1. This setting is used for a simultaneous video and audio surveillance situation, and also for simultaneous video and audio recording to the archive (see the section titled Audio Monitoring).

NOTE 2. This setting is relevant only for microphones connected to IP servers. The microphone and the video camera to which it is to be linked must be connected to the same IP server.

If the microphone is embedded in a video camera or physically connected to it, then its corresponding object will be automatically displayed in the objects tree as a child of that particular video camera.

To configure a **Microphone** object, you must:

1. Select the microphone object in the objects tree (Fig. 6.4—15, 1).

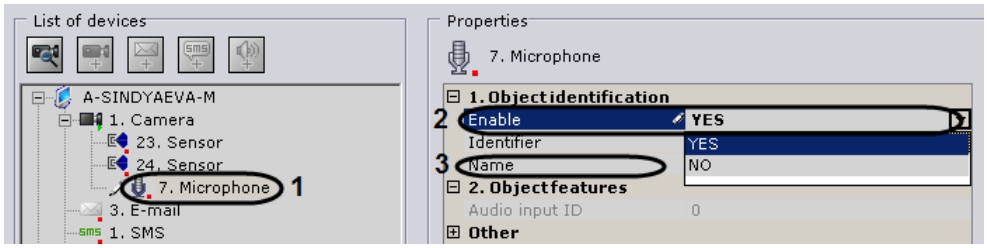


Fig. 6.4—15 A Microphone object

2. Enable the microphone by selecting **Yes** in the **Enable** field (see Fig. 6.4—15, 2).
3. Enter the name of the microphone into the **Name** field (see Fig. 6.4—15, 3).
4. Configure additional microphone parameters (e.g., audio codec, bit rate, etc.) in the **Other** group (Fig. 6.4—16) using their descriptions in the interface of the *Axxon Smart* software package or, for more detail, in the official reference documentation of the parent video camera.

Fig. 6.4—16 The Other group

5. Click the **Apply** button.

The microphone will then be switched to its assigned operation mode.

To check the microphone's operation, you must perform the following steps:

1. Select the **Sound on/off** check box in the **Summarized data** group (Fig. 6.4—17).

Fig. 6.4—17 Checking microphone operation

2. Provide an audio signal to the microphone.
3. If the microphone is configured correctly, the audio signal will be transmitted to the server's speakers. The strength of the incoming audio signal will be displayed on the indicator to the right of the **Sound on/off** check box. (see Fig. 6.4—17).

Checking microphone operation is now complete.

6.4.5 The Telemetry Object

The **Telemetry** object displays the characteristics of a PTZ device that should be connected to a PTZ video camera.

To configure a **Telemetry** object, you must:

1. Select a **Telemetry** object in the objects tree (Fig. 6.4—18).

Fig. 6.4—18 A Telemetry Object

2. Enable the PTZ device by setting the corresponding parameter (Fig. 6.4—19, 1).

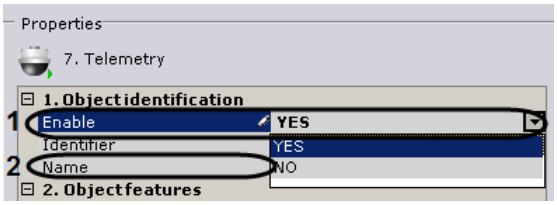


Fig. 6.4—19 The identification parameters of a Telemetry Object

3. Enter the name of the PTZ device (see Fig. 6.4—19, 2).

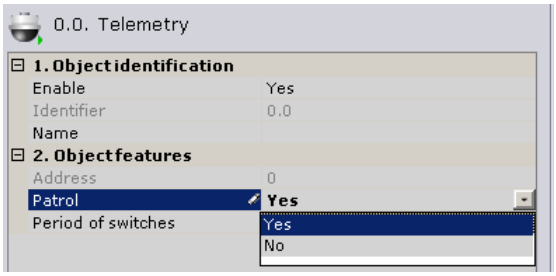


Fig. 6.4—20 Enabling patrol mode

4. Activate patrolling (see Fig. 6.4—20). When patrolling is enabled, the video camera automatically changes its position along a route defined in its presets list (see Fig. 6.4—20).

NOTE. Patrolling is enabled using the Patrolling button in the PTZ camera control panel (see the section titled Patrolling).

Fig. 6.4—21 Setting switching period

5. Set the period in seconds for switching of the PTZ camera between presets when in patrol mode (see Fig. 6.4—21).
6. Click the **Apply** button.

The PTZ device will then be switched to its assigned operation mode.

To check the operation of the PTZ device, click the **Test** button (Fig. 6.4—22)**.** If the PTZ device is configured correctly, it will turn one step and return to its original position.

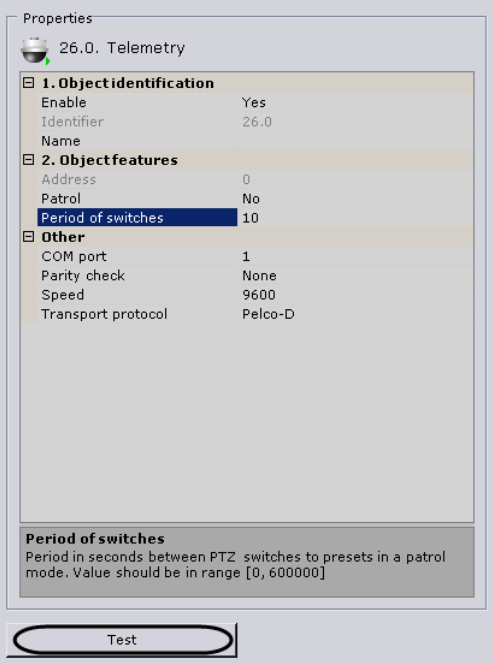


Fig. 6.4—22 Checking PTZ device operation

6.4.6 The Sensor Object

If a sensor is physically connected to the system independently of a video camera, then you must specify the video camera to which it will be linked in the settings of the given sensor. When you do this, the **Sensor** object will appear under the specified **Camera** object in the object tree.

NOTE 1. This setting is used to link alerts initiated by the triggering of a sensor to a video camera.

NOTE 2. This setting is relevant only for sensors connected to IP servers. The sensor and the video camera to which it is to be linked must be connected to the same IP server.

If the sensor is embedded in a video camera or physically connected to it, then its corresponding object will be automatically displayed in the objects tree as a child of that particular video camera.

To configure a **Sensor** object, you must:

1. Select a **Sensor** object in the objects tree (Fig. 6.4—23, 1).

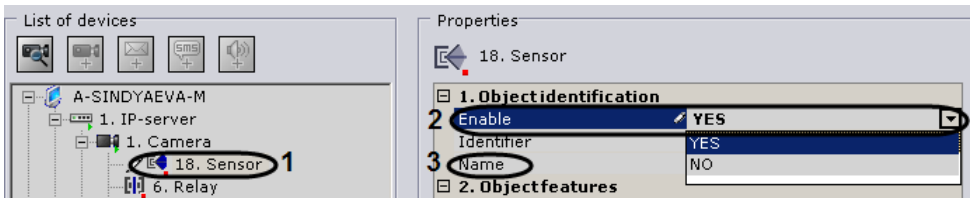


Fig. 6.4—23 Configuring a Sensor Object

2. Enable the device (Fig. 6.4—23, 2).
3. Enter the name of the sensor (Fig. 6.4—23, 3).

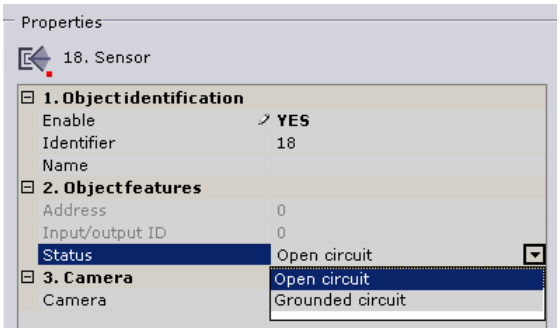


Fig. 6.4—24 Selecting sensor status

4. Set the status in which the sensor is to be in the absence of an alarm (Fig. 6.4—24).
5. Click the **Apply** button.

The sensor will then be switched to its assigned operation mode.

The current sensor status is displayed in the **Sensor information** group (Fig. 6.4—25).

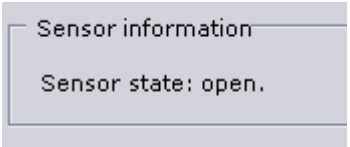


Fig. 6.4—25 Sensor information

6.4.7 The Relay Object

If a relay is physically connected to the system independently of a video camera, then you must specify the video camera to which it will be linked in the settings of the given relay. When you do this, the **Relay** object will appear under the specified **Camera** object in the object tree.

NOTE. This setting is relevant only for relays connected to IP servers. The relay and the video camera to which it is to be linked must be connected to the same IP server.

If the relay is embedded in a video camera or physically connected to it, then its corresponding object will be automatically displayed in the objects tree as a child of that particular video camera.

To configure a **Relay** object, you must:

1. select a **Relay** object in the objects tree.
2. Enable the device (Fig. 6.4—26, 1).

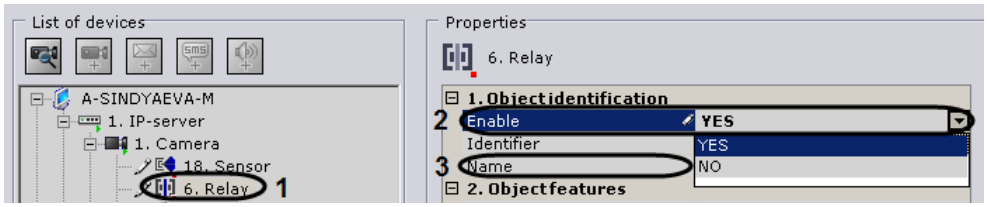


Fig. 6.4—26 Configuring a Relay Object

3. Enter the name of the relay (see Fig. 6.4—26, 2).
4. Set the status in which the relay is to be in the absence of an alarm (Fig. 6.4—27).

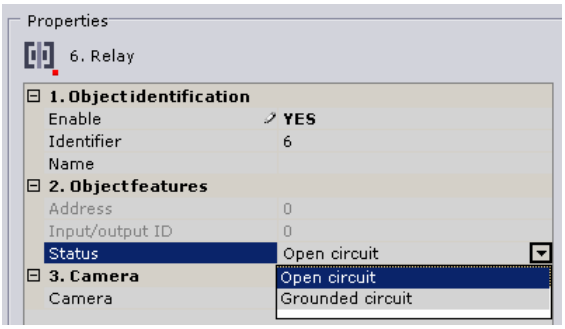


Fig. 6.4—27 Selecting relay status

5. Click the **Apply** button.

The relay will then be switched to its assigned operation mode.

To check the operation of the relay, click the **Test** button (Fig. 6.4—28)**.** If the relay is configured correctly, there will be a brief change in its status.

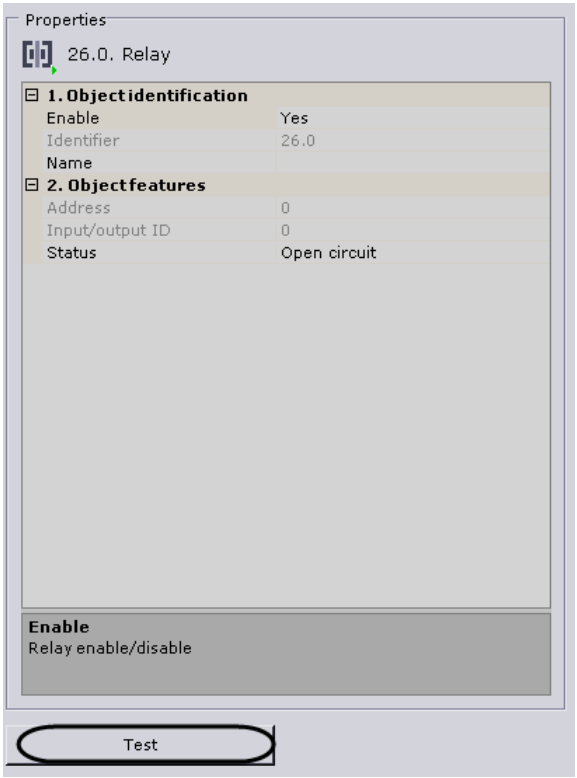


Fig. 6.4—28 Checking relay operation

6.4.8 The Speaker Object

The **Speaker** object is used to configure audio notification, which is launched as an automatic response when a detector is triggered.

In Axxon Smart you can create the following types of **Speaker** objects:

1. IP speaker device. Created automatically if there is an audio outlet on an IP device.

*NOTE. One audio outlet on an IP device corresponds to one **Speaker** object listed under the **Camera** object in the object tree.*

2. System speaker. Created manually. Sound on the system speaker is played back using the server's sound card.

A **Speaker** object can play audio notification files with the extensions:

1. .wav
2. .mp3
3. .ogg
4. .mkv
5. .avi

The following audio notification file coding formats are supported:

1. G.711
2. G.726
3. VORBIS
4. PCM

The audio notification file should be stored on the computer corresponding to the **Server** object on the basis of which the **Speaker** object is registered.

6.4.8.1 *Creating an Object*

To create a **Speaker** system object, you must perform the following steps:

1. In the list of devices, highlight a **Server** object (Fig. 6.4—29, 1)

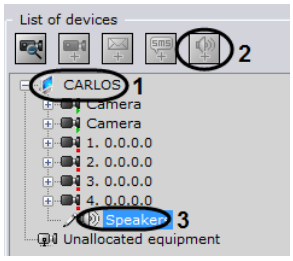


Fig. 6.4—29 Creating a Speaker object

2. Click the  button (see Fig. 6.4—29, 2).
3. Click the **Apply** button.
4. When you do this, the **Speaker** object appears in the list of devices (see Fig. 6.4—29, 3).

Creation of the **Speaker** object is complete.

6.4.8.2 *Configuring a Speaker Object*

To configure a **Speaker** object, you must perform the following steps:

1. In the list of devices, highlight the **Speaker** object (Fig. 6.4—30, 1) which needs to be configured.

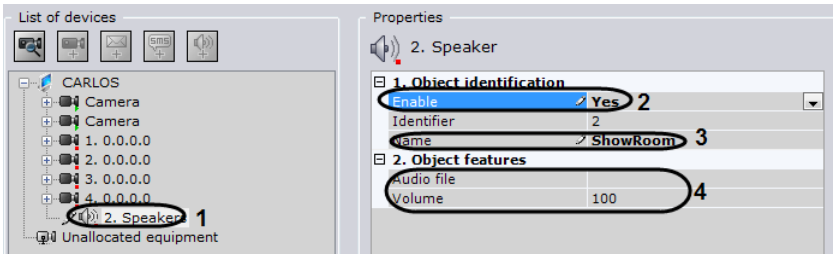


Fig. 6.4—30 Configuring a Speaker object

2. Activate the **Speaker** object (see Fig. 6.4—30, 2) by selecting **Yes** in the **Enable** list.
3. In the **Name** field (see Fig. 6.4—30, 3), enter the desired name for the **Speaker** object.
4. In the **Audio file** field (see Fig. 6.4—30, 4), enter the full path to the audio notification file.
5. In the **Volume** field (see Fig. 6.4—30, 4, Fig. 6.4—31), enter the desired speaker volume level.

NOTE. When configuring the speaker of an IP device, you can set other parameters as well, for example, the compression algorithm for the audio signal sent to the speaker for playback (Fig. 6.4—31). Which speaker parameters you can configure is determined by the protocol for integration of the IP device and the Axxon Smart software package.

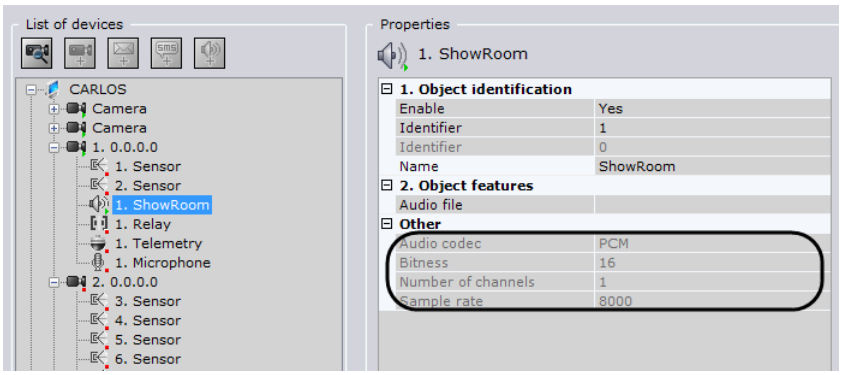


Fig. 6.4—31 Characteristics of configuring an IP device speaker

6. Click the **Apply** button.

Configuration of the **Speaker** object is now complete.

6.4.8.3 *Checking Audio Notification*

To check audio notification from a **Speaker** object, click the **Test** button (Fig. 6.4—32, 1).

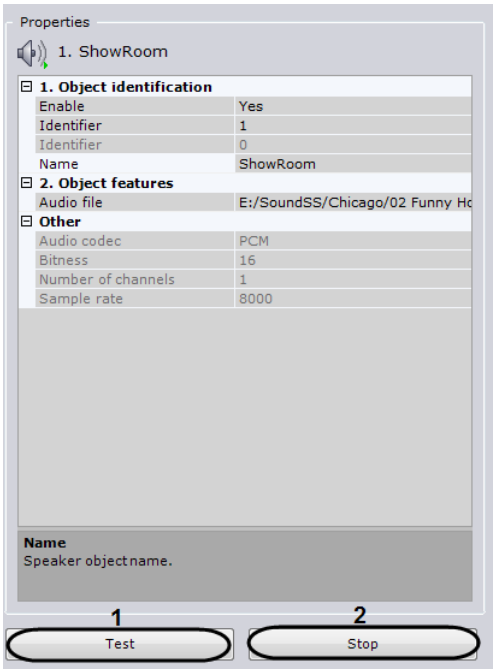


Fig. 6.4—32 Checking audio notification

When you do this, the audio notification file whose path you indicated in the corresponding field plays back (see the section titled *Configuring a Speaker Object*). To stop the test playback, click the **Stop** button (see Fig. 6.4—32, 2).

6.4.9 The E-mail Object

The **E-mail** object is used to configure electronic messages which can then be sent to a user as an automatic response when a detector is triggered.

6.4.9.1 *Creating an Object*

To create an **E-mail** object, you must perform the following steps:

1. In the list of devices, highlight a **Server** object (Fig. 6.4—33, 1)

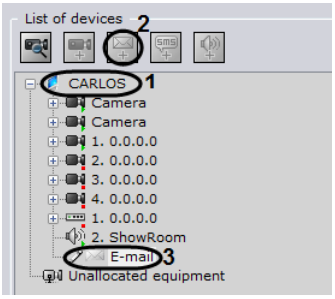


Fig. 6.4—33 Creating an E-mail object

2. Click the  button (see Fig. 6.4—33, 2).
3. Click the **Apply** button.
4. When you do this, an **E-mail** object appears in the list of devices (see Fig. 6.4—33, 3).

Creation of the **E-mail** object is now complete.

6.4.9.2 *Configuring an E-mail Object*

To configure an **E-mail** object, you must perform the following steps:

1. In the list of devices, highlight the **E-mail** object which needs to be configured (Fig. 6.4—34, 1).

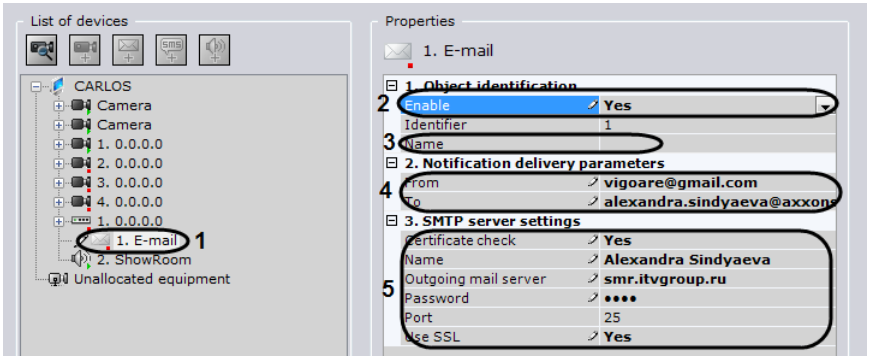


Fig. 6.4—34 Configuring an E-mail object

2. Activate the **E-mail** object (see Fig. 6.4—34, 2) by selecting **Yes** in the **Enable** list.
3. In the **Name** field (see Fig. 6.4—34, 3), enter the desired name for the **E-mail** object.
4. In the **Notification delivery parameters** field (see Fig. 6.4—34, 4), set the delivery parameters for the E-mail message:
   4.1. In the **To** field, enter the E-mail address to which the messages will be sent.
   4.2. In the **From** field, enter the E-mail address from which the messages will be sent.
5. In the **SMTP server settings** field (see Fig. 6.4—34, 5), enter the settings of the outgoing mail server:
   5.1. In the **Name** field, enter the name of the user account used to send messages on the outgoing mail server.
   5.2. If you need to use an SSL-encoded connection when connecting to the outgoing mail server, select **Yes** from the **Use SSL** list.
   5.3. In the **Password** field, enter the password for the user account on the outgoing mail server.
   5.4. In the **Port** field, enter the number of the port used by the outgoing mail server.
   5.5. If when using an encoded connection the SSL certificate must be checked, select **Yes** from the **Certificate check** list.
   5.6. In the **Outgoing mail server** field, enter the name of the outgoing mail SMTP server.
6. Click the **Apply** button.

Configuration of the **E-mail** object is now complete.

6.4.9.3 *Checking E-mail Notification*

To check E-mail notification from an **E-mail** object, send a test message by clicking the **Test message** button (Fig. 6.4—35).

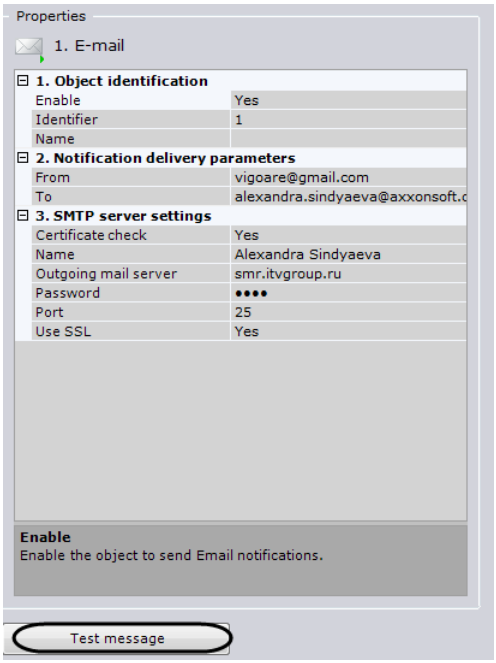


Fig. 6.4—35 Checking E-mail notification

When you do this, the following message is sent to the E-mail address indicated in the **To** field (see the section titled *Configuring an E-mail Object*): "This is a test message to check Axxon Smart E-mail notification."

*NOTE. If the recipient does not receive the message, verify the accuracy of the **E-mail** object settings.*

6.4.10 The SMS Object

The **SMS** object is used to configure SMS messages which can then be sent to a user as an automatic response when a detector is triggered.

6.4.10.1 *Creating an Object*

To create an **SMS** object, you must perform the following steps:

1. In the list of devices, highlight a **Server** object (Fig. 6.4—36, 1)

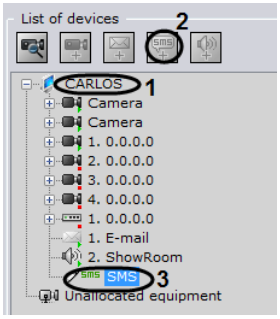


Fig. 6.4—36 Creating an SMS object

2. Click the  button (Fig. 6.4—36, 2).
3. Click the **Apply** button.
4. When you do this, the **SMS** object appears in the list of devices (Fig. 6.4—36, 3).

Creation of the **SMS** object is now complete.

6.4.10.2 *Configuring an SMS Object*

To configure an **SMS** object, you must perform the following steps:

1. In the list of devices, highlight the **SMS** object which needs to be configured (Fig. 6.4—37, 1).

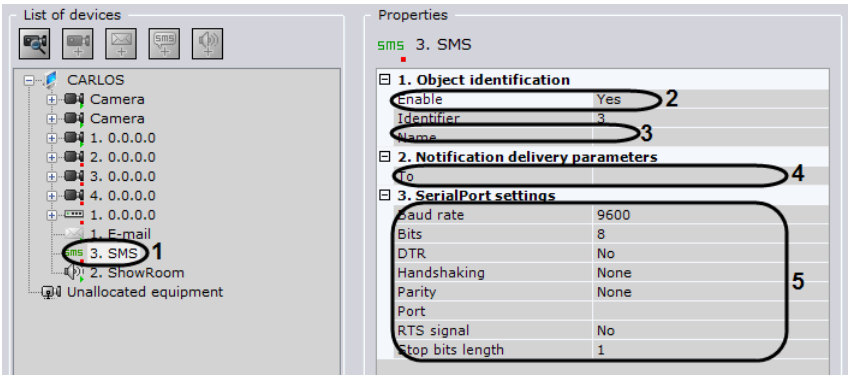


Fig. 6.4—37 Configuring an SMS object

2. Activate the **SMS** object (see Fig. 6.4—37, 2) by selecting **Yes** in the **Enable** list.
3. In the **Name** field (see Fig. 6.4—37, 3), enter the desired name for the **SMS** object.
4. In the **To** field (see Fig. 6.4—37, 4), enter the cellular telephone number in the international format (*+<country code>xxxxxxxxxx*) to which messages will be sent.
5. In the **SerialPort settings** group (see Fig. 6.4—37, 5), indicate the port settings used to connect to the GSM modem by which SMS messages will be sent:
    5.1. If you need to use a DTR control signal, select **Yes** from the **DTR** list.
    5.2. In the **Bits** field, enter the number of bits in the byte of a data packet.
    5.3. In the **Stop bits length** field, enter the number of bits in the stop bit of a data packet.
    5.4. If you need to use a parity check when transmitting data, select the desired method of parity check from the **Parity** list.
    5.5. From the **Port** list, select the serial port used to connect to the GSM modem.
    5.6. If hardware control of the serial port data protocol is enabled (see step 5.8) and you need to use an RTS signal, select **Yes** from the **RTS signal** list.
    5.7. Select the speed for data transmission via the GSM modem from the **Baud rate** list.
    5.8. If you need to control the serial port data protocol, select the desired method of control from the **Handshaking** list: hardware (RTS/STS), software (XOn/XOff), or alternating.
6. Click the **Apply** button.

Configuration of the SMS object is now complete.

6.5 Configuring detectors

6.5.1 Types of Detectors

In the Axxon Smart software package, several types of detectors process incoming data:

1. Situation analysis detectors

2. Basic detectors:

2.1. Video detectors

2.2. Audio detectors

3. Detectors embedded in a video camera:

3.1. Video stream processing detectors

3.2. Detectors which process signals from the video camera's sensor

Detector setup takes place using the interface in the **Detectors** tab (under **Settings**) (Fig. 6.5—1). For detector setup you must have the appropriate permissions.

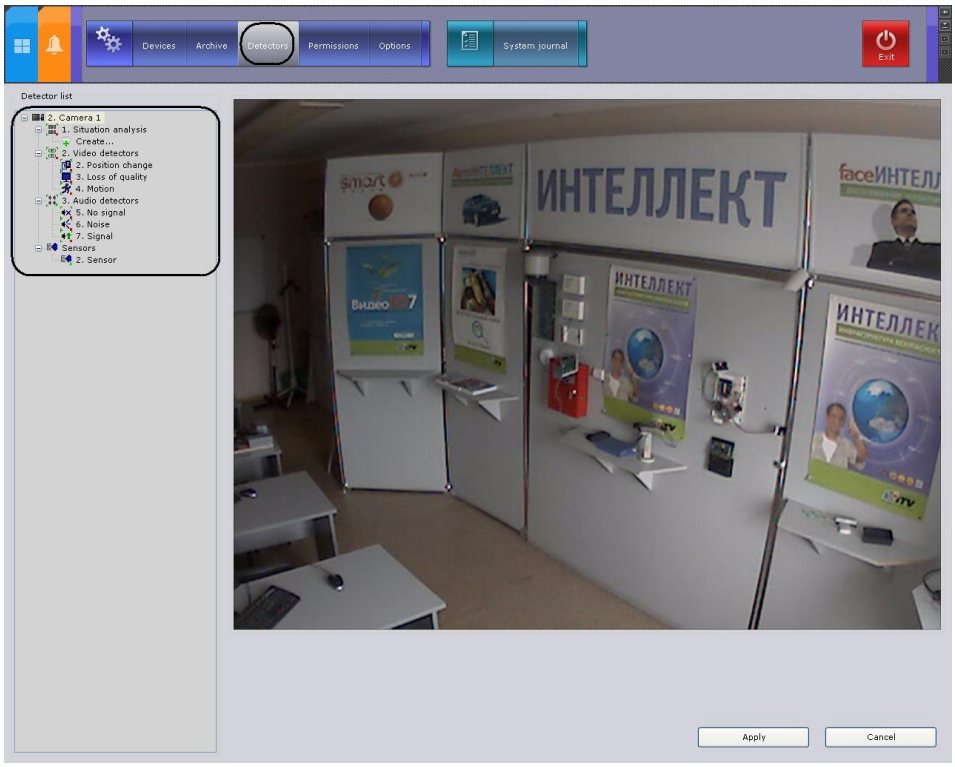


Fig. 6.5—1 The Detectors tab

The structure of the detector list consists of three levels (see Fig. 6.5—1):

1. Video cameras
2. Types of video camera detectors
3. Video camera detectors

Important! For a video camera and its corresponding branch to appear in the detector list, the camera must be enabled in Axxon Smart.

Each type of detector corresponds to a parent object (see Fig. 6.5—1):

1. Situation analysis
2. Video detectors

3. Audio detectors
4. Embedded detectors
5. Sensors

Parent objects for those detectors which can be configured for a video camera are created automatically depending on the camera's specifications (see the device's official reference documentation). For example, an **Audio detector** object is created only when there is an audio outlet on the video camera, and an **Embedded detector** is created only when there are embedded analytics.

6.5.2 Situation Analysis Detectors

6.5.2.1 *Types of Situation Analysis Detectors*

The following detectors enable analysis of the situation in a video camera's field of view (Table 6.5—1).

Table 6.5—1 Types of situation analysis detectors

Detector object name	Detector description
Motion	A detector triggered by motion in an area of a video camera's field of view
Loitering	A detector triggered by the lengthy presence of an object in an area of a video camera's field of view
Object disappearance	A detector triggered by the disappearance of an object in an area of a video camera's field of view
Abandoned object	A detector triggered by the presence of an abandoned object in an area of a video camera's field of view
Line crossing	A detector triggered by the trajectory of an object crossing a virtual line
Object appearance	A detector triggered by the appearance of an abandoned object in an area of a video camera's field of view
Stopping	A detector triggered by the cessation of motion in an area of a video camera's field of view

6.5.2.2 *Procedure for Configuring Situation Analysis Detectors*

You can configure situation analysis detectors as follows:

1. Enable situation analysis (disabled by default).
2. Set the general parameters.
3. Set common detection zones and/or masks.
4. Create objects for the required types of detectors
5. For each detector, set the virtual element (area or line) used for situation analysis.
6. Set detector parameters (only for the loitering detector).
7. Check the triggering of detectors using the trigger ribbon (see the section titled *Checking the Triggering of a Detector*).
8. For each detector, set rules to be automatically executed when the detector is triggered (see the section titled *Configuring Automatic Rules*)

6.5.2.3 *Enabling Situation Analysis*

To enable situation analysis, you must perform the following steps:

1. In the detector list, highlight a **Situation analysis** object (Fig. 6.5—1, 1) which offers a means of analyzing the situation in the field of view of the desired video camera.

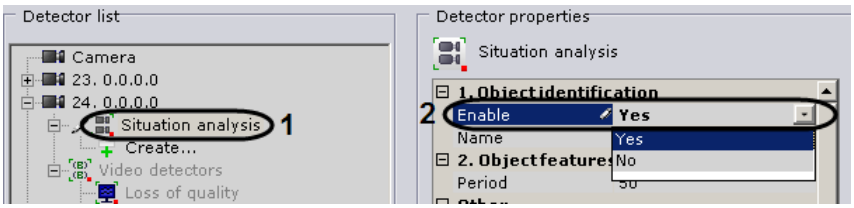


Fig. 6.5—1 Enabling situation analysis

2. Select **Yes** from the **Enable** list (see Fig. 6.5—1, 2).

3. Click the **Apply** button.

Situation analysis is now enabled.

6.5.2.4 *Setting General Parameters*

To set a situation analysis detector's general parameters, you must perform the following steps:

1. In the detector list, highlight a **Situation analysis** object (Fig. 6.5—2, 1) which offers a means of analyzing the situation in the field of view of the required video camera.

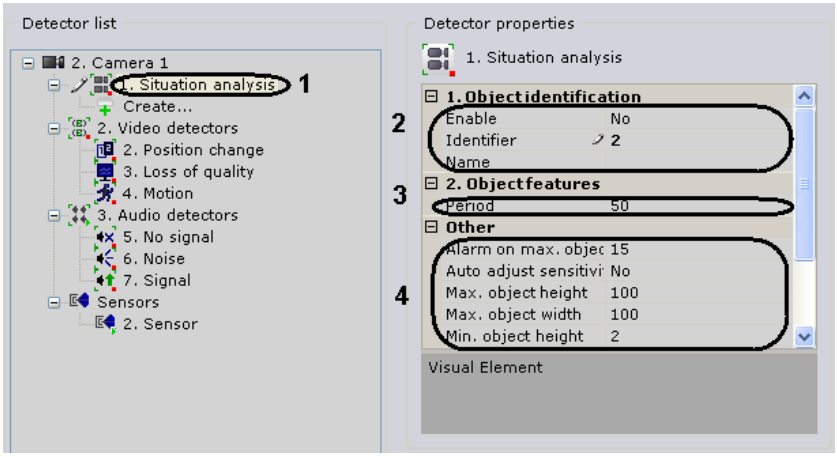


Fig. 6.5—2 General parameters of situation analysis detectors

2. In the **Period** field (see Fig. 6.5—2, 2), enter the time in milliseconds after which the next video image frame will be analyzed. The value should be in the range [0, 65535]. If the value is 0, each frame of the video image is analyzed.

3. If you need automatic adjustment of the sensitivity of a motion detector or an abandoned object detector, select **Yes** in the **Auto adjust sensitivity** list (see Fig. 6.5—2, 3).

NOTE. Enabling this option is recommended if the lighting fluctuates significantly in the course of the video camera's operation (for example, in outdoor conditions).

4. In the **Max. object height** and **Max. object width** fields (see Fig. 6.5—2, 4), enter the maximum height and width of a detectable object as a percent of the height of the video image frame. The values should be in the range [2, 100].

5. In the **Alert on max. object rest time** field (see Fig. 6.5—2, 4), enter the maximum rest time of an object in seconds, above which it is considered abandoned. The value should be in the range [3, 1200].

NOTE 1. This setting is relevant for an abandoned object detector.

NOTE 2. It is recommended to start by setting the value of this parameter at 10.

6. In the **Min. object height** and **Min. object width** fields (see Fig. 6.5—2, 4), enter the minimum height and width of a detectable object as a percent of the height of the video image frame. The values should be in the range [2, 100].

7. In the **Sensitivity: motion** and **Sensitivity: abandoned object** fields (see Fig. 6.5—2, 4), enter the sensitivity of the motion detector and the abandoned object detector, respectively. The sensitivity of the motion detector should be set in the range [1, 80], and that of the abandoned object detector should be set in the range [5, 30].

NOTE. These parameters depend on the lighting conditions and should be chosen empirically. It is recommended to start by setting the sensitivity of both detectors at 20.

8. Click the **Apply** button.

The general parameters of the situation analysis detectors are now set.

6.5.2.5 *Setting Common Detection Zones and Masks*

You can set detection zones and/or masks which are common to all situation analysis detectors.

NOTE 1. Common zones are analyzed and common masks are ignored by all situation analysis detectors.

NOTE 1. Common detection masks allow you to immediately exclude areas of a video camera's field of view which are known to be complex (leaves, water, etc.) from analysis.

To set common detection zones and/or masks, you must perform the following steps:

1. In the detector list, highlight a **Situation analysis** object (Fig. 6.5—3, 1) which offers a means of analyzing the situation in the field of view of the required video camera.

Fig. 6.5—3 Setting a common detection zone

2. In the viewing tile (see Fig. 6.5—3, 2), sequentially set the nodes of a closed area within which or outside of which you need to create a detection zone or mask (Table 6.5—2).

NOTE. When the area is being constructed, the nodes are connected by a two-color dotted line which outlines the area's borders.

Table 6.5—2 Operations with an area

Operation	Result
Left-click in the viewing tile	Creates a new area node
Right-click on a created node	Deletes the area node
Position the cursor on a node and, holding down the left mouse button, move the mouse	Moves the area node
Click the button	Deletes the area

3. When a closed area is set, the icon bar appears for creating detection zones or masks inside or outside the area. To utilize an icon's function (Table 6.5—3), click it with the left mouse button.

Table 6.5—3 Creating a detection zone or mask with an icon

Icon	Function
	Creates a detection mask inside the outlined area
	Creates a detection mask outside the outlined area
	Creates a detection zone inside the outlined area
	Creates a detection zone outside the outlined area

NOTE. If you select a mask icon, the mask created will be visualized in the viewing tile as a dimmed area (Fig. 6.5—4).

Fig. 6.5—4 A detection mask

4. Repeat steps 2-3 to set the necessary common detection zones and/or masks (Fig. 6.5—5).

Fig. 6.5—5 Setting several detection zones and masks

NOTE. To delete an existing detection mask, you must create a detection zone inside the masked area.

5. Click the **Apply** button.

The setting of common detection zones and/or masks is complete.

6.5.2.6 *Creating a Detector Object*

To activate the needed type of situation analysis detector, you must create the corresponding object (see the section titled *Types of Situation Analysis Detectors*).

To create a detector object, you must perform the following steps:

1. In the branch of the **Situation analysis** object which offers a means of analyzing the situation in the desired video camera's field of view, click **Create** (Fig. 6.5—6).

NOTE. You can also create a detector object using the Create detector command in the context menu of the Situation analysis object (brought up by right-clicking on the object).

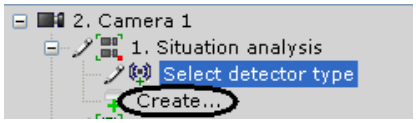


Fig. 6.5—6 Creating a detector

2. Highlight the **Select detector type** link which appears (Fig. 6.5—7, 1).

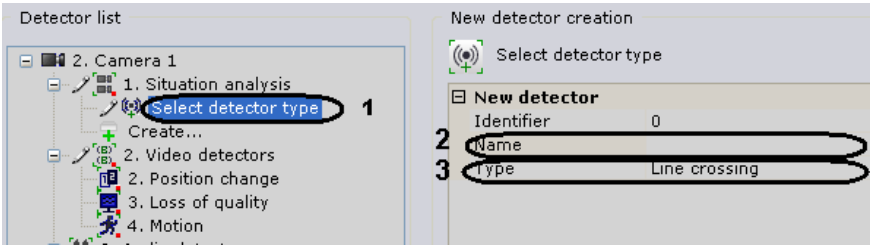


Fig. 6.5—7 Selecting detector type

3. In the **Name** field (see Fig. 6.5—7, 2), enter the detector name which will appear in the detector list and the viewing tile.

4. From the **Type** list (see Fig. 6.5—7, 3), select the desired detector type.

5. Click the **Apply** button.

Creation of the detector object is now complete.

6.5.2.7 *Setting Virtual Elements*

For each type of situation analysis detector you must set a virtual element of one of two types:

1. A line

2. An area

Important! If no visual element is set, the detector will not work.

The type of visual element is determined by the detector type. Only the **Line crossing** detector requires you to set a **Line** element. Other situation analysis detectors require you to set an **Area** element for each detector.

6.5.2.7.1 Line

The **Line** visual element sets a virtual line in the field of view of a video camera; when something crosses this line, it triggers the **Line crossing** detector.

To set a line, you must perform the following steps:

1. In the list of detectors, highlight a **Line crossing** object (Fig. 6.5—8, 1).

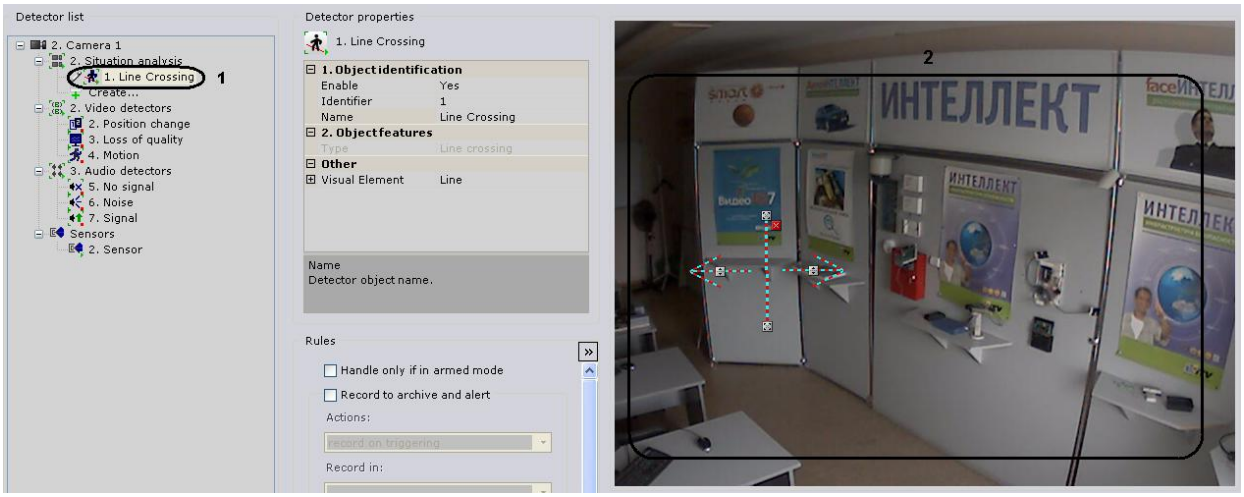


Fig. 6.5—8 Setting a line

2. In the viewing tile (see Fig. 6.5—8, 2), set the end points of a line which, when something crosses it, will trigger the line crossing detector (Table 6.5—4).

NOTE. When the line is being constructed, the end points are connected by a two-color dotted line. The direction of the object's motion across the line is indicated by dotted arrows (see Fig. 6.5—8, 2).

Table 6.5—4 Operations with a line

Operation	Result
Left-click in the viewing tile	Creates a line end point
Position the cursor on an end point and, holding down the left mouse button, move the mouse	Moves the line end point
Click the button	Deletes the line

3. By default, the **Line crossing** detector monitors object motion across the line in both directions. To suspend detection of motion in one direction, click the button corresponding to that direction.

Important! At least one direction must be selected for detection to take place.

NOTE. An unmonitored direction of object motion is indicated by a dimmed arrow.

4. Click the **Apply** button.

The line is now set.

6.5.2.7.2 Area

The **Area** visual element sets an area of a video camera's field of view, the situation in which a detector of the selected type is to analyze.

To set an area, you must perform the following steps:

1. In the detector list, highlight the detector object for which you need to set an area (Fig. 6.5—9, 1).

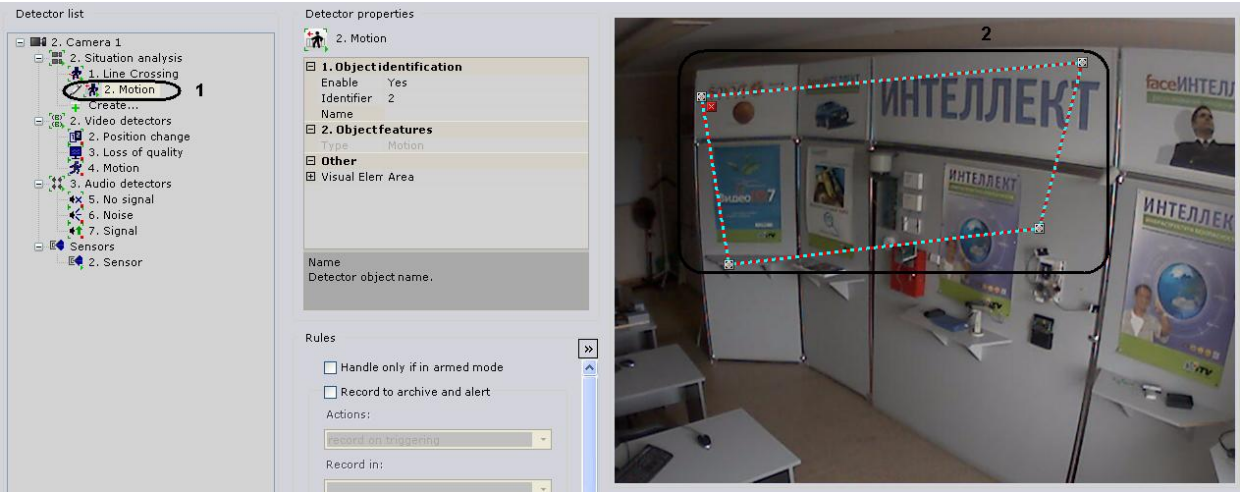


Fig. 6.5—9 Setting an area

2. In the viewing tile (see Fig. 6.5—9, 2) sequentially set the nodes of an area in which the situation is to be analyzed (Table 6.5—5).

NOTE. When the area is being constructed, the nodes are connected by a two-color dotted line which outlines the area's borders.

Table 6.5—5 Operations with an area

Operation	Result
Left-click in the viewing tile	Creates a new area node
Right-click on a created node	Deletes the area node
Position the cursor on a node and, holding down the left mouse button, move the mouse	Moves the area node
Click the button	Deletes the area

3. Click the **Apply** button.

The area is now set.

6.5.2.8 *Settings Specific to the Loitering Detector*

When configuring the loitering detector, you must set the maximum time an object can be in the analyzed area, above which the detector is triggered.

To set a maximum time, you must perform the following steps:

1. In the detector list, highlight a **Loitering** object (Fig. 6.5—10, 1).

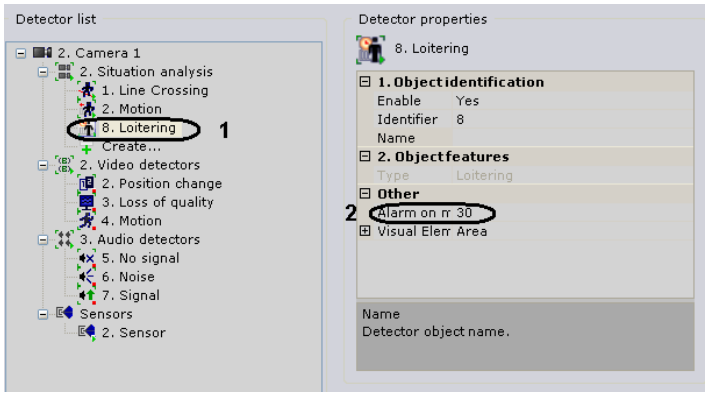


Fig. 6.5—10 Configuring the loitering detector

2. In the **Alert on max. object loitering time** field (see Fig. 6.5—10, 2), enter the maximum object loitering time in seconds. The value should be in the range [0, 3600].

3. Click the **Apply** button.

The maximum loitering time is now set.

6.5.3 Video Detectors

6.5.3.1 *Types of Video Detectors*

The following detectors enable analysis of the video image from a camera (Table 6.5—6).

Table 6.5—6 Types of video detectors

Detector object name	Detector description
Loss of quality	A detector which is triggered when a video image received from a video camera loses quality.
Motion	A detector triggered by motion in a video camera's field of view
Position change	A detector triggered by a change in the video image background indicating a change in the video camera's position in space.

6.5.3.2 *Procedure for Configuring Video Detectors*

For each video camera, video detectors of all three types are automatically created (see the section titled *Types of Video Detectors*, Fig. 6.5—11).

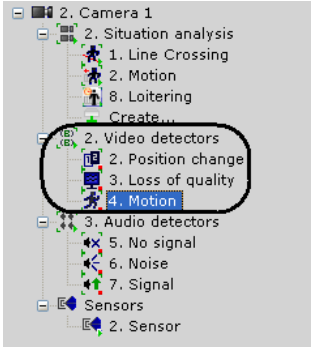


Fig. 6.5—11 Video detectors

You can configure video detectors as follows:

1. Enable video detection (disabled by default).
2. Set the general video detector properties.
3. Enable the desired video detectors (all are disabled by default).
4. Configure the motion detector.

NOTE. The loss of quality and position change detectors do not require configuration.

5. Check the triggering of detectors using the trigger ribbon (see the section titled *Checking the Triggering of a Detector*).
6. For each detector, set the automatic rules to be executed when the detector is triggered (see the section titled *Configuring Automatic Rules*).

6.5.3.3 *Enabling Video Detection*

To enable video detection, you must perform the following steps:

1. In the detector list, highlight a **Video detector** object which offers a means of analyzing the video image from the desired video camera.

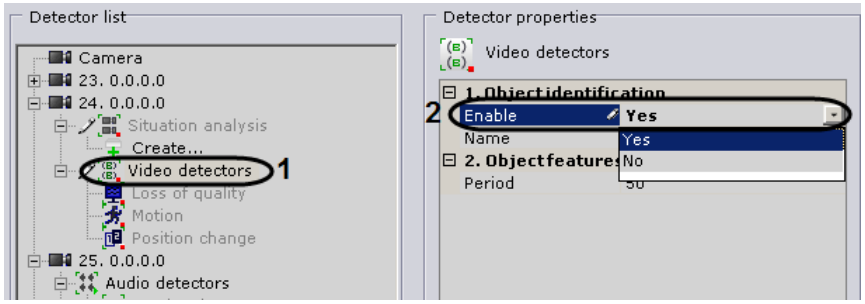


Fig. 6.5—12 Enabling video detection

2. Select **Yes** from the **Enable** list.
3. Click the **Apply** button.

Video detection is now enabled.

The desired video detectors may be enabled in the same way as video detection (Fig. 6.5—13).

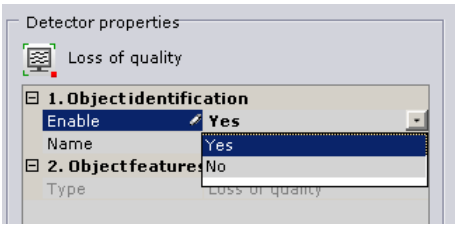


Fig. 6.5—13 Enabling a video detector

6.5.3.4 *Setting General Parameters*

To set the general parameters of video detectors, you must perform the following steps:

1. In the detector list, highlight a **Video detector** object (Fig. 6.5—14, 1) which offers a means of analyzing the video image from the desired video camera.

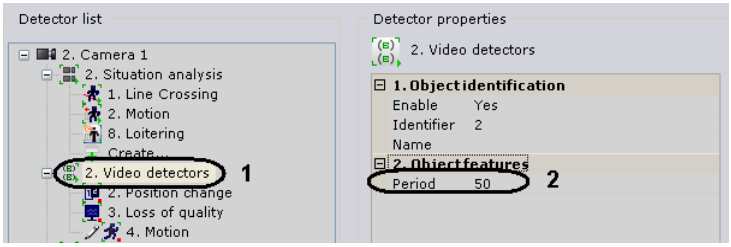


Fig. 6.5—14 Setting the general parameters of video detectors

2. In the **Period** field (see Fig. 6.5—14, 2), enter the time in milliseconds after which the next video image frame will be processed. The value should be in the range [0, 65535]. If the value is 0, each frame of the video image is processed.

3. Click the **Apply** button.

Setting the general parameters of the video detectors is now complete.

6.5.3.5 *Settings Specific to the Motion Video Detector*

To configure the motion video detector, you must perform the following steps:

1. In the detector list, highlight a **Motion** video detector object (Fig. 6.5—15, 1).

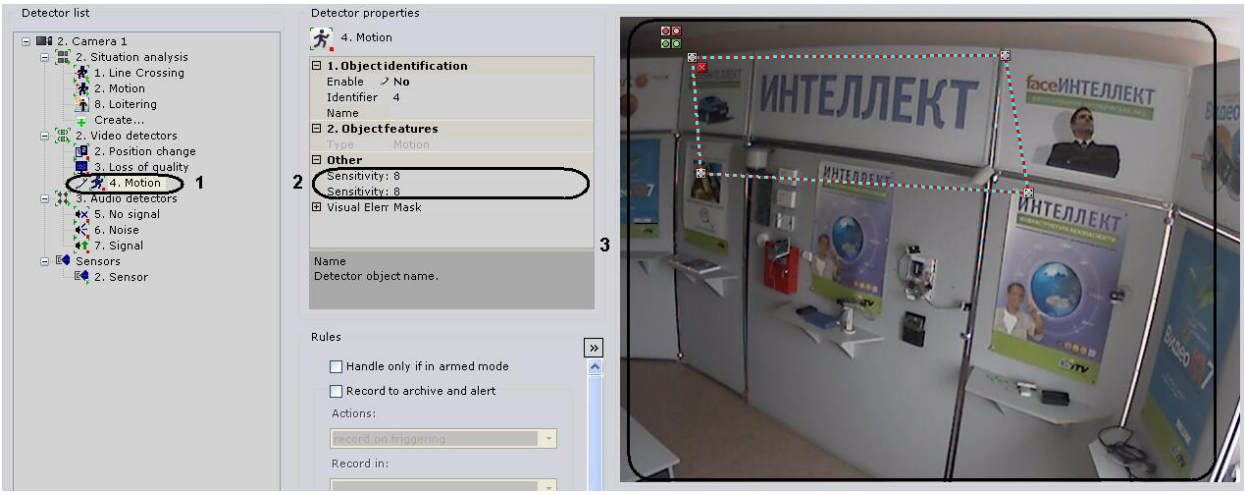


Fig. 6.5—15 Configuring a motion detector

2. In the **Sensitivity: contrast** field (see Fig. 6.5—15, 2), enter the sensitivity of the detector to object contrast. You should select a value empirically in the range [0, 16]. The greater the value, the less contrastive the objects which can be detected.

3. In the **Sensitivity: size** field (see Fig. 6.5—15, 2), enter the sensitivity of the detector to object size. You should select a value empirically in the range [0, 10]. The greater the value, the smaller the objects which can be detected.

4. In the viewing tile, set detection zones and/or masks in the same way as for situation analysis detectors (see Fig. 6.5—15, 3).

NOTE. See steps 2-4 in the section titled Setting Common Detection Zones and Masks.

5. Click the **Apply** button.

Motion video detector configuration is now complete.

6.5.4 Audio Detectors

6.5.4.1 *Types of Audio Detectors*

The following detectors enable analysis of the audio signal from a microphone (Table 6.5—7).

Table 6.5—7 Types of audio detectors

Detector object name	Detector description
No signal	A detector which is triggered by the absence of an audio signal from an audio device.
Signal	A detector which is triggered by the reception of an audio signal from an audio device.
Noise	A detector which is triggered by the appearance of noise

Important! A No signal audio detector may operate incorrectly with video cameras emitting a background signal with a non-zero volume, even if the integrated microphone is physically disabled.

6.5.4.2 *Procedure for Configuring Audio Detectors*

For each video camera equipped with one or more audio ports, audio detectors of all three types are automatically created (see the section titled *Types of Audio Detectors*, Fig. 6.5—16).

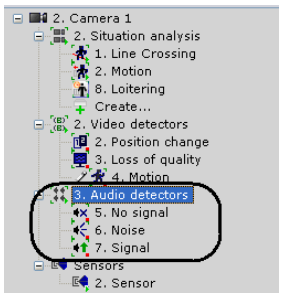


Fig. 6.5—16 Audio detectors

You can configure audio detectors as follows:

1. Set the general audio detector parameters.
2. Enable the desired audio detectors (all are disabled by default).
3. Configure the **Noise** and **Signal** detectors.

*NOTE. The **No signal** detector does not require configuration.*

4. Check the triggering of detectors using the trigger ribbon (optional) (see the section titled *Checking the Triggering of a Detector*).
5. For each detector, set the automatic rules to be executed when the detector is triggered (see the section titled *Configuring Automatic Rules*).

6.5.4.3 *Setting General Parameters*

To set the general parameters of audio detectors, you must perform the following steps:

1. In the detector list, highlight an **Audio detector** object (Fig. 6.5—17, 1) which offers a means of analyzing the audio signal from a microphone connected to the desired video camera.

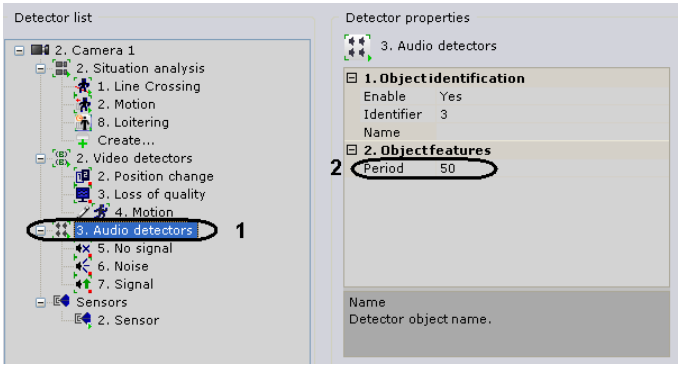


Fig. 6.5—17 Setting the general parameters of audio detectors

2. In the **Period** field (see Fig. 6.5—17, 2), enter the time in milliseconds after which the next section of the audio stream will be processed by the audio detectors. The value should be in the range [0, 65535]. If the value is 0, each section of the audio stream is processed.

3. Click the **Apply** button.

Setting the general properties of the audio detectors is now complete.

6.5.4.4 *Settings Specific to the Signal and Noise Detectors*

To configure the **Signal** and **Noise** detectors, you must perform the following steps:

1. In the detector list, highlight a **Signal** or **Noise** audio detector object.

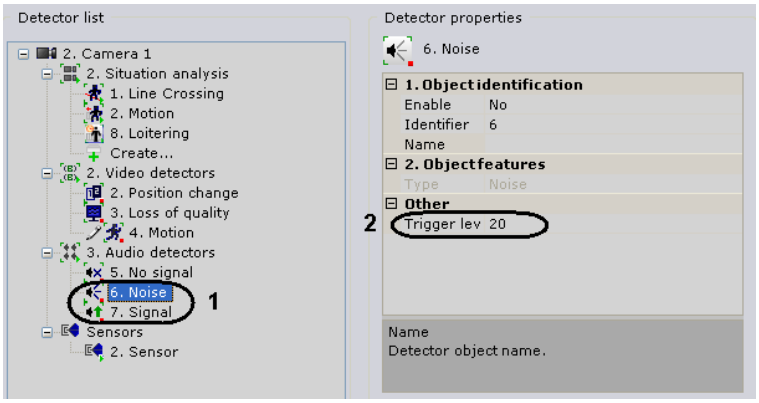


Fig. 6.5—18 Configuration of the Signal and Noise Detectors

2. Enter the following values in the **Level** field:

   2.1. When configuring the **Signal** detector, enter the audio signal level in standard units above which the detector will be triggered. You should select a value empirically in the range [0, 1000].

   2.2. When configuring the **Noise** detector, enter the noise level in standard units above which the detector will be triggered. You should select a value empirically in the range [0, 1000].

3. Click the **Apply** button.

Configuration of the **Signal** and **Noise** detectors is now complete.

6.5.5 Embedded Detectors

At the moment of writing of this documentation, the embedded analytics of Axis and Sony video cameras and Stretch cards have been integrated into the *Axxon Smart* software package (if they support it; see the official reference documentation for these devices).

This section contains an example of configuring Sony Ipela Embedded Detectors. When configuring the embedded detectors of other devices, you should use their descriptions in the interface of the *Axxon Smart* software package or, for more detail, the official reference documentation for these devices.

6.5.5.1 *Procedure for Configuring Sony Ipela Embedded Detectors*

You can configure Sony Ipela detectors as follows:

1. Create a detector object.
2. Set the detector parameters.
3. Check the triggering of detectors using the trigger ribbon (optional) (see the section titled *Checking the Triggering of a Detector*).
4. Set the rules to be automatically executed when the detector is triggered (see the section titled *Configuring Automatic Rules*).

6.5.5.2 *Creating a Sony Ipela Detector Object*

To create a Sony Ipela detector object, you must perform the following steps:

1. In the branch of the **Embedded detectors** object which offers a means of analyzing the video image in the desired Sony Ipela video camera, click **Create** (Fig. 6.5—19).

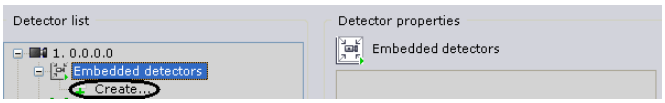


Fig. 6.5—19 Creating a Sony Ipela detector

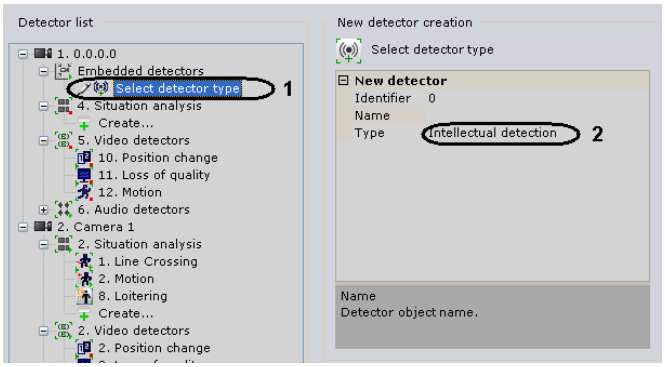


Fig. 6.5—20 Creating a Sony Ipela detector

2. Highlight the **Select detector type** link which appears (see Fig. 6.5—20, 1).

3. From the **Type** list (see Fig. 6.5—20, 2), select **Intellectual detection**.

4. Click the **Apply** button.

5. When you do this, an **Intellectual detection** object appears in the detector list.

Creation of a Sony Ipela detector object is now complete.

6.5.5.3 *Configuring a Sony Ipela Detector*

To configure a Sony Ipela detector, you must perform the following steps:

1. In the list of detectors, highlight an **Intellectual detection** object (Fig. 6.5—21, 1).

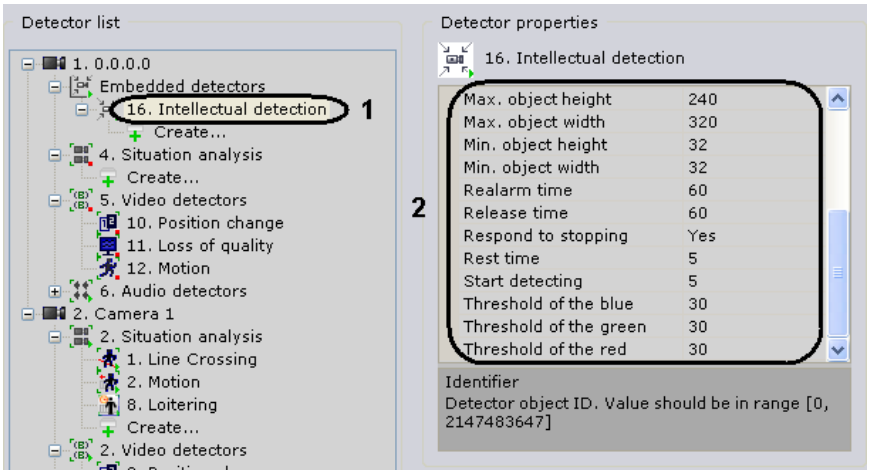


Fig. 6.5—21 Configuring a Sony Ipela detector

2. From the **Detect** list, select the desired detection mode: **Motion** or **Abandoned object** (see Fig. 6.5—21, 2).

3. If you selected motion detection (**Motion** in the **Detect** list), set the following parameters (see Fig. 6.5—21, 2):

    3.1. To enable the mode in which the detector also responds to stopping, select **Yes** in the **Respond to stopping** list.

    3.2. In the **Rest time** field, indicate in seconds the rest time of an object after which the motion detector registers stopping (if you executed step 3.1). The value should be in the range [2, 60].

    3.3. In the **Green threshold** field, enter the saturation level of the green RGB component in the image of a moving object above which the detector is triggered. The value should be in the range [0, 99].

    3.4. In the **Red threshold** field, enter the saturation level of the red RGB component in the image of a moving object above which the detector is triggered. The value should be in the range [0, 99].

3.5. In the **Blue threshold** field, enter the saturation level of the blue RGB component in the image of a moving object above which the detector is triggered. The value should be in the range [0, 99].

NOTE. The threshold saturation of the RGB component in the image of a moving object determines the sensitivity of the detector. It is advisable to change the saturation of all components at the same time (see steps 3.3 – 3.5).

4. If you selected abandoned object detection (**Abandoned object** in the **Detect** list), set the following parameters (see Fig. 6.5—21, 2):

   4.1. In the field **Start detecting**, indicate the time in standard units from the appearance of an object in the frame to the beginning of its detection. This should be selected empirically. The value should be in the range [3, 7].

   4.2. In the **Detection time** field, enter the rest time of an object in seconds, as counted from the beginning of detection (see step 4.1), after which it is considered abandoned. The value should be in the range [40, 43200].

   4.3. In the **Realarm time** field, enter in seconds the time since the last alert about an abandoned object after which a repeat alert is generated (assuming that such an event occurs). The value should be in the range [60, 21600].

   4.4. In the **Release time** field, enter the length of time an abandoned object remains in view above which it will be considered part of the background. In this case, alarm generation ceases. The value should be in the range [60, 43200].

5. In the **Max. object height** and **Max. object width** fields (see Fig. 6.5—21, 2) enter the maximum height and width of a detectable object in pixels. The height value should be in the range [8, 480] and the width value should be in the range [8, 640].

6. In the **Min. object height** and **Min. object width** fields (see Fig. 6.5—21, 2) enter the maximum height and width of a detectable object in pixels. The height value should be in the range [8, 480] and the width value should be in the range [8, 640].

7. Click the **Apply** button.

Configuration of the Sony Ipela embedded detector is now complete.

6.5.6 Sensors

A **Sensor** object appears on the **Detectors** tab after it has been enabled in the **Devices** tab (see the section titled *The Sensor Object*)**.**

The sensor must be configured in the **Devices** tab (see the section titled *The Sensor Object*): the **Detector properties** field in the **Detectors** tab duplicates the settings entered in the **Devices** tab under **Settings** and is not editable (Fig. 6.5—22).

Fig. 6.5—22 Detector properties

In the **Detectors** tab for a **Sensor** detector you can do the following:

1. Check the triggering of detectors using the trigger ribbon (optional) (see the section titled *Checking the Triggering of a Detector*).

2. Set the rules to be automatically executed when the detector is triggered (see the section titled *Configuring Automatic Rules*).

6.5.7 Checking the Triggering of a Detector

You can check the triggering of detectors in the **Detectors** tab.

To use this option you must perform the following steps:

1. In the detector list, highlight the detector object whose triggering you need to check.

Important! The detector object should be enabled and configured.

2. Produce an event whose occurrence should trigger the detector: motion in the frame, turning the video camera, providing sound to an audio device, etc.

3. If the detector is configured correctly, video image frames from the video camera corresponding to the detector will be displayed on the trigger ribbon with the time they were received indicated (Fig. 6.5—23).

Fig. 6.5—23 Detector trigger ribbon

Checking the triggering of a detector is now complete.

6.5.8 Configuring Automatic Rules

6.5.8.1 *General Information*

In order for certain actions to be executed when a detector is triggered, you must configure automatic rules.

You can set these rules in the **Rules** group. This group has two display modes:

1. normal (set by default) (Fig. 6.5—24).

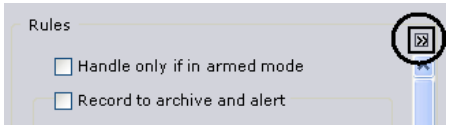


Fig. 6.5—24 Normal display mode of the Rules group

2. expanded (Fig. 6.5—25).

Fig. 6.5—25 Expanded display mode of the Rules group

Choose the display mode which is more convenient for configuration. To switch from one mode to the other, click the button in the upper right-hand corner of the **Rules** group (see Fig. 6.5—24, Fig. 6.5—25).

6.5.8.2 *Types of Automatic Rules*

When a detector is triggered, one or more rules may be executed:

1. Recording to the archive and initiation of an alert in the system.
2. Switching a relay.
3. Switching to a PTZ camera preset.
4. Voice notification.
5. E-mail notification.
6. SMS notification.

6.5.8.3 *Automatic Rule Execution Modes*

You can select the execution mode of all automatic rules set for a video camera's detector.

Responses can be executed in one of two modes:

1. If the video camera is in armed mode.
2. Whether or not the video camera is in armed mode.

If the rules should be executed only when the camera is in armed mode, select the **Handle only if in armed mode** check box (Fig. 6.5—26).

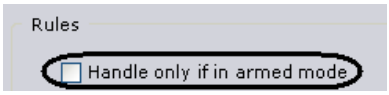


Fig. 6.5—26 Configuring processing in armed mode

6.5.8.4 *Conditions for Setting Automatic Rules*

Before setting automatic rules to be executed when a detector is triggered, you must make sure that the following objects have been created and configured (Table 6.5—8).

Table 6.5—8 Conditions for setting automatic rules

Rule	Object which must be configured
Recording to Archive and Initiation of an Alert	Archive
Switching Relays	Relay
Switching to a PTZ Camera Preset	Telemetry (you must set the presets using the PTZ device control panel)
Voice notification	Speaker
E-mail notification	E-mail
SMS notification	SMS

If the conditions necessary for setting a rule have not been fulfilled (see Table 6.5—8), then when you attempt to activate the given rule, the icon appears in the interface.

NOTE. To activate a rule, select the check box next to its name.

The icon marks the following interface elements (Fig. 6.5—27):

1. The name of a rule whose execution is blocked.
2. The name of the detector object for which the rule is being set.

3. The name of the **Detectors** tab.

Fig. 6.5—27 Setting automatic rules not possible

6.5.8.5 *Recording to Archive and Initiation of an Alert*

To configure recording to the archive and the initiation of an alert when a detector is triggered, you must perform the following steps:

1. Select the **Record to archive and alert** check box (Fig. 6.5—28, 1).

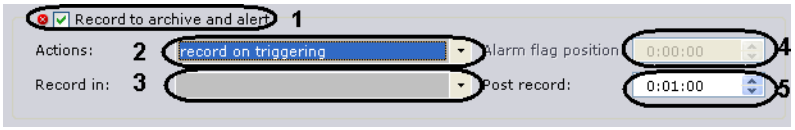


Fig. 6.5—28 Configuring recording to archive and initiation of an alert

2. From the **Actions** list (see Fig. 6.5—28, 2), select the desired action to be taken when the detector is triggered:

   2.1. Record to archive (the value **Record on triggering**).

NOTE. When this value is selected, an alarm is not initiated in the system when the detector is triggered.

   2.2. Record to archive and initiate an alert in the system (the value **Record and alarm**).

3. From the **Record in** list (see Fig. 6.5—28, 3), select the archive to which you need to record the video image (and audio signal, if configured accordingly) when the detector is triggered.

Important! Recording from the video camera of the detector should be configured to this archive (see the section titled Configuring Recording of the Video Stream from Video Cameras to the Archive).

4. In the **Alert flag position** field (see Fig. 6.5—28, 4), enter the number of seconds by which the alert flag will be shifted back from the actual time the alert was triggered.

NOTE. If the alert flag position is set, playback of an event received for processing begins from the moment corresponding to the flag's position, and not from the moment of the beginning of the alert (Fig. 6.5—29).

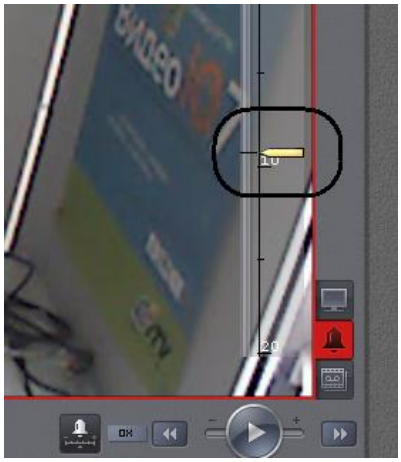


Fig. 6.5—29 Position of the alert flag

5. In the **Post record** field (see Fig. 6.5—28, 5), enter the post record time – the length in seconds of post-alert recording which will be added to the end of the recording made in connection with the alert. The post record time is counted from the moment of the end of the alert and is observed only if the alert is evaluated by the operator before the end of the given time. If the alert is evaluated by the operator or automatically after the end of the post record time, the recording ends at the moment of evaluation of the alert.

NOTE. For example, the post record time is 2 minutes. An alert is registered. If the operator evaluates the alert before it is over or within 2 minutes of the moment it ended, the recording will end exactly 2 minutes from the moment the alert ended. If the alert is evaluated by the operator or automatically after two minutes have passed since the end of the alert, the recording ends at the moment of evaluation of the alert.

6. Go to another automatic rule, or click **Apply**.

Configuration of recording to the archive and initiation of an alert when a detector is triggered is now complete.

6.5.8.6 *Switching Relays*

To configure the switching of a relay when a detector is triggered, you must perform the following steps:

1. Select the **Switch relay** check box (Fig. 6.5—30, 1).

Fig. 6.5—30 Configuring switching of a relay

2. From the **Switching relay** list (see Fig. 6.5—30, 2), select the **Relay** object corresponding to the relay which needs to be switched when the detector is triggered. Any enabled relay in the system can be used, including one tied to another server.

3. In the **Length of time** field (see Fig. 6.5—30, 3), enter the length of time for which the relay should be in switched status.

4. Go to another automatic rule, or click **Apply**.

Configuration of switching a relay when a detector is triggered is now complete.

6.5.8.7 *Switching to a PTZ Camera Preset*

To configure switching to a PTZ camera preset, you must perform the following steps:

1. Select the **Go to preset** check box (Fig. 6.5—31, 1).

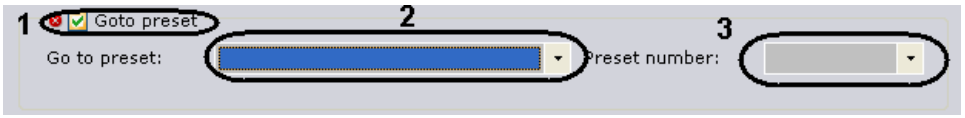


Fig. 6.5—31 Configuring switching to a PTZ camera preset

2. From the **Go to preset** list (see Fig. 6.5—31, 2), select the **Telemetry** object corresponding to the pan/tilt unit of the desired PTZ camera. The pan/tilt unit of any PTZ camera can be used, including one tied to another server (if it is enabled).

3. From the **Preset number** list (see Fig. 6.5—31, 3), select the number of the camera preset to which the camera should switch when the detector is triggered.

4. Go to another automatic rule, or click **Apply**.

Configuration of switching to a PTZ camera preset is now complete.

6.5.8.8 *Voice notification*

To configure voice notification when a detector is triggered, you must perform the following steps:

1. Select the **Voice notification** check box (Fig. 6.5—32, 1).

Fig. 6.5—32 Configuring voice notification

2. From the **Audio notification** list (see Fig. 6.5—32, 2), select the **Speaker** object corresponding to the speaker on which you wish to play the voice notification.

3. In the **During** field (see Fig. 6.5—32, 3), enter the time in the format HH:MM:SS during which the voice notification is to be transmitted.

4. Go to another automatic rule, or click **Apply**.

Configuration of voice notification when a detector is triggered is now complete.

6.5.8.9 *E-mail notification*

To configure E-mail notification when a detector is triggered, you must perform the following steps:

1. Select the **Send E-mail** check box (Fig. 6.5—33, 1).

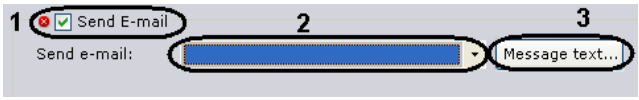


Fig. 6.5—33 Configuring E-mail notification

2. From the **Send E-mail** list (see Fig. 6.5—33, 2), select the **E-mail** object which will be used for E-mail notification when a detector is triggered.

3. Click the **Message text** button (see Fig. 6.5—33, 3).

4. In the **Message subject** field of the window which appears (Fig. 6.5—34, 1), enter the subject of the E-mail message which will be sent when the detector is triggered.

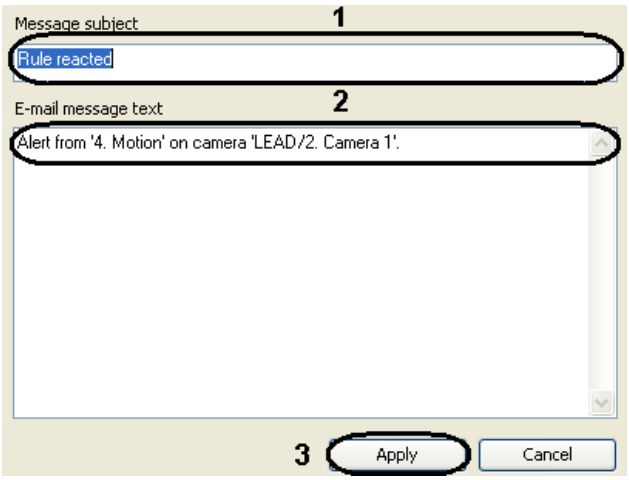


Fig. 6.5—34 E-mail message

5. In the **E-mail message text** field (see Fig. 6.5—34, 2), enter the text which should be sent in an E-mail message when the detector is triggered.

6. To close the window and save changes, click **Apply** (see Fig. 6.5—34, 3).

7. Go to another automatic rule, or click **Apply**.

Configuration of E-mail notification when a detector is triggered is now complete.

6.5.8.10 *SMS notification*

To configure SMS notification when a detector is triggered, you must perform the following steps:

1. Select the **Send SMS** check box (Fig. 6.5—35, 1).

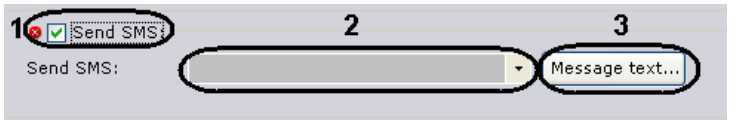


Fig. 6.5—35 Configuring SMS notification

2. From the **Send SMS** list (see Fig. 6.5—35, 2), select the **SMS** object which will be used for SMS notification when a detector is triggered.

3. Click the **Message text** button (see Fig. 6.5—35, 3).

4. In the **SMS message text** field of the window which appears (Fig. 6.5—36, 1), enter the text which should be sent in an SMS when the detector is triggered.

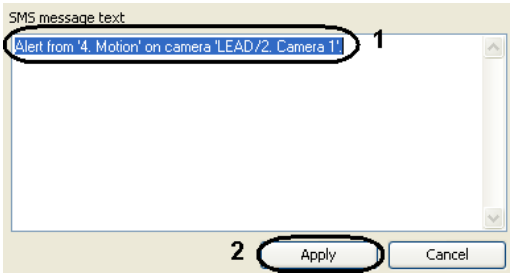


Fig. 6.5—36 SMS message text

5. To close the window and save changes, click **Apply** (see Fig. 6.5—36, 2).

6. Go to another automatic rule, or click **Apply**.

Configuration of SMS notification when a detector is triggered is now complete.

6.6 Configuring Archives

6.6.1 General Information

You can configure archives using the interface in the **Archive** tab (under **Settings**) (Fig. 6.6—1). To create archives you must have the appropriate permissions.

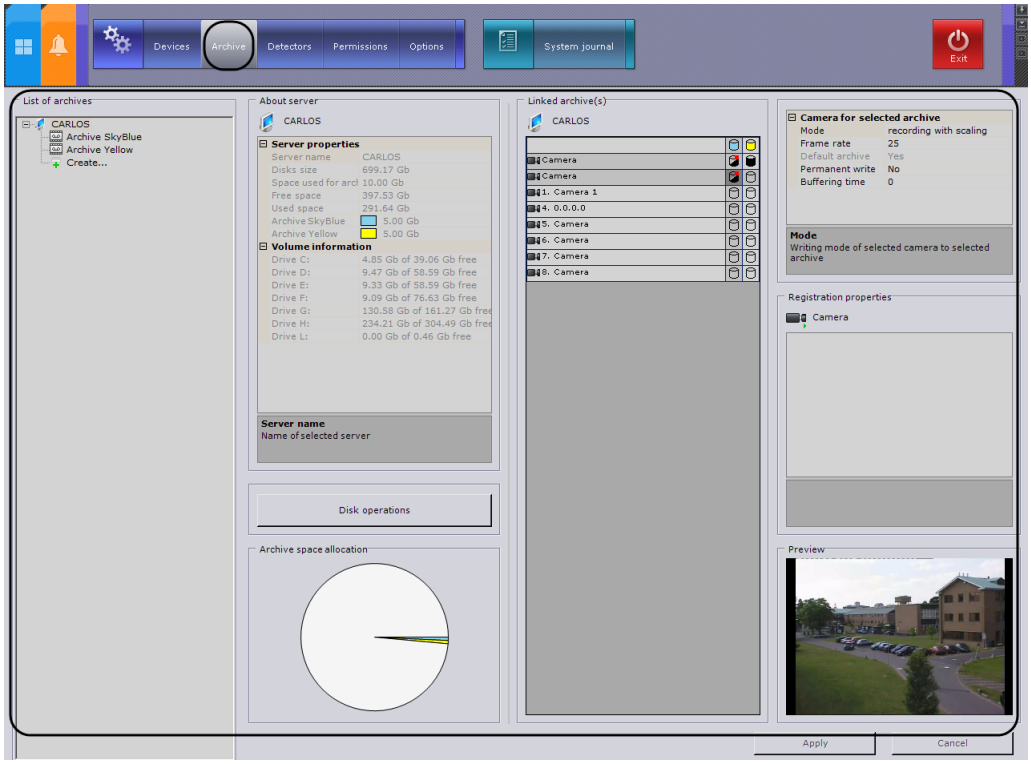


Fig. 6.6—1 The Archive tab

On the base of one server you can create an unlimited number of archives.

An archive can be distributed on several volumes of the server. On one volume for one archive you can create only one partition, which occupies either a file of a set size or the entire volume.

6.6.2 Procedure for Configuring Archives

You can configure archives as follows:

1. Create archives with the desired parameters.
2. Configure recording of the video stream from video cameras to the archive.

6.6.3 Creating Archives with the Desired Parameters

To create an archive with the desired parameters, you must perform the following steps:

1. In the branch of the **Server** object corresponding to the computer on which you need to organize an archive, click the **Create** link (Fig. 6.6—2).

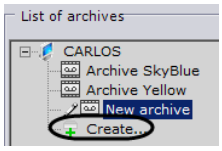


Fig. 6.6—2 Creating an archive

NOTE. You can also create an archive using the Create archive command in the context menu of the Server object (brought up by right-clicking on the object).

2. Highlight the **New archive** link which appears (Fig. 6.6—3, 1).

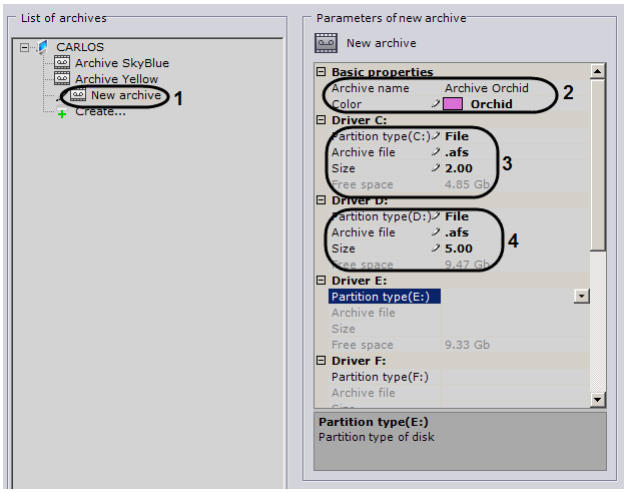


Fig. 6.6—3 Setting archive parameters

3. In the **Basic properties** group (see Fig. 6.6—3, 2), identify the archive:
   3.1. in the **Archive name** field, enter the desired archive name.
   3.2. From the **Color** list, select a color to designate the archive.
4. Place the archive partitions on one or several volumes of the server (see Fig. 6.6—3, 3):

4.1. From the **Partition type** list, select the desired type of archive partition on the disk: a file or the entire volume.

NOTE. The system disk cannot be allocated in its entirety to an archive.

4.2. If you select a **File** partition, enter the full path to the .afs file which should be used for creating an archive partition on the disk in the **Archive file** field.

NOTE 1. If the indicated file does not exist, it will be automatically created when changes are saved.

NOTE 2. When an archive is created on the basis of an existing file, it is not possible to extract archive recordings from said file.

4.3. If you select a **File** partition, enter the amount of disk space in gigabytes which should be used for the archive partition in the **Size** field.

NOTE. The size of an archive partition on a disk should be greater than 1 GB.

NOTE 2. When an archive is created on the basis of an existing file, the size of this file is automatically displayed in the Size field. It may be changed.

4.4. If you select a **Disk** partition, you must first manually delete the file system on the selected disk using the standard Windows OS *Disk management* utility and then repeat the archive creation procedure. To start this utility, click the **Disk operations** button (Fig. 6.6—4).

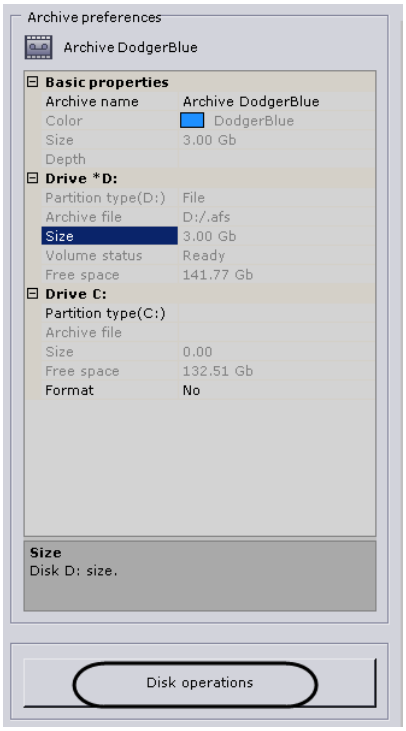


Fig. 6.6—4 Launching the disk management utility

NOTE. Deleting the file system on the disk in the Disk management utility consists of the following:

1. *Delete the volume.*
2. *Create a new volume in the resulting unformatted area.*

3. *Assign a letter to the volume, but do not format it.*

4.5. Repeat steps 4.1-4.4 to place archive partitions on all desired volumes of the server (see Fig. 6.6—3, 4).

5. Click the **Apply** button.

6. A dialog box will appear with a warning that the desired partitions (files and/or volumes) will be formatted (Fig. 6.6—5).

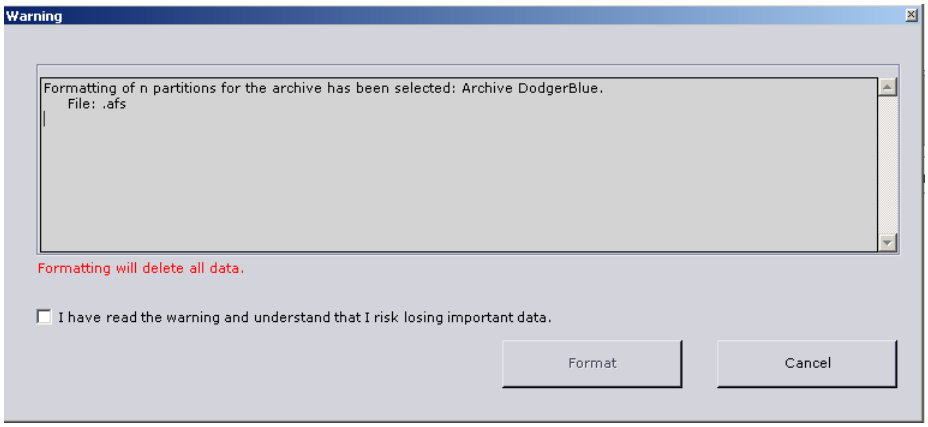


Fig. 6.6—5 Warning about partition formatting

7. Read the list of partitions which are to be formatted. If it is correct, select the **I have read this warning and understand the risk of losing important data** check box and click the **Format** button (see Fig. 6.6—5). Otherwise click the **Cancel** button to return to archive settings.

Creation of an archive with the desired parameters is now complete.

The volume of the archives with respect to the total volume of the system's disks is displayed in the **Archive space allocation** diagram (Fig. 6.6—6).

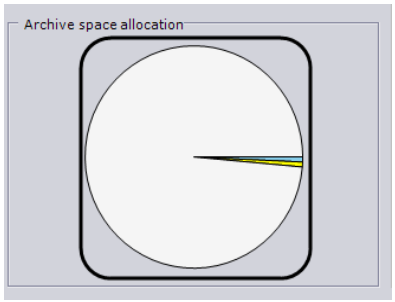


Fig. 6.6—6 The Archive space allocation diagram

6.6.4 Configuring Recording of the Video Stream from Video Cameras to the Archive

To configure recording of the video stream from video cameras to the archive, you must perform the following steps:

1. Left-click on the icon in the **Linked archive(s)** table (Fig. 6.6—7, 1) at the intersection of the row corresponding to the camera from which the video stream should be recorded to an archive and the column corresponding to that archive.

NOTE 1. Archives are designated by  *icons of the corresponding colors (see the section titled Creating Archives with the Desired Parameters).*

NOTE 2. The parameters of the video stream being recorded to the archive will be displayed in the ***Registration properties*** *group (see Fig. 6.6—7, 2).*

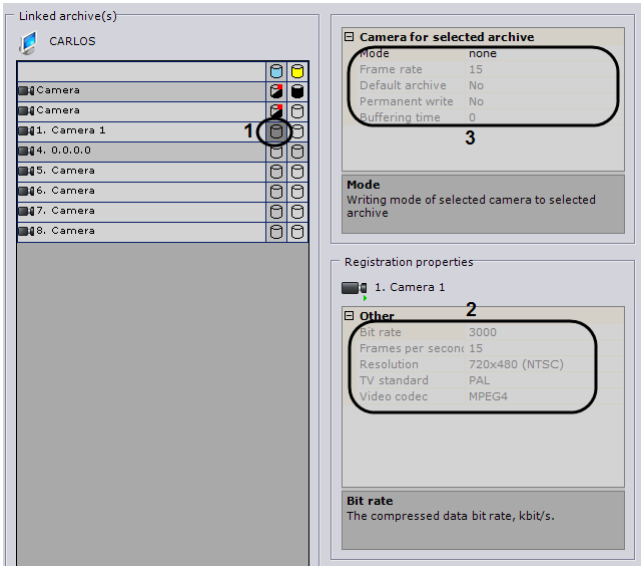


Fig. 6.6—7 Configuring recording from a video camera to an archive

2. From the **Mode** list (see Fig. 6.6—7, 3), select the desired mode of recording the video stream from the video camera to the archive: none, recording with scaling, recording with the fps given in the camera settings.

3. If you choose recording with scaling, enter the maximum frame rate when recording the video stream from a video camera to the archive in the **Max frame rate** field (see Fig. 6.6—7, 3). If the frame rate of the video stream coming in from a video camera is less than the indicated value, the recording will be made at the original and not the maximum rate.

4. The default archive is used to record video images during user-initiated alarms for a video camera. For each video camera one and only one default archive must be set. The first archive to which recording of a video stream from a video camera was configured automatically becomes the default archive.

If it is necessary to make a different archive the default archive for a given video camera, select **Yes** from the **Default archive** list (see Fig. 6.6—7, 3) corresponding to the other archive.

5. If you need to continuously record a video stream to an archive, select **Yes** from the **Continuous recording** list (see Fig. 6.6—7, 3). If **No** is selected, the video stream from the camera will be recorded at the command of the operator or if automatic rules for recording when detectors are triggered have been set.

6. In the **Buffering time** field (see Fig. 6.6—7, 3) enter the pre-event recording time of the video stream from the camera in seconds. The value should be in the range [0, 120].

NOTE. Pre-event recording time – a period of pre-event recording that will be added to the beginning of an alert event recording.

7. Repeat steps 1-6 to configure recording of the video stream from a camera to all desired archives (Fig. 6.6—8).

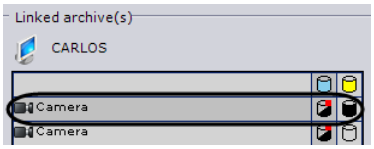


Fig. 6.6—8 Configuring recording of the video stream from a camera to several archives

8. Click the **Apply** button.

Configuration of recording of the video stream from a camera to archives is complete.

*NOTE. An archive's icon in the **Linked archive(s)** table automatically changes depending on the registration properties set. (Table 6.6—1).*

Table 6.6—1 Type of archive icon

Default archive/Mode	None	Recording with scaling	Recording with the given fps
No			
Yes	-		

6.6.5 Deleting Archives

You can delete an archive from the system.

Important! When an archive is deleted, the archive file or partition is not physically removed. They can be used again for creating an archive; however, the archive recordings stored on them will be lost.

To delete an archive from the system, you must perform the following steps:

1. Select the archive to be deleted in the archive list (Fig. 6.6—9).
2. Right-click to bring up the context menu. Execute the command **Delete archive** (Fig. 6.6—9).

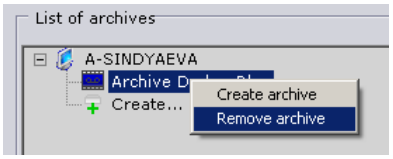


Fig. 6.6—9 Deleting an archive

3. Click the **Apply** button.

Deleting an archive from the system is now complete.

6.7 Configuring Forensic Search

In order for Forensic Search to be possible with a video camera, the following conditions must be met:

1. there are video stream recordings from the desired video camera in the archive;
2. there are metadata recordings from this video stream in the object trajectory database;
3. the user has the appropriate permissions.

This section contains information on how to configure the Axxon Smart software package such as to satisfy these conditions.

6.7.1 Possible ways to configure recording to the video stream archive

For Forensic Search to work with a video camera, recording of its video stream to the archive can be configured in any of the following ways:

1. Continuous recording to the archive is enabled (Fig. 6.7—1, see the section *Configuring Recording of the Video Stream from Video Cameras to the Archive*).

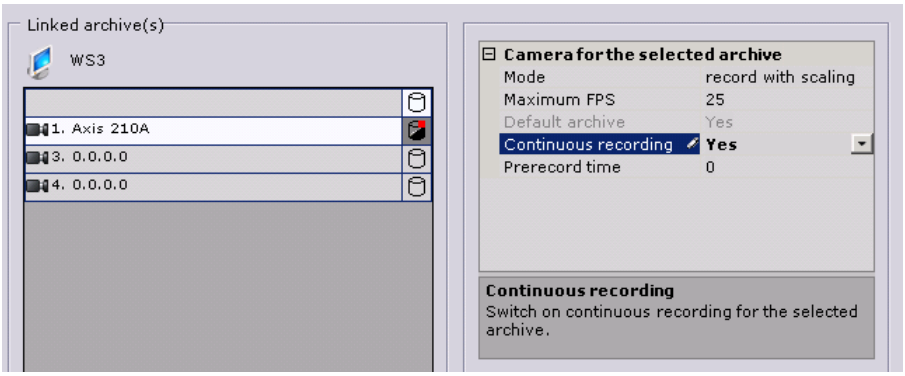


Fig. 6.7—1 Enabling continuous recording to the archive for a video camera

2. Continuous recording to the archive is disabled (Fig. 6.7—2), but the video stream from the camera is recorded by operator command or according to automatic rules for recording which are executed when a detection tool is triggered (Fig. 6.7—3, see also the section *Recording to Archive and Initiation of an Alert*).

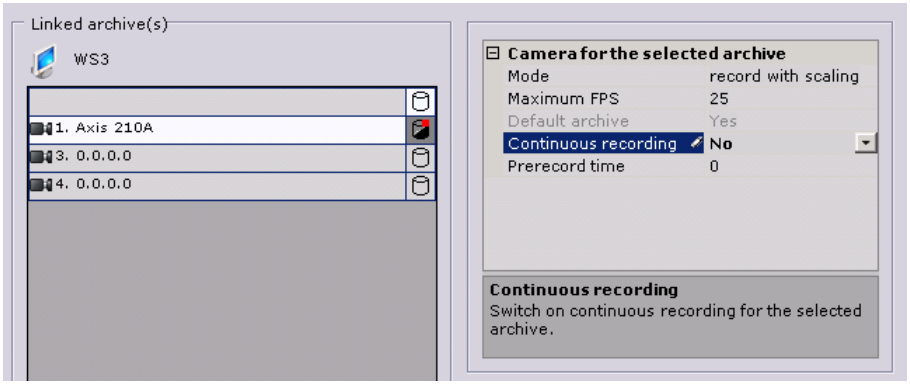


Fig. 6.7—2 Disabling continuous recording to the archive for a video camera

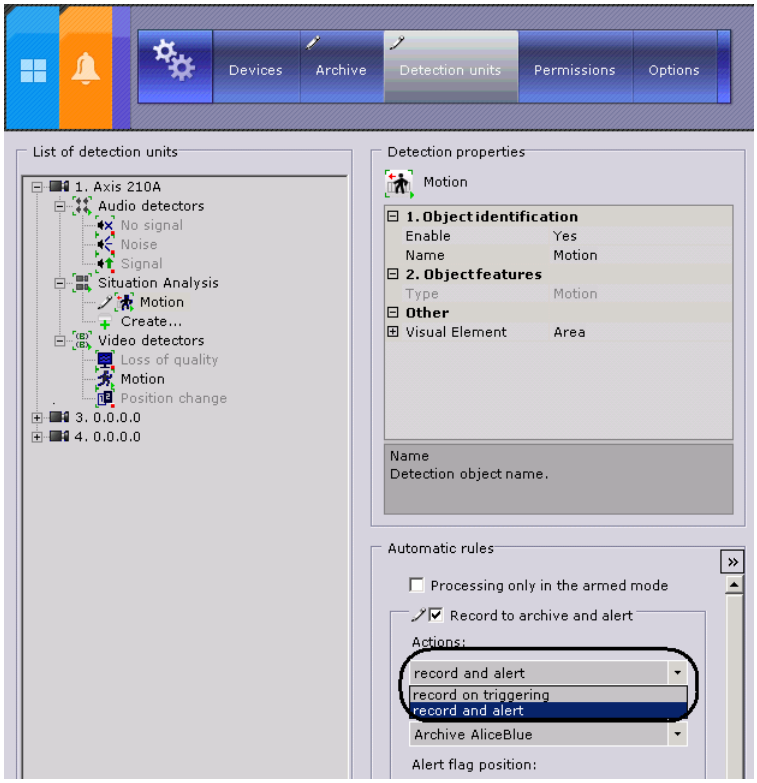


Fig. 6.7—3 Setting automatic recording rules

6.7.2 Enabling recording of video stream metadata

To enable recording of video stream metadata, you must perform the following steps:

1. Switch to the **Detectors tab** under **Settings**.
2. Enable situation analysis (see the section *Enabling Situation Analysis*).
3. Select Yes from the **Metadata recording list** (Fig. 6.7—4)

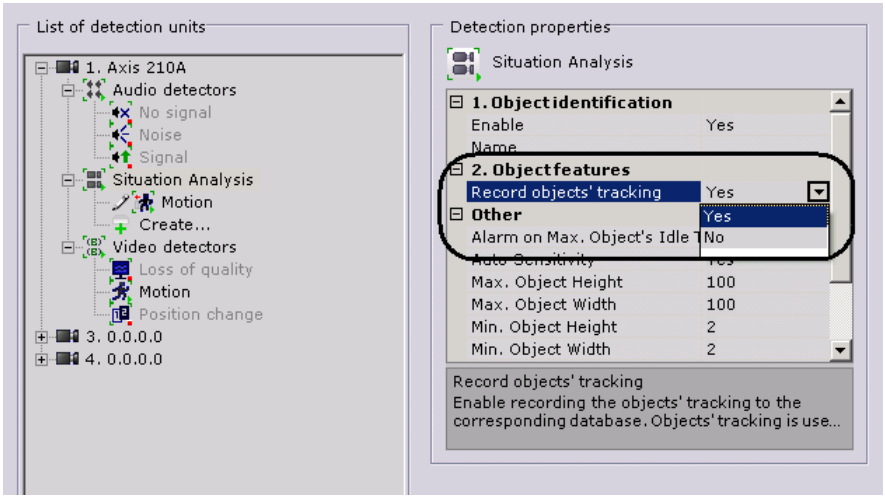


Fig. 6.7—4 Enabling recording of video stream metadata

4. Click the **Apply** button.

Recording of video stream metadata will then be enabled. The video stream metadata will be recorded to the object trajectory database when the video stream is recorded to the archive.

6.7.3 Configuring user permissions for Forensic Search

To use the Forensic Search, it is sufficient to have Archive configuration permissions (Fig. 6.7—5, see also the section*Creating and Configuring the Role and User System Objects*).

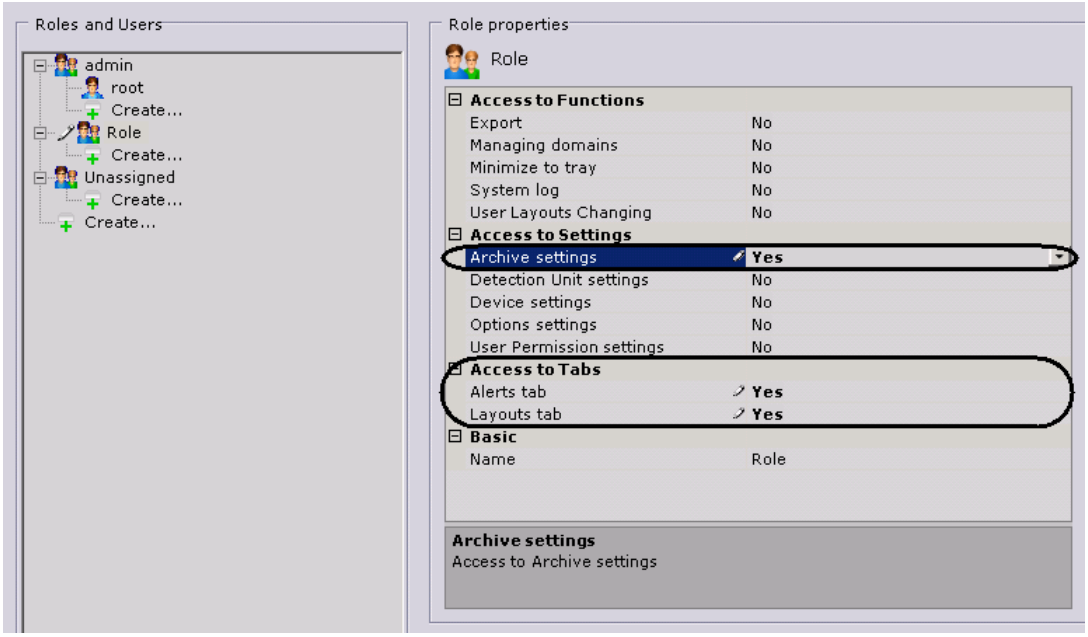


Fig. 6.7—5 Configuring user permissions for Forensic Search

6.8 Configuring the User Interface

6.8.1 Switching Between Layout Types

When working with Axxon Smart, the user can choose either a standard layout or a user-defined layout. To switch between these types of layouts, you must perform the following steps:

1. Go to **System settings⇒Options⇒Interface** (Fig. 6.8—1, 1-2).

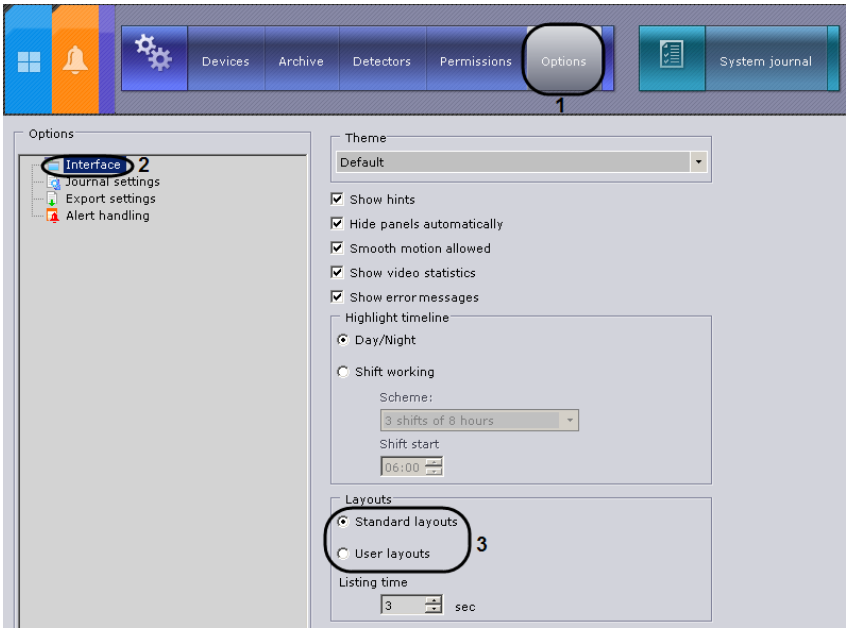


Fig. 6.8—1 Selecting a Layouts ribbon work mode

2. Select the layout type in the **Layouts** configuration group (see Fig. 6.8—1, 3).

3. Click the **Apply** button to save the settings.

The layout ribbon will then operate in the selected mode.

*NOTE. Switching modes is allowed only for users with **Layout configuration** permissions .*

6.8.2 Configuring Slideshow Parameters

Slideshow mode is a cyclical switching of layouts according to an assigned frequency (dwell-time). Slideshow is launched using the context menu of the layout ribbon.

To configure the slideshow dwell-time, you must perform the following steps:

1. Go to **System settings**⇒**Options**⇒**Interface** (Fig. 6.8—2, 1-2).

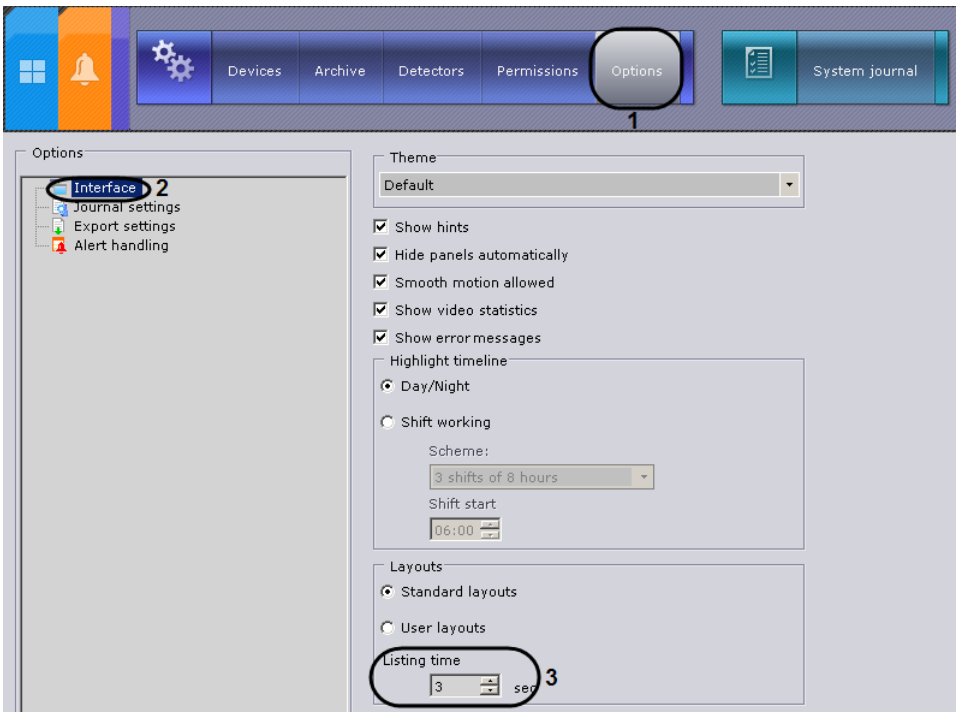


Fig. 6.8—2 Configuring slideshow mode

2. Set the slideshow dwell-time in seconds in the **Layouts** configuration group (see Fig. 6.8—2, 3).

3. Click the **Apply** button to save the settings.

The slideshow dwell-time is now set.

*NOTE. Switching modes is allowed only for users with **Layout configuration** permissions .*

6.8.3 Hiding Hints

In Axxon Smart, hints are displayed when the cursor is moved over a control element. Hints are enabled by default. To turn off hints, you must perform the following steps:

1. Go to **System settings**⇒**Options**⇒**Interface** (Fig. 6.8—3, 1-2).

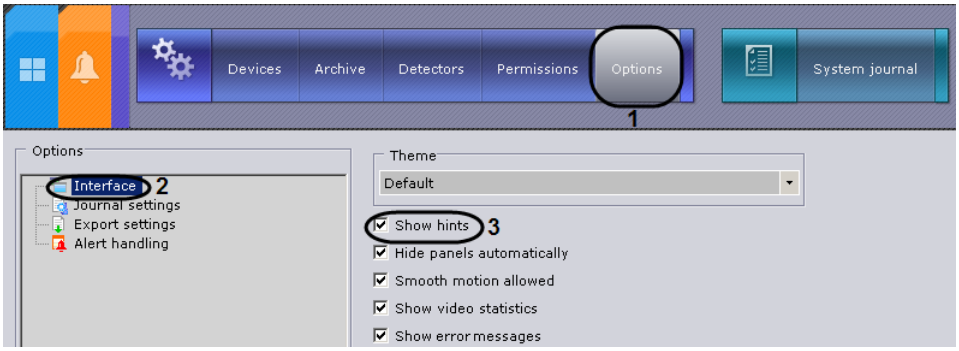


Fig. 6.8—3 Configuring hints

2. Deselect the **Show hints** checkbox (see Fig. 6.8—3, 3).
3. Click the **Apply** button to save the settings.

Hints are now disabled. Hints can be enabled again by reselecting the **Show tips** checkbox.

6.8.4 Configuring Autohide for Panels

Autohide entails hiding the top panel if there is no input from the keyboard or mouse. There are two levels of autohide: shrinking the panel (after 10 seconds of inactivity) and hiding the panel (after 30 seconds of inactivity). Autohide is enabled by default.

To turn off autohide for panels, you must perform the following steps:

1. Go to **System settings⇒Options⇒Interface** (Fig. 6.8—4, 1-2).

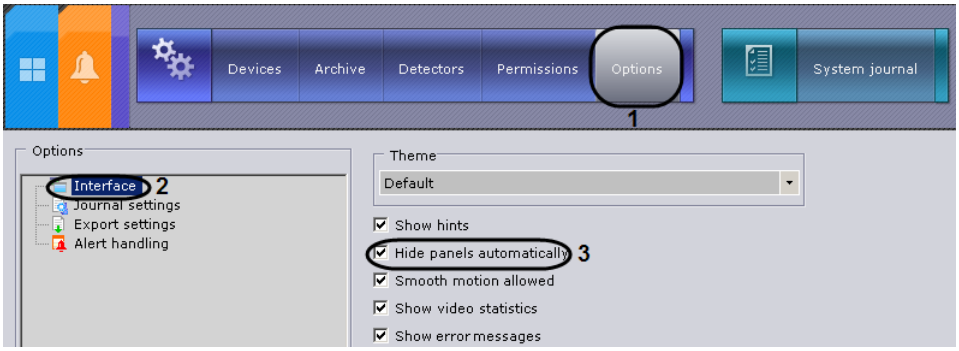


Fig. 6.8—4 Configuring autohide for panels

2. Deselect the **Hide panels automatically** checkbox (see Fig. 6.8—4, 3).
3. Click the **Apply** button to save the settings.

Automatic hiding of panels is now disabled.

6.8.5 Configuring Smooth Motion

Smooth motion is needed to smoothly change the position of viewing tiles, as well as for smooth switching between tabs. Smooth motion of viewing tiles is enabled by default. To disable this option, you must perform the following steps:

1. Go to **System settings⇒Options⇒Interface** (Fig. 6.8—5, 1-2).

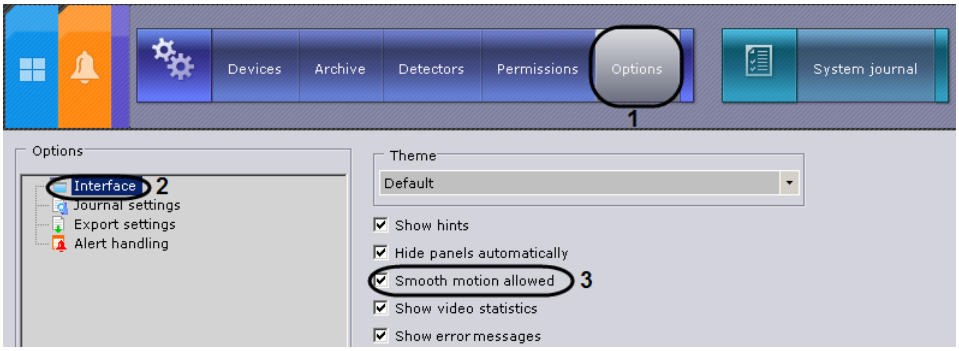


Fig. 6.8—5 Configuring smooth motion

2. Deselect the **Smooth motion allowed** checkbox (see Fig. 6.8—5, 3).
3. Click the **Apply** button to save the settings.

Smooth motion for viewing tiles will now be disabled.

6.8.6 Configuring Display of Video Statistics

You can display the following video statistics in the viewing tile:

1. Frame rate of the displayed video stream.
2. Frame rate of the video stream received from a video camera or an archive.
3. Bit rate of a compressed video stream.
4. Resolution of the displayed video stream.

To use these options you must perform the following steps:

1. Go to **System settings⇒Options⇒Interface** (Fig. 6.8—6, 1-2).

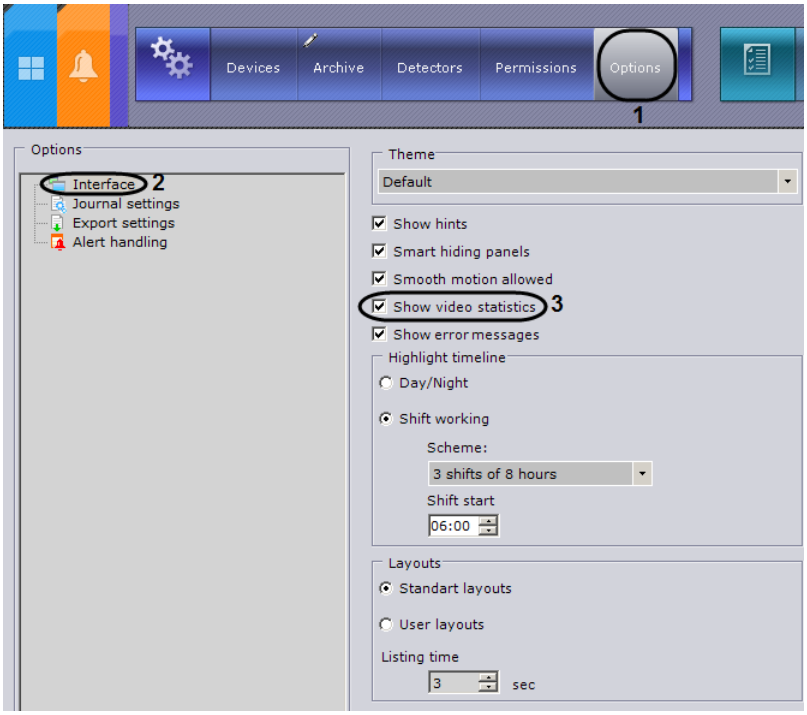


Fig. 6.8—6 Configuring display of video statistics

2. Select the **Show video statistics** checkbox (see Fig. 6.8—6, 3).

3. Click the **Apply** button to save the settings.

The video statistics will now be displayed in the viewing tile for all modes (real time, archive and alert) (Fig. 6.8—7).

Fig. 6.8—7 An example of displaying video statistics

6.8.7 Configuring Display of Error Messages

By default, messages about system errors which have occurred are displayed in real time in the **Layouts** and **Alerts** tabs of the Axxon Smart software package (Fig. 6.8—8).

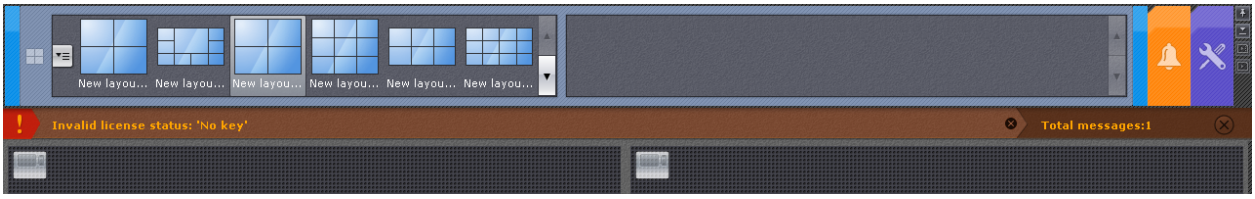


Fig. 6.8—8 An example of displaying an invalid license error message

To turn off display of error messages, you must perform the following steps:

1. Go to **System settings⇒Options⇒Interface** (Fig. 6.8—9, 1-2).

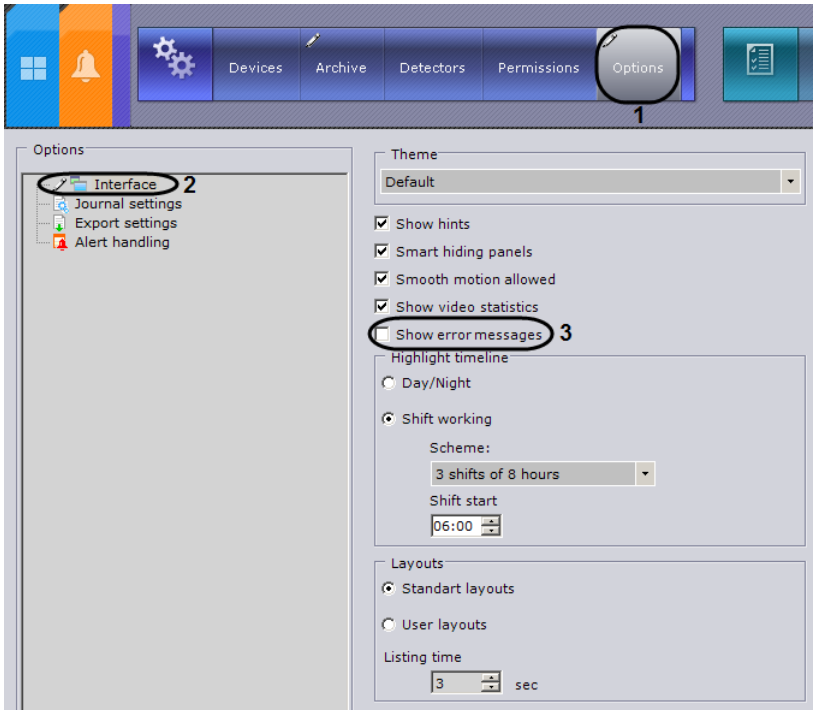


Fig. 6.8—9 Configuring display of error messages

2. Deselect the **Show error messages** checkbox (see Fig. 6.8—9, 3).
3. Click the **Apply** button to save the settings.

Display of error messages will now be turned off.

6.8.8 Configuring the Timeline

In Axxon Smart, a timeline is displayed in the right portion of the video surveillance monitor when a viewing tile is switched to archive playback mode. The external appearance of the timeline can change depending on the style you select: **Day/night** or **Shift working**.

6.8.8.1 *Configuring the Day/night style*

If the **Day/night** style is selected, the timeline will be displayed in light-colored segments from 6.00 to 18.00 and dark-colored segments from 18.00 to 6.00.

To set the **Day/night** style for the timeline, you must perform the following steps:

1. Go to **System settings⇒Options⇒Interface** (Fig. 6.8—10, 1-2).

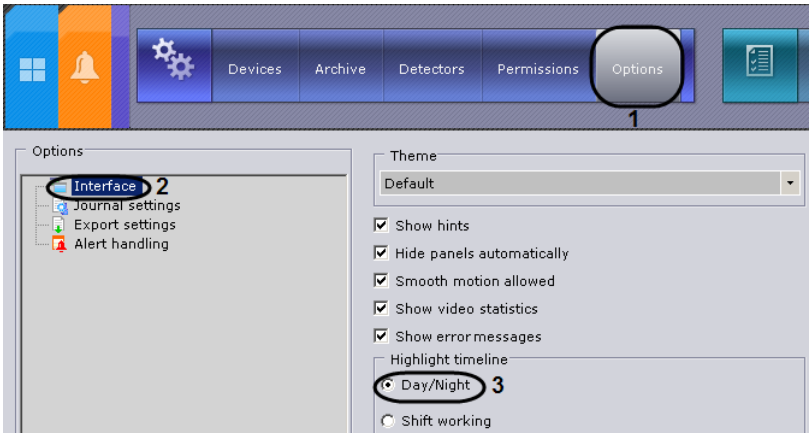


Fig. 6.8—10 Configuring the timeline style. The Day/night style

2. Select the **Day/night** option button in the **Highlight timeline** configuration group (see Fig. 6.8—10, 3).

3. Click the **Apply** button to save the settings.

The timeline will now look like the one pictured in Fig. 6.8—11 when viewing an archive.

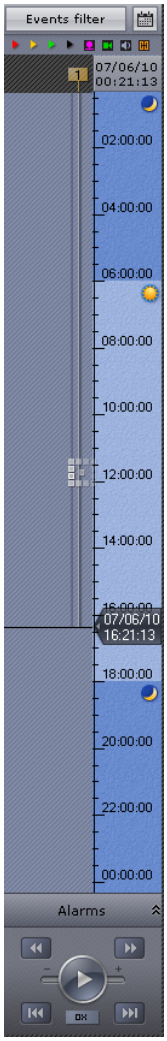


Fig. 6.8—11 The timeline. The Day/night style

6.8.8.2 *Configuring the Shift working style*

If the **Shift working** style is set, the timeline will be displayed in alternately colored segments (depending on the number of shifts set per day and the beginning of the first shift). Each segment contains a shift identification number. In Axxon Smart, the user can choose 3 types of shifts (three 8-hour shifts, two 12-hour shifts, or one 24-hour shift).

To configure the **Shift working** style, you must perform the following steps:

1. Go to **System settings**⇒**Options**⇒**Interface** (Fig. 6.8—12, 1-2).

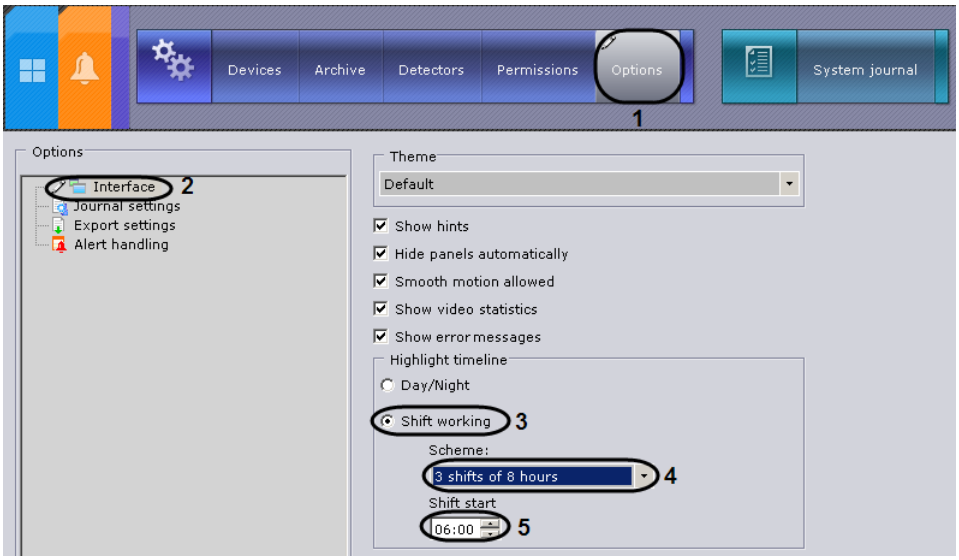


Fig. 6.8—12 Configuring the timeline style. The Shift working style

2. Select the **Shift working** option button in the **Highlight timeline** configuration group (see Fig. 6.8—12, 3).
3. Select the shift type from the **Scheme** list (see Fig. 6.8—12, 4).
4. Define the start time of the shift (see Fig. 6.8—12, 5).
5. Click the **Apply** button to save the settings.

The timeline will now look like the one pictured in Fig. 6.8—13 when viewing an archive.

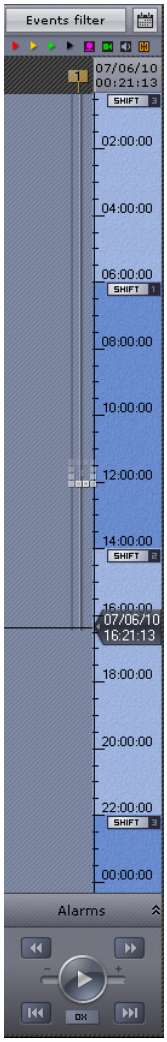


Fig. 6.8—13 The timeline. The Shift working style

6.9 Configuring the System Journal

System journal – a journal containing system information on events which have occurred, including records of system errors.

The system journal is stored in a local database of each server. You can set access to the system journal for a user group in the **Permissions** tab under **Settings** (see the section titled *The Role object*).

To configure the system journal, you must perform the following steps:

1. Go to **System settings⇒Options⇒Journal settings** (Fig. 6.9—1, 1-2).

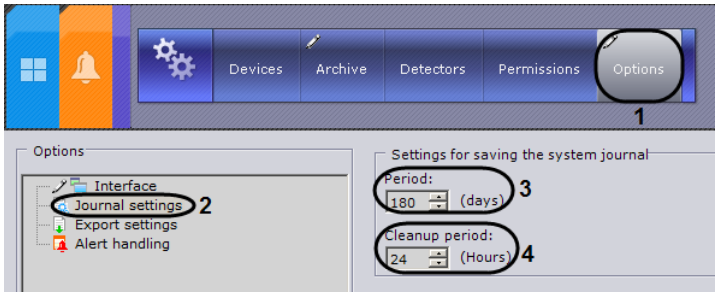


Fig. 6.9—1 Configuring the system journal

2. In the **Period** field, enter in days the period for which the system journal will be stored in the server's database (see Fig. 6.9—1, 3).

3. In the **Cleanup period** field, enter in hours the period after which irrelevant events will be removed from the system log (see Fig. 6.9—1, 4). The following events are considered irrelevant:

    3.1. Events for which a connection to the video archive is possible, but is absent (for instance, in the absence of video recording when a detector is triggered).

    3.2. Events which have been stored in the system journal for a period greater than that indicated in step 2.

4. Click the **Apply** button.

Configuration of the system journal is now complete.

6.10 Configuring Export

Configuration of the export of video recordings or frames consists of selecting folders for saving exported files. By default, files are exported to C:\Documents and Settings\User\My Documents\AxxonSoft\Export.

To change export settings, you must perform the following steps:

1. Go to **System settings**⇒**Options**⇒**Export settings** (Fig. 6.10—1, 1-2).

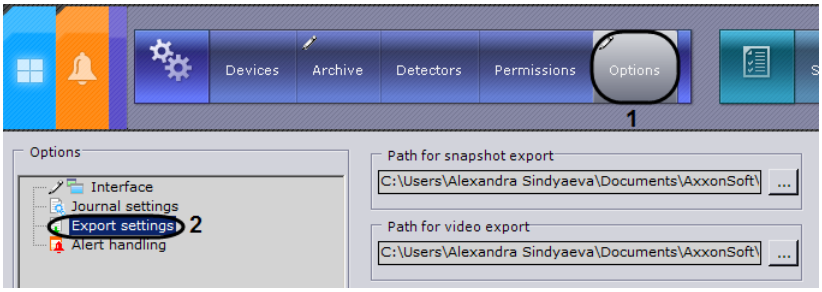


Fig. 6.10—1 Configuring export

2. In the **Path for snapshot export** and **Path for video export** fields, enter the full path to the folders for saving exported files.

3. Click the **Apply** button.

Changing the export settings is now complete.

Exported video recordings will be stored in .avi format; video frames will be stored in JPG format.

6.11 Configuring Alert Mode

You can set the following parameters for alert handling:

1. The maximum allowed time for ignoring alert is the length of time a new alert can remain unaccepted for handling by an operator before it is assigned **Missed** status and is deleted from the **Alerts** tab.

NOTE 1. To accept an alert for handling, you must switch to the alert mode.

NOTE 2. The time allowed for evaluating an alert after accepting it for handling is not limited.

2. The maximum allowed reaction time to alert is the length of time from the moment the operator who accepted an alert for handling exits alert mode after which the alert returns to **New** status and the count for the allowed time for ignoring alert begins again.

NOTE. For example, an operator can exit alert mode to view the video archive related to the alert.

To configure alert handling in the system, you must perform the following steps:

1. Go to **System settings**⇒**Options**⇒**Alert handling** (Fig. 6.11—1, 1-2).

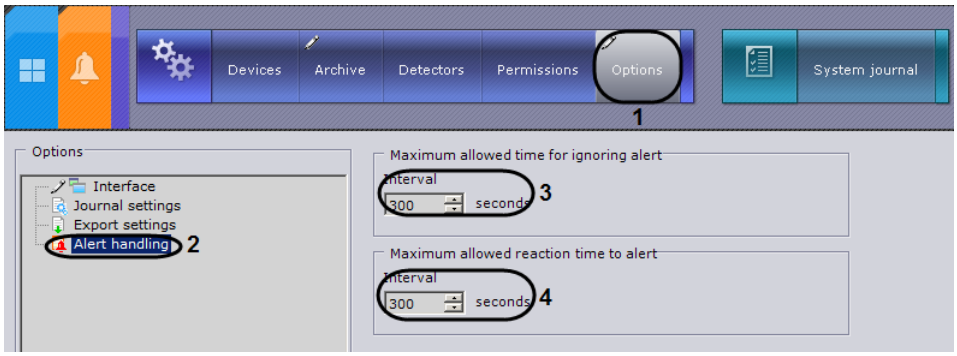


Fig. 6.11—1 Configuration of alert handling

2. In the **Maximum allowed time for ignoring alert** group, enter the time in seconds during which it is necessary to accept the alert for handling before it is assigned **Missed** status (see Fig. 6.11—1, 3).

3. In the **Maximum allowed reaction time to alert** field, enter the time in seconds during which an operator who accepted an alert for handling and exited alert mode without evaluating it must return to alert mode (see Fig. 6.11—1, 4).

4. Click the **Apply** button.

Configuration of alert handling is now complete.

6.12 Creating and Configuring the Role and User System Objects

In Axxon Smart, only one role (Administrator) and one user (root) are registered by default; their deletion is prohibited. Administrators possess permissions to configure all components of the video surveillance system. To register an operator with individual permissions , you must create a new role with those permissions and a new user account for that user.
Registration and configuration of roles and users is carried out through the **Permissions** tab in **Settings**.

6.12.1 The Role object

A role is intended for assigning a group of users individual rights and permissions for administration, management and/or monitoring of individual components of Axxon Smart.

To register a new role, you must perform the following steps:

1. Select a role in the user tree (Fig. 6.12—1, 1).
2. Bring up the context menu of the user tree by right-clicking with the mouse.
3. Select **Add role** (Fig. 6.12—1, 2).

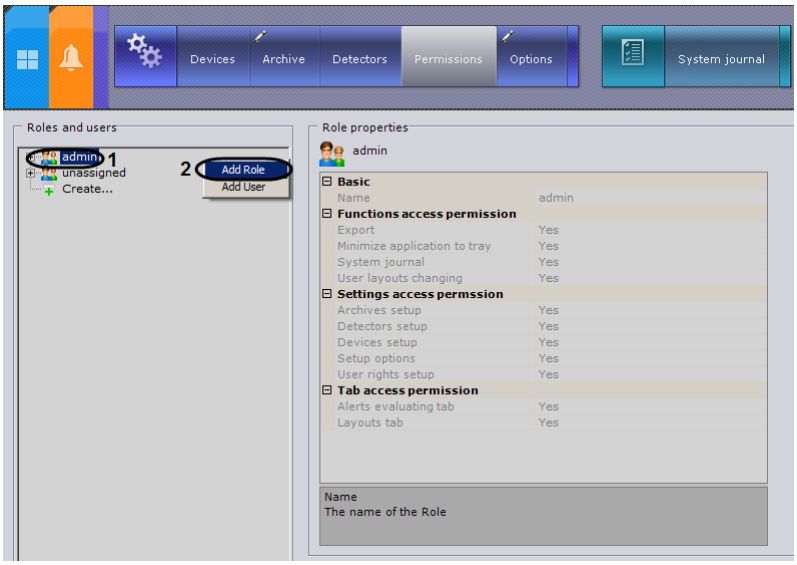


Fig. 6.12—1 Adding a role

A new role will then appear in the user tree, and the properties of that role will appear on the right (Fig. 6.12—2).

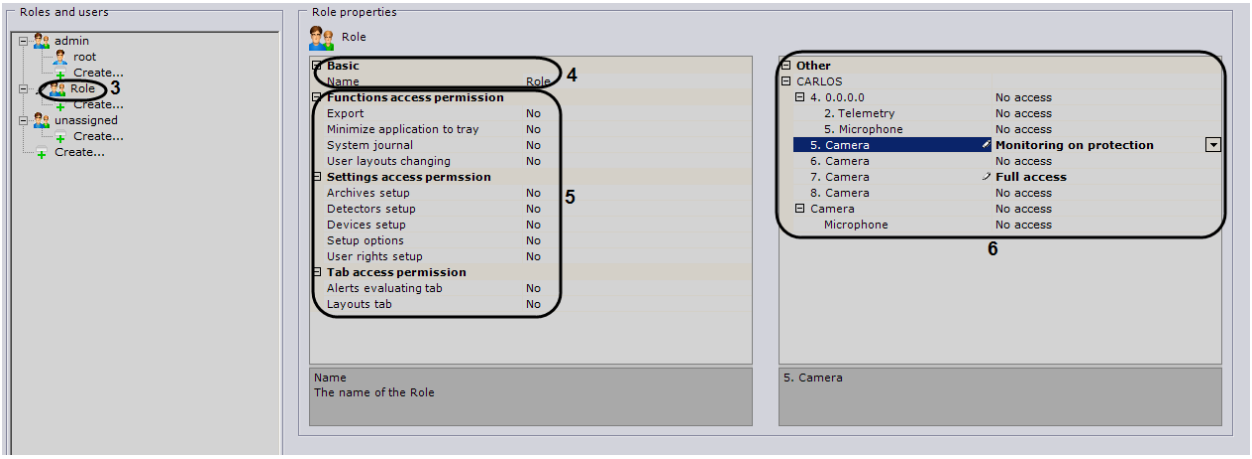


Fig. 6.12—2 User rights setup panel

4. Assign a name for the role in the **Basic** role properties (see Fig. 6.12—2, 5).
5. Select **Yes** for the components for which access needs to be granted (see Fig. 6.12—2, 4).
6. Select the appropriate permissions for access to devices (see Fig. 6.12—2, 6).
7. Click the **Apply** button to save the settings.

The new role has now been created.

To delete a role, you must perform the following steps:

1. In the user tree, select the role that you want to delete (Fig. 6.12—3, 1).

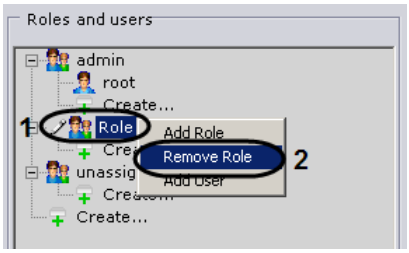


Fig. 6.12—3 Deleting a role

2. Bring up the context menu of the user tree by right-clicking with the mouse.
3. Select **Delete role** (see Fig. 6.12—3, 2).
4. Click the **Apply** button to save the settings.

The role has now been deleted.

6.12.2 The User Object

In Axxon Smart, several users can be assigned to one role. The user will be granted the permissions for administration, management, and/or monitoring that are indicated in the settings of the role. When registering users, their names and passwords are specified for authorization in the system.

To register a user, you must perform the following steps:

1. Select a role in the user tree (Fig. 6.12—4, 1).

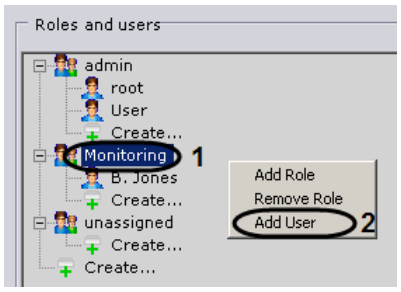


Fig. 6.12—4 Registering a user

2. Bring up the context menu of the user tree by right-clicking with the mouse (see Fig. 6.12—4, 2).
3. Select **Add user** (see Fig. 6.12—4, 2).

The new user will then appear in the user tree, and the permissions configuration panel for that user will open on the right (Fig. 6.12—5).

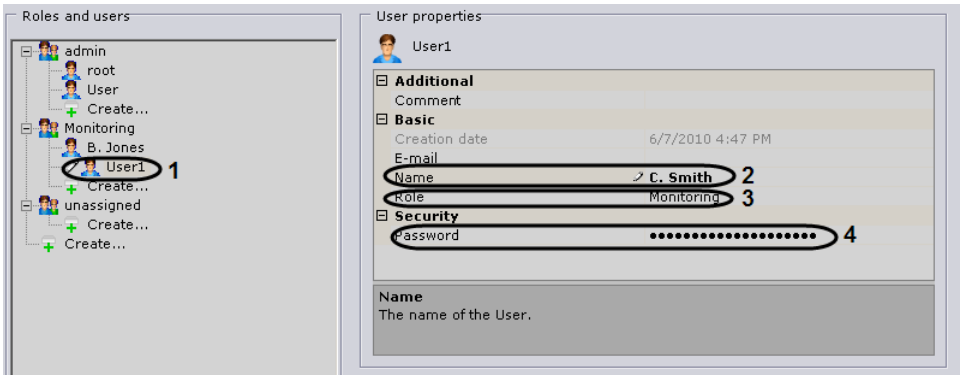


Fig. 6.12—5 Configuring a User

4. Enter the password into the **Security** configuration group (see Fig. 6.12—5, 2).
5. Enter the user name in the **Basic** configuration group (see Fig. 6.12—5, 3).
6. Select a role in the **Basic** configuration group (see Fig. 6.12—5, 4).
7. If necessary, enter an E-mail address and additional information about the user in the **E-mail** and **Comment** fields (Fig. 6.12—6).

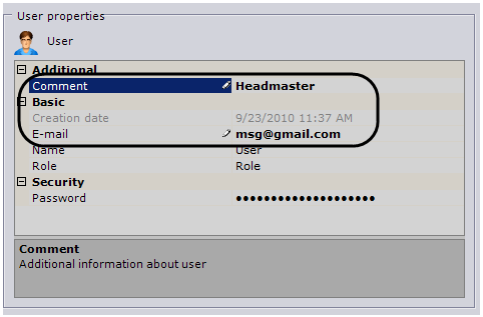


Fig. 6.12—6 Optional User settings

8. Click the **Apply** button to save the settings.

The user has now been registered and added to the user tree.

To delete the user from the tree, you must perform the following steps:

1. Select the user (Fig. 6.12—7, 1).

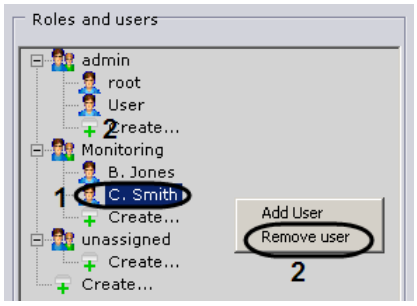


Fig. 6.12—7 Deleting a user

2. Bring up the context menu of the user tree by right-clicking with the mouse.
3. Select **Delete user** (see Fig. 6.12—7, 2).
4. Click the **Apply** button to save the settings.

The user has now been deleted from the user tree.

7 Working with the Axxon Smart Software Package

7.1 Main Elements of the User Interface

7.1.1 Viewing Tile

The viewing tile (see Fig. 7.1—1) is used to display video stream on the monitor of a computer with specific parameters for the purpose of video surveillance and viewing video archives. The viewing tile also has a function which allows the generation and evaluation of alert events in the process of video monitoring of a guarded location.

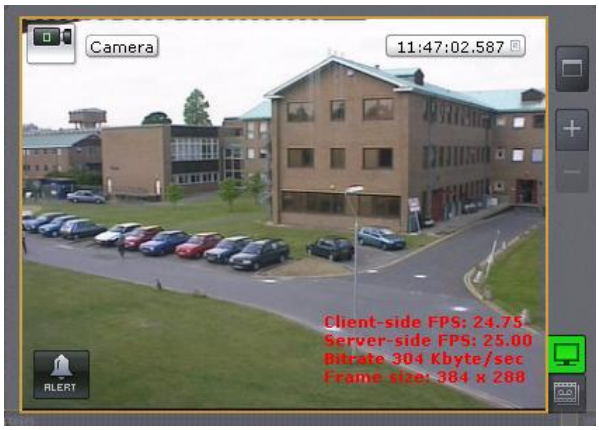


Fig. 7.1—1 The viewing Tile

A more detailed description of the functions of the viewing tile can be found in the section titled *Video Surveillance*.

7.1.1.1 *Color Coding of Frames*

Color coding of the frame of a viewing tile is used to indicate the status of the video camera.

Table 7.1—1 Color coding of a viewing tile frame

Color of viewing tile frame	Camera status
Green	Camera disarmed
Yellow	Camera armed
Red	Alert for this camera
Gray	Archive mode
Dark blue	**Snapshot** function enabled

NOTE. Color coding for alert status has priority over color coding for archive and snapshot modes.

7.1.1.2 *Viewing Tile Context Menu*

The viewing tile context menu is used to access the following functions (depending on the enabled surveillance mode):

1. Video surveillance
2. Audio monitoring
3. Exporting frames and recordings
4. Object tracking

To bring up the viewing tile context menu (Fig. 7.1—2, 1), left-click the video camera icon in the upper left-hand corner of the tile (Fig. 7.1—2, 2).

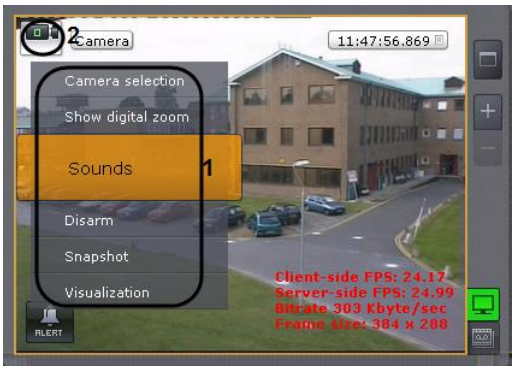


Fig. 7.1—2 Bringing up the viewing tile context menu

7.1.1.3 *Time Display*

The time display appears in the upper right-hand corner of the viewing tile (Fig. 7.1—3).

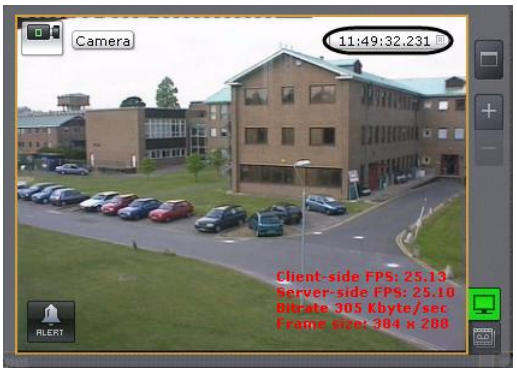


Fig. 7.1—3 The time display in a viewing tile

In real-time mode, the time display shows the current time: 16:16:33.

In archive and alert modes, it shows the time of the fragment being viewed and the playback mode:

1. forward: 14:47:29;
2. backward: 14:47:19;
3. pause: 14:48:42.

In all video surveillance modes you can enable the **Snapshot** mode using the time display. To do this, left-click in the area with the clock. A snowflake will now appear to the left of the clock. 15:28:37.

If a video image is currently being recorded from a video camera, the letter R appears to the right of the clock: 14:47:29.

7.1.1.4 *Display of Video Statistics*

You can display video statistics in the viewing tile (Fig. 7.1—4, Table 7.1—2) (see the section titled *Configuring Display of Video Statistics*). In real-time mode the video display statistics are shown. In alert and archive modes the video recording statistics are shown.

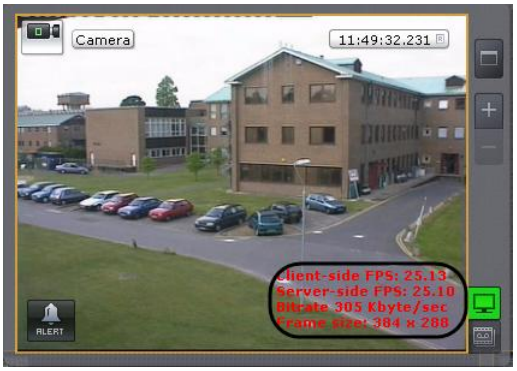


Fig. 7.1—4 Display of video statistics in the viewing tile

Table 7.1—2 Video statistics displayed

Video statistic	Description of statistic
Client-side FPS	Frame rate of the displayed video stream.
Server-side FPS	Frame rate of the video stream received from a video camera or an archive.
Bitrate	Bitrate of a compressed video stream.
Frame size	Resolution of the displayed video stream.

7.1.1.5 *Video Surveillance Mode Selection Tabs*

To select the video surveillance mode, use the tabs in the lower right-hand part of the viewing tile (Fig. 7.1—5).

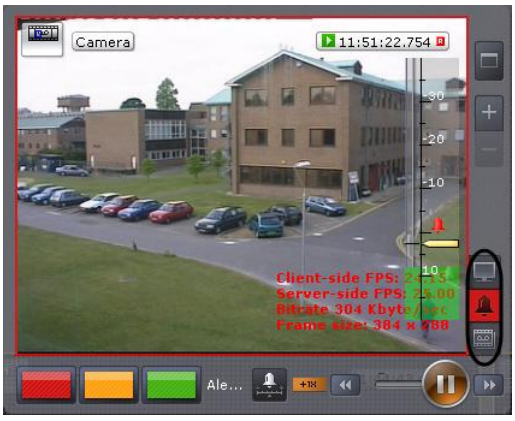


Fig. 7.1—5 Video surveillance mode selection tabs

Color coding of tabs corresponding to inactive surveillance modes is disabled:

1. Real time mode:  ;
2. Alert mode:  ;
3. Archive mode:  .

The tab corresponding to the active surveillance mode is highlighted with a color:

1. Real time mode:  .
2. Alert mode:  ;

3. Archive mode:  .

7.1.2 Layouts

An Axxon Smart operator is granted access to work with the layouts ribbon (Fig. 7.1—6). The layouts ribbon can operate in a user-defined mode or a standard mode of operation.

Fig. 7.1—6. The Layouts ribbon

By default, the standard mode is enabled for the layouts ribbon. The operating mode of the layouts ribbon can be selected in the **Settings** tab.

7.1.2.1 *Standard Operating Mode of the Layouts Ribbon*

The standard mode of the layouts ribbon comprises an automatically determined set of standard layouts. When working in standard mode, the Axxon Smart operator may not create, delete, or edit layouts.

Each button on the layouts ribbon represents a group of layouts of the same type. The layouts in a group differ only with respect to the video cameras contained within them. If a group of layouts contains more than one layout, then a context menu will become accessible for that group. The operator can use this context menu to select layouts in the group or launch a cyclical slideshow of layouts in that group.

7.1.2.2 *User-Defined Operating Mode of the Layouts Ribbon*

The user-defined mode of the layouts ribbon comprises a set of layouts created by an operator. When working in user-defined mode, the Axxon Smart operator can create, edit, or delete layouts.

7.1.2.3 *Creating and Deleting Layouts*

Layouts are created based on standard layout types. To create a new layout, select one of the standard layouts in the context menu of the layouts ribbon. The newly created layout will be named automatically. The layout will then be placed at the beginning of the list in the layouts ribbon.

If necessary, the name of the newly created layout can be changed. To do this, left-click the mouse over the layout name and then edit the name. To save the name, press **Enter**.

To delete the selected layout, you must perform the following steps:

1. Select the layout on the layout ribbon.
2. Click the  button to bring up the context menu.

The layout ribbon context menu will then be displayed.

3. Select **Delete layout**.

Deletion of the layout is now complete.

7.1.2.4 *Editing Layouts*

Editing a layout is carried out by creating a new layout based on one that has already been created and modifying it in terms of the quantity, content, and position of viewing tiles.

The number of viewing tiles in a layout can be modified by increasing the size of one or more viewing tiles using the increase/reduce viewing tile buttons and the **Set** button.

7.1.2.5 *Layout Slideshow*

Slideshow mode is a cyclical switching of all user-accessible layouts according to an assigned frequency (dwell time).

To launch slideshow mode, bring up the context menu of the layout ribbon and select **Launch slideshow**.

This will launch the cyclical switching of all user-accessible layouts according to the assigned dwell time.

To turn off slideshow mode, bring up the context menu of the layout ribbon and select **Stop slideshow**.

You can select the layout of viewing tiles using the layout panel. To select a viewing tile layout, bring up the layout ribbon context menu by clicking the  button (Fig. 7.1—7).

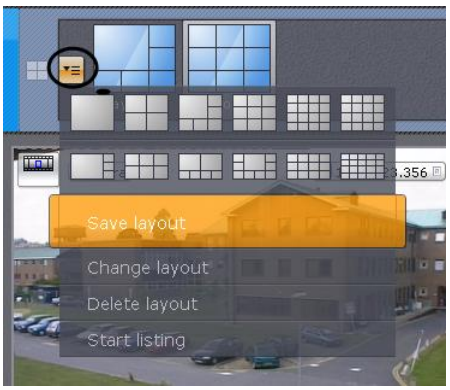


Fig. 7.1—7. Layout ribbon context menu

Select one of the layout templates located in the top 2 lines of the context menu.

The given layout will then be displayed on the layout ribbon.

7.1.3 The Archive Navigation Panel

7.1.3.1 *The Structure and Function of the Archive Navigation Panel*

The archive navigation panel is automatically displayed in the right-hand part of the screen when you switch the viewing tile to archive mode (Fig. 7.1—8).

Fig. 7.1—8 The archive navigation panel

The archive navigation panel includes the following components:

1. The alert events filter
2. The position selection panel
3. The timeline
4. The alerts list
5. The playback panel

The archive navigation panel is used for the following functions:

1. Navigating in the archive.
2. Playback of recordings
3. Selecting playback mode: forward or backward
4. Setting playback speed
5. Selecting alerts for display on the timeline and in the alert events list
6. Viewing the list of the most recent alert events of the selected type.

7.1.3.2 *The Alert Events Filter*

The **Events filter** component is used to select alert events to be displayed on the archive navigation panel.

To select alert events, you must perform the following steps:

1. Click the **Events filter** button (Fig. 7.1—9, 1). The **Events filter** window will then be displayed (Fig. 7.1—9, 2).

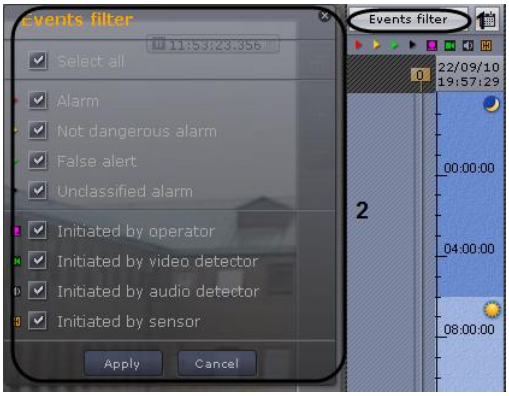


Fig. 7.1—9 The events filter

2. Select the check boxes for the alerts which should be displayed on the archive navigation panel, according to their status:
    2.1. Alert
    2.2. Non-critical alert
    2.3. False alert
    2.4. Unclassified alert
3. Select the check boxes for the alerts which should be displayed on the archive navigation panel, according to the cause of their initiation:
    3.1. Initiated by operator
    3.2. Initiated by video detector (basic, situation analysis or embedded)
    3.3. Initiated by audio detector (basic, situation analysis or embedded)
    3.4. Initiated by sensor
4. Click the **Apply** button.

*NOTE. To close the window without saving changes, click the **Cancel** button or* .

Selection of alert events is now complete.

Events of the selected type will be displayed on the timeline (see the section titled *The Timeline*) and in the alert events list (see the section titled *The Alerts List*).

7.1.3.3 *The Timeline*

The timeline is a graphical representation of the time axis of the archive and is located in the middle part of the navigation panel (Fig. 7.1—10).

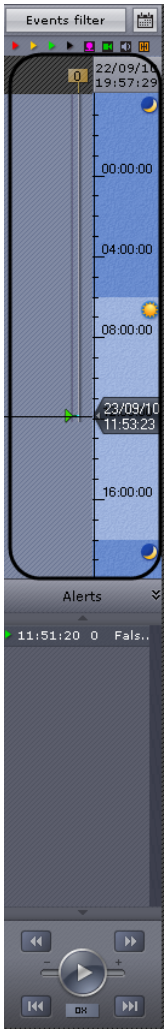


Fig. 7.1—10 The timeline

The timeline contains indicators of the presence of recordings, or tracks (Fig. 7.1—11).

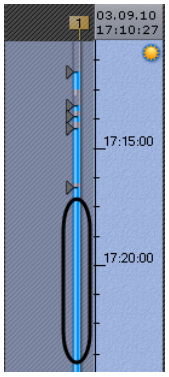


Fig. 7.1—11 Color coding of tracks

Neutral colored tracks correspond to recording periods, while transparent tracks indicate no recording.

Alert periods on a track are colored in various shades of blue (depending on the cause of the alert) (see Fig. 7.1—11, Table 7.1—3). Display of one alert event or another on the timeline is determined by filter settings (see the section titled *The Alert Events Filter*).

Table 7.1—3 Color coding of a track

Cause of alert	Color of the alert period on the track
Operator	Very light blue
Video detector (basic, situation analysis or embedded)	Light blue
Audio detector (basic, situation analysis or embedded)	Dark blue
Sensor	Very dark blue

NOTE. The colors of alert periods overlap when they coincide in time.

At the moment when an alert is assigned a status (alert, non-critical, false, or unclassified), a flag is added to the track (Fig. 7.1—12).

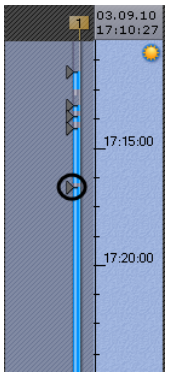


Fig. 7.1—12 Alert status flag

The flag is colored according to the alert status (Fig. 7.1—13):

1. Green – false alert
2. Yellow – non-critical alert
3. Red – alert
4. Gray – unclassified alert

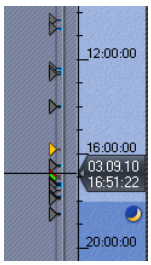


Fig. 7.1—13 Color coding of flags

The timeline's background can be displayed in two styles (depending on settings – see the section titled *Configuring the Timeline*):

1. **Day/Night** (Fig. 7.1—14)

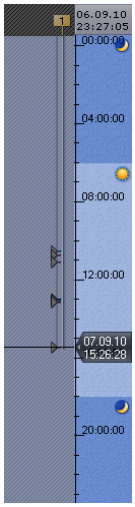


Fig. 7.1—14 The timeline in Day/Night style

2. **Shift working** (Fig. 7.1—15)

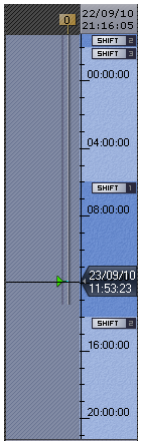


Fig. 7.1—15 The timeline in Shift working style

You can scroll and zoom the timeline using the mouse.

To scroll the timeline, move the cursor on its background (displayed in the **Day/Night** or **Shift working** style) vertically while holding down the left mouse button. To change the scale of the timeline, right-click on the timeline's background (**Day/Night** or **Shift working**) and, while holding down the right mouse button, move the cursor down to zoom out or up to zoom in.

NOTE. You can also scroll and zoom the timeline using the position selection panel (see the section titled The Position Selection Panel).

You can select recordings for playback in the viewing tile using the timeline. To select a recording, left-click the indicator (Fig. 7.1—16) and drag it to the desired position.

If there is no recording in the selected position, the indicator will automatically move to the position corresponding to the nearest recording.

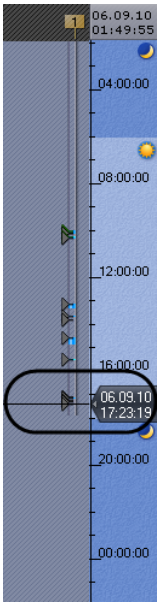


Fig. 7.1—16 The timeline indicator

NOTE. You can also set a timeline indicator in the desired position by indicating the exact date and time (see the section titled Setting the Timeline Indicator in the Desired Position.

You can also position the indicator using the alert events list (see the section titled The Alerts List).

7.1.3.4 *The Position Selection Panel*

The position selection panel is used for the following functions:

1. Setting the timeline indicator in the desired position.
2. Scrolling and zooming the timeline.

7.1.3.4.1 Setting the Timeline Indicator in the Desired Position

To set the indicator in the desired position, you must perform the following steps:

1. Click the  button (Fig. 7.1—17, 1). The **Archive position selection** window will then appear (Fig. 7.1—17).

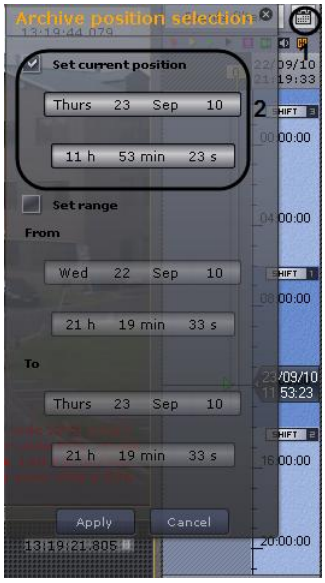


Fig. 7.1—17 Setting the timeline indicator in the desired position

2. In this window, select the **Set current position** check box (see Fig. 7.1—17, 2). The time parameters in the **Set current position** group, which determine the position of the timeline indicator, will become available for editing.
3. Position the cursor over the desired time parameter (day of the week, date, month, year, hour, etc.) (see Fig. 7.1—17, 2). An arrow for increasing (↑) or decreasing (↓) the selected parameter will then appear (Fig. 7.1—18). To change the parameter by one unit, click the corresponding arrow once. Repeat this step to modify all desired time parameters.

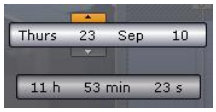


Fig. 7.1—18 Setting a time parameter

4. Click the **Apply** button.

*NOTE. To close the window without saving changes, click the **Cancel** button or* .

Setting the timeline indicator in the desired position is now complete.

7.1.3.4.2 Scrolling and Zooming the Timeline

A limited section of the timeline is displayed in the **Monitor** interface window.

To scroll and zoom the timeline, you must perform the following steps:

1. Click the button (Fig. 7.1—19, 1). The **Archive position selection** window will then appear (Fig. 7.1—19).

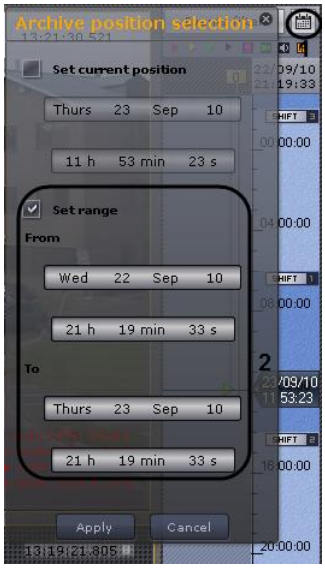


Fig. 7.1—19 Scrolling and zooming the timeline

2. In this window, select the **Set range** check box (see Fig. 7.1—19, 2). The time parameters in the **Set range** group, which determine the boundaries of the displayed section of the timeline, will become available for editing.
3. Set the **From** and **To** boundaries of the timeline in the same way as in step three of the section titled *Setting the Timeline Indicator in the Desired Position*.
   Setting the timeline section results in the scrolling of the timeline.
   If you set a narrow section, the scale of the timeline will increase, while if you set a wide section, the scale will decrease.
4. Click the **Apply** button.

*NOTE. To close the window without saving changes, click the **Cancel** button or* .

Scrolling and zooming the timeline is now complete.

7.1.3.5 *The Alerts List*

To display the alerts list, click the **Alerts** button (Fig. 7.1—20).

Fig. 7.1—20 Displaying the alerts list

The list of the most recent alerts will then be displayed (Fig. 7.1—21).

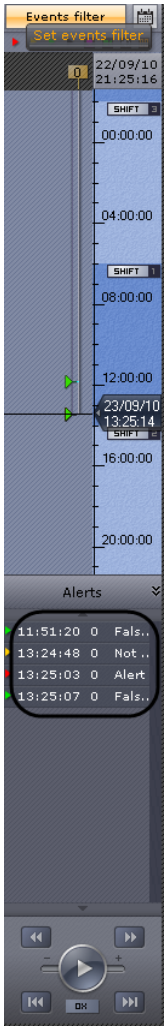


Fig. 7.1—21 The alerts list

NOTE. Display of one alert event or another in the list is determined by filter settings (see the section titled The Alert Events Filter).

To hide the alerts list, click the **Alerts** button again.

When you place the cursor over an alert in the list, detailed event information appears (Fig. 7.1—22).

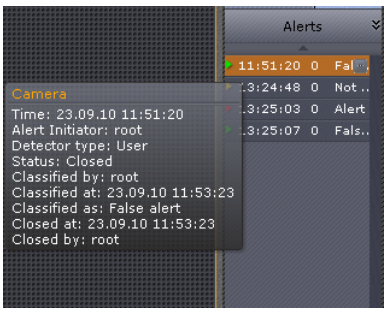


Fig. 7.1—22 Alert information

NOTE. Navigating in the archive using the alerts list is described in the section titled Navigating Using the Alerts List.

7.1.3.6 *The Playback Panel*

The playback panel is located in the lower part of the navigation panel (Fig. 7.1—23).

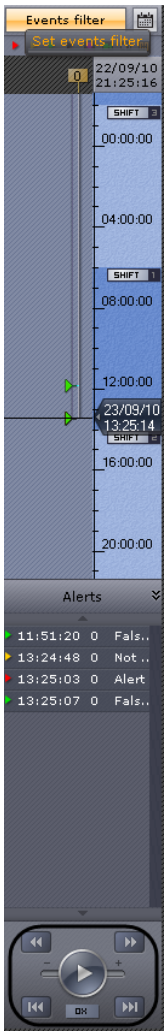


Fig. 7.1—23 The playback panel

The playback panel contains the following buttons:

1.  — go to the previous frame
2.  — go to the next frame
3.  — go to the previous recording
4.  — go to the next recording
5.  — play/pause

The  button also acts as a slider which sets the speed and mode (forward/backward) of playback.

NOTE. Working with the playback panel is described in detail in the section titled Navigating Using the Playback Panel.

7.1.4 The PTZ Control Panel

The PTZ control panel is displayed automatically in the right-hand part of the screen when the viewing tile of a PTZ camera is activated in real time mode (Fig. 7.1—24).

Fig. 7.1—24 The PTZ control panel

The PTZ control panel is used for the following functions:

1. Controlling PTZ video cameras
2. Setting and switching to camera presets
3. Launching/stopping patrolling

The PTZ control panel includes the following interface elements:

1. Presets list
2. Dialer
3. PTZ controls for iris, focus, and optical zoom
4. Virtual 3D joystick
5. Patrol button

NOTE. Working with the dialer, PTZ controls, joystick, and patrol button are described in the section titled Controlling a PTZ Camera.

7.1.4.1 *The Presets List*

The presets list created for a selected video camera is displayed in the upper part of the PTZ control panel.

Fig. 7.1—25 PTZ camera presets list

For each preset in the list, the following parameters are displayed:

1. The identification number
2. A descriptive name

The presets list is used for the following functions:

1. Creating presets.
2. Editing the identification number and name of an existing preset.
3. Deleting presets.
4. Switching to a preset.

You can create up to 99 presets with numbers from 1 to 99. To create a preset you must perform the following steps:

1. Place the PTZ camera in the position which is to be saved as a preset.
2. Click the  button. Fields for entering an identification number and a descriptive name for the preset will then appear (Fig. 7.1—26).

Fig. 7.1—26 Preset parameters

3. Fill in these fields as desired (see Fig. 7.1—26).

Important! If a preset with the identification number entered already exists, its parameters, as well as the corresponding PTZ camera position, will be overwritten.

4. Left-click anywhere in the presets list to save changes.

Creation of a preset is now complete.

To edit the number and name of an existing preset, you must perform the following steps:

1. Highlight the desired preset in the list.
2. Click the Edit button. The identification number and descriptive name fields will then become accessible for editing.
3. Modify the preset number and/or name as desired.
4. Left-click anywhere in the presets list to save changes.

Editing of the preset is now complete.

To delete an existing preset, you must perform the following steps:

1. Highlight the desired preset in the list.
2. Click the — button.

The preset has now been deleted.

To switch to a preset, left-click the corresponding line in the presets list. The camera will then be switched to the desired position.

NOTE. See the section titled Control Using the Presets List.

7.1.4.2 *The Dialer Panel*

The dialer panel is used to switch to a PTZ preset.

To display the dialer panel, click the **Dialer** button (Fig. 7.1—27). The dialer panel will then be displayed on the PTZ control panel (Fig. 7.1—28).

Fig. 7.1—27 The Dialer button

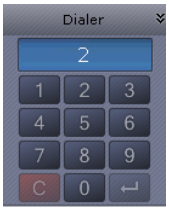


Fig. 7.1—28 The dialer panel

To hide the dialer panel, click the Dialer button again.

Switching to a PTZ preset using the dialer panel is described in detail in the section titled *Control Using the Dialer Panel*.

7.2 Configuring Interfaces on a Multi-Monitor Computer

In the Axxon Smart software package you can create several separate viewing tiles for display on additional physical monitors connected to a server or client.

Separate tiles are created by duplicating the contents (layout) of the main tile in the created window. You can create separate tiles of the following types:

1. Tile with management functions – the functions are the same as in the main tile, but there is no control panel (upper panel) in this tile.
2. Tile with monitoring functions – there is no access to alert and archive modes or ability to control PTZ devices; color coding for alerts is supported.

To create a tile with management functions, click the  button (top); to create a tile with monitoring functions, click  (bottom); these buttons are located in the right-hand part of the control panel (Fig. 7.2—1).

Fig. 7.2—1 Buttons for creating additional Axxon Smart tiles

7.3 Video Surveillance

7.3.1 Video Surveillance Modes

The video image from a video camera is displayed on the computer monitor through the client's interface objects, namely the video surveillance monitor and the viewing tile (Fig. 7.3—1).

Fig. 7.3—1 Monitor with one viewing tile

There are three modes for working with a viewing tile:

1. Real time mode
2. Alert mode
3. Archive mode

NOTE. The alert mode is available if an alert has been initiated in the system.

7.3.2 Functions Available in All Video Surveillance Modes

The following video surveillance functions are available in all video surveillance modes:

1. Scaling the viewing tile.
2. Digital zooming.
3. Video image processing.
4. Snapshot.

7.3.2.1 *Scaling the Viewing Tile*

The scale of the viewing tile can be adjusted. You can do this using the buttons in the upper right-hand part of the active viewing tile (Fig. 7.3—2):

1.  — expands the viewing tile to fill the entire screen.
2.  — Enlarges the viewing tile.
3.  — Decreases the size of the viewing tile.

Fig. 7.3—2 Viewing tile scale buttons

7.3.2.2 *Digital Zooming*

Digital zooming in a video image enables you to gradually increase the magnification of a video image without changing the dimensions of the viewing tile.

To magnify a video image, use the digital zoom scale. To display the digital zoom scale on the viewing tile screen, select **Show digital zoom** in the context menu of the viewing tile. (Fig. 7.3—3, Fig. 7.3—4).

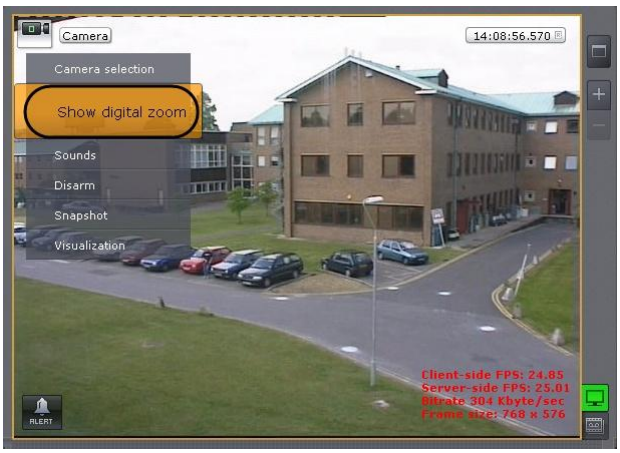


Fig. 7.3—3 Displaying digital zoom

Fig. 7.3—4 The digital zoom scale

To magnify a video image, move the slider of the digital zoom scale up to the desired value. The maximum zoom is 16x. To return to the original image, move the slider back to its original position.

To hide the digital zoom scale, select **Hide digital zoom** in the context menu of the viewing tile (Fig. 7.3—5).

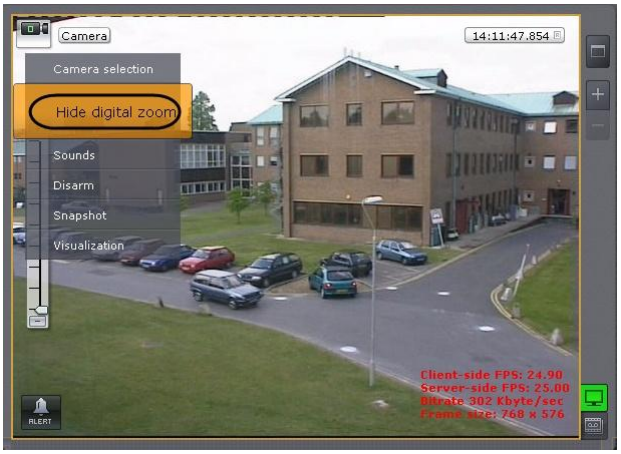


Fig. 7.3—5 Hiding digital zoom

After the digital zoom scale has been hidden, the selected zoom level of the image will be preserved when switching between image viewing modes.

7.3.2.3 *Video Image Processing*

In Axxon Smart, the video image processing functions implemented in the viewing tile enhance the performance and convenience of using the video surveillance system.

The following video image processing functions are available from the viewing tile:

1. Contrast
2. Sharpness
3. Deinterlacing

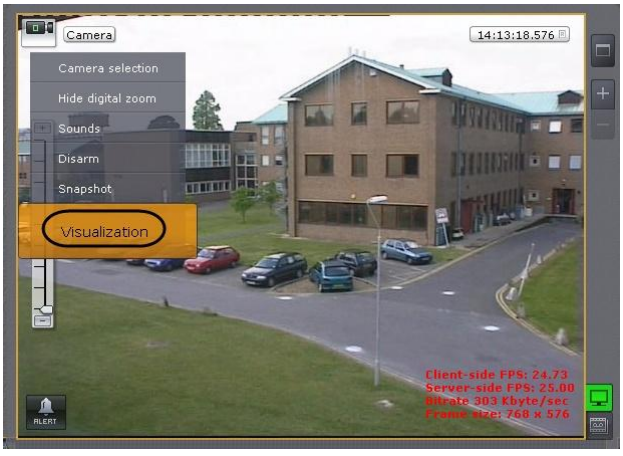


Fig. 7.3—6 Viewing tile context menu.
The Visualization option

To enable video image processing functions, use the **Visualization** option in the context menu of the viewing tile (see Fig. 7.3—6). Only one image processing function can be enabled at one time.

7.3.2.3.1 Changing the Contrast Level

An Axxon Smart operator is granted access to adjust the contrast of a video image.

To adjust the contrast, select the **Contrast** option in the **Visualization** context menu (Fig. 7.3—7).

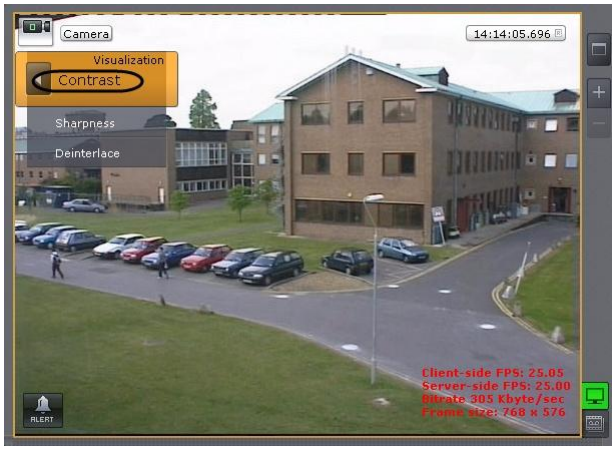


Fig. 7.3—7 The Visualization context menu.
The Contrast option

The image in the following figure (Fig. 7.3—8) shows an example of employing the **Contrast** function.

Fig. 7.3—8. An example of the use of the Contrast function

To return to the original image, reselect the **Contrast** option in the **Visualization** context menu.

7.3.2.3.2 Setting the Sharpness Level

An Axxon Smart operator is granted access to adjust the sharpness of a video image.

To adjust the sharpness, select the **Sharpness** option in the **Visualization** context menu (Fig. 7.3—9).

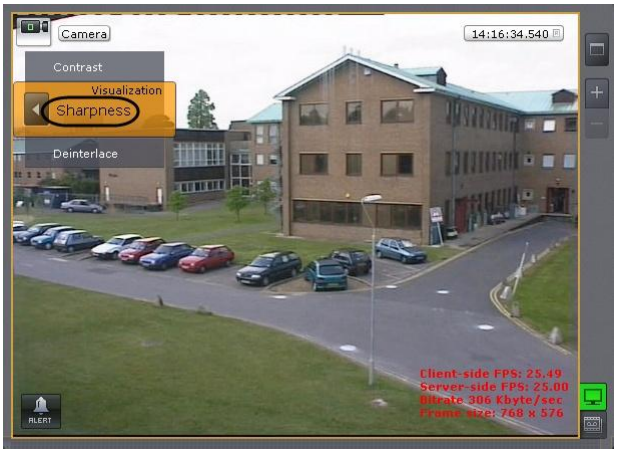


Fig. 7.3—9 The Visualization context menu.
The Sharpness option

The image in the following figure (Fig. 7.3—10) shows an example of employing the **Sharpness** tool.

Fig. 7.3—10. An example of employing the Sharpness function

To return to the original image, use the **Sharpness** function again.

7.3.2.3.3 Using Deinterlacing

The **Deinterlacing** tool is used to correct the combing effect, which is the appearance of distortions and artifacts on the borders of video image fragments observed when objects are moving quickly relative to the background.

The image in the following figure (Fig. 7.3—11) shows an example of such a distortion.

Fig. 7.3—11 An example of a combing distortion

To utilize this tool, select the **Deinterlacing** option in the **Visualization** context menu (Fig. 7.3—12).

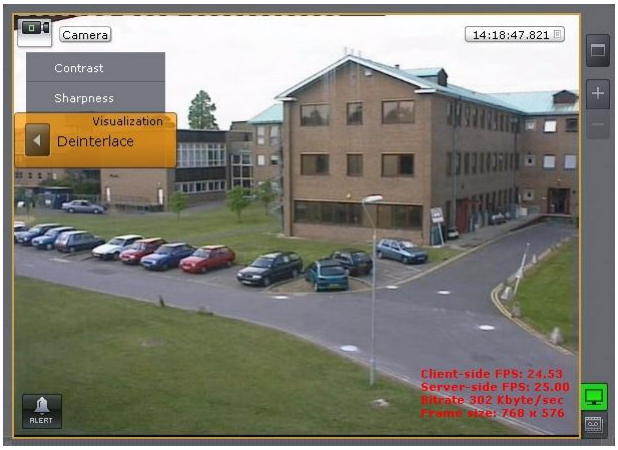


Fig. 7.3—12 The Visualization context menu.
The Deinterlacing option

The image in the viewing tile will then be corrected.

To disable the deinterlacing function, reselect the **Deinterlacing** option.

7.3.2.4 *Employing the Snapshot function*

An Axxon Smart operator is granted access to the **Snapshot** function.

Activation of the **Snapshot** function pauses the video image displayed at the moment the function is activated. However, this does not stop the video playback process, and when this function is turned off, the user will see the video image corresponding to the current time.

To turn on the **Snapshot** function, select the **Snapshot** option in the context menu of the viewing tile (Fig. 7.3—13) or left-click the time indicator (see the section titled *Time Display*).

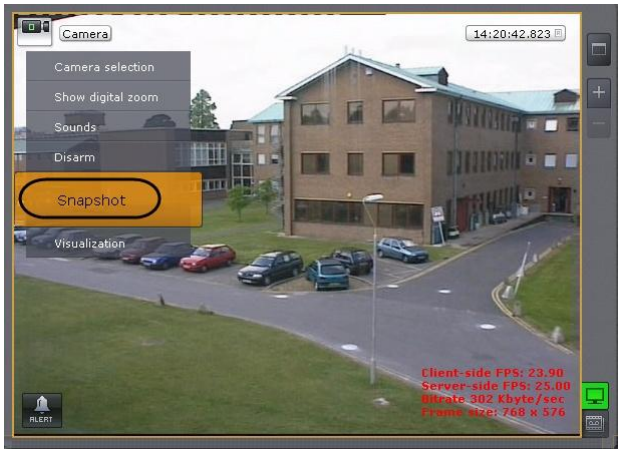


Fig. 7.3—13 Employing the Snapshot function

This will cause the viewing tile to be highlighted with a blue border. A snowflake icon will appear on the time indicator (Fig. 7.3—14), and the **Snapshot** option will be replaced with **Cancel snapshot** in the context menu of the viewing tile (Fig. 7.3—15).

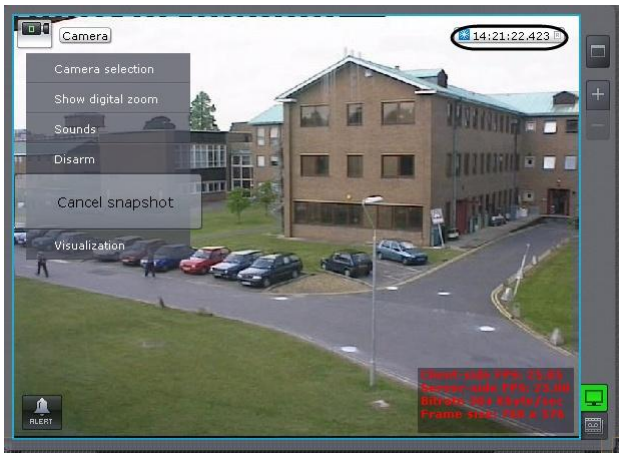


Fig. 7.3—14 An example of employing the Snapshot function. The snowflake

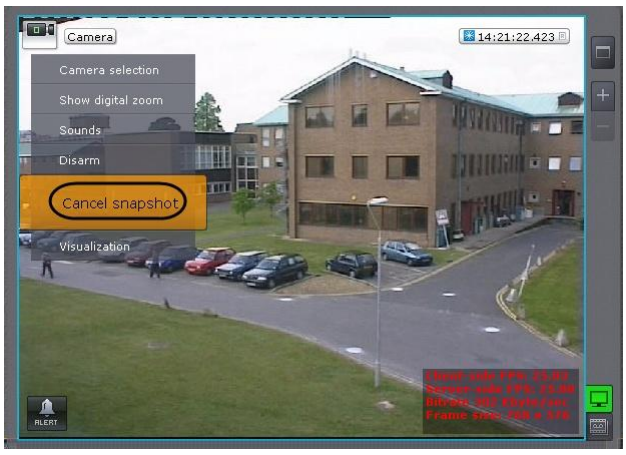


Fig. 7.3—15 An example of employing the Snapshot function. The Cancel snapshot option

To save the snapshot, select the **Snapshot export** option in the context menu of the video camera (Fig. 7.3—16) (see the section titled *Exporting frames*).

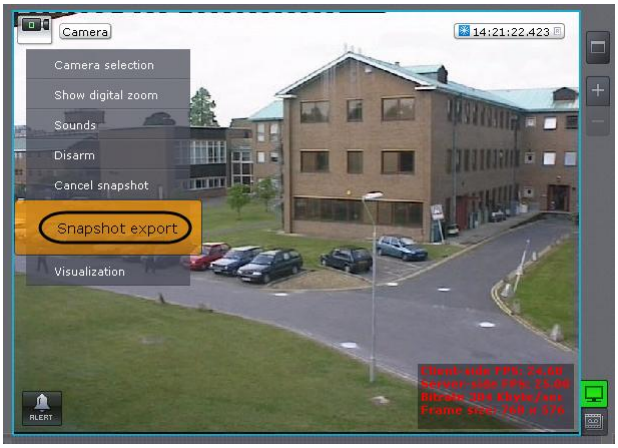


Fig. 7.3—16 Snapshot export

To turn off the **Snapshot** function, select the **Cancel Snapshot** option in the context menu of the viewing tile or click the time indicator again (see the section titled *Time Display*).

7.3.3 Real-Time Video Surveillance

7.3.3.1 *Switching to Real-Time Video Surveillance Mode*

To switch the viewing tile from archive mode (Fig. 7.3—17) or alert mode (Fig. 7.3—18) to real time mode, switch to the  tab in the lower right-hand corner of the tile.

Fig. 7.3—17 Switching from alert mode to real time mode

Fig. 7.3—18 Switching from archive mode to real time mode

The viewing tile will then appear in real time mode (Fig. 7.3—19).

NOTE. To indicate the enabling of real time mode, the button will turn green: «» (Fig. 7.3—19).

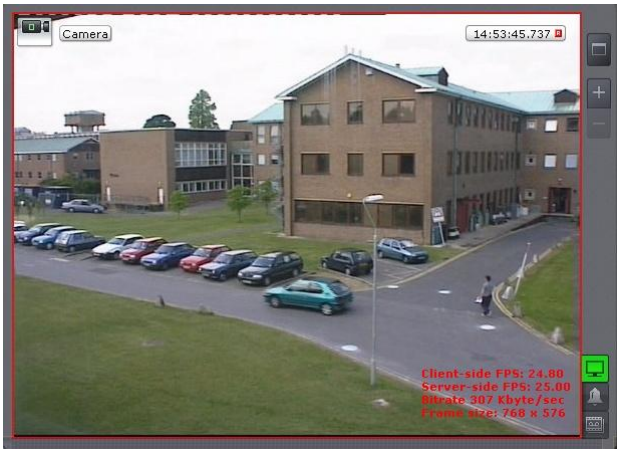


Fig. 7.3—19 The viewing tile in real time mode

7.3.3.2 *Video Surveillance Functions Available in Real Time Mode*

In real time mode the following video surveillance functions are accessible:

1. Selecting a video camera for video image viewing.
2. Object tracking.
3. Scaling the viewing tile.
4. Digital zooming.
5. Arming/disarming a video camera.
6. Video image processing.
7. Snapshot.

NOTE. Scaling the viewing tile, digital zoom, video image processing, and the Snapshot function are accessible in all video surveillance modes; they are described in the section titled Functions Available in All Video Surveillance Modes.

7.3.3.3 *Selecting a Video Camera*

To display an image in the viewing tile, select an IP camera in one of two ways:

1. From the list in the context menu of the viewing tile (Fig. 7.3—20, 1).
2. From the list on the video camera selection panel (Fig. 7.3—20, 2).

Fig. 7.3—20 The video surveillance monitor; an active viewing tile

7.3.3.3.1 Selecting a Video Camera Using the Context Menu of the Viewing Tile

To select a video camera using the context menu of the viewing tile, you must perform the following steps:

1. Bring up the context menu in the viewing tile (Fig. 7.3—21, 1).
2. Select **Camera selection** (Fig. 7.3—21, 2).

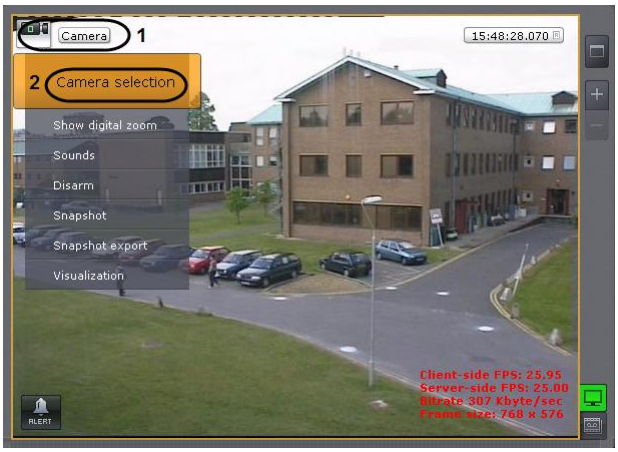


Fig. 7.3—21 Viewing tile context menu

3. Select the desired video camera in the displayed list (Fig. 7.3—22).

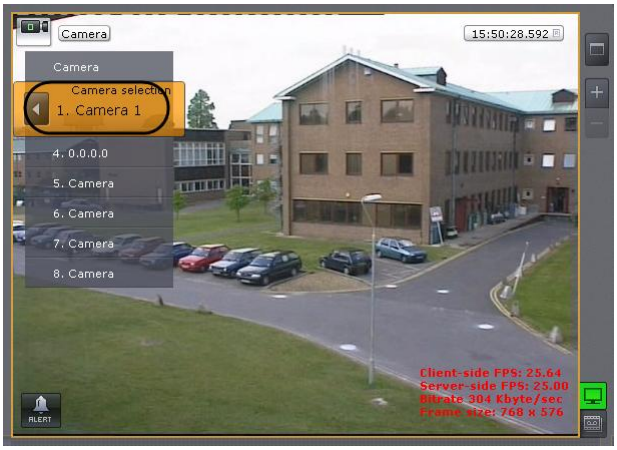


Fig. 7.3—22. List of available video cameras

The image from the selected video camera will now be displayed in the viewing tile.

7.3.3.3.2 Selecting a Video Camera Using the Viewing Tile Preview Ribbon

The video camera panel is used to display a list of video cameras linked to Axxon Smart (Fig. 7.3—23).

Fig. 7.3—23 The viewing tile preview ribbon

To display the image from a selected camera in the viewing tile, perform one of the following sequences of actions:

1. Switch the given viewing tile into active mode (with a mouse click) and select the video camera from the list on the video camera panel.
2. Select the video camera from the list on the video camera panel by clicking it with the mouse and, while holding down the mouse button, moving the cursor to the viewing tile and then releasing the mouse button.

The image from the selected video camera will then be displayed on the viewing tile.

7.3.3.4 *Arming and Disarming a Video Camera*

In Axxon Smart, a video camera is armed via all the detectors registered for that video camera.

NOTE. The function of arming a video camera is accessible only if at least one detector has been registered for that camera in Axxon Smart.

To arm a camera , select **Arm** in the context menu of the viewing tile (Fig. 7.3—24). The camera will then become active.

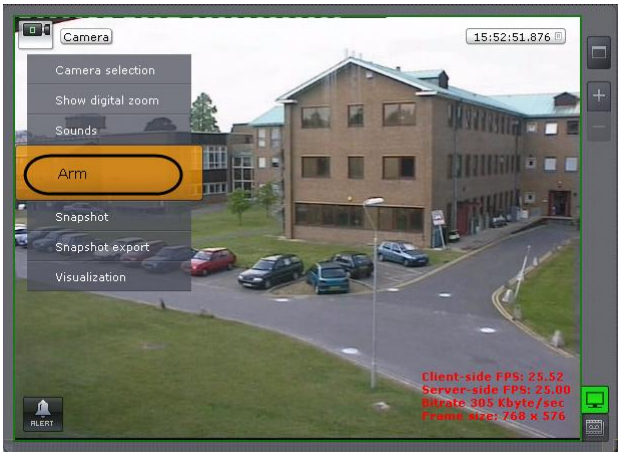


Fig. 7.3—24 Viewing tile context menu.
The Arm option

To disarm a camera , select **Disarm** in the context menu of the viewing tile. The video camera will then be disarmed.

7.3.3.5 *Object tracking*

Object tracking allows an operator to visually track the movement of objects in a camera's field of view.

Important! Object tracking is possible if at least one situation analysis detector is active (see the section titled Situation Analysis Detectors).

Object tracking carries out the following functions:

1. Recognizes the presence of a moving object and dynamically highlights it with a transparent rectangle on the video image.
2. Displays the trajectory of the object's movement.

Motion detection is carried out based on the gradient of the frame difference of the video image in time.

To enable object tracking, select **Show tracking** in the viewing tile context menu.

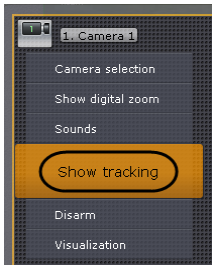


Fig. 7.3—25 Enabling object tracking

The object tracking functions will then be activated (Fig. 7.3—26).

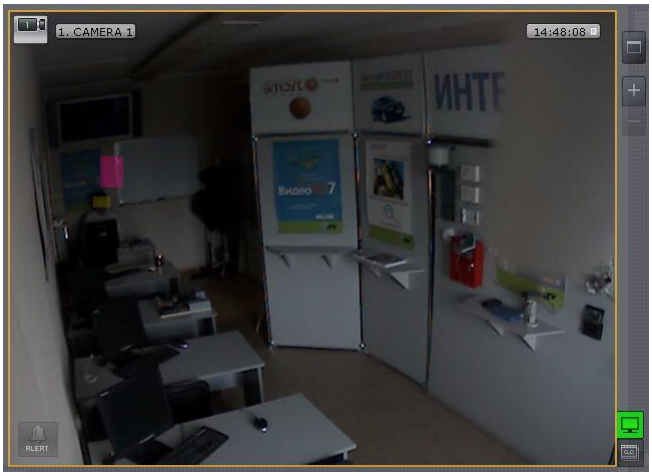


Fig. 7.3—26 Object tracking

7.3.3.6 *Controlling a PTZ Camera*

A PTZ video camera is controlled through the PTZ device control panel. The user gains access to this panel when the viewing tile of a video camera that supports a PTZ control interface is selected in real time mode (Fig. 7.3—27).

Fig. 7.3—27 The PTZ control panel

The following actions can be performed using the PTZ device control panel:

5. Using presets.
6. Modifying the parameters of the iris, focus, and optical zoom.
7. Modifying the horizontal and vertical tilt angle of the video camera

8. Launching/stopping patrol mode

NOTE. Setting of presets is described in detail in the section titled The PTZ Control Panel.

7.3.3.6.1 Control Using the Presets List

To switch a PTZ camera to a preset you can use the presets list. To do this, left-click the corresponding line in the given presets list (Fig. 7.3—28).

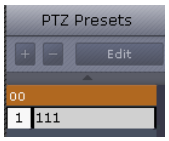


Fig. 7.3—28 The Presets List

7.3.3.6.2 Control Using the Dialer Panel

To switch a PTZ camera to a preset you can use the dialer panel. To display the dialer panel, click the **Dialer** button (Fig. 7.3—29).

Fig. 7.3—29 Accessing the dialer panel

To switch to a preset using the dialer panel, you must perform the following steps:

1. Using the numeric buttons (0-9), enter the number of the preset to which you want to switch. The dialed number is displayed in a special field (Fig. 7.3—30).
   To delete the last digit dialed, click the C button.

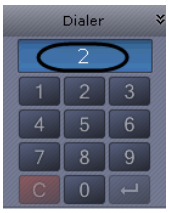


Fig. 7.3—30 Display of a dialed number

2. Click the ↵ button to switch to the preset with the number entered. The camera will then be switched to the desired position.

Switching to a preset using the dialer panel is now complete.

NOTE. Examples of entering a number:

5, ↵ – switches to preset no. 5.

0, 5, ↵ – switches to preset no. 5.

5, 7, ↵ – switches to preset no. 57.

7.3.3.6.3 Control Using a Virtual Joystick

A PTZ video camera can be controlled with a virtual joystick on the PTZ device control panel.

The virtual joystick is shown in the following figure (Fig. 7.3—31).

Fig. 7.3—31 The virtual joystick

To control a PTZ device using a virtual joystick, click the arrow corresponding to the direction in which you want to turn the video camera.

7.3.3.6.4 Patrolling

Patrolling is an automatic change in the position of a camera along a route defined in the camera's presets list. Patrolling is enabled using the **Patrol** button in the PTZ camera control panel (Fig. 7.3—32).

Fig. 7.3—32 The Patrol button

To stop patrolling, click the **Patrol** button again.

Important! Manual control takes priority over automatic control. Any interference in the patrolling process cancels it.

7.3.3.6.5 Remote Control of the Focus, Iris, and Optical Zoom

To control the focus, iris, and optical zoom, use the regulator scales for each of those functions (Fig. 7.3—33).

Fig. 7.3—33 The regulator scales for focus, iris, and optical zoom

To regulate the focus, iris, and optical zoom, move the corresponding slider up or down.

7.3.4 Video Surveillance in Archive Mode

7.3.4.1 *Switching to Archive Mode*

To switch the viewing tile from real time mode (Fig. 7.3—34) or alert mode (Fig. 7.3—35) to archive mode, switch to the  tab in the lower right-hand corner of the tile.

NOTE. In real time mode, if the viewing tile is not active, the tabs for switching to other modes are not displayed. In this case, to display the tabs, click with any mouse button on the viewing tile.

Fig. 7.3—34 Switching from real time mode to archive mode

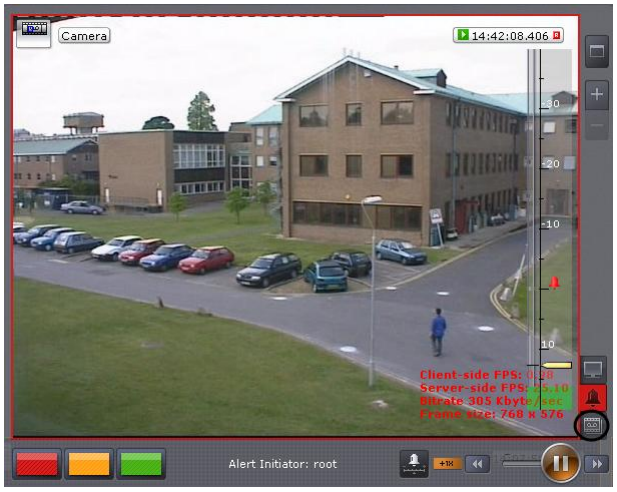


Fig. 7.3—35 Switching from alert mode to archive mode

The viewing tile will then appear in archive mode (Fig. 7.3—36).

Fig. 7.3—36 The viewing tile in archive mode

7.3.4.2 *Video Surveillance Functions Available in Archive Mode*

In archive mode the following video surveillance functions are accessible:

1. Selecting a video camera for viewing of recordings.
2. Selecting an archive for viewing of recordings.
3. Scaling the viewing tile.
4. Digital zooming.
5. Video image processing.
6. Snapshot.
7. Navigating in the archive.
8. Playback of recordings.

*NOTE. Scaling the viewing tile, digital zoom, video image processing, and the **Snapshot** function are accessible in all video surveillance modes; they are described in the section titled Functions Available in All Video Surveillance Modes.*

7.3.4.3 *Selecting a Video Camera*

You can select a video camera for display in the viewing tile in archive mode using the viewing tile context menu.

To select a camera, you must perform the following steps:

1. Bring up the context menu in the viewing tile (Fig. 7.3—37, 1).
2. Select **Camera selection** (Fig. 7.3—37, 2).

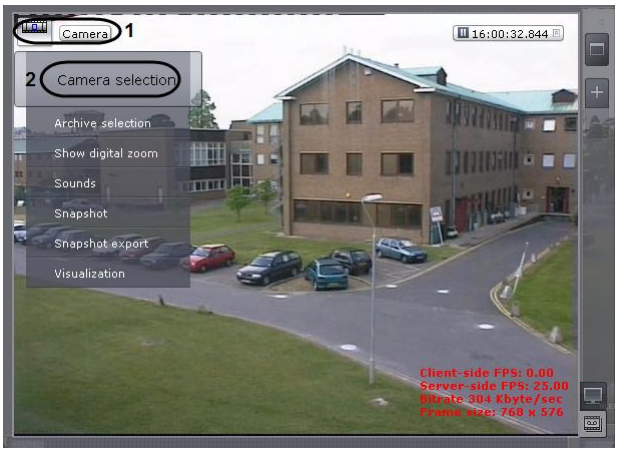


Fig. 7.3—37 Viewing tile context menu

3. Select the desired video camera in the displayed list (Fig. 7.3—38).

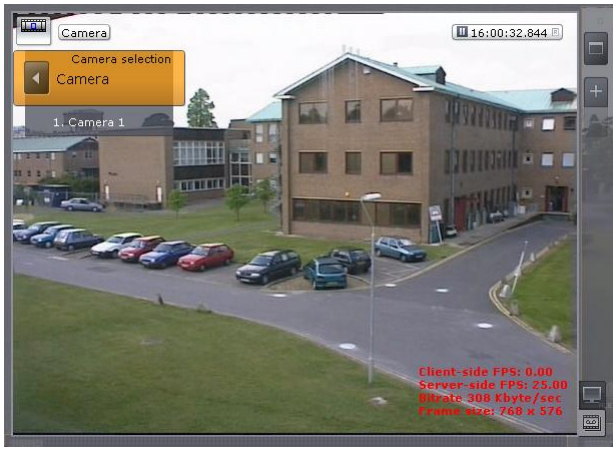


Fig. 7.3—38 List of available video cameras

The image from the selected video camera will now be displayed in the viewing tile in archive mode.

7.3.4.4 *Selecting an Archive*

You can select an archive for display in a viewing tile using the tile's context menu.

To select an archive, you must perform the following steps:

1. Bring up the context menu in the viewing tile (Fig. 7.3—39, 1).
2. Select **Archive selection** (Fig. 7.3—39, 2).

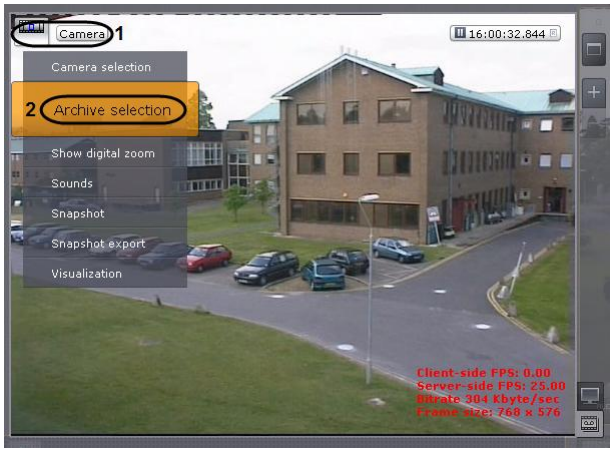


Fig. 7.3—39 Viewing tile context menu

3. Select the desired archive in the displayed list (Fig. 7.3—40).

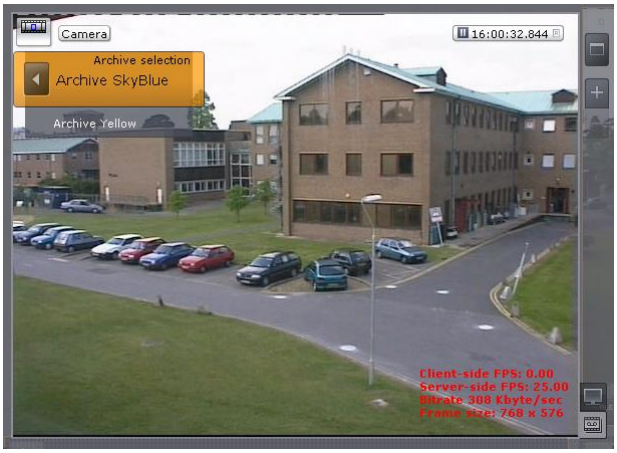


Fig. 7.3—40 List of available archives

The selected archive will now be displayed in the viewing tile.

NOTE. If there is no recording in the selected archive, a message to that effect will appear in the viewing tile.

7.3.4.5 *Navigating in the Archive*

You can navigate in the archive using the following interface elements:

1. The timeline

NOTE. Configuration of the timeline is described in detail in the section titled The Archive Navigation Panel.

2. The archive position selection panel
3. The alerts list
4. The playback panel

You can also use hotkeys to navigate in the archive.

7.3.4.5.1 Navigating Using the Timeline

NOTE. Working with the timeline is described in detail in the section titled The Timeline.

You can select recordings in the archive for playback in the viewing tile using the timeline. To do this, left-click the indicator (Fig. 7.3—41) and drag it to the corresponding position on the timeline.

NOTE. The position on the timeline is a graphical representation of a specific moment in time.

The frame corresponding to the selected position (moment in time) will then be displayed in the viewing tile (Fig. 7.3—41, 2).

Fig. 7.3—41 Navigating in the archive using the timeline

If there is no recording in the selected position, the indicator will automatically move to the position corresponding to the nearest recording.

To play back the selected recording, use the playback panel (see the section titled *Navigating Using the Playback Panel*).

7.3.4.5.2 Navigating Using the Archive Position Selection Panel

You can set the time indicator in the desired position using the position selection panel. You can bring this panel up by clicking the  button in the upper right-hand corner of the archive navigation panel.

For details, see the section titled *The Position Selection Panel*.

7.3.4.5.3 Navigating Using the Alerts List

The **Alerts** list and the timeline are dynamically linked: when you select an event in the list, the timeline indicator automatically moves to the selected position (Fig. 7.3—42).

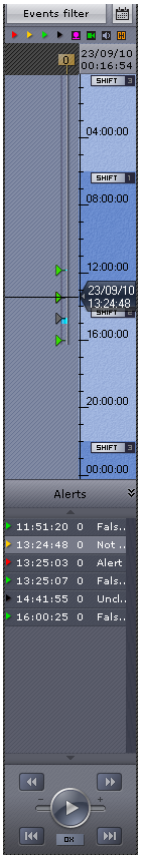


Fig. 7.3—42 Navigating using the Alerts list

For details, see the section titled *The Alerts List*.

7.3.4.5.4 Navigating Using the Playback Panel

To navigate in the archive using the playback panel, you must first select a recording for playback.

Once a recording is selected, the following operations are accessible:

1. Play recording:  ;
2. Stop playback:  ;
3. Go to the preceding frame: 
4. Go to the next frame: 
5. Go to the previous recording: 
6. Go to the next recording: 

It is possible to change the mode (forward/reverse) and speed of playback. To do this, use the slider (Fig. 7.3—43, Fig. 7.3—44).

Fig. 7.3—43 Fast reverse playback of a recording

Fig. 7.3—44 Fast forward playback of a recording

For reverse playback of a recording, move the slider to the left of the position corresponding to zero playback speed (the center of the slider); for forward playback, move it to the right. The current playback speed is displayed under the slider (Fig. 7.3—43, Fig. 7.3—44). During forward playback of a recording, a + sign appears before the speed; during reverse playback, a - sign appears.

The value 0X corresponds to zero speed, i.e., no playback; the value 1X corresponds to the frame rate of recording.

At a speed less than 1X, playback is slower than the speed of recording; at speeds greater than 1X, it is faster.

NOTE. Both forward and reverse playback may be accelerated up to 16X.

7.3.4.5.5 Hotkeys for Navigating in the Archive

You can use the following hotkeys to navigate in the archive (Table 7.3—1).

Table 7.3—1 Hotkeys for navigating in the archive

Hotkey	Function
Space	Play/pause
↑	Increase playback speed
↓	Reduce playback speed (including reverse playback)
→	Go to the next frame (in pause mode)
←	Go to the preceding frame (in pause mode)
Page up	Go to the preceding recording
Page down	Go to the next recording
Home	Go to the first frame of the archive
End	Go to the last frame of the archive

7.3.5 Video Surveillance in Alert Mode

7.3.5.1 *Video Surveillance Functions Available in Alert Mode*

In alert mode the following video surveillance functions are accessible:

1. Selecting a video camera.
2. Scaling the viewing tile.
3. Digital zooming.
4. Video image processing.
5. Snapshot.
6. Forward and reverse playback of an alert at various speeds.
7. Alert evaluation (assigning a status).

*NOTE. Scaling the viewing tile, digital zoom, video image processing, and the **Snapshot** function are accessible in all video surveillance modes; they are described in the section titled Functions Available in All Video Surveillance Modes.*

7.3.5.2 *Initiating an Alert*

A system alert can be initiated in one of two ways:

1. Manually (by an operator).
2. Automatically (when a detector is triggered).

7.3.5.2.1 Manual Initiation

To initiate an alert manually, you must perform the following steps:

1. Switch to real time mode (Fig. 7.3—45) (see the section titled *Switching to Real-Time Video Surveillance Mode*).

Fig. 7.3—45 Manual initiation of an alert

2. Click the  button in the lower left-hand corner of the viewing tile (see Fig. 7.3—45).
3. An alert will then be initiated in the system and the viewing tile will automatically switch to alert mode for evaluation of the situation (Fig. 7.3—46).

Fig. 7.3—46 Alert mode

Manual initiation of an alert is now complete.

7.3.5.2.2 Automatic Initiation

An alert is initiated automatically if a **Record and alert** rule to be executed when a detector is triggered is activated (see the section titled *Recording to Archive and Initiation of an Alert*).

When an alert is initiated automatically, the color indicator of the **Alert** button 

in the lower left-hand corner of the viewing tile is turned on (Fig. 7.3—47).

Fig. 7.3—47 Automatic initiation of an alert

To evaluate the situation, go to the **Alerts** tab, and then accept the event for handling (see the section titled *Accepting an Alert for Handling*).

7.3.5.3 *Accepting an Alert for Handling*

To accept an alert for handling, select it in the alerts list, which is accessible from the **Alerts** tab (Fig. 7.3—48).

Fig. 7.3—48 Accepting an alert for handling

The alert handling tile will then appear (Fig. 7.3—49).

Fig. 7.3—49 The alert handling tile

7.3.5.4 *Switching to Alert Mode*

When an alert is initiated, the system switches to alert mode automatically at the moment the event is accepted for handling. An operator can exit alert mode, for example, to view the video archive related to the alert. To return the viewing tile from real time mode (Fig. 7.3—50) or archive mode (Fig. 7.3—51) to alert mode, click the  button in the lower right-hand corner of the tile.

NOTE. In real time mode, if the viewing tile is not active, the tabs for switching to other modes are not displayed. In this case, to display the tabs, click with any mouse button on the viewing tile.

Fig. 7.3—50 Switching from real time mode to alert mode

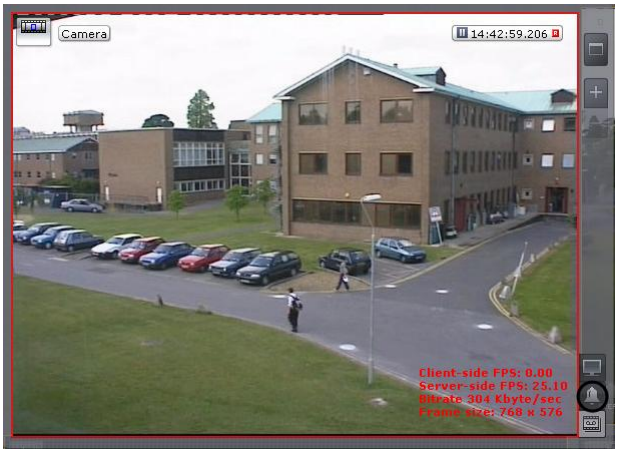


Fig. 7.3—51 Switching from archive mode to alert mode

The viewing tile will then appear in alert mode (Fig. 7.3—52).

NOTE. To indicate alert mode, the  *button will turn red: «*  *» (Fig. 7.3—52).*

Fig. 7.3—52 The viewing tile in alert mode

7.3.5.5 *Working with the Alert Handling Tile*

7.3.5.5.1 Alert Handling Tile Interface Elements

The alert handling tile is a viewing tile which, besides the standard interface elements (context menu, time indicator, etc.), also contains elements for alert playback and evaluation:

1. The playback panel
2. The timeline
3. A button for quick positioning of the timeline indicator in the position corresponding to the beginning of the alert.

7.3.5.5.2 Selecting a Video Camera

You can select a video camera for display in the viewing tile in alert mode using the viewing tile context menu.

To select a camera, you must perform the following steps:

1. Bring up the context menu in the viewing tile (Fig. 7.3—53, 1).
2. Select **Camera selection** (Fig. 7.3—53, 2).

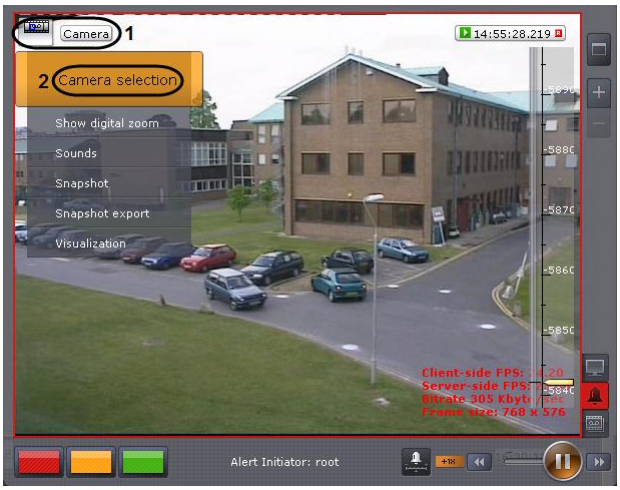


Fig. 7.3—53 Viewing tile context menu

3. Select the desired video camera in the displayed list (Fig. 7.3—54).

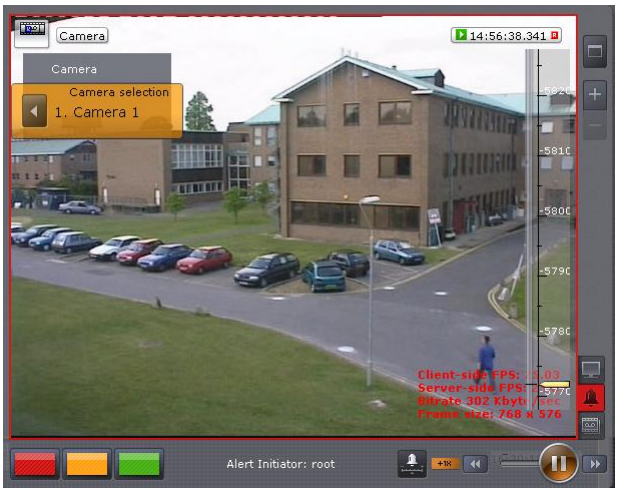


Fig. 7.3—54 List of available video cameras

The image from the selected video camera will now be displayed in the viewing tile in alert mode.

7.3.5.5.3 Alert Playback

As soon as an alert is accepted for handling, automatic one-time playback of the alert recording is launched. Playback is launched either from the moment of the beginning of the alert, or from the moment corresponding to the position of the alert flag (Fig. 7.3—55, only when the alert is initiated automatically; see the section titled *Recording to Archive and Initiation of an Alert*).

Fig. 7.3—55 Position of the alert flag

If the alert was initiated automatically, the visual element set for the detector which initiated the alert will be displayed in the viewing tile: either a detection area (Fig. 7.3—56), or a line which, when crossed, will trigger the detector (Fig. 7.3—57). The object which triggered the detector will be outlined with a red frame (Fig. 7.3—56, Fig. 7.3—57).

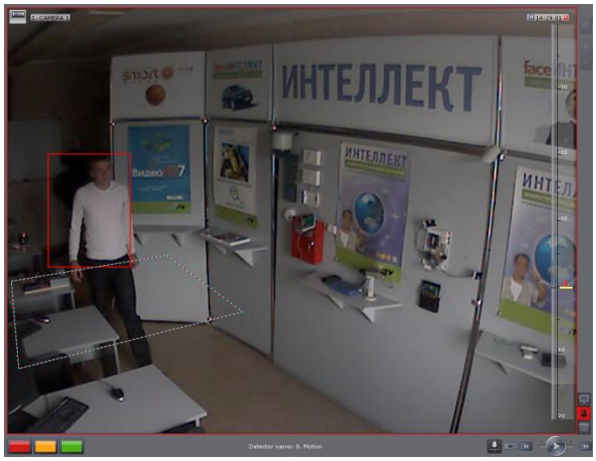


Fig. 7.3—56 Display of an Area visual element

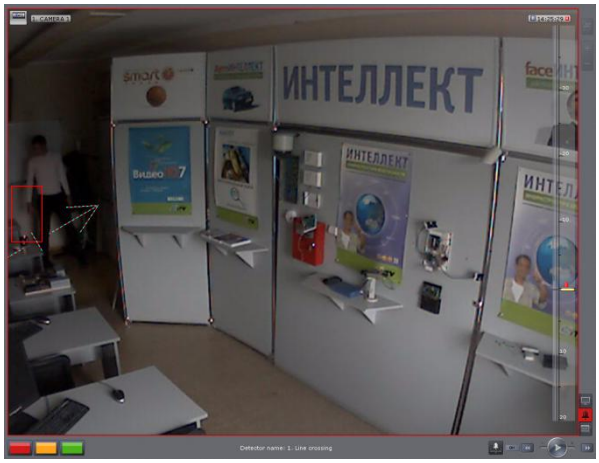


Fig. 7.3—57 Display of a Line visual element

The cause of the alert is displayed in the lower part of the viewing tile (Fig. 7.3—58).

Fig. 7.3—58 Displaying the cause of the alert

To go to the desired segment of the alert event to replay it, left-click the timeline indicator and drag it to the corresponding position (Fig. 7.3—59).

Fig. 7.3—59 The timeline indicator

To go to the beginning of the alert event, click the  button on the alert playback panel, or place the timeline indicator in the  position (Fig. 7.3—60).

Fig. 7.3—60 Going to the beginning of an alert

Once a segment is selected for replay, the following operations are accessible:

1. Play recording:  ;
2. Stop playback:  ;
3. Go to the preceding frame: 
4. Go to the next frame: 

It is possible to change the mode (forward/reverse) and speed of playback. To do this, use the slider (Fig. 7.3—61, Fig. 7.3—62).

Fig. 7.3—61 Reverse playback of a fragment

Fig. 7.3—62 Forward playback of a fragment

For reverse playback of a recording, move the slider to the left of the position corresponding to zero playback speed (the center of the slider); for forward playback, move it to the right. The current

playback speed is displayed to the left of the slider (Fig. 7.3—61, Fig. 7.3—62). During forward playback of a recording, a + sign appears before the speed; during reverse playback, a - sign appears.

The value 0X corresponds to zero speed, i.e., no playback; the value 1X corresponds to the frame rate of recording. At a speed less than 1X, playback is slower than the speed of recording.

7.3.5.5.4 Evaluating an Alert

To evaluate an alert, use the group of colored buttons in the lower left-hand corner of the alert handling tile (Fig. 7.3—63, Table 7.3—2). After evaluation of the alert, the viewing tile on the given client automatically switches to real time mode.

Important! In the case of multi-user event handling, only the first operator to switch to alert mode may evaluate the alert (if he or she has the appropriate permissions). For the rest of the operators the alert evaluation buttons are not displayed.

Fig. 7.3—63 Evaluating an alert

Table 7.3—2 The alert evaluation buttons

Button	Function
	Assigns **Alert** status
	Assigns **Non-critical alert** status
	Assigns **False alert** status

7.3.5.6 *Limitations When Working with Alert Events in Case of Multi-User Handling*

In the case of multi-user handling, only one operator may accept an alert for handling. Other operators may switch to alert mode with limited functions for the purpose of playing back the alert. This can be done in one of two ways:

1. Switch to the  tab of the alert viewing tile (Fig. 7.3—64, see the section titled *Switching to Alert Mode*).

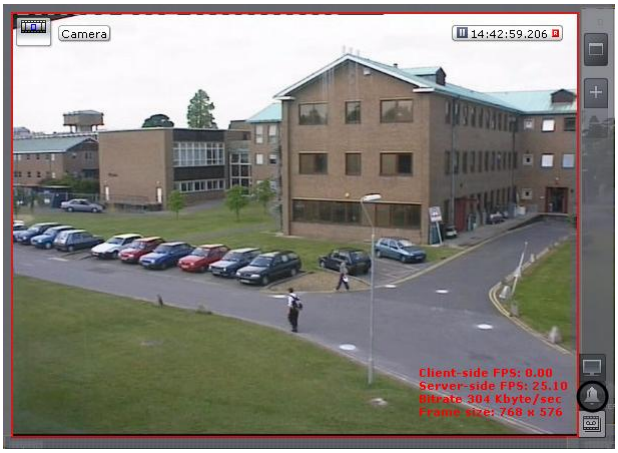


Fig. 7.3—64 Switching to viewing tile alert mode

2. Switch to the **Alerts** tab and select the alert from the alerts list (Fig. 7.3—65).

Fig. 7.3—65 Selecting an alert from the alerts list

In alert mode with limited functions, the alert evaluation buttons are not displayed. Instead, the name of the operator who is currently handling the alert is displayed. The other functions of the alert handling tile remain unchanged.

After evaluation of the alert on another client, on the given client the status assigned to the alert is displayed in place of the name of the operator.

If the operator who accepted the alert for handling exceeds the maximum allowed reaction time, other operators may also accept the alert for handling.

If more than one alert appears for one camera, any operator may access all alerts not yet accepted for handling.

7.3.6 Video Surveillance in Forensic Search Mode

7.3.6.1 *Switching to Forensic Search*

To switch the viewing tile to the Forensic Search mode, go to the tab in the lower right-hand corner of the tile (Fig. 7.3—66).

NOTE. In real time mode, if the viewing tile is not active, the tabs for switching to other modes are not displayed. In this case, to display the tabs, click with any mouse button on the viewing tile.

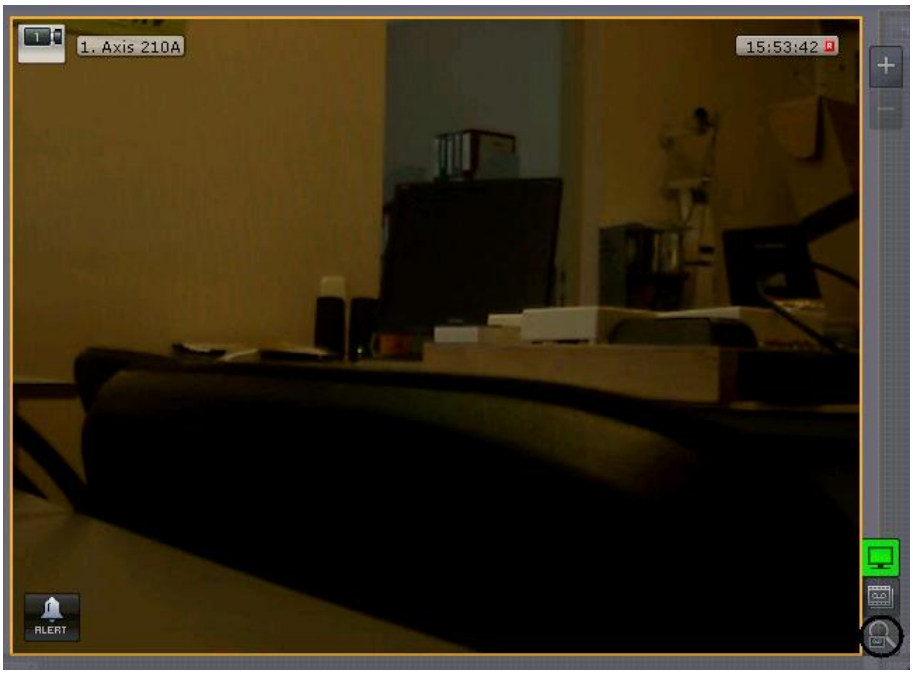


Fig. 7.3—66 Switching to Forensic Search

The viewing tile will then appear in Forensic Search mode (Fig. 7.3—67).

NOTE. To indicate the enabling of the Forensic Search mode, the button will turn grey: (Fig. 7.3—67).

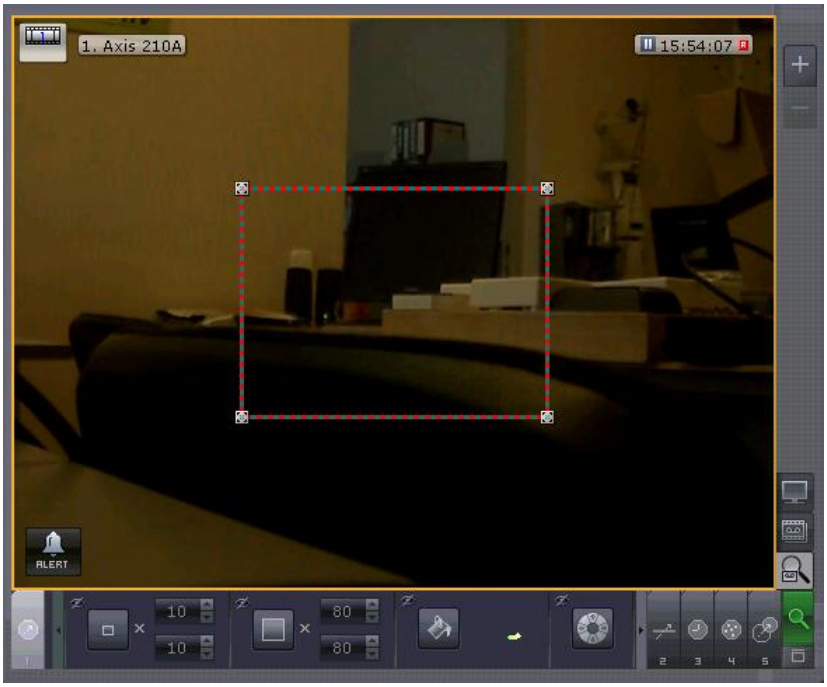


Fig. 7.3—67 Viewing Tile in Forensic Search Mode

7.3.6.2 *Video Surveillance Functions Available in Forensic Search Mode*

In Forensic Search mode the following video surveillance functions are accessible:

1. all functions available in archive mode (see the section *Video Surveillance in Archive Mode*).
2. Searching the archive by the following criteria:
   - 2.1 motion in an area;
   - 2.2 the trajectory of an object crossing a virtual line;
   - 2.3 loitering of an object in an area;
   - 2.4 simultaneous presence of a large number of objects in an area;
   - 2.5 motion from one area to another.

7.3.6.3 *Steps in searching the archive*

A Forensic Search is carried out in steps:

1. selecting a search criterion;

NOTE. In the current version of Axxon Smart, you can only search by one criterion at a time.

2. editing the visual element needed for searching by the selected criterion;
3. configuring the parameters of the criterion;
4. setting the relevant period of time in the past;
5. launching the search and viewing results.

Steps 2 and 3 are used to refine the search query. They can be skipped; in this case the search will be carried out using the default parameters or the parameters set previously (see note below). For example, in the first case using the Motion criterion, a search will be made for any motion in the central area of the frame by width and height, equal to 40% of the width and height of the frame respectively (see the section *Area*), regardless of the size of the moving object, its color or the direction and speed of its motion.

NOTE. The visual element needed to search by the selected criterion and the parameters of the criterion are saved if the user switches to another search criterion, exits Forensic Search mode, or even restarts Axxon Smart.

7.3.6.4 *Selecting a search criterion*

To select a criterion for the Forensic Search, you can use one of five expanding menus:

NOTE. The menus are displayed in the lower part of the viewing tile in Forensic Search mode (Fig. 7.3—68).

1.  – motion in an area;
2.  – the trajectory of an object crossing a virtual line;
3.  – loitering of an object in an area;
4.  – simultaneous presence of a large number of objects in an area;
5.  – motion from one area to another.

A menu expands when you click the corresponding icon, while the previously expanded menu collapses. One of the menus is always expanded; the expanded menu is light gray (Fig. 7.3—68).

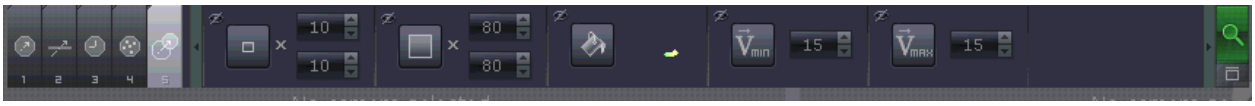


Fig. 7.3—68 Archive search criterion selection menus

7.3.6.5 *Editing visual elements*

The visual element needed for searching by a selected criterion is automatically displayed in the viewing pane. For the criteria Motion in an area, Loitering in an area and Simultaneous presence of a large number of objects in an area, the visual element Area is used. The visual elements Line and Two areas are used only for configuring the criteria Crossing of a virtual line by the trajectory of an object and Motion from one area to another, respectively.

The visual element displayed by default must be edited to conform to the needed search query; for example, it may be necessary to increase or decrease the search area, move the virtual line, etc.

7.3.6.5.1 Line

The visual element Line is needed for searching the archive by the criterion Crossing of a virtual line by the trajectory of an object. This visual element sets a virtual line in the field of view of a video camera; cases of something crossing this line will be found in the archive.

The end points of the line are connected by a two-color dotted line. The direction of the object's motion across the line is indicated by dotted arrows (Fig. 7.3—69).

By default the end points of the line have the coordinates (50%, 30%) and (50%, 70%) in percents of the width and height of the frame, respectively (Fig. 7.3—69).

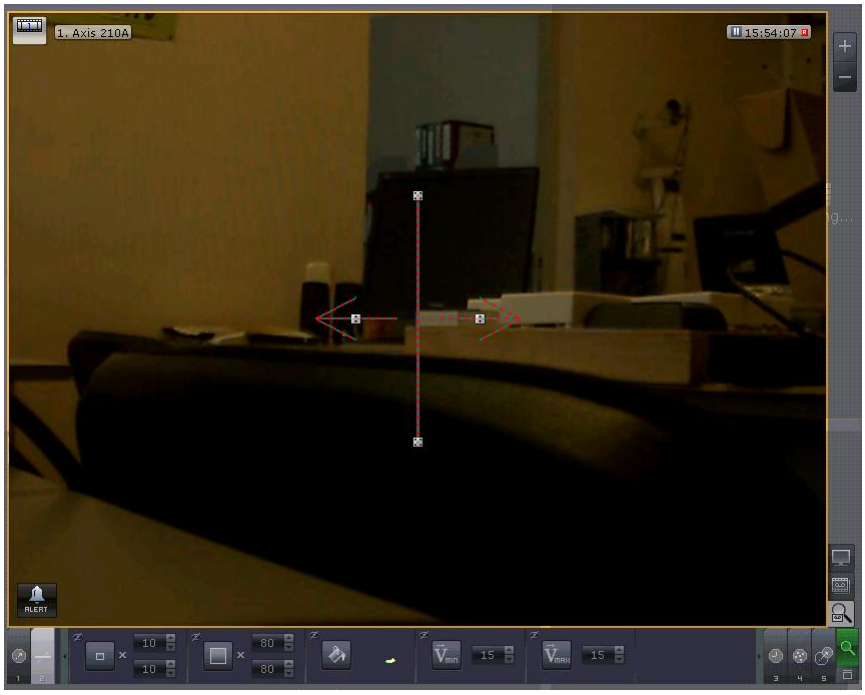


Fig. 7.3—69 Archive search criterion selection menus

To move the end point of a line, position the cursor on an end point and, holding down the left mouse button, move the mouse.

By default, both directions of motion across the virtual line are taken into account when searching the archive. If searching for motion in one direction is not needed, click the button corresponding to that direction.

Important! At least one direction must be selected for the search to take place.

NOTE. A disregarded direction of object motion is indicated by a dimmed arrow.

7.3.6.5.2 Area

The visual element Area is needed for searching the archive by the following criteria:

1. Motion in an area.
2. Loitering of an object in an area.
3. Simultaneous presence of a large number of objects in an area.

This visual element sets an area in the field of view of a video camera which is to be analyzed when searching by the selected criterion.

The nodes of the area are connected by a two-color dotted line (Fig. 7.3—70).

By default an area is defined by 4 nodes with the coordinates (30%, 30%), (70%, 30%), (70%, 70%) and (30%, 70%) in percents of the width and height of the frame, respectively (Fig. 7.3—70).

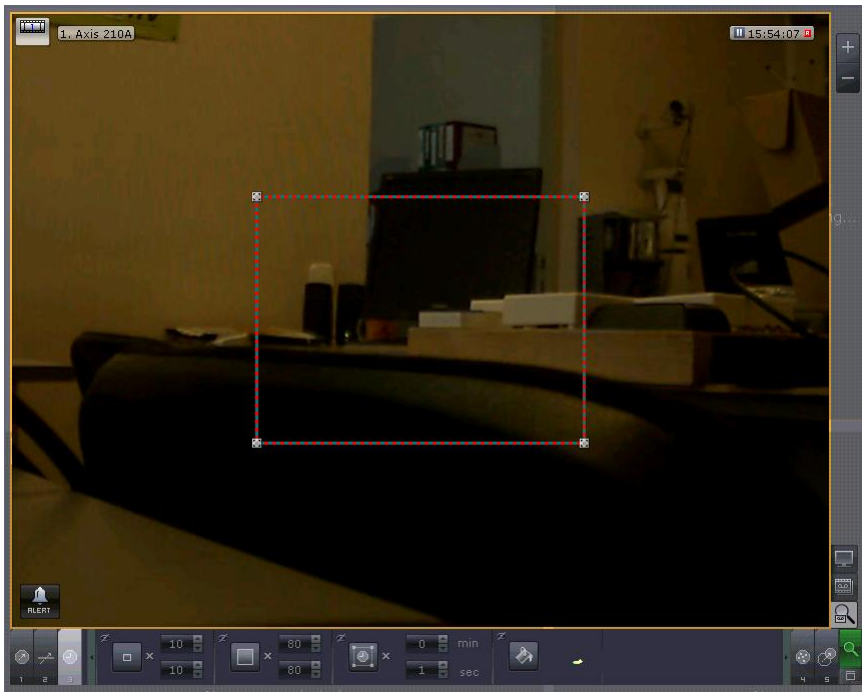


Fig. 7.3—70 Default area

To edit an area, you must use the following operations (Table 7.3—3).

Table 7.3—3 Operations with an area

Operation	Result
Right-click on a line	Creates a new area node
Right-click on a created node	Deletes the area node
Position the cursor on a node and, holding down the left mouse button, move the mouse	Moves the area node

7.3.6.5.3 Two areas

The visual element **Two areas** is needed to search the archive by the criterion **Motion from one area to another**. This visual element sets two areas in the video camera's field of view; cases of something moving between them (from one to the other) are to be found in the archive.

The nodes of each area are connected by a two-color dotted line (Fig. 7.3—71). The direction of motion between the areas is indicated by a dotted arrow.

By default, each area is defined by 4 nodes. The nodes of the first area have the coordinates (20%, 40%), (40%, 40%), (40%, 60%), (20%, 60%), and those of the second have the coordinates (60%, 40%), (80%, 40%), (80%, 60%), (60%, 60%) in percents of the width and height of the frame, respectively (Fig. 7.3—71).

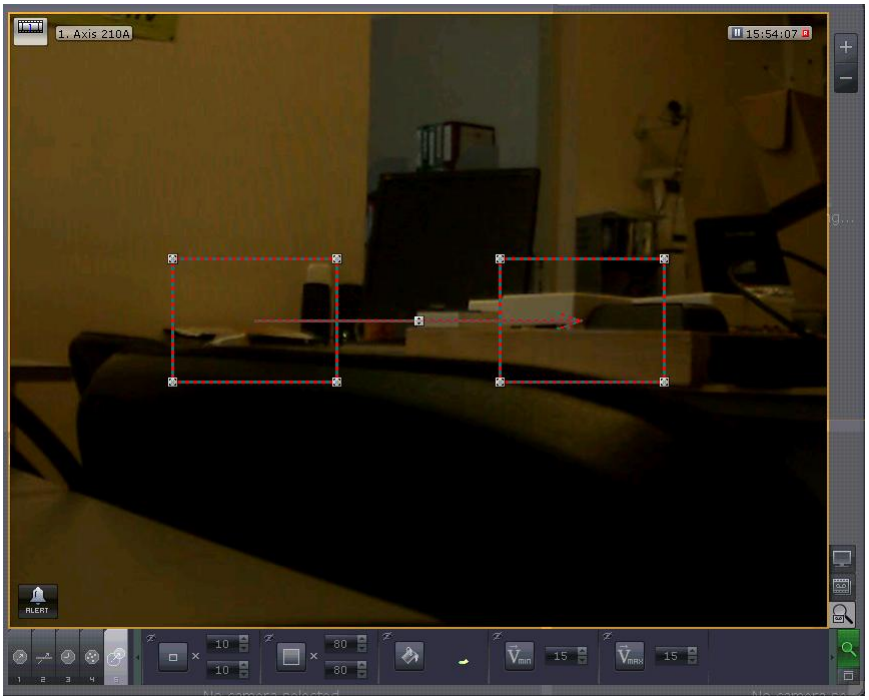


Fig. 7.3—71 Default two areas

Each area can be edited in the same way as the visual element **Area** (see the section *Area*).

To change the direction of motion between the areas, click the button on the direction arrow (see Fig. 7.3—71).

7.3.6.6 *Configuring criteria*

Configuration of a Forensic Search criterion entails setting one or more parameters for the criterion.

For each parameter there is a toggle button which graphically represents its function and also allows this parameter to be considered (button pushed in) or disregarded (button not pressed in).

NOTE. When the mouse pointer is positioned over a button, details about the corresponding parameter are displayed.

7.3.6.6.1 Motion in an area

To configure the Motion in and area criterion, you can set one or more parameters:

1. minimum size of a moving object;
2. maximum size of a moving object;
3. moving object color;
4. direction of object motion;
5. minimum object speed;
6. maximum object speed.

The procedures for setting the minimum and maximum size of the moving object are the same, but to consider the minimum size the button is used, while to consider the maximum size the button is used.

Below is the full procedure for setting the minimum (maximum) size of an object:

1. Click the corresponding button (or).
2. When you do this, a visual element (Fig. 7.3—72) will appear which serves a dual purpose: to be a graphical representation of an object of minimum (maximum) size and to set this size.

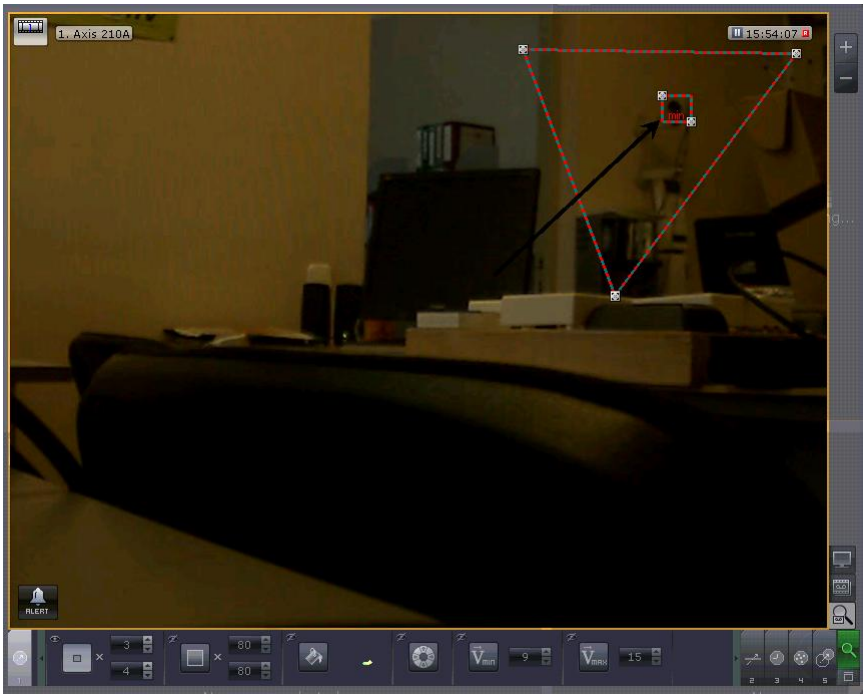


Fig. 7.3—72 Visual element representing an object of minimum size

3. The minimum (maximum) size of a moving object can be set in any of the following ways:

NOTE. The first method lets you cofigure the size roughly, while the second allows a precise configuration.

3.1 Position the cursor on a visual element node and, holding down the left mouse button, move the mouse.

3.2 Set the width and height of an object of minimum (maximum) size using the arrows in the upper and lower margins, respectively (Fig. 7.3—73). The dimensions of a visual element in the viewing tile can be changed in a similar fashion.

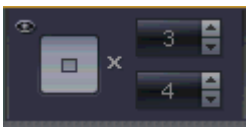


Fig. 7.3—73 Setting the width and height of an object of minimum size

The minimum (maximum) size of an object will then be set.

To set a the color of a moving object, you must perform the following steps:

NOTE. For more effective searching in the archive, a color range is set rather than a specific color, which in general depends on lighting conditions and other environmental factors. The search checks whether an object is of any color from the given range. If so, the corresponding video recording will appear in the search results.

1. Click the button  .
2. When you do this, a palette of shades of various saturation will appear in the viewing tile (Fig. 7.3—74).

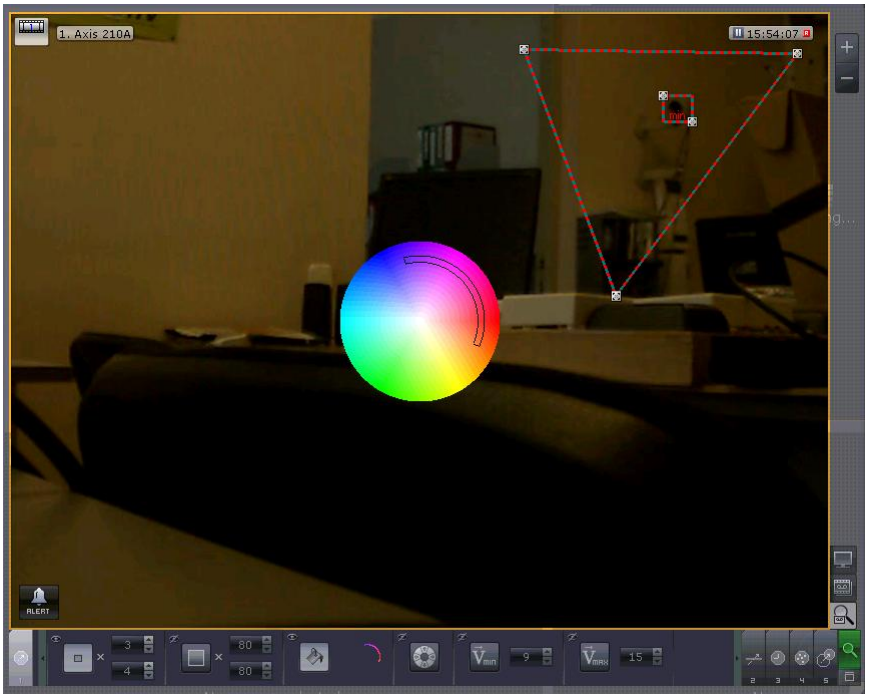


Fig. 7.3—74 Setting the color of a moving object

3. Set the color range on the palette using the black frame. The frame is creating using the Drag & Drop method (click any mouse button, move the mouse, and release the button) (see Fig. 7.3—74).

Important! Any click on the palette is considered the beginning of outlining a new range; the previous range will disappear.

The color of a moving object will then be set.

By default, when searching the archive, motion in any direction is searched for. It is possible to prevent searching for motion in one or several directions.

To prevent searching for motion in a direction, you must perform the following steps:

1. Click the button  .
2. When you do this, a visual element consisting of 8 sectors corresponding to 8 directions will appear (Fig. 7.3—75).

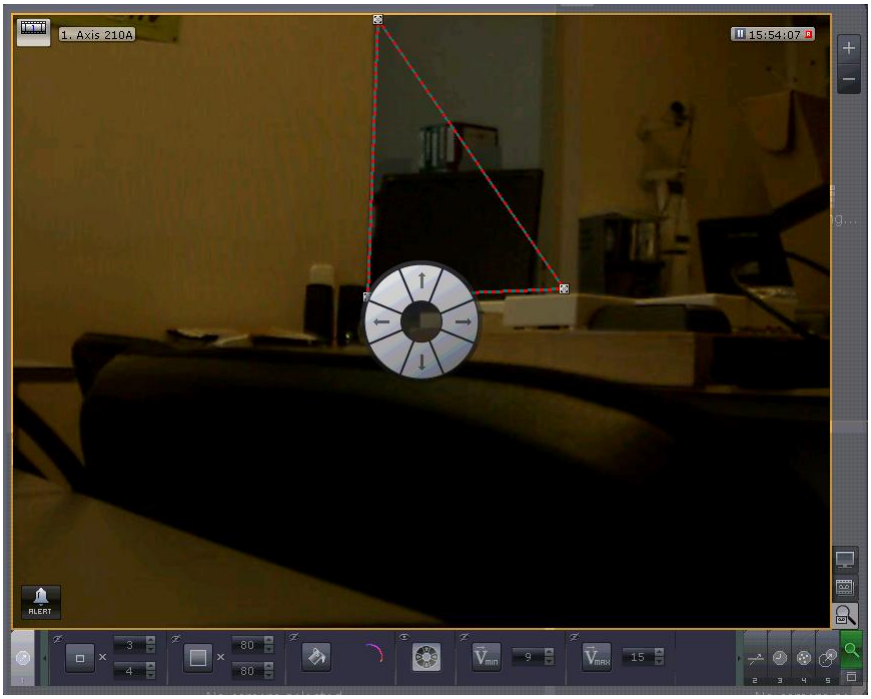


Fig. 7.3—75 Disabling a search for motion in one or several directions

3. Click any of the mouse buttons on the direction where a motion search needs to be prevented. Once you do this, the sector for this direction will come out green. If needed, repeat the procedure for other directions. Click on the direction with any mouse button again to enable a search.

The target search directions are now set.

The procedures for setting the minimum and maximum speed of a moving object are the same. However, the button  is used to set the minimum speed, whereas the button  is used to calculate the maximum speed.

Below is the complete procedure for setting the minimum/maximum speed of an object:

1. Click on the corresponding button,  or  .
2. When you do this, a tile (Fig. 7.3—76) opens that will show a double-headed arrow which serves a dual purpose: to visually demonstrate an object's movement within one second, and to specify the given path of motion or speed.

Fig. 7.3—76 The double-headed arrow for setting the object's minimum speed

3. The minimum/maximum speed of a moving object can be set in any of the following ways:

NOTE: The first method allows you to configure the approximate speed, while the second lets you configure it more precisely.

3.1 Point the cursor over an end point, and move the mouse while holding down the left mouse button. The arrow length will match an object's minimum/maximum speed within one second.

3.2 Use the arrow keys to set the minimum/maximum speed of an object in meters per second (Fig. 7.3—77).The size of the arrow in the tile will change accordingly.

Fig. 7.3—77 Setting the minimum speed of a moving object

This will set the minimum/maximum speed of a moving object.

7.3.6.6.2 The path of an object crossing a virtual line

You can specify one or more parameters to detect crossing of a virtual test by the object's path (Fig. 7.3—78):

1. Minimum size of a moving object
2. Maximum size of a moving object
3. Moving object's color
4. Direction of an object's motion
5. Minimum speed of an object
6. Maximum speed of an object

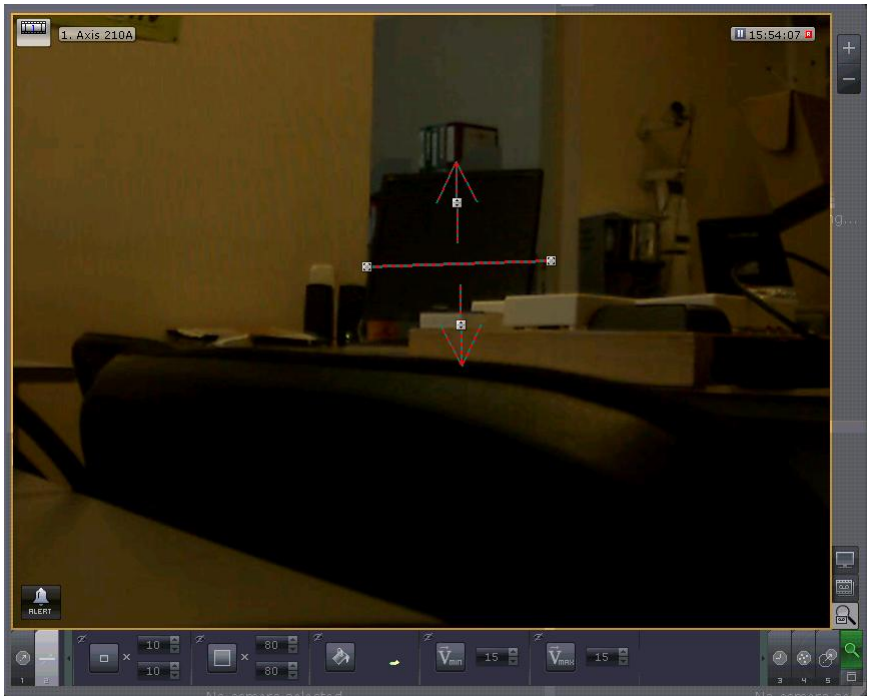


Fig. 7.3—78 Parameters for an object crossing a virtual line

The procedures for setting up virtual line crossing detection for an object's trajectory are similar to those described in the section *Motion in an area.*

7.3.6.6.3 Loitering of an Object in an Area

You may specify one or more parameters to detect **Loitering of an Object in an Area** (Fig. 7.3—79):

1. Minimum size of an object
2. Maximum size of an object
3. An object's color
4. The duration of time that an object remains in view (the search results will include video footage of when the object stays in the area longer than the specified time frame).

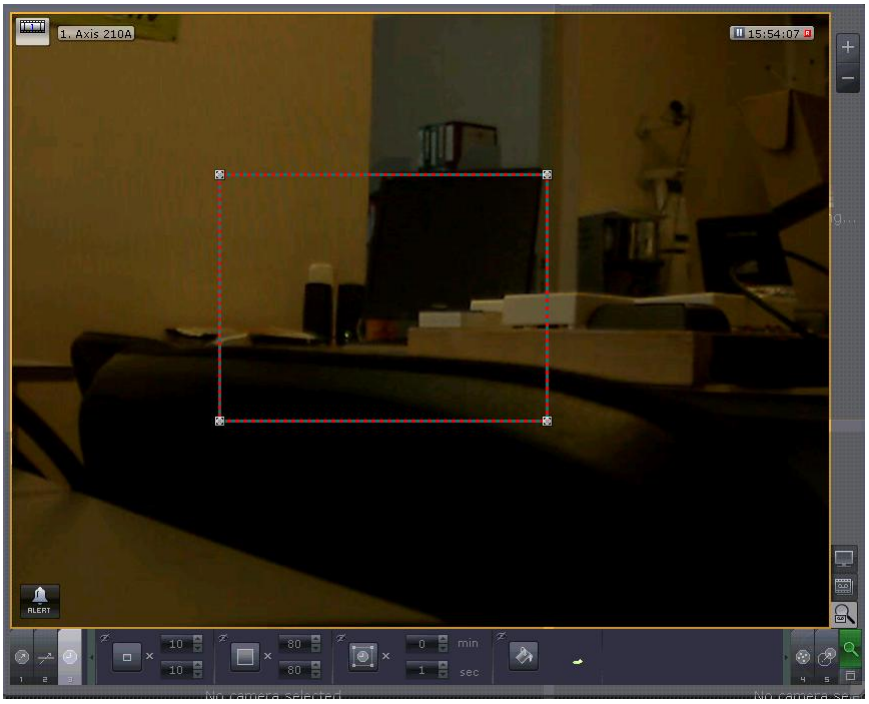


Fig. 7.3—79 Parameters for an object loitering in an area

The procedures for the first three parameters of **Loitering of an Object in an Area** are similar to those described in the section *Motion in an area*.

To set the duration for an object loitering in an area, you must complete the following steps:

1. Click the button  .
2. After this the fields will become active so that the minutes and seconds can be set for the amount of time that an object can stay in an area undetected (Fig. 7.3—80). The values can be set using the arrows  .

Fig. 7.3—80 Setting the length of time that an object can remain in an area

This procedure will set the time frame that an object can remain in an area.

7.3.6.6.4 The Simultaneous Presence of a Large Number of Objects in an Area

In order to configure **The Simultaneous Presence of a Large Number of Objects in an Area**, one or more parameters can be applied (Fig. 7.3—81):

1. Minimum size of an object
2. Maximum size of an object
3. An object's color

4. The minimum number of objects (the search results will include video footage where the number of objects in an area exceed the specified amount).

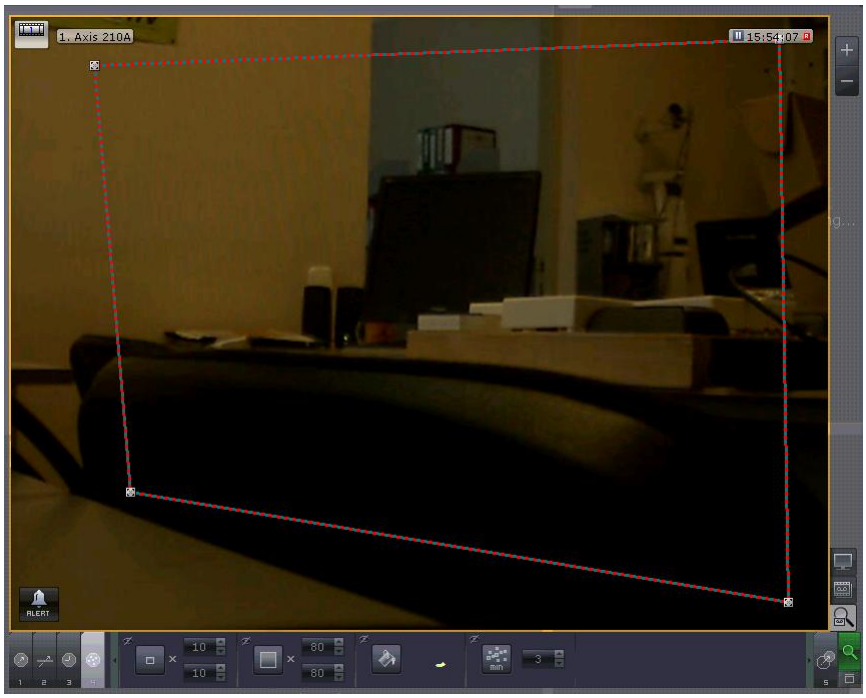


Fig. 7.3—81 Parameters for objects present in an area at a time

The procedures for setting up the first three parameters in **The Simultaneous Presence of a Large Number of Objects in an Area** are similar to those described in the section *Motion in an area.*

Complete the following steps to set the maximum number of objects in an area:

1. Click the button  .
2. The field will become active, allowing the maximum number of objects in an area to be set (Fig. 7.3—82). The values are set by using the arrow keys  .

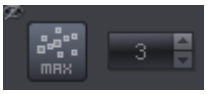


Fig. 7.3—82 Setting the maximum number of objects in an area

This will set the minimum number of object present in an area.

7.3.6.6.5 Motion from One Area to Another

Motion from One Area to Another One or more parameters can be set to configure the **Motion from One Area to Another** criteria (Fig. 7.3—83):

1. Minimum size of an object
2. Maximum size of an object
3. An object's color

4. Minimum speed of an object

5. Maximum speed of an object

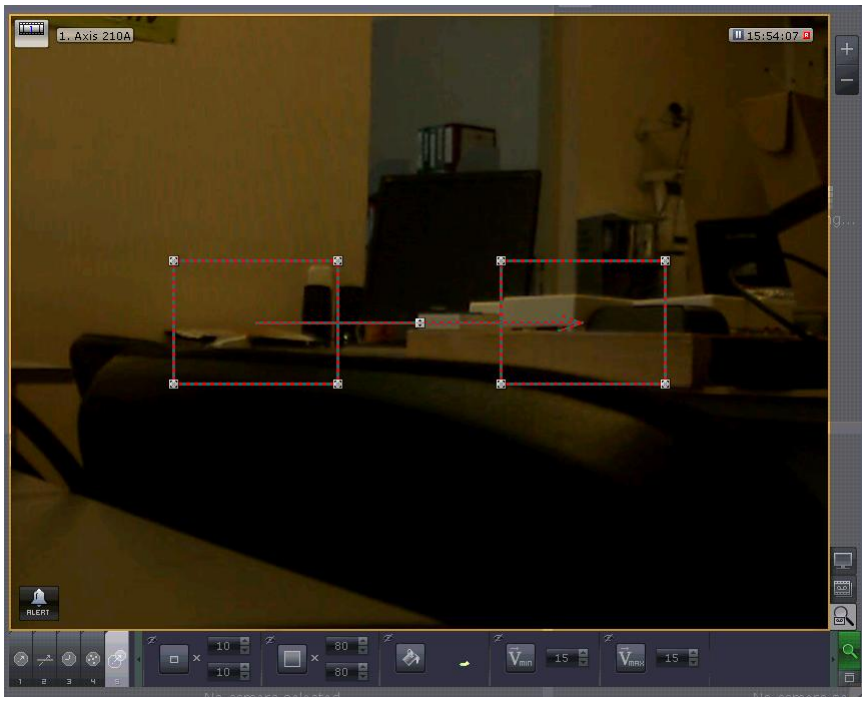


Fig. 7.3—83 Criteria for objects moving from one area to another

The procedures for configuring **Movement from One Area to Another** are similar to those described in the section *Motion in an area*.

7.3.6.7 *Setting the Duration*

Forensic Search is completed for the time period that is displayed on the timeline. The *Navigating Using the Timeline* section describes how to scroll and zoom through the timeline.

7.3.6.8 *Launching the Forensic Search and Viewing Search Results*

To begin a search, click on the button  in the lower-right corner of the viewing tile while in the Forensic Search mode (Fig. 7.3—84).

Warning! The search will be performed for the time period shown on the timeline.

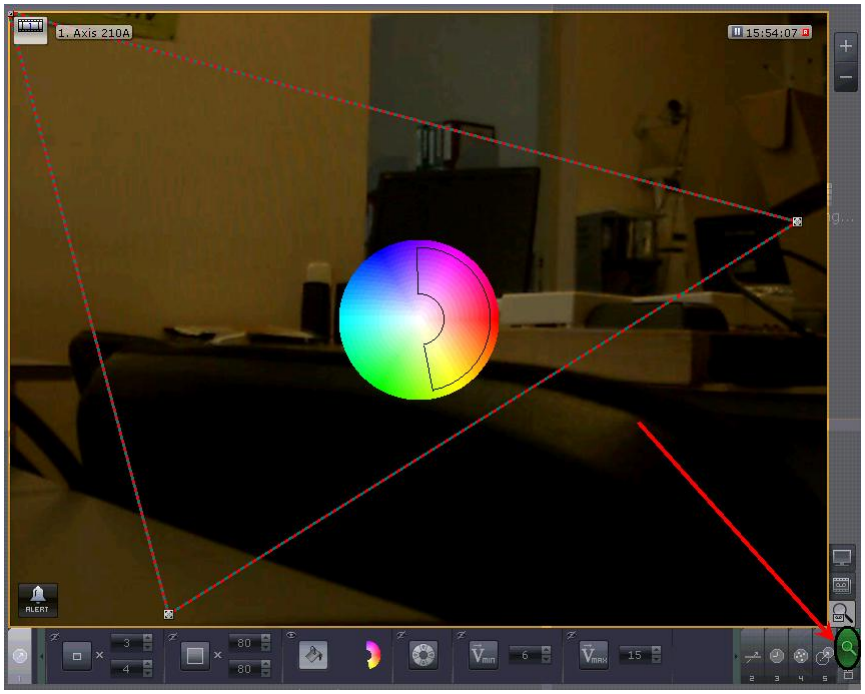


Fig. 7.3—84 Starting a search

Video footage that match your search query will be flagged on the timeline (Fig. 7.3—85).

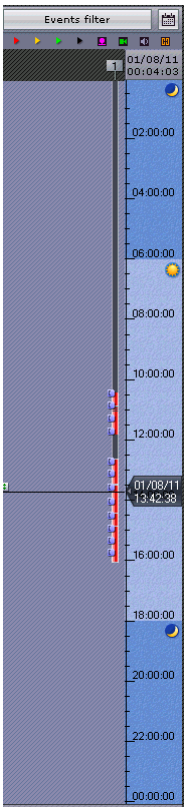


Fig. 7.3—85 Search results flagged on the timeline

Navigating through the videos found using the timeline can be done in a similar way as navigating through the archives (see the *Navigating Using the Timeline* section).

7.4 Audio Monitoring

7.4.1 General Information

Audio monitoring of a situation is carried out using the microphones corresponding to a video camera surveying the situation.

In different viewing tile modes, different audio monitoring functions are accessible:

1. Real time mode – listening to sound from a microphone in real time.
2. Archive and alert modes – playback of sound recorded from a microphone.

7.4.2 Audio Monitoring in Real Time Mode

In real time mode it is possible to simultaneously conduct video surveillance using a video camera and listen to sound from a microphone corresponding to that camera.

NOTE 1. You can listen to sound only from a microphone corresponding to the currently selected camera.

NOTE 2. If a microphone corresponds to a video camera, its object is a child of the camera's object.

To select a microphone from which to listen to sound, you must perform the following steps:

1. Switch the viewing tile to real time mode (see the section titled *Switching to Real-Time Video Surveillance Mode*).
2. Bring up the context menu in the viewing tile (Fig. 7.4—1, 1).

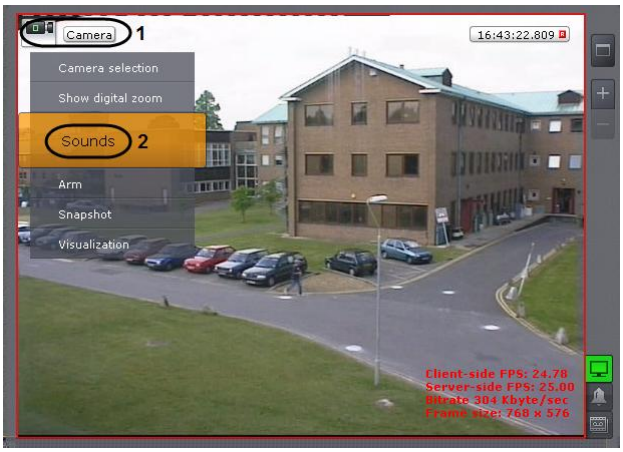


Fig. 7.4—1 Viewing tile context menu

3. Select **Sound** (see Fig. 7.4—1, 2).
4. Select the desired microphone in the displayed list (Fig. 7.4—2).

NOTE. Only microphones corresponding to the camera which is conducting video surveillance are displayed in the list.

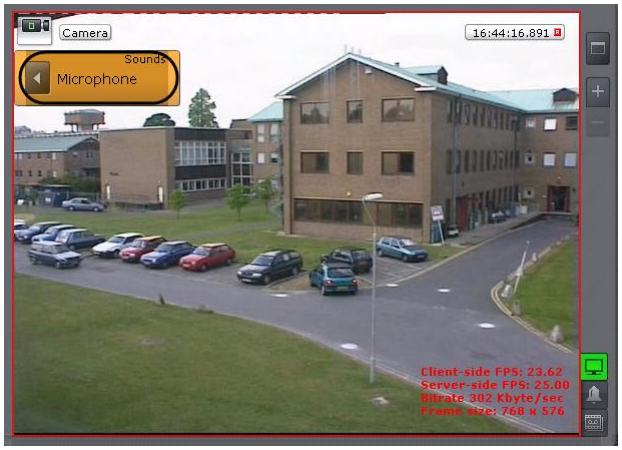


Fig. 7.4—2 Selecting a microphone for listening to sound

*NOTE. If the microphone is already being listened to via Axxon Smart, its name is marked as **On** (Fig. 7.4—3).*

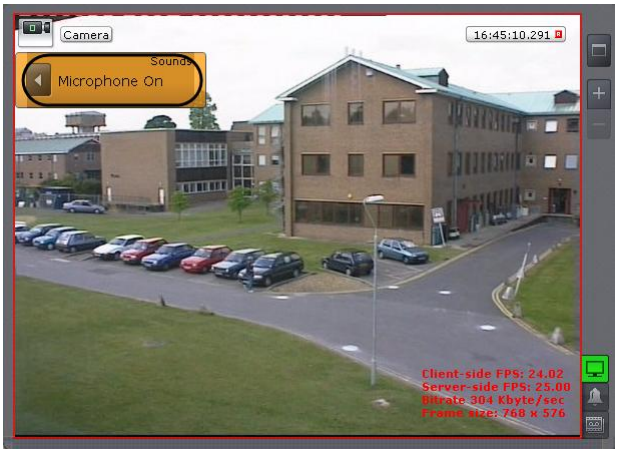


Fig. 7.4—3 Listening indicator

Selecting a microphone for listening is now complete.

After microphone selection, the sound from the microphone will be automatically listened to on the client.

7.4.3 Audio Monitoring in Archive and Alert Modes

In archive and alert modes it is possible to simultaneously play back synchronized video and audio recordings. An audio recording can only be played back from a microphone corresponding to the currently selected video camera, and only in forward playback mode at 1X speed.

Selecting a microphone for audio playback in archive and alert modes is carried out in the same way as for listening to sound in real time mode (Fig. 7.4—4).

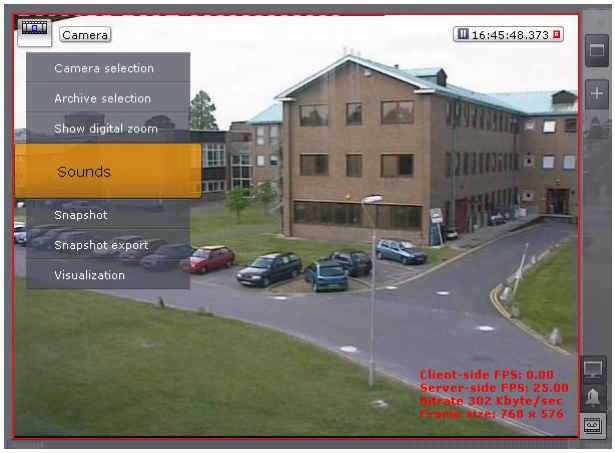


Fig. 7.4—4 Selecting a microphone for playing an audio recording

You can control the synchronous playback of audio and video recordings with the instruments of the currently active viewing tile mode (see the sections titled *Navigating Using the Playback Panel* for archive mode and *Alert Playback* for alert mode).

7.5 Exporting Frames and Video Recordings

7.5.1 Exporting frames

Export of frames is accessible in all viewing tile modes.

To export a video image frame, you must perform the following steps:

1. Enable the **Snapshot** function (see the section titled *Employing the Snapshot function*).
2. Bring up the context menu in the viewing tile (Fig. 7.5—1, 1).
3. Select **Export snapshot** (Fig. 7.5—1, 2).

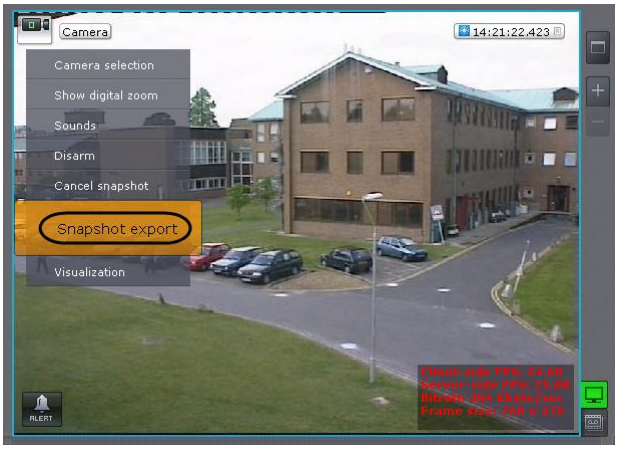


Fig. 7.5—1 Snapshot export

4. The snapshot will then be saved in .JPG format in the directory specified in the export settings (see the section titled *Configuring Export*).

Export of the frame is now complete.

7.5.2 Exporting Video Recordings

Export of video recordings is accessible in the archive viewing tile mode.

To export a video recording (fragment), you must perform the following steps:

1. Switch to archive mode (see the section titled *Switching to Archive Mode*).
2. Right-click on the position on the timeline corresponding to one end of the video fragment you wish to export, and, holding the button down, highlight the fragment on the timeline (Fig. 7.5—2).

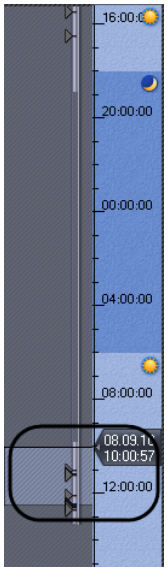


Fig. 7.5—2 Highlighting a fragment for export

5. Bring up the context menu in the viewing tile (Fig. 7.5—3, 1).

Fig. 7.5—3 Launching export

3. Select **Export video** (see Fig. 7.5—3, 2).
4. The highlighted recording fragment will then be saved in .avi format in the directory specified in the export settings (see the section titled *Configuring Export*).

Export of the video recording is now complete.

7.6 Event Control

Event control in the Axxon Smart software package can be conducted in three ways:

1. In real time mode.
2. Using the system journal.
3. By logging events in an external journal.

NOTE. Configuration of logging in external journals is carried out through the journal management utility (see the section titled Journal Management Utility).

7.6.1 Control in Real Time Mode

Messages about system errors which have occurred are displayed in real time on a dynamic error panel. When there are no unaccepted errors, this panel is not displayed; when there are such errors, it is displayed in Axxon Smart's **Layouts** and **Alerts** tabs (Fig. 7.6—1).

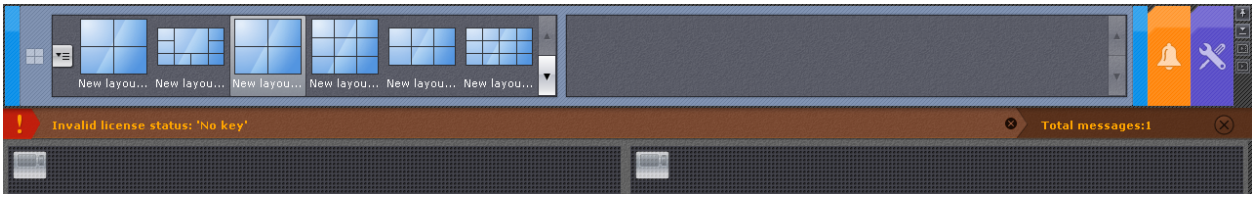
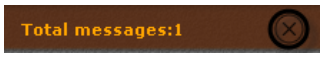


Fig. 7.6—1 The error panel

*NOTE. This capability is configured in the **Settings** tab (see the section titled Configuring Display of Error Messages).*

To accept an error and delete it from the error pane, click the corresponding  button.

To accept all errors and close the error panel, click the 

button.

7.6.2 The System Journal

Information about events which have occurred in the system is stored in the system journal.

To access the system journal, select **Settings** ⇒ **System journal** (Fig. 7.6—2).

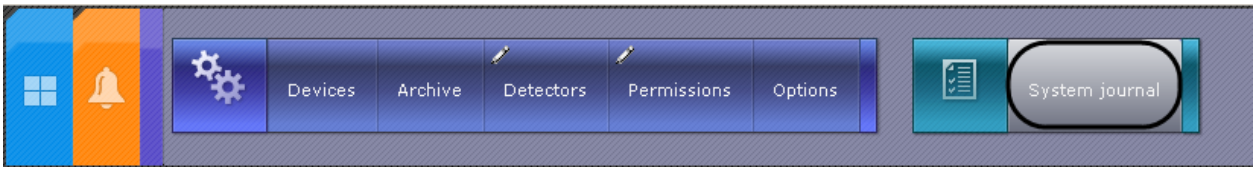


Fig. 7.6—2 Accessing the system journal

When you do this, a window appears which can be used to search, view, and export system journal events.

7.6.2.1 *Setting Event Search Filters*

To view and/or export system journal events, first you need to conduct a search for them.

To search for system journal events, you need to set one or more filters:

1. The time period during which the events were recorded.
2. The event type:
    2.1. Information
    2.2. Alert

2.3. Error
2.4. Debug

3. A key phrase contained in the system event descriptions.

NOTE. The time period is a mandatory filter, while the event type and key phrase are optional ones.

Search filters can be set as follows:

1. In the **To** and **From** fields (Fig. 7.6—3, 1) you can enter the date and time of the beginning and end of the period during which the events you are searching for were recorded.

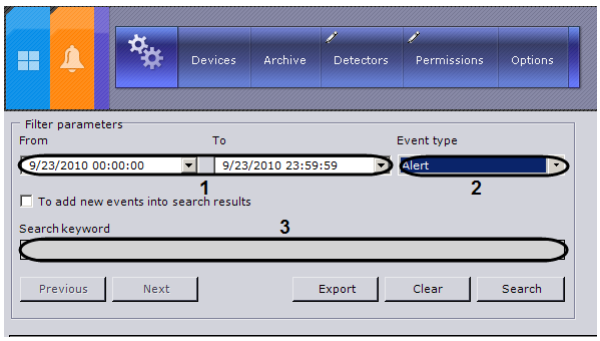


Fig. 7.6—3 Setting event search filters

NOTE 1. The date and time must be entered in the format DD.MM.YYYY HH.MM.SS.

NOTE 2. By default, the event search period is defined as the past 24 hours.

2. From the **Event type** list (see Fig. 7.6—3, 2), select the event type to be searched for. To search for all event types, you should select the empty line.
3. In the **Search keyword** field (see Fig. 7.6—3, 3), enter a key phrase contained in the system description of the events to be searched for.

The event search filters have been set.

Next you must start the event search (see the section titled *Event Search Procedure*).

7.6.2.2 *Event Search Procedure*

To start a search for system log events which satisfy the filters which have been set (see the section titled *Setting Event Search Filters*), you must click the **Search** button (Fig. 7.6—4, 1).

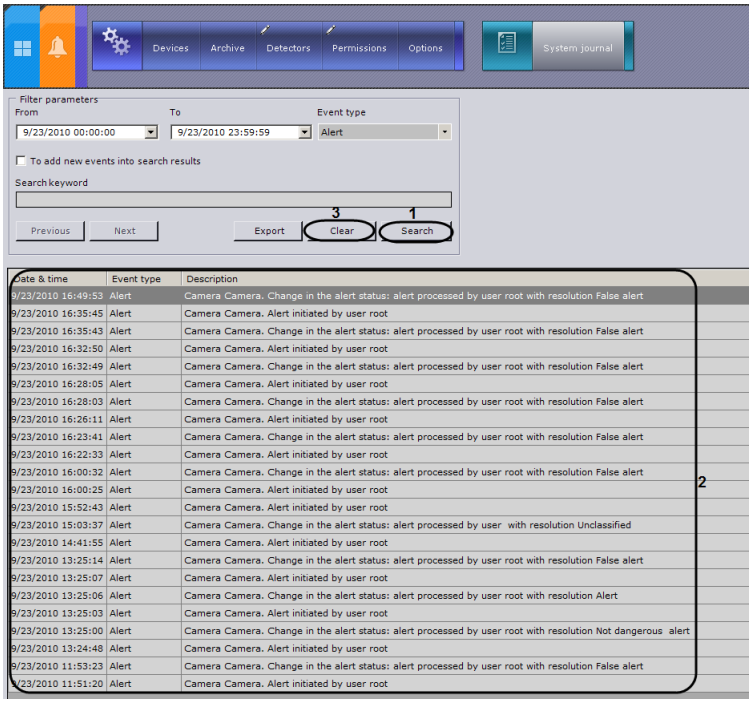


Fig. 7.6—4 Event search procedure

When you do this, a search results table appears (see Fig. 7.6—4, 2).

To clear the event search filters (except the time period filter) and the results table, click the **Clear** button (see Fig. 7.6—4, 3).

7.6.2.3 *Refreshing Event Search Results*

You can automatically refresh the event search results table, i.e., add events to it which happened after the search was started (see the section titled *Event Search Procedure*). To do this, select the **Add new events to the search results** check box (Fig. 7.6—5).

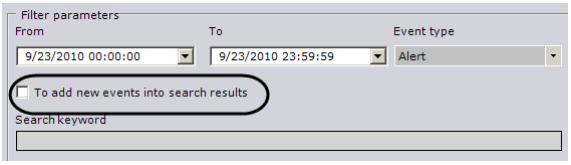


Fig. 7.6—5 Refreshing event search results

7.6.2.4 *Viewing Event Search Results*

System journal event search results are displayed in a table (Fig. 7.6—6, 1, Table 7.6—1).

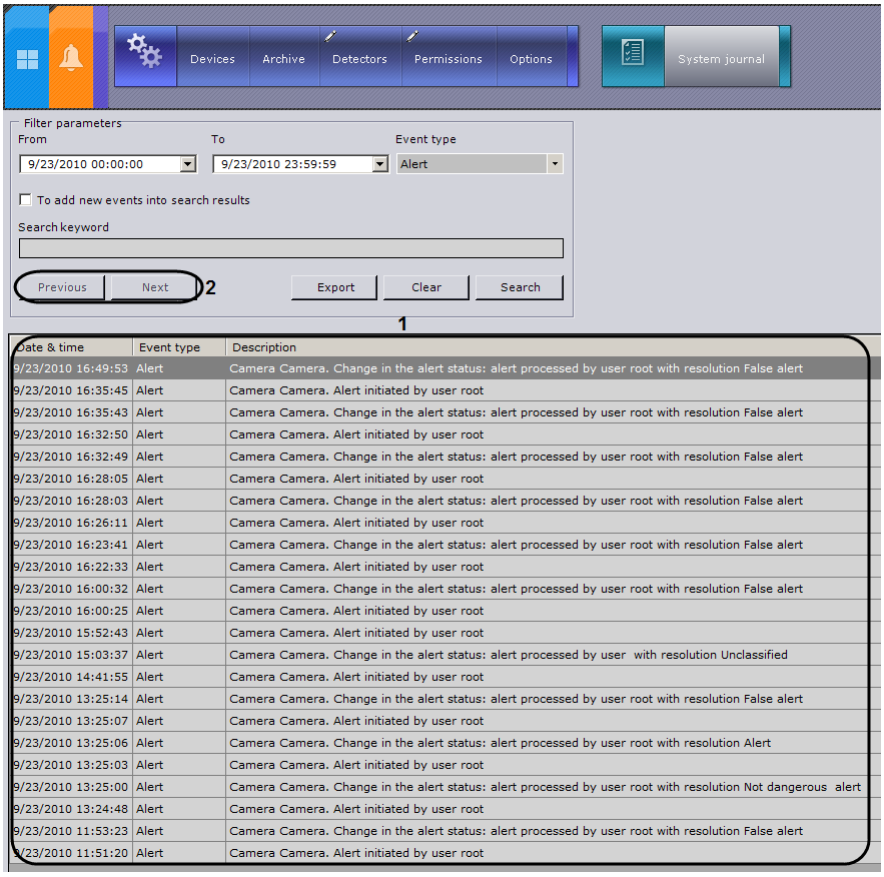


Fig. 7.6—6 Viewing event search results

Table 7.6—1 The system journal event search results table

Table column	Contents of column
Date & time	Date and time the event was recorded in the system in the format DD.MM.YYYY HH.MM.SS
Event type	Event type (information, alert, debug, error)
Description	System description of the event

The search results table may be more than one page. To navigate through a table which is more than one page, use the following buttons (see Fig. 7.6—6, 2):

1. **Previous**. Goes back to the previous page of the table.
2. **Next**. Goes to the next page of the table.

7.6.2.5 *Exporting Event Search Results*

To export the system log event search results, click the **Export** button (Fig. 7.6—7).

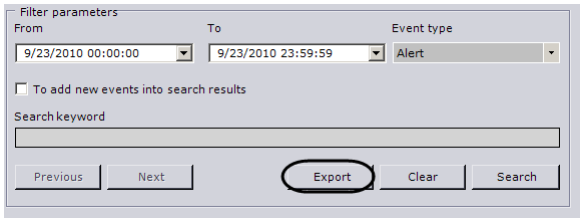
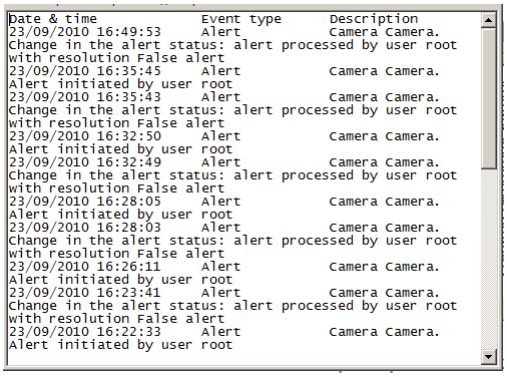


Fig. 7.6—7 Exporting event search results

When you do this, the standard Windows OS **Save As** dialog box appears, using which you can save the search results as a .txt (text) (Fig. 7.6—8) or .csv (character-separated) file.



```
Date & time             Event type      Description
23/09/2010 16:49:53     Alert           Camera Camera.
Change in the alert status: alert processed by user root
with resolution False alert
23/09/2010 16:35:45     Alert           Camera Camera.
Alert initiated by user root
23/09/2010 16:35:43     Alert           Camera Camera.
Change in the alert status: alert processed by user root
with resolution False alert
23/09/2010 16:32:50     Alert           Camera Camera.
Alert initiated by user root
23/09/2010 16:32:49     Alert           Camera Camera.
Change in the alert status: alert processed by user root
with resolution False alert
23/09/2010 16:28:05     Alert           Camera Camera.
Alert initiated by user root
23/09/2010 16:28:03     Alert           Camera Camera.
Change in the alert status: alert processed by user root
with resolution False alert
23/09/2010 16:26:11     Alert           Camera Camera.
Alert initiated by user root
23/09/2010 16:23:41     Alert           Camera Camera.
Change in the alert status: alert processed by user root
with resolution False alert
23/09/2010 16:22:33     Alert           Camera Camera.
Alert initiated by user root
```

Fig. 7.6—8 Example of a text file with event search results

8 Description of Utilities

8.1 The Collection of System Information Utility

8.1.1 Purpose of the Support.exe Utility

The Support.exe utility is design to collect information about the configuration and operating status of hardware, the Windows operating system, and the Axxon Smart software. The utility generates an archive that can be used by the company's technical support department. In case of system malfunction or errors in the Axxon Smart software package, send out an email with the archive generated by the Support.exe utility attached.

8.1.2 Launching and Closing the Utility

The Support.exe utility is launched using the **Start** menu, which is used to launch user programs in Windows. Go to **Start** ⇒ **All Programs** ⇒ **Axxon Smart** ⇒ **Utilities** ⇒ **Collection of system information**.

The Support.exe utility dialog box will then be displayed (Fig. 8.1—1).

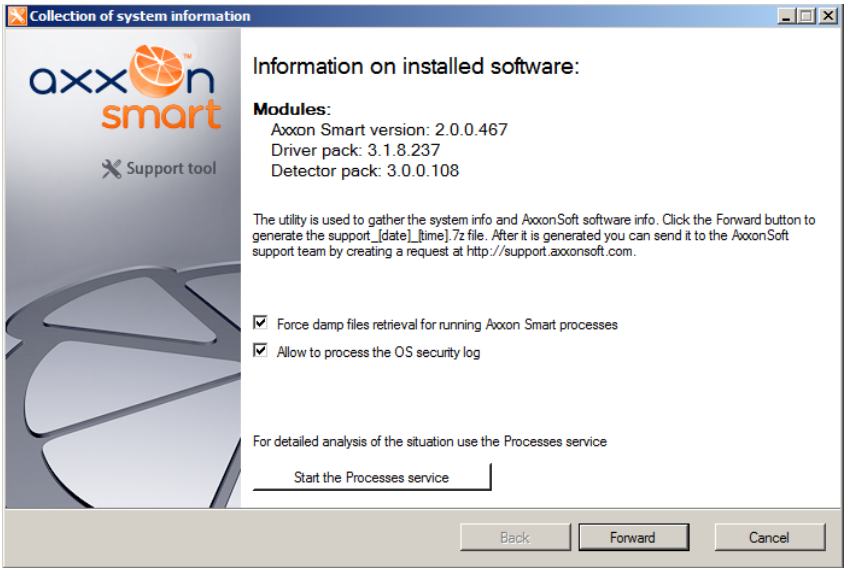


Fig. 8.1—1 Support.exe utility dialog box

To close the Support.exe utility, click the button or **Cancel**.

8.1.3 Description of the Support.exe Utility Interface

The Support.exe utility's user interface includes the following elements:

1. Brief information about the installed software (Fig. 8.1—2, 1).
2. Brief instructions on how to use the Support.exe utility (Fig. 8.1—2, 2).
3. Check boxes for information collection settings (Fig. 8.1—2, 3).
4. A button for starting the **Processes** service, which is used for detailed analysis of a situation (Fig. 8.1—2, 4).
5. A button which launches information collection (Fig. 8.1—2, 5).

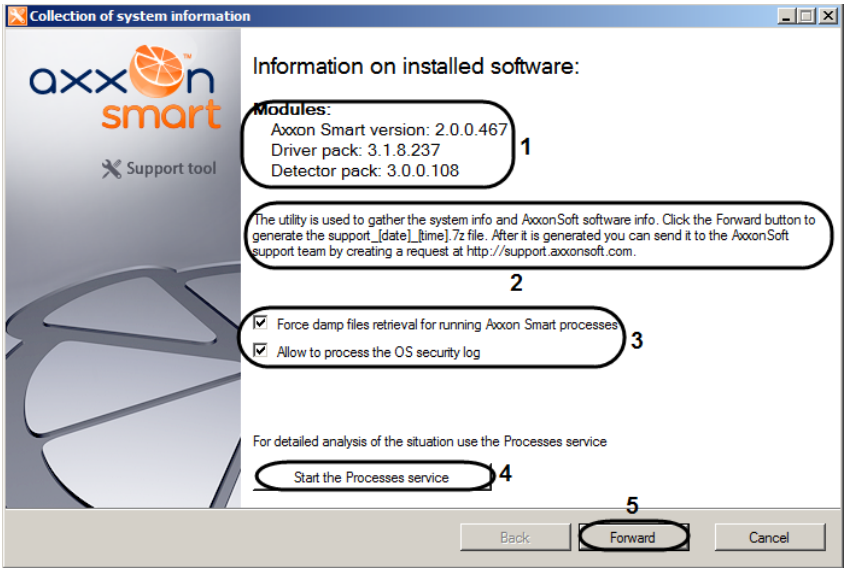


Fig. 8.1—2 Support.exe utility interface

8.1.4 The Processes Service

The **Processes** service is used for detailed analysis of a situation. To launch it, click the **Start the Processes service** button; the **Processes** window will then appear displaying information about processes running on the computer initiated by the Support.exe utility (Fig. 8.1—3).

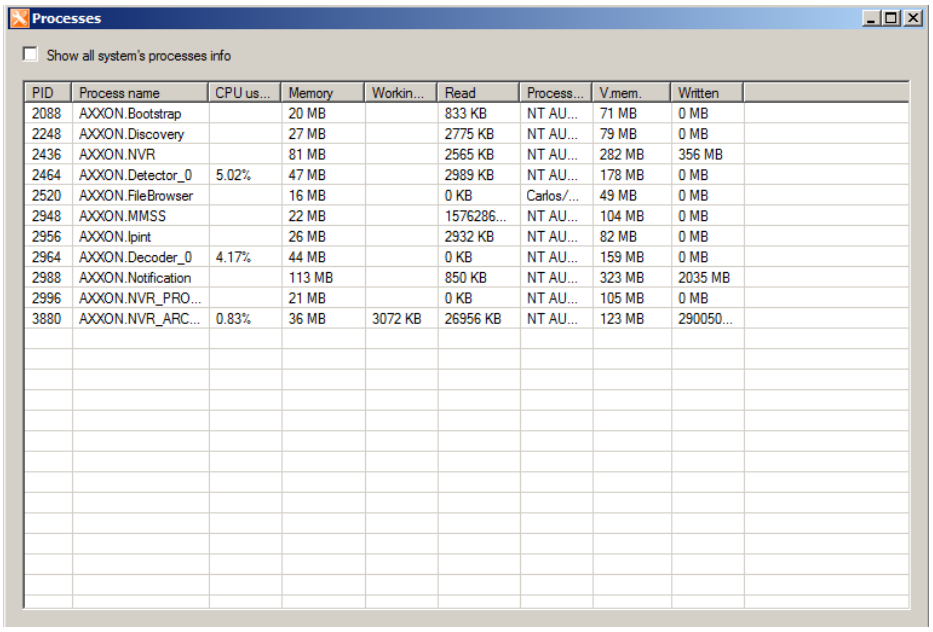


Fig. 8.1—3 The operation of the Processes service

*NOTE. Selecting the **Show all system processes info** check box enables viewing of all processes running on the computer (Fig. 8.1—4).*

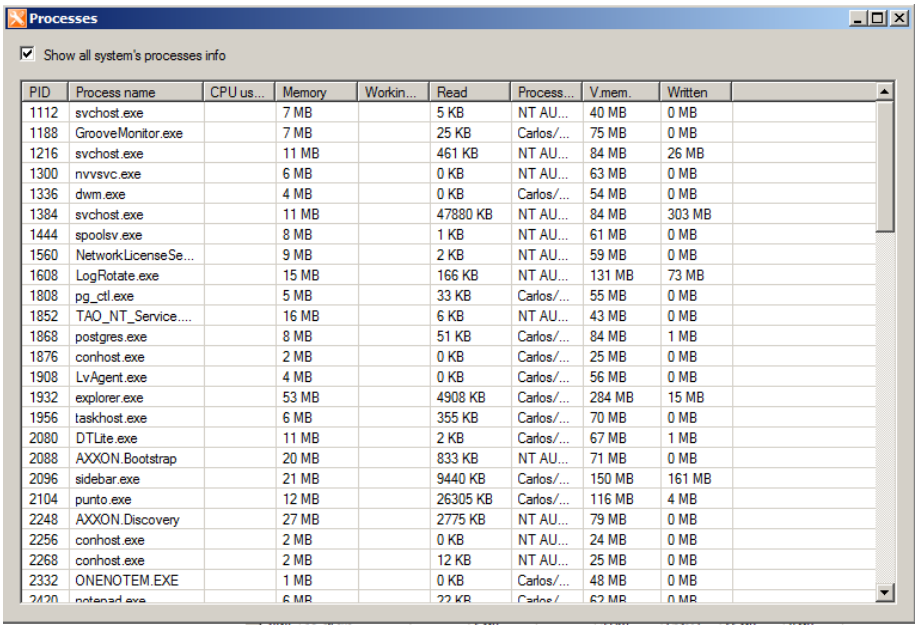


Fig. 8.1—4 A list of all processes running on the computer

To close the **Processes** window, click the button.

8.1.5 Collecting Data on the Configuration of Servers and Clients Using the Support.exe Utility

To collect data using the Support.exe utility, perform the following:

1. Launch the Support.exe utility (see «Launching and Closing the Utility»).

2. Configure collection of system information by selecting the appropriate check boxes (Fig. 8.1—5, 1).

*NOTE. Selecting the **Allow to process the OS logs** option allows information on the Windows security system to be included in the report generated by the utility.*

3. Click the **Next** button (Fig. 8.1—5, 2).

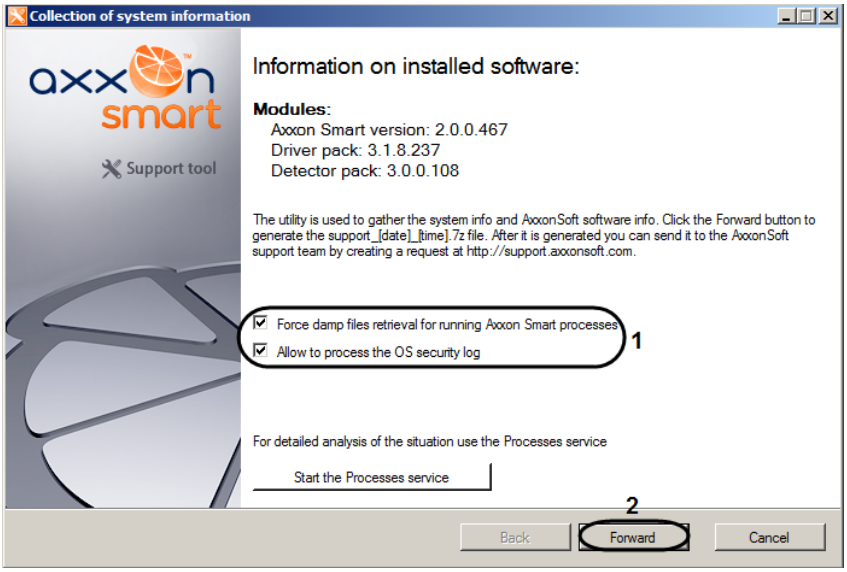


Fig. 8.1—5 Configuring and launching collection of system information

Collection of information about the system will then be launched (Fig. 8.1—6). The table that displays the progress of data collection includes two columns: **Step** and **Status**. In the **Step** column, a brief description of the stage of information collection is displayed. In the **Status** column, a progress indicator and the time spent on executing the stage are displayed.

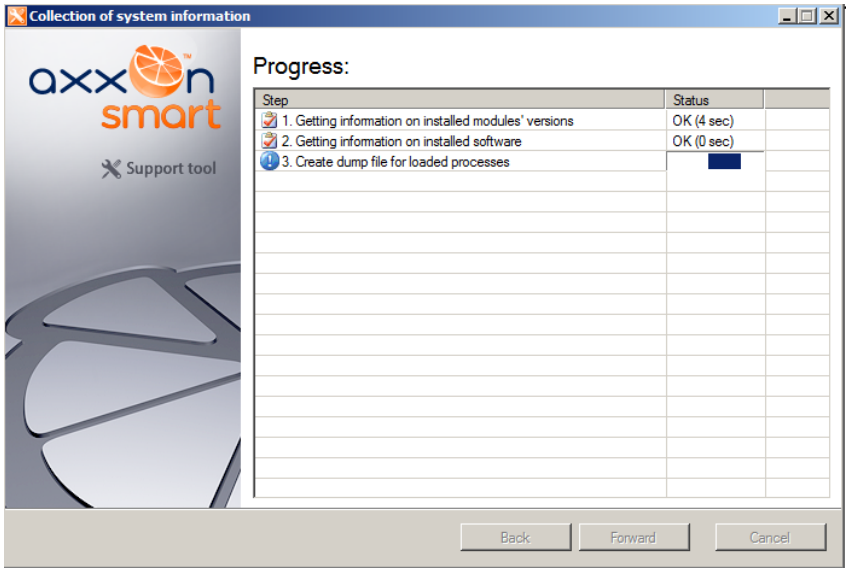


Fig. 8.1—6 Collection of system information

4. When collection of information is complete, click the **Next** button (Fig. 8.1—7).

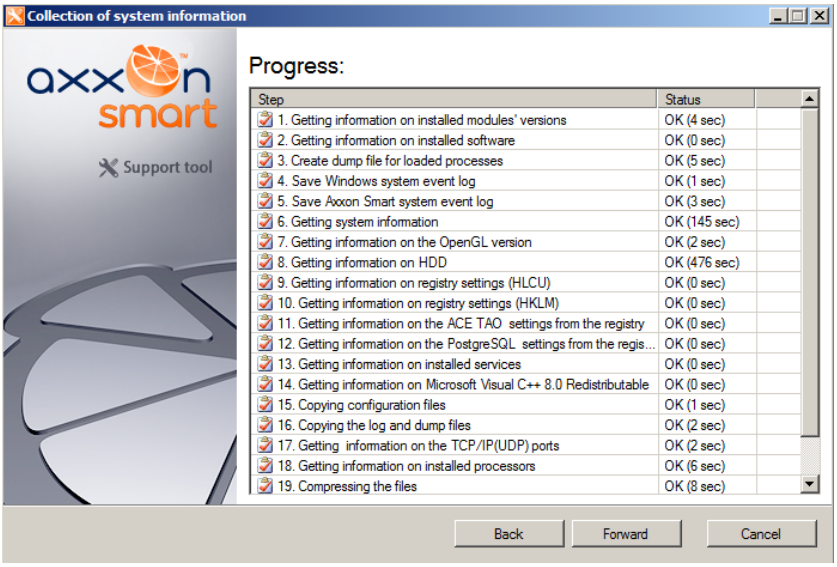


Fig. 8.1—7 Completion of information collection

5. A window containing information about the generated archive **support_[date]_[time].7z** will then appear. You can access the folder containing this archive by clicking the **Open directory with file** button (Fig. 8.1—8).

NOTE. The archive is located in the folder ***<Directory where Axxon Smart is installed>\AxxonSmart\Support****.*

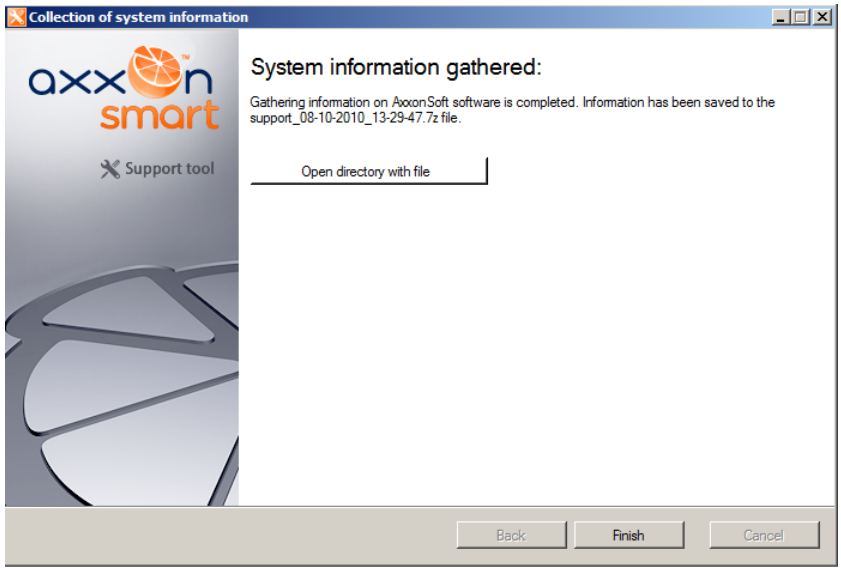


Fig. 8.1—8 Accessing the support_[date]_[time].7z archive

6. Send an email to the AxxonSoft Company's technical support department with the **support_[date]_[time].7z** archive attached.

8.2 Journal Management Utility

By default, information about all system events is recorded in the Axxon Smart system journal, which is stored in a local database of the server. It is possible to record information about desired events in external journals, which are log files stored in local directories of a server (Table 8.2—1). Journal data is

archived at set intervals and moved to the journal archive. Configuration of these capabilities is carried out through the journal management utility.

Table 8.2—1 Journal storage directories

Axxon Smart component	Journal storage directory
Server	<Directory where Axxon Smart is installed>\logs
Client	<Letter of system disk>:\Users\<User>\Appdata\Local\AxxonSoft\AxxonSmart\logs

The journal management utility is used to configure the following parameters:

1. Parameters for the archive of external journals containing information about events which occurred in the system.
2. Journaling levels for the Axxon Smart client and server.

8.2.1 Launching and Closing the Utility

The journal management utility can be launched using the **Start** menu, which is intended for launching user programs in Windows. **Start** ⇒ **Programs** ⇒ **Axxon Smart** ⇒ **Utilities** ⇒ **Journal management**.

The journal management utility dialog box will then appear (Fig. 8.2—1).

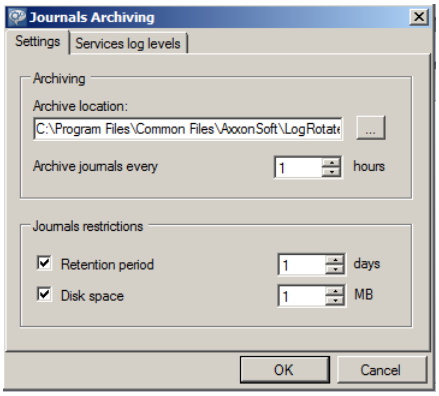


Fig. 8.2—1 The journal management utility

To close the journal management utility, click **Cancel** or ✕ (accessible on both utility tabs) (see Fig. 8.2—1).

8.2.2 Configuring a Journal Archive

Configuring a journal archive is carried out in the Settings tab of the journal management utility.

To configure a journal archive, you must perform the following steps:

1. In the **Archive location** field (Fig. 8.2—2, 1), enter the complete path to the directory to which the event journals should be moved after archiving.

NOTE. To set the path using standard Windows OS tools, use the ... button.

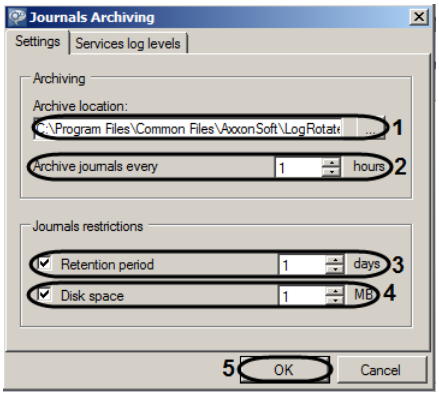


Fig. 8.2—2 Journal archive parameters

2. In the **Archive journals every...hours** field (Fig. 8.2—2, 1), enter the event journal archiving interval in hours.
3. In the **Journal restrictions** group, set the following parameters:
    3.1. In the **Retention period** field (see Fig. 8.2—2, 3), indicate the maximum retention time in days of a journal in the archive, after which the journal is deleted.
    3.2. In the **Disk space** field (see Fig. 8.2—2, 4), indicate the maximum size of the archive, above which the oldest journals are deleted from the archive.

NOTE 1. Archive disk space restrictions take priority over journal retention time restrictions. For example, the oldest journals will be automatically deleted even if their retention time has not expired if the archive size has exceeded the maximum value.

*NOTE 2. If you do not need to enter restrictions on journal retention time and/or archive size, deselect the corresponding check boxes in the **Journal restrictions** group (see Fig. 8.2—2, 3-4).*

4. Click the **OK** button (see Fig. 8.2—2, 5) to save changes.

Configuration of the journal archive is now complete.

8.2.3 Configuring Journaling Levels

Journaling levels differ in the list of events to be recorded in external journals, as well as the level of event specification (low, high, medium). Configuration of levels is carried out in the **Journaling levels** tab of the journal management utility.

To configure the journaling level, you must perform the following steps:

1. Select the desired journaling level of the client (Axxon Smart Client) and the server (Axxon Smart Server) (Fig. 8.2—3, 1, Table 8.2—2).

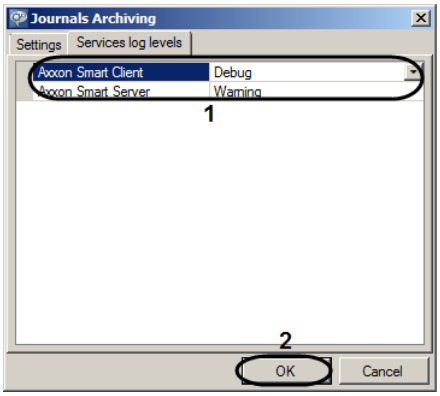


Fig. 8.2—3 Configuring journaling levels

Table 8.2—2 Journaling level descriptions

Journaling level	Journaling level description
None	Event journaling disabled
Error	Low specification level – only system errors are logged
Warning	Low specification level – only system warnings are logged
Info	Low specification level – only information messages are logged
Debug	Medium specification level – system errors and warnings are logged
Trace	High specification level – all system events are logged

2. Click the **OK** button (see Fig. 8.2—3, 2) to save changes.

Configuration of journaling levels is complete.

9 Appendices

Appendix 1. Glossary

Abandoned object detector – a detector triggered when an object remains motionless in a detection zone for a prolonged period.

Active viewing tile - the viewing tile currently in use by the user.

Alert flag – the moment in time before the beginning of an alert from which playback of the archive on an alert begins after the alert is accepted for handling.

Analytics subsystem – all the tools that provide for automatic analysis of incoming video and audio data.

Archive – all video files stored on a hard disk which are available for playback and export to supported formats.

Archive navigation panel – all interface objects used to work with an archive, e.g., the timeline, the alerts list, etc.

Audio detector – a detector used to analyze the audio signal from a microphone.

Audio recording – 1. the process of recording a digitized audio signal on a hard disk.
2. audio data stored in a specific format on a hard disk.

Audio signal detector – a detector which is triggered by an increase in the signal/noise ratio above a set level.

Audio subsystem – all the tools that provide for the collection of audio data, its processing, and its storage on media.

AWS (automated workstation) – security system user workstation, a minimally equipped personal computer with Axxon Smart software installed.

Camera – 1. the source of a video signal.
2. a system object displaying the properties of an installed video camera and controlling its operation.

Client – designation for a personal computer on which the client configuration of Axxon Smart software is installed (or will be installed).

Color coding – software-based graphical notification to a security system operator about the current status or operating mode of system objects (equipment, software modules).

Control panel – a panel made up of user-accessible tabs, used to navigate from one group of interface objects to another.

Default archive of a video camera – the archive to which images from a given video camera are recorded during user-initiated alerts.

Detection mask – 1. an area of a video image not processed by a detector.
2. a tool which allows the user to mark out an area of the video image which is not to be processed by a detector.

Detection zone – the area of a video image processed by a detector.

Dialer panel – a panel (part of the PTZ control panel) used to dial a preset number.

Distributed system – a group consisting of several interacting Axxon Smart servers (up to 4) and clients (unlimited). The Axxon Smart servers are linked within a domain.

Domain – a selected group of computers on which the server configuration of the Axxon Smart software package is installed. Linking the servers in a group makes it possible to set up interaction between them, thus organizing a distributed system.

Event registration subsystem – all the tools that provide for the collection of data about system events, its processing, and its storage on media.

Interface cable – a cable used to connect two or more devices together for data transfer.

Interface object – a system object used for interaction between the user and the software (data input/output).

Layout – a saved arrangement of viewing tiles relative to each other.

Layouts ribbon – a panel containing tools to create, edit, and manage layouts.

Licensing – regulation (setting forth the terms) of the usage of AxxonSoft software modules.

Line crossing detector – a detector which is triggered when the trajectory of an object crosses a virtual line in a video camera's field of view.

Loss of quality detector – a detector which is triggered by a loss of quality in the video image from a camera.

Microphone – 1. a source of audio signals.
2. a system object used to manage the parameters of audio signal reception.

Noise detector – a detector which is triggered by an decrease in the signal/noise ratio below a set level.

No signal detector – a detector which is triggered by the absence of an audio signal from an audio device.

Notification subsystem – all the tools that provide for notification of the user about events which have occurred in the system.

Object appearance detector – a detector triggered by the appearance of an object in a set area of a video camera's field of view.

Object disappearance detector – a detector triggered by the disappearance of an object in a set area of a video camera's field of view.

Object tracking – a function which allows an operator to visually track the movement of objects in a camera's field of view.

Playback control panel – a panel containing buttons to control playback of video recordings: **Play**, **Pause**, **Go to next video recording**, etc.

Position change detector – a detector triggered by a substantial change in the background of a video image indicating a change in the position of the camera in space.

Pre-event recording – a period of pre-event recording that will be added to the beginning of an alert event recording.

Preset – the preprogrammed positioning of a PTZ device.

PTZ control panel – all interface objects used to control a selected PTZ device.

PTZ device – a system object displaying the properties of an installed PTZ camera device.

NOTE. Also used to designate a physical device.

PTZ subsystem – all the tools that provide for remote control of a PTZ device and the lens of a video camera.

Relay – a system object displaying the properties of an installed relay.

Security system – a set of devices used for video surveillance, audio surveillance, and object recognition, all controlled by the Axxon Smart software system.

Sensor – a system object displaying the properties of an installed sensor.

Sensor and relay subsystem – all the tools that provide for the automatic triggering of an execution device connected to the embedded relay port of a video camera or IP server when a detector (including one which processes the embedded sensor of a video camera or IP server) is triggered.

Server – designation for a personal computer on which the server configuration of Axxon Smart software is installed (or will be installed).

Situation analysis detector – a detector used to analyze the situation in a camera's field of view according to set criteria.

Slideshow – automatic switching of user layouts, or of viewing tiles if working with standard layouts.

Software package – all AxxonSoft software and hardware tools used together to build a security system.

Software module – a program or functionally complete component of a program used to perform a specific functional task (perform a user function).

Stopping detector – a detector triggered by the cessation of motion in a set area of a video camera's field of view.

System journal – a journal containing system information on events which have occurred, including records of system errors.

Timeline – an interface object used to search for video recordings in an archive.

Video detector – a detector used to analyze the video image from a video camera.

Video recording – 1. the process of recording a digitized video signal on a hard disk.
2. video data stored in a specific format on a hard disk.

Video subsystem – all the tools that provide for the collection of video data, its processing, and its storage on media.

Video surveillance monitor – an interface object used to manage the user interfaces of the Axxon Smart software, e.g. layouts, viewing tiles, various panels and context menus, etc.

Viewing tile – an interface object displaying the video stream coming from a specific video camera and enabling control of that video camera.