AxxonSoft

INTELLECT™ Software Package

Operator's Guide

Version 2.0.4

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axxon
Video Surveillance and Security Solutions

Contents

1 List of terms used

1. In the INTELLECT Operator's Manual the following terms are used.
2. System - video surveillance and audio monitoring digital system based on the INTELLECT ™software system.
3. Software - INTELLECT™ software system.
4. Screen – virtual object that displays various dialog boxes (monitors, audio players, PTZ control panels etc) that assist the Operator to work with the software.
5. Video surveillance monitor – interface window for displaying and controlling surveillance windows.
6. Surveillance window - interface window which displays the video image that comes from the surveillance camera. The surveillance window includes interface elements, used to control and display data messages.
7. Audio player – interface window containing elements that allow monitoring and recording the microphone audio signal.
8. Active archive – function module used to work with the backup archive.
9. Map – on-line graphical chart of the distributed system used to monitor and control external system devices (cameras, microphones, beams, relays).
10. Universal PTZ control panel – interface window used to control System PTZ units (e.g. surveillance camera equipped with PTZ and connected to the System).User's dialog box – interface window with user's set of control elements used to control various system devices and modules.
11. The alarm notification window – interface window used to inform the Operator of registered alarm and system events.
12. Event log – interface window used to display data on events, registered by System (with data event type filtration).
13. Object list – interface window used to control object status on Location Map.
14. Remote Workplace – computer with "Remote Monitoring Workplace" type of INTELLECT™ software.

2 Introduction

2.1 INTELLECT™ software function

INTELLECT™ software is designed to build industrial scalable and flexible (adaptable) integrated security systems based on video surveillance and audio monitoring digital systems.

INTELLECT™ software is to be used as a basic software environment with the following functionality:

1. Building video surveillance and audio monitoring digital systems and integration with joint data systems, various types of security equipment, auxiliary 3rd party application software via integrated OMI.
2. Compatibility with a wide range of security devices and data security systems, particularly fire alarms, access control, surveillance cameras, data systems for object (event) analysis, recognition and identification on video.
3. Central recording and processing of events, notification generating and various functions control on the base of flexible algorithms.
4. Exclusive scaling facilities, adaptation to actual task, resources used redistribution according to actual number and content of secured objects monitoring tasks.

2.2 General recommendations on Intellect™ software based security system applications

The following is recommended for correct application of Intellect™ software based security systems:

1. to follow duty instructions;
2. to use the system only for its intended purpose;
3. not to use 3rd party application software if it is not a software component on basic computers with INTELLECT™ software.

2.3 Personnel skills requirements

For correct Software application Operator shall meet qualifying requirement to Intellect™ software Operator.

3 General description of INTELLECT™ software

3.1 INTELLECT™ software functions

INTELLECT™ intelligent video surveillance system functions comprise of:

1. Automatic or manual software startup.
2. Multiple video camera images simultaneously displayed on a PC screen (multiple windows displayed on a single monitor and multiple monitors used on a single physical PC screen).
3. Priority-oriented displaying of active and alarm cameras video stream.
4. Flexible split screen configuration including the number of windows on the monitor.
5. Colour coding of the camera state in the window (“Armed”, “Alarm”, “Recording”).
6. Image burn-in option in surveillance Window: current time/date, camera ID and name.
7. Alarm notification displaying.
8. Image scaling.
9. Automatic or manual windows slide show.
10. Video recording can be performed:
    - 10.1. if an alarm event is detected;
    - 10.2. by Operator command;
    - 10.3. pre- and post-alarm event recording on alarm;
    - 10.4. pre-alarm event recording with post-alarm recording by Operator’s command.
11. Single video frames storage and exporting.
12. Freeze frame selection and viewing, without interruption of video recording.
13. Audio- and video-archives management.
14. Remote access to audiovisual streams from any workplace with both a local and remote archive recording option.
15. Viewing archive recordings with search and retrieve options with time, event type, camera ID criteria.
16. Synchro playback of footage recorded by several cameras.
17. Image processing options:

17.1. digital zooming;

17.2. image sharpening and contrast maximizing;

17.3. dynamic outlining of moving objects;

17.4. de-interlacing (removing image fluttering).

18. Access to all video servers' audiovisual streams from any workplace.

19. Web interface based surveillance.

20. End devices (PTZ) management via:

20.1. universal control panel (for all end devices);

20.2. specific control panel (for individual devices);

20.3. PC mouse;

20.4. joystick.

21. Subdividing of a secured virtual object.

22. Multilevel hierarchical object mapping:

22.1. automatic switching and recursive structural event analysis option;

22.2. graphical representation of active objects used on the map for system devices.

23. Use of various types of intelligent motion detectors:

23.1. Motion detector;

23.2. Face detector;

23.3. Lost items detector;

23.4. Focusing detector;

23.5. Video signal stability detector;

23.6. Background change detector;

23.7. Camera blinding detector;

23.8. Lens blocking detector;

23.9. Camera rotation detector;

23.10. Infrared detector.

24. Use of independent detector zones.

25. Detector masking.

26. Independent audio monitoring system:

    26.1. audio monitoring;

    26.2. audio and video synchro recording;

    26.3. audio recording switched on by Operator or by acoustic startup;

    26.4. exporting audio recorordings.

27. Central event recording and processing.

28. Security system services (restart service).

29. Auto notify via:

    29.1. Short Message Service (SMS);

    29.2. e-mail;

    29.3. Voice-message service;

    29.4. Voice notification service.

30. User's functions option (user's macro commands and scripts).

3.2 Specification of INTELLECT™ software

Key specifications of digital video surveillance systems based on INTELLECT™ software are listed in Table 3.2-1.

Table 3.2-1

Characteristic	Value
Maximum number of video grabber channels for signal processing in "real time" mode (25/30 frames per second (PAL/NTSC)) on a single video server	32 channels
Maximum number of video grabber channels for signal processing in multiplex mode (64 channels permit processing speed up to 8 frames per second) on single video server	64 channels
Maximum number of continuous video signals to be displayed simultaneously	4 video signals
Maximum number of signals from microphones or telephone lines to be processed simultaneously	64 audio signals
Maximum number of audio output channels (to loudspeakers, headphones etc).	Defined by soundcard used
Maximum number of PTZ units used	Up to 64 PTZ units

Characteristic	Value
Maximum number of remote workplaces that get video from a server	Limited by the size and characteristics of the transmitted video, surveillance system structure, net capacity
Maximum number of servers that transmit video to the same remote workplace simultaneously	Limited by the size and characteristics of the transmitted video, surveillance system structure, net capacity
Maximum number of images displayed on the remote workplace screen simultaneously	Limited by video characteristics and net capacity
Maximum size of video flux through a gateway	Limited by gateway hardware resources and net capacity
Supported grabber card types	FS-5, FS-6, FS-16, FS-8, WS-6, WS-7, WS-17
Supported graphic card types	Any graphic cards with a RAM size not less than 256 Mb not integrated into a PCI-E motherboard
Supported soundcard types	Standard soundcards, MidiMan Delta, Comart Hera, Эхолот USB (8, 32 etc), Ольха 9P
Supported digitization frequency range	Defined by soundcard used facility, software constraints: 0 – 96 000 Hz

3.3 Structure of the digital video surveillance system based on INTELLECT ™ software

The flowchart of a digital video surveillance and the audio monitoring system based on INTELLECT™ software is shown in Fig. 3.3-1.

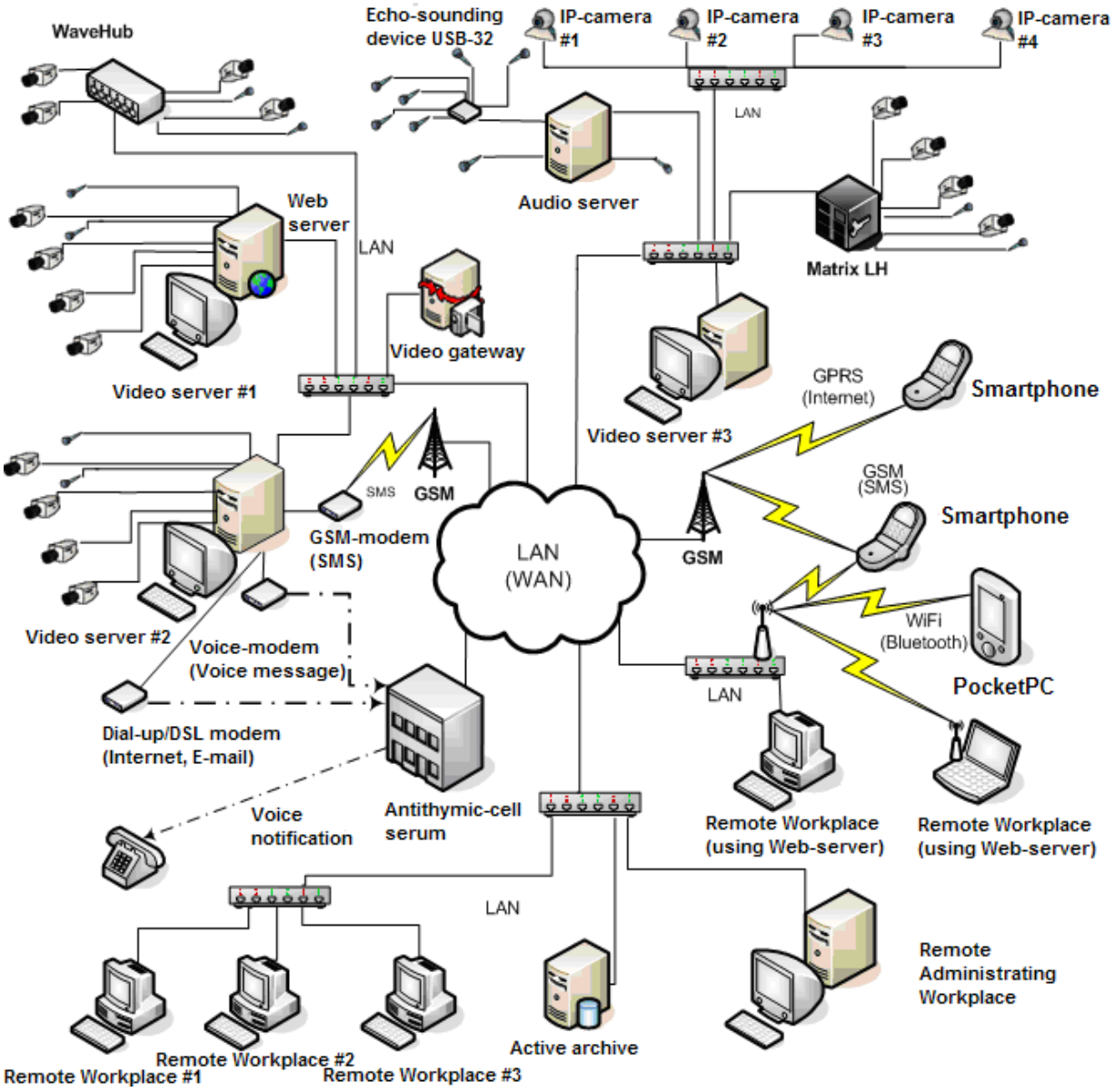


Fig. 3.3-1 Flowchart of the digital video surveillance and audio monitoring system based on INTELLECT™ software

4 Intellect™ software operation

4.1 INTELLECT ™ software launching and shutdown

Before starting work with the software it is recommended to make sure that all system units: connections, cameras, microphones etc. are functional.

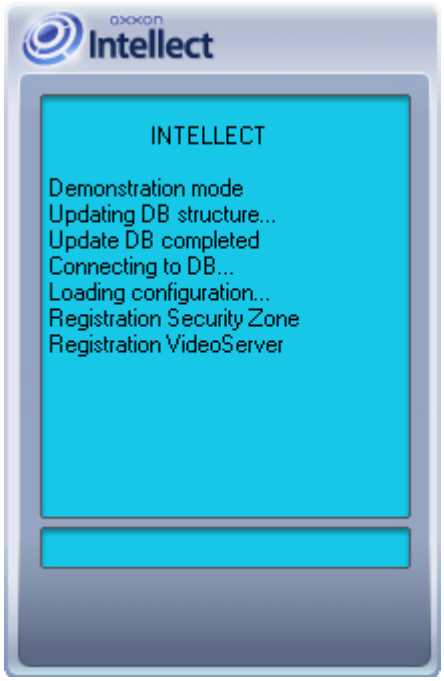


Fig. 4.1-1 Launching INTELLECT™ software

The software can be launched (see Fig. 4.1-1):

1. Automatically. The software automatic startup follows Windows startup.
2. Manually. To launch the program manually choose “The Client Site” item in the Windows Startup Menu (Start/All Programs/Intellect/The Client Site) or use the shortcut on the desktop.

Access to the program may require a password. The password should be entered at INTELLECT™ application startup.

To finish the INTELLECT™ program operation do the following:

1. move the cursor to the top right corner of the program window, then the main program control pane will appear;
2. click the «  » icon on the software main control panel;
3. choose the “Log Off” option in the menu.

Program exit will start, and the system can be configured to request a password again (see Fig. 4.1-2).

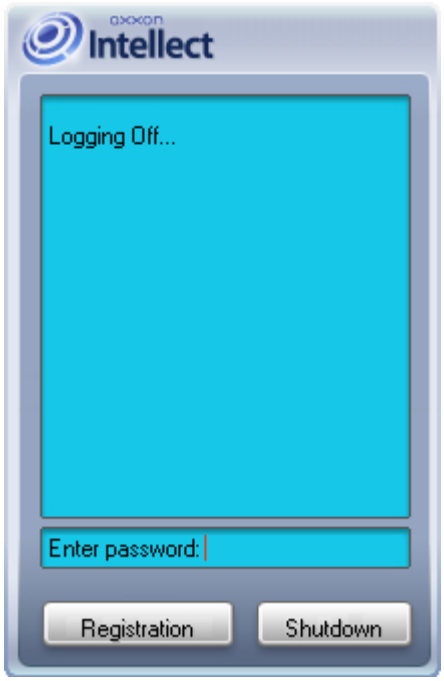


Fig. 4.1-2 Finishing INTELLECT™ program operation secured by password request

NOTE. In some configurations program exit (logging off) may be forbidden. Then no "Log Off" option will be displayed in the menu.

4.2 INTELLECT™ software user interface

4.2.1 Main control panel

4.2.1.1 *Function*

The main control panel is a basic element of the INTELLECT™ software control interface.

4.2.1.2 *Functions*

The main control panel provides access to the following program functions:

1. system operation startup and completion;
2. program settings;
3. control of the program interface windows display;
4. displaying service messages;
5. manual launching of macros;
6. displaying data on the current program version.

4.2.1.3 *Interface description*

The main control panel is placed in the top right corner of the screen (see Fig. 4.2-1).

Fig. 4.2-1 INTELLECT™ main software control panel

In a dormant state the panel is automatically removed from the screen. To return it, simply move the cursor to the top right corner, then the main program control panel will appear on the screen.

Elements of the main panel interface of INTELLECT™ software are described in Table 4.2-1.

Table 4.2-1

Element Fig.	Name	Comments
	Information window	The information window is used for prompts on program operation and error messages.
	"Screens" button	Chooses and displays screens and some other windows on the desktop. The "Close all" command hides all visible program windows.
	"Execute" button	Provides access to various program control functions: startup, logging out, program settings, manual launching of macros, calling up the debug window and displaying data on the current program version

4.2.2 Video Monitor

4.2.2.1 *Function*

The video monitor is used for displaying and controlling surveillance windows.

4.2.2.2 *Functions*

The video monitor is used:

1. to display images from video surveillance cameras;
2. to control surveillance modes;
3. to graphically process images from video surveillance cameras;
4. to control recording of video sequences from surveillance cameras;
5. to work with video archives;
6. to display video camera status data.

4.2.2.3 *Interface description*

Fig. 4.2-2 shows the video surveillance monitor interface.

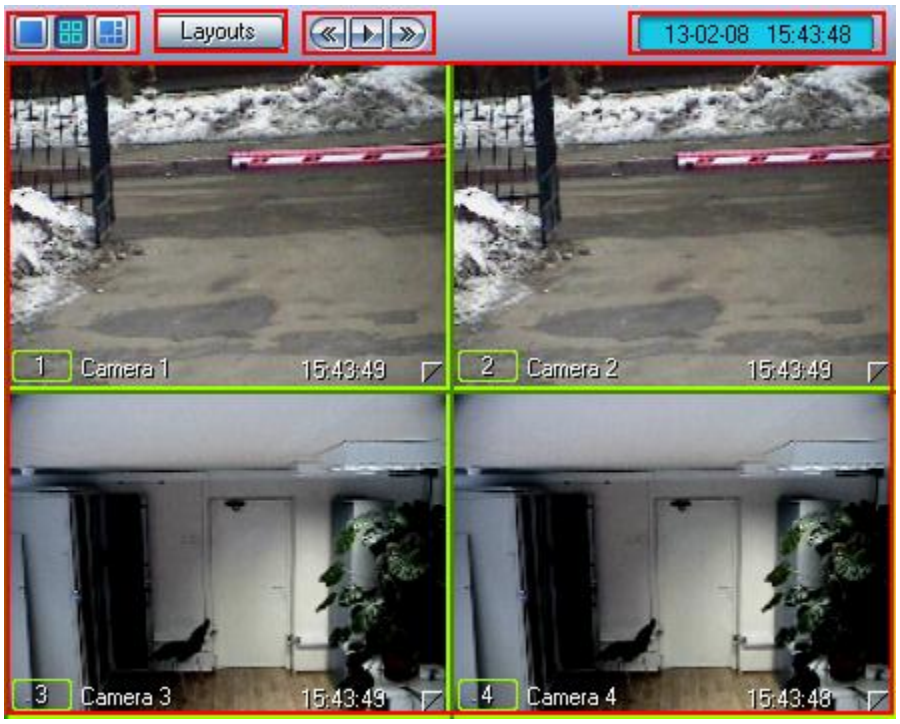


Fig. 4.2-2 Video surveillance monitor interface

The surveillance monitor window consists of a field for video surveillance windows and a tools panel with:

1. «  » buttons used to alter the number of surveillance windows on the monitor;
2. « 

» button used to control the monitor layout;
3. «  » buttons used to alter surveillance windows;
4. « 

» field displays current time/date.

Every surveillance window has its functions menu to gain access to arming and disarming cameras, image processing, functional command menus, image processing, video recording control, frame export and printing etc.

Calling up the functions menu is performed by left clicking on the camera number in the surveillance window (see Fig. 4.2-3).

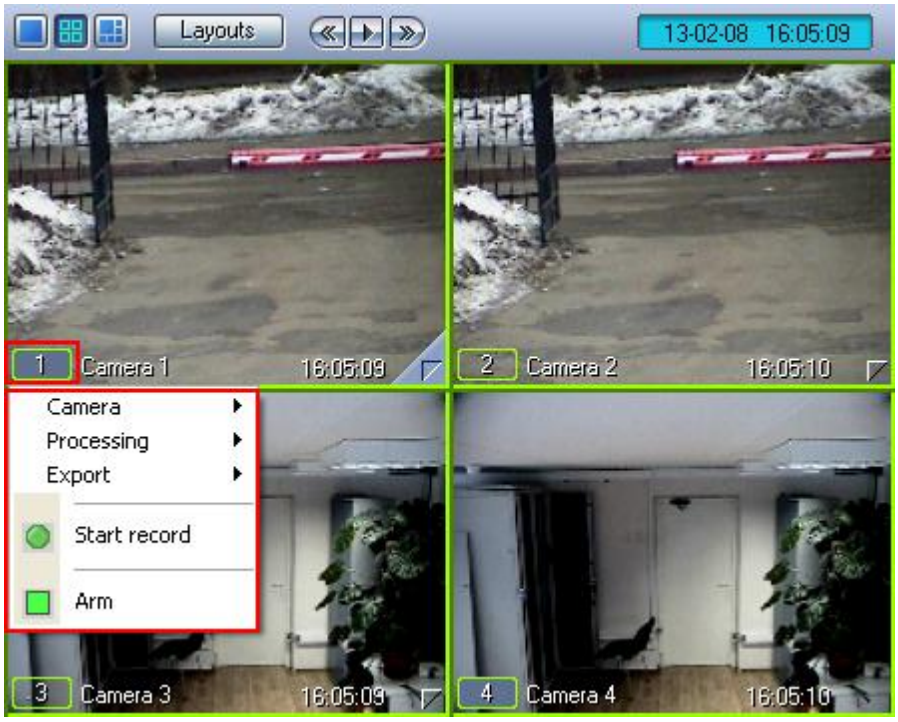


Fig. 4.2-3 Functions menu of the video surveillance window

Hotkeys for convenient monitor and surveillance windows operation are listed in Table 4.2-2.

Table 4.2-2

Hotkeys	**Action**	**Comments**
0 .. 9 Num (digits keypad)	Active window selecting	The sequence number of the selected window corresponds to the button number. To choose a 2-digit number window, quickly enter two digits without delay.
F1 .. F8	Select the number of windows displayed on the monitor	F1 – 1 window F2 – 4 windows F3 – 9 windows F4 – 16 windows etc
Ctrl + R Ctrl + T	Video recording control,	Ctrl + R – video recording startup Ctrl + R – video recording stop
Shift + LeftClick/RightClick	Image scaling in the window	Shift + LeftClick - step-by-step zoom-in Shift + RightClick - step-by-step image reduction
Tab	Entering and quitting archive mode	See “Video surveillance/Working with video archives” section.
Ctrl + “/”	Archive playback control (playback	Ctrl + “/” – playback

Hotkeys	Action	Comments
Ctrl + Spacebar Ctrl + * Ctrl + Left/Right	control panel).	Ctrl + Spacebar – stop Ctrl + * – pause Ctrl + Left/Right – previous/next frame (in pause mode)
Ctrl + A/D	Camera arming	Ctrl + A – camera arming Ctrl + D – camera disarming
Ctrl + E/P	Operating individual frames	Ctrl + E – frame exporting (saving) Ctrl + P – frame printing
Ctrl + W	Increase image contrast	Maximum contrast is set. To retract the previous value, click the hotkeys once more.
Ctrl + S Ctrl + H	Setting camera mask	Ctrl + S – show camera mask Ctrl + H – hide camera mask See “Video surveillance/Use of motion detectors” section.

4.2.3 Audio player

4.2.3.1 *Function*

The audio player is used to operate the audio monitoring subsystem, that provides audio monitoring and recording for secured locations.

4.2.3.2 *Functions*

Audio player provides:

1. realtime monitoring of the event audio component;
2. recording of the event audio component;
3. playback of the recorded event audio component;
4. saving the recorded event audio component as a standard Windows wave file.

NOTE. Audio player operation requires headphones or speakers to be connected to the PC soundcard.

4.2.3.3 *Interface description*

Fig. 4.2-4 shows the audio player interface.

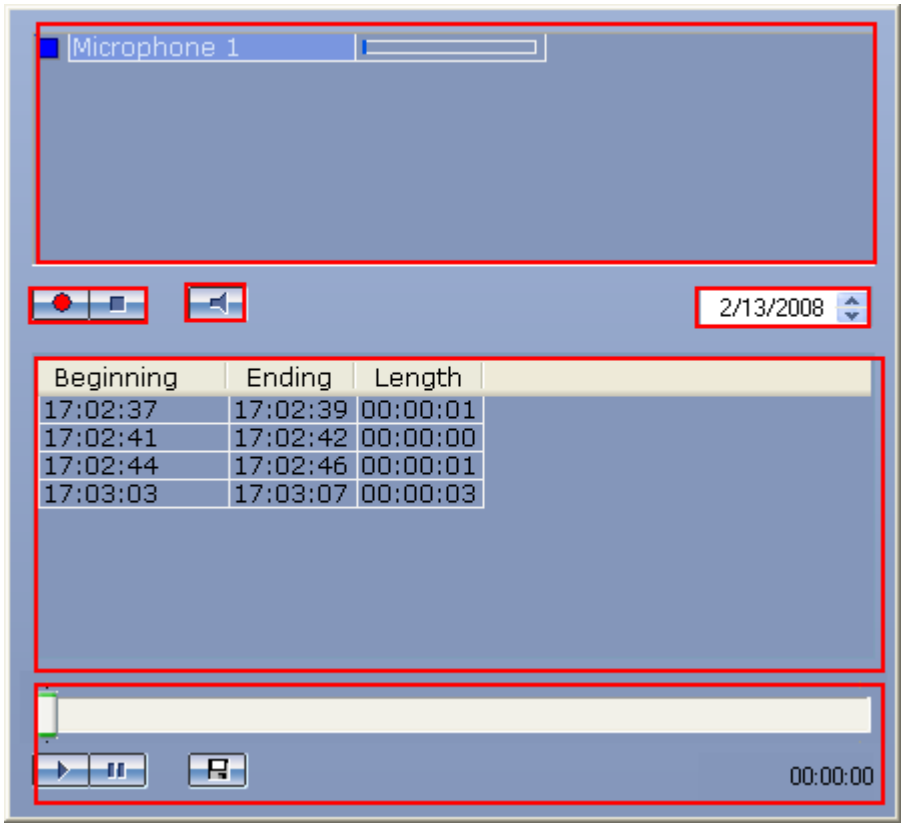
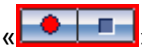


Fig. 4.2-4 Audio player interface

The upper part of the audio player window displays the list of attached microphones. Each microphone has a status indicator (to the left) and microphone signal level dynamic scale (to the right), shown in Fig. 4.2-5.

Fig. 4.2-5 Microphone indicators

In the middle part of the audio player window the «  » recording control buttons are displayed (also used for microphone arming and disarming) and the «  » button used for switching of real time monitoring and the list of recorordings made from a given microphone on a certain day (see Fig. 4.2-6).

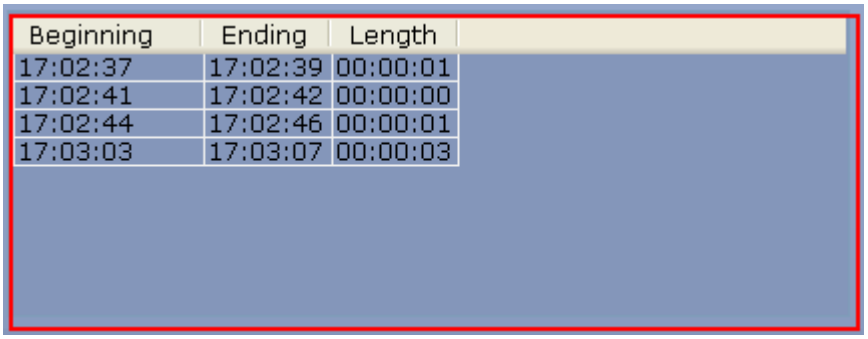


Fig. 4.2-6 Recordings list

Each audio recording has a from/to time and duration marks.

To choose available recordings to be viewed, enter its date in the field above the recordings list (see Fig. 4.2-7).

Fig. 4.2-7 Recording date field

The tape transport panel is placed below the audio recordings list (see Fig. 4.2-8).

Fig. 4.2-8 Tape transport panel

The «  » and «  » buttons are used for selected recording playback control, the «  » button is used to export the recording into the file.

4.2.4 Universal PTZ control panel

4.2.4.1 *Function*

Universal PTZ control panel is used to control System PTZs (e.g., surveillance camera PTZ).

4.2.4.2 *Functions*

PTZ control panel universal window provides:

1. Control of camera PTZ units;
2. Lens zoom control (Fig. magnification);
3. Focus adjustment;
4. PTZ user's settings.

4.2.4.3 *Interface description*

Fig. 4.2-9 shows the PTZ control panel universal window interface.

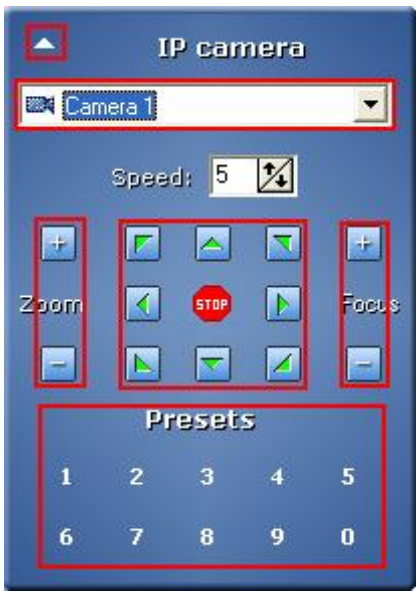
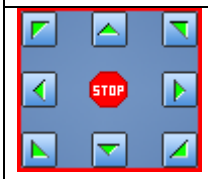
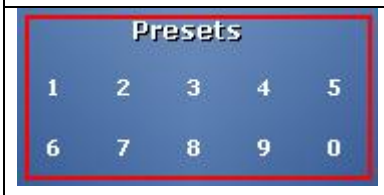


Fig. 4.2-9 PTZ control panel universal window interface.

Elements of PTZ control panel universal window interface are described in Table 4.2-3.

Table 4.2-3

Element Fig.	Function
	Minimizing PTZ control panel universal window (minimizes the client's window , leaving the header only)
	Choosing the camera number, whose PTZ unit is to be controlled.
	Setting of relative camera rotation speed
	Camera orientation control
	Lens zoom control (Fig. magnification)
	Focus adjustment

Element Fig.	Function
	PTZ user settings

4.2.5 User's dialog box window

4.2.5.1 *Function*

The user dialog box window is used to control various system devices and modules.

4.2.5.2 *Functions*

The user dialog box window provides:

1. control of various system devices and modules;
2. access to System user functions.

4.2.5.3 *Interface description*

The user dialog box window is the interface frame used to perform user specified functions with a user's set of elements, selected by the program administrator whilst setting up the program. Examples of user dialog box windows are shown in Fig. 4.2-10 and Fig. 4.2-11.

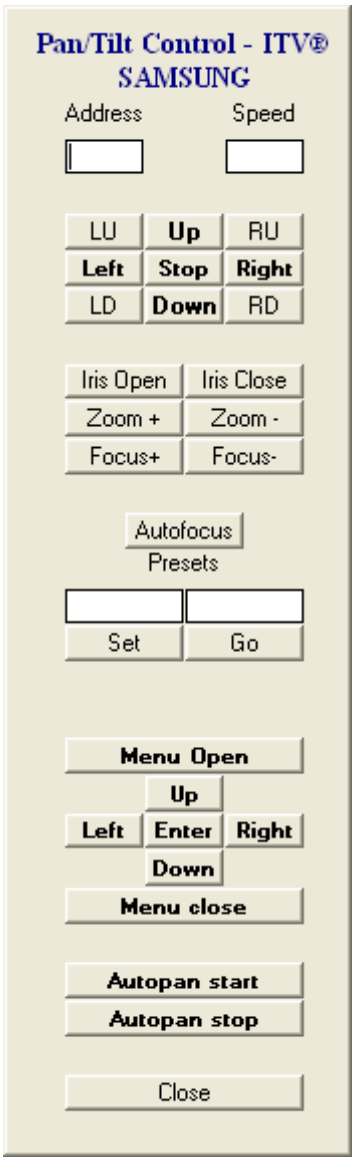


Fig. 4.2-10 User dialog box window used to control Samsung PTZ units

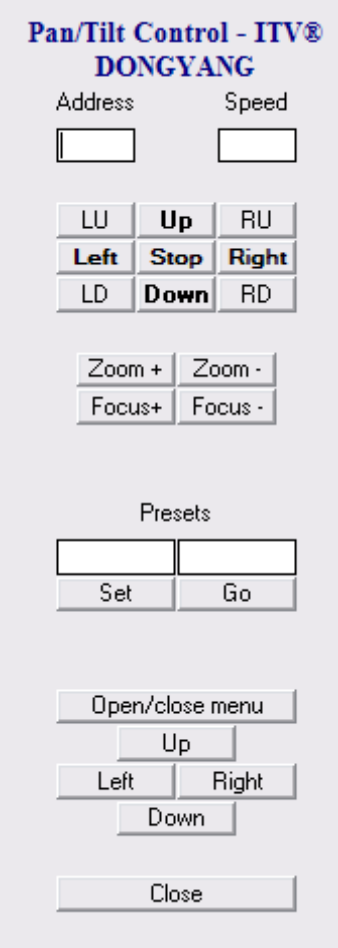


Fig. 4.2-11 User dialog box window used to control DonGyang PTZ units

4.2.6 Active archive pane

4.2.6.1 *Function*

The active archive pane is used to control active archiving.

4.2.6.2 *Functions*

The active archive pane provides:

1. active archive monitoring;
2. manual video archiving;
3. automatic video archiving;
4. choosing the surveillance camera, whose video recordings are to be archived;
5. entering date/time “from” and “to” values for video archiving (for each surveillance camera individually).

4.2.6.3 *Interface description*

Fig. 4.2-12 shows the active archiving control panel interface.

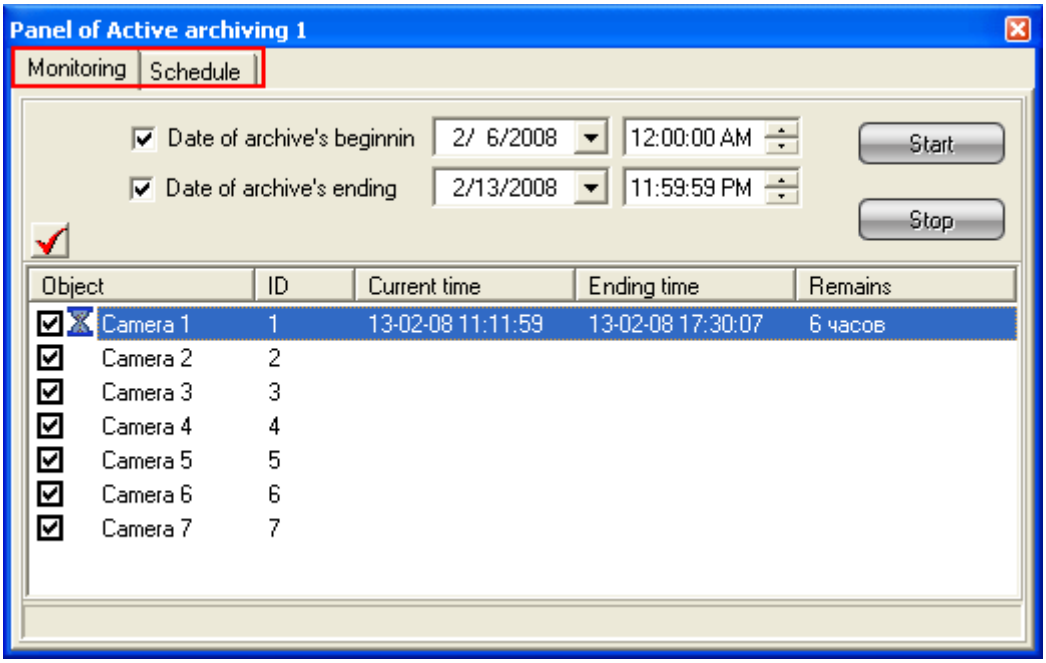


Fig. 4.2-12 Active archiving control panel interface

"Monitoring" and "Schedule" tabs are displayed at the top of the panel. The "Monitoring" tab is used to monitor and control the active archive, and the "Schedule" tab – to enter automatic active archiving parameters.

The "Monitoring" tab (see Fig. 4.2-13) contains the following controls:

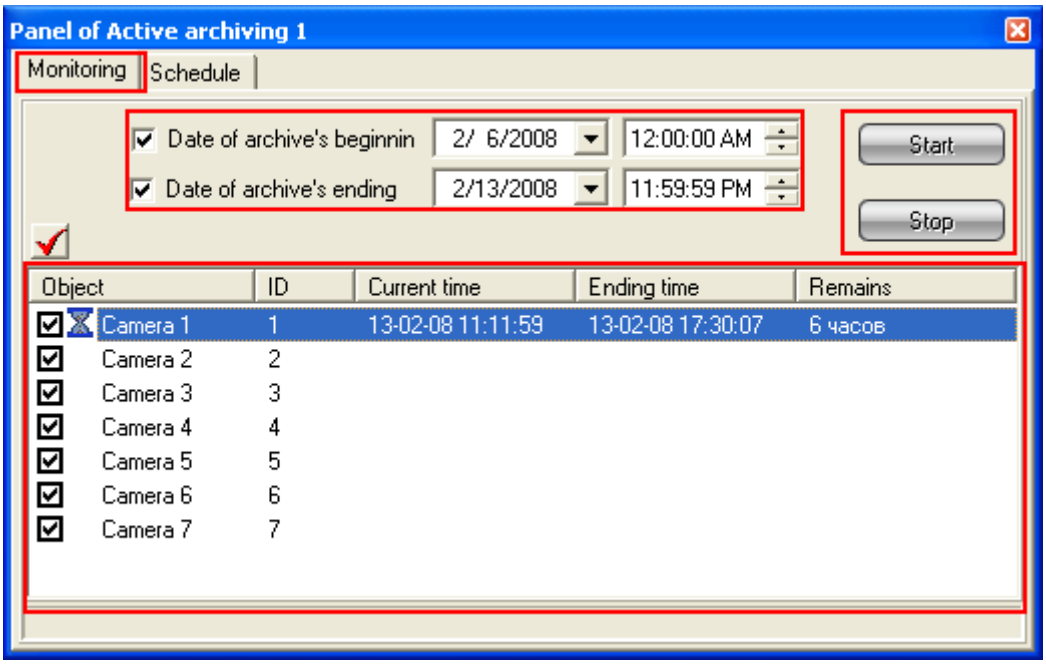


Fig. 4.2-13 Active archiving control panel interface ("Monitoring" tab)

1. "Startup" and "Stop" buttons for manual archiving;

2. Fields for entering archiving date/time “from” and “to” values;
3. Table of cameras selected and archive copying progress;
4. The «  » button is used to select/deselect all cameras.

The “Schedule” tab (see Fig. 4.2-14) contains a table for automatic archiving setup:

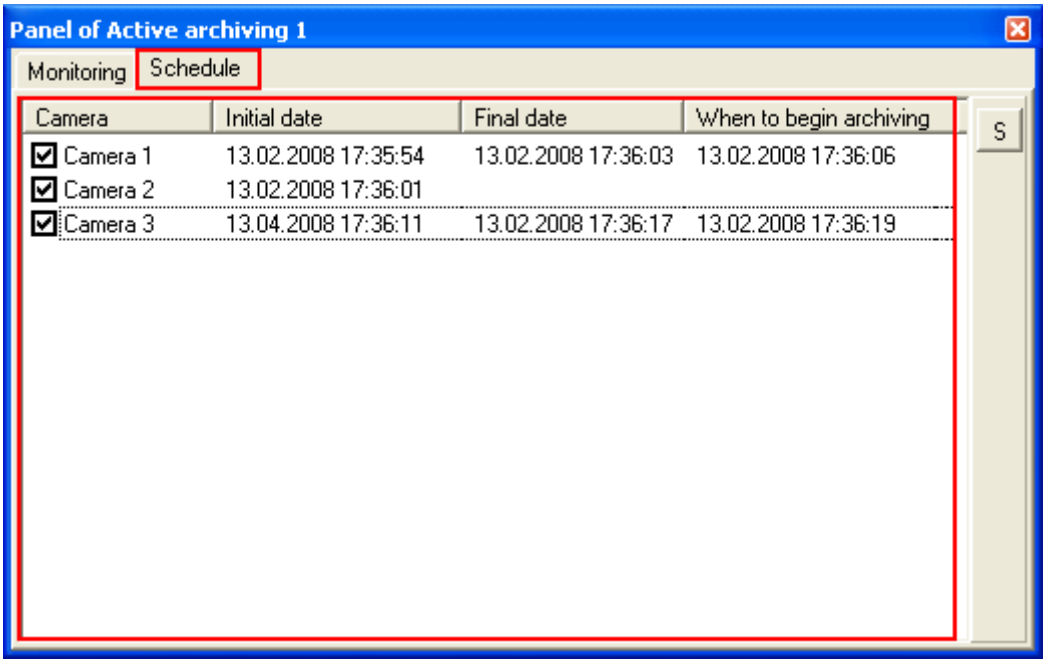


Fig. 4.2-14 Active archiving control panel interface (“Schedule” tab)

4.2.7 Alarm notification window

4.2.7.1 *Function*

The alarm notification window is used to inform the Operator about registered alarm and system events.

4.2.7.2 *Functions*

The alarm notification window provides:

1. auto notification to Operator of registered system events;
2. auto notification to Operator of registered alarm events;
3. operator control of processing registered alarm and system events.

4.2.7.3 *Interface description*

Fig. 4.2-15 shows the alarm notification window interface.

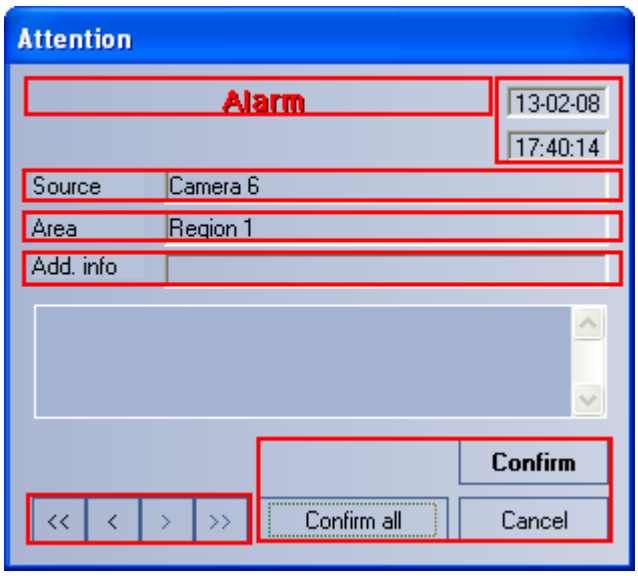
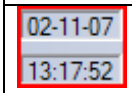
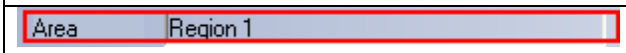
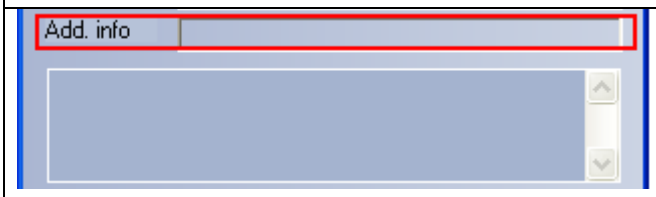
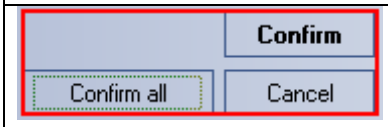


Fig. 4.2-15 Alarm notification window interface

NOTE. The alarm notification window is not displayed by default – only if the system had registered an alarm or system event is it displayed over all other windows of the program user interface. If an alarm event occurs, the notification window appears on the screen, even if no other UI elements are visible at that time.

Elements of an alarm event window interface are described in Table 4.2-4.

Table 4.2-4

Element Fig.	**Comments**
	Event name
	Date and time of event registration.
	Event source object.
	Virtual area (section) of event source location.
	Additional information on event.
	Control elements block for event processing
	Control elements block for event navigation

4.2.8 Events log

4.2.8.1 *Function*

Event log is used to display data on events, registered by the system (with data filtering by event type option)

4.2.8.2 *Functions*

Events log provides:

1. displaying of a given type of event, registered by the system;
2. displaying data on a displayed event: Event source, name, section, date and time of event registration, additional information on event;
3. forming and printing a report on registered events;
4. switching to event source map location;
5. source camera video recording playback option in the events log child window.

4.2.8.3 *Interface description*

The events log window interface is shown in Fig. 4.2-16.

Source	Event	Region	Additional information	Date	Time
Camera 5	Stop record	Region 1		13-02-08	17:47:51
Camera 5	Alarm End	Region 1		13-02-08	17:47:51
Camera 1	Stop record	Region 1		13-02-08	17:47:52
Camera 1	Alarm End	Region 1		13-02-08	17:47:52
Camera 2	Stop record	Region 1		13-02-08	17:47:57
Camera 2	Alarm End	Region 1		13-02-08	17:47:57
Camera 4	Record	Region 1		13-02-08	17:47:57
Camera 4	Alarm	Region 1		13-02-08	17:47:57
Camera 3	Record	Region 1		13-02-08	17:47:57
Camera 3	Alarm	Region 1		13-02-08	17:47:57
Camera 6	Record	Region 1		13-02-08	17:48:00
Camera 6	Alarm	Region 1		13-02-08	17:48:00
Camera 5	Record	Region 1		13-02-08	17:48:00
Camera 5	Alarm	Region 1		13-02-08	17:48:00
Camera 1	Record	Region 1		13-02-08	17:48:00
Camera 1	Alarm	Region 1		13-02-08	17:48:00
Camera 2	Record	Region 1		13-02-08	17:48:01
Camera 2	Alarm	Region 1		13-02-08	17:48:01
Camera 1	Stop record	Region 1		13-02-08	17:48:07
Camera 1	Alarm End	Region 1		13-02-08	17:48:07
Camera 1	Record	Region 1		13-02-08	17:48:08
Camera 1	Alarm	Region 1		13-02-08	17:48:08

Fig. 4.2-16 Events log window interface

All displayed events are listed in the Events Table (see Table 4.2-5).

Table 4.2-5

Column name	Comments
Source	Event source object.
Event	Event name
Section	Virtual area (section) of event source location.
Additional information.	Additional information on event.
Date	Date and time of event registration.
Time	

The icon opposite the event source shows its current status. For example, the “Camera” event source object has the «» icon in armed status, and if an alarm event was registered and video recording was started from this camera, the icon toggles to «».

For every event in the table there is provided a functional contextual menu,called by clicking the right mouse button upon the line with the name of the coresponding event in the table or pressing the key combination «Ctrl + P». The particular content of the functions menu depends on the event source object type. For example, the “camera” type event source object functions menu is shown in Fig. 4.2-17.

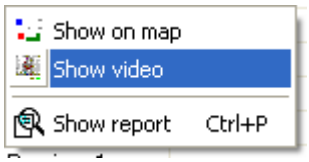


Fig. 4.2-17 Event functions menu (event source object is “Camera”)

4.2.9 Map

4.2.9.1 *Function*

The map is used to monitor and control system devices (cameras, microphones, beams, relays) and to launch macros.

4.2.9.2 *Functions*

The map provides the following program functions:

1. multilevel hierarchical object mapping (graphical chart forming) of a secured location;
2. on-line monitoring of the status of all system devices on the map;
3. virtual subdividing of secured objects;
4. possibility of automatic switching and recursive structural event analysis;
5. management of end devices;
6. launching macros.

4.2.9.3 *Interface description*

The shape of the map depends on the secured object structure; it is assigned during the system setup procedure. An example of a map for one floor of a secured object is shown in Fig. 4.2-18.

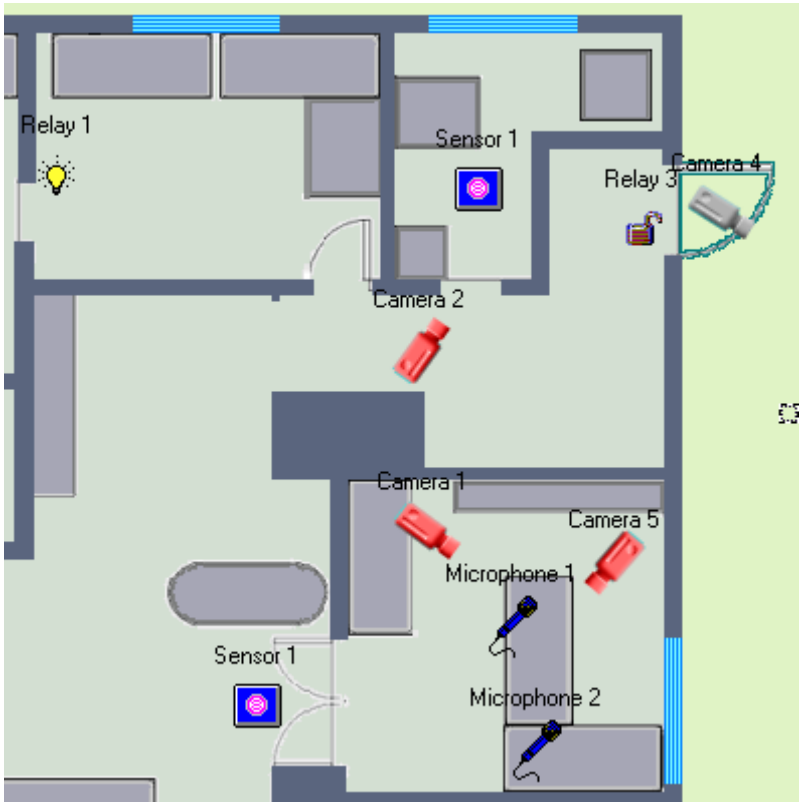


Fig. 4.2-18 Map interface (example)

System devices on the map are displayed as icons. Each device has its status displayed, and access to its functions is performed via the device functions menu by right clicking on the device icon on the map.

For example, the “Camera” type object has a functions menu shown in Fig. 4.2-19.

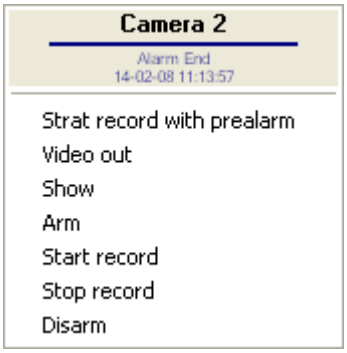


Fig. 4.2-19 Functions menu of a “Camera” type object

The map may have multiple layers (levels). Then an interlayer link icon is used to toggle the layers (see Fig. 4.2-20).

Fig. 4.2-20 Interlayer link

The map interlayer link indicates registered alarm events by any device on the appropriate layer.

4.2.10 Video surveillance monitor for web browser

4.2.10.1 *Function*

The video surveillance monitor for web browser is intended for TCP/IP based remote video surveillance of chosen secured locations via the web browser. Remote video surveillance requires no INTELLECT ™software system setup at the Operator's workplace (but the browser has to support Java).

4.2.10.2 *Functions*

The video surveillance monitor for the web browser supports:

1. remote video surveillance with no INTELLECT ™software system setup at the Operator's workplace;
2. altering the number of surveillance windows present on the video monitor of the web browser;
3. camera arming and disarming;
4. camera detector control;
5. recording of video sequences from surveillance cameras.

4.2.10.3 *Video archives operation. Interface description*

Fig. 4.2-21 shows an interface of the video surveillance monitor for web browser.

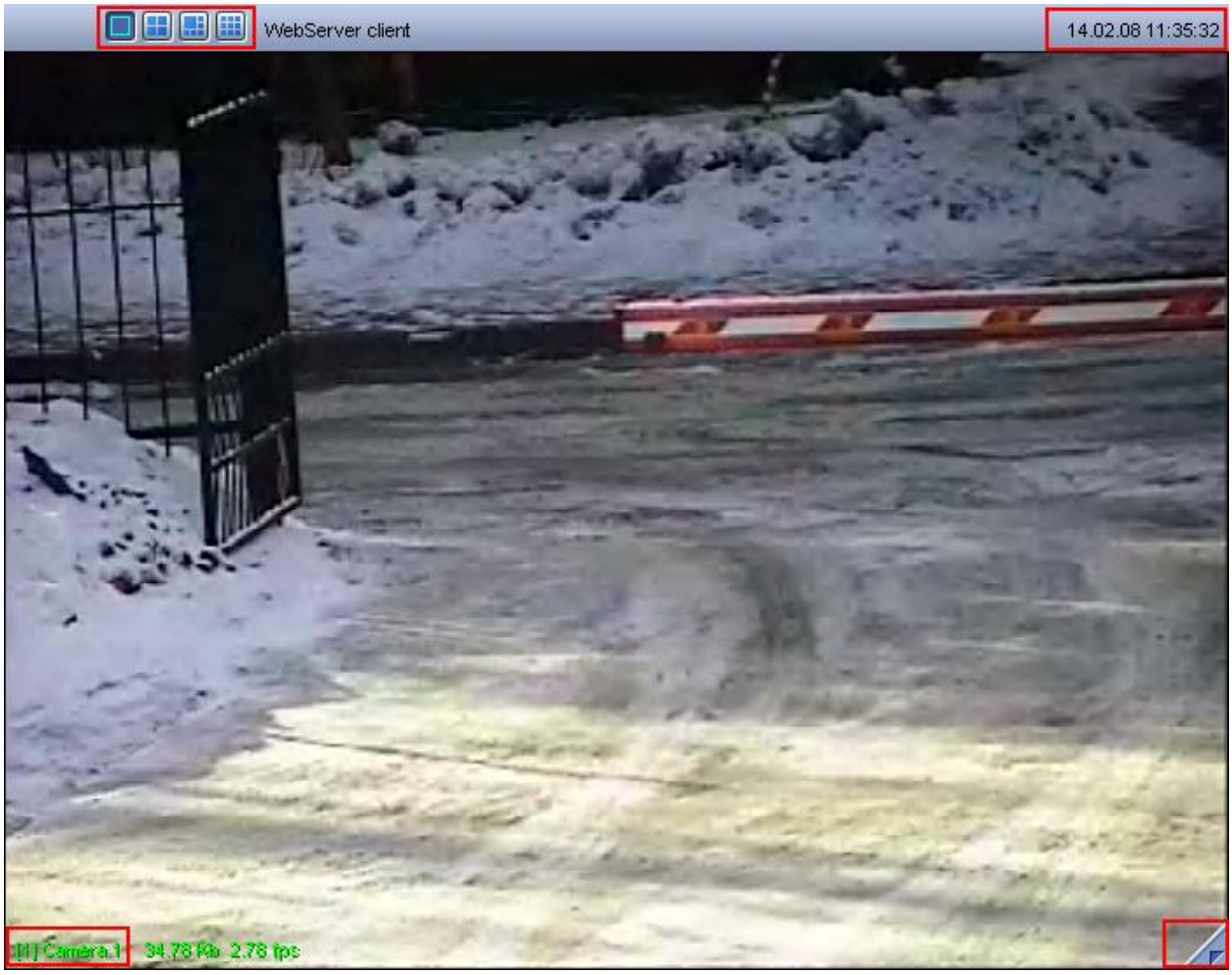
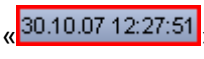


Fig. 4.2-21 Interface of video surveillance monitor for web browser

The surveillance monitor for the web server window consists of a field for video surveillance windows and a tools panel with:

1. «  » buttons used to alter the number of surveillance windows on the monitor;
2. «  » button used to enter archive viewing mode;
3. « 

» field displaying current time/date.

Every surveillance window has its functions menu « 

» which is used to select a surveillance camera and to get access to some camera options. Displaying the functions menu is performed by left clicking on the camera number in the surveillance window (see Fig. 4.2-22).

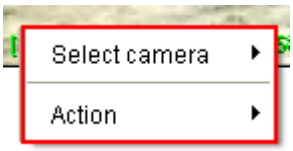


Fig. 4.2-22 Functions menu of the surveillance window for web browser

The colour of the video surveillance window border and camera name text indicates the camera status.

4.2.11 Panoramic video surveillance window

4.2.11.1 *Function*

Panoramic video surveillance window is designed for creating and viewing the panoramic image. Panoramic video surveillance window is divided into two parts in accordance with its functions: video surveillance control panel and image viewport.

4.2.11.2 *Functions*

While using the panoramic video surveillance window the following modes of image processing are provided:

1. navigation;
2. perspective correction;
3. restore;
4. pan;
5. cut borders;
6. zoom in/zoom out.

4.2.11.3 *Interface description*

Panoramic video surveillance window is shown in Fig. 4.2-23.

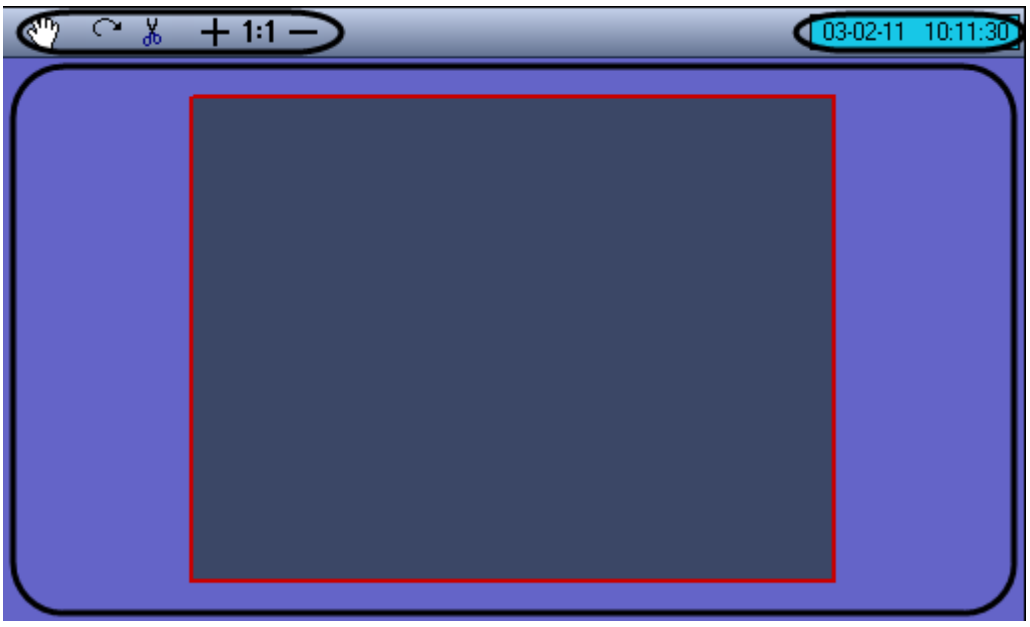
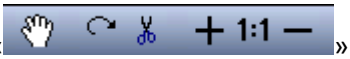
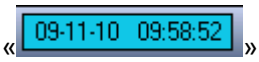


Fig. 4.2-23 Scene interface object

Panoramic video surveillance window consists of the field for displaying video surveillance window and toolbar with the following elements:

5. buttons « 

» serve to process images;

6. current date and time are displayed in the field « 

»

4.3 Video surveillance

4.3.1 General information

The video surveillance subsystem allows video monitoring (event video component viewing) and video recording (event video component recording) by providing:

1. multiple video camera images simultaneously displayed on a PC screen (multiple windows displayed on a single monitor and multiple monitors used on a single physical PC screen);
2. priority-oriented displaying of active and alarm cameras video stream;
3. flexible split screen configuration including the number of windows on the monitor;
4. colour coding of the camera state in the window (“Armed”, “Alarm”, “Recording”);
5. image burn-in option in the surveillance window: current time/date, camera ID and name;
6. displaying of alarm notification window;
7. image scaling;
8. automatic or manual windows slide show;
9. video recording can be performed:
   - 9.1. if an alarm event is detected;
   - 9.2. by Operator command;
   - 9.3. pre- and post-alarm event recording;
   - 9.4. pre-alarm event recording with post-alarm recording by Operator command.
10. single video frames storage and exporting;
11. freeze frame selection and viewing, without interrupting the video recording;
12. audio- and video-archives management;
13. remote access to audiovisual streams from any workplace with both a local and remote archive recording option;
14. viewing archive recordings with search and retrieve options on time, event type, camera ID criteria;
15. synchro playback of footage recorded by several cameras;

16. image processing option (digital zooming, image sharpening and contrast maximization, dynamic outlining of moving objects, removal of image fluttering);

17. web interface-based surveillance;

18. use of various types of intelligent motion detectors (motion detectors, face detector, lost items detector, focusing detector, video signal stability detector, background change detector, camera tampering, infrared detector);

19. use of independent detector zones;

20. detector masking.

4.3.2 Viewing video sequences from surveillance cameras

Viewing of video sequences from surveillance cameras is performed with the surveillance monitor. Several solutions are possible for the monitor:

1. The video monitor is a Windows interface window, built in screen object of the INTELLECT™ system (see the “Video Monitor” section).
2. Cross-platform solution with surveillance via a web browser (see the “Video surveillance monitor for web browser” section).
3. The video monitor is attached to a pocket computer as a WindowsMobile application.
4. Surveillance is held from a mobile phone via a special Java application.

4.3.3 Surveillance windows operation.

4.3.3.1 *Altering the number of windows*

By default a single monitor displays all windows related to it. To set the number of surveillance windows on the monitor, buttons are used on the top left side of the monitor tools panel (see Fig. 4.3-1).

Fig. 4.3-1 Setting the number of surveillance windows on the monitor

The «» button is used to display a single window, the next buttons – to display 4, 6, 9 or 16 windows on the monitor The set of buttons displayed varies depending on the number of cameras attached to the monitor.

NOTE. Some program settings render the tools panel inaccessible. If the Overlay 1 mode is chosen during the system setup, and the monitor displays six surveillance windows, then the surveillance window scaling by double-clicking is disabled, and the surveillance windows layout cannot be changed.

4.3.3.2 *Windows layout on the monitor*

The layout defines the number and location of windows on the monitor. To move or change the location of windows on the monitor, drag them with the mouse. The software allows you to develop the user's window layout.

To control the layout use menu, called up by the "Screens" button on the video monitor tools panel (see Fig. 4.3-2).

Fig. 4.3-2 Monitor layout control

To develop a new layout:

1. click the “Screens” button on the video monitor;
2. select the “Add” option in the menu;
3. enter the name of the new layout in a dialog box.

Then a new layout will appear in the layout list.

To select a layout click its name in the list. To delete an existing layout use the “Delete” menu command.

NOTE. If the Overlay 1 mode is chosen during the system setup, and the monitor displays six surveillance windows, the surveillance windows layout cannot be changed.

4.3.3.3 *Slide show*

If the total number of cameras, attached to a given monitor is more than the number of surveillance windows, displayed on a monitor simultaneously, the slide show option is used.

For a slide show the «  », «  » and «  » buttons are used on the video monitor tools panel (see Fig. 4.3-3).

Fig. 4.3-3 Slide show

The first two buttons are used for paging one screen forward/backward. The «  » button is used to automatically switch on and off the slide show with a pre-defined time value.

4.3.3.4 *Active Window*

The surveillance window may be activated or de-activated. The active window is focused at the moment; the remaining windows are de-activated. (see Fig. 4.3-4). To move focus, click another window.

Fig. 4.3-4 Activated and de-activated surveillance windows

The distinctive feature of the active window is a recordings archive access button (in the left bottom), the archive stores recordings from camera, attached to this window, and the grey background of the .window number Active and de-activated windows have no functional differences.

NOTE. If there are too many windows opened on a monitor, the recordings archive access button may well not be displayed.

4.3.3.5 *Window scaling*

The software has the option of video image scaling in the surveillance windows.

To magnify or reduce the image in an active window, use the mouse wheel (see Fig. 4.3-5, Fig. 4.3-6).

Fig. 4.3-5 Zooming in the surveillance window (initial state)

Fig. 4.3-6 Zooming in the surveillance window (post-zooming state)

For other zooming modes see “Video Surveillance/Image processing”.

The magnified image can be dragged by using the left mouse button (see Fig. 4.3-7).

Fig. 4.3-7 Image dragging in the surveillance window

NOTE. A full size image is achieved when a single surveillance window is displayed on one monitor. If multiple windows are displayed, their sizes may be automatically reduced.

4.3.4 Camera arming and disarming

4.3.4.1 *General information*

Analysis of the scene obtained from the surveillance camera is performed with the activity detector: Activity detectors are intelligent sensors with various functions: motion detection within the observed scene, face detection, camera tampering etc.

Each camera has its main activity detector. By default camera arming/disarming means the main activity detector is switched on/off. An alarm event by the main detector takes place (and is registered by the system), when motion within the observed scene begins. If a camera is disarmed, the alarm event is not registered.

Moreover, special auxiliary detectors are available. Such detectors, unlike the main one, register not only the beginning of some motion in the camera, but lens closure and tampering, camera rotation, face recognition and so on.

Main and auxiliary detection zones can be masked Mask is the scene image area with no scene control (for example, if you mask the detector main zone, there is no scene control in progress inside the mask).

4.3.4.2 *Indication of camera status*

The colour of the video surveillance window border indicates the current camera status (see Table 4.3-1).

Table 4.3-1

Colour of the video surveillance window border	Camera status
Green	Camera disarmed
Yellow	Camera armed
Red	Camera is armed, alarm event occurred on camera.

The colour of the camera number indicator border in the surveillance window indicates the current status of the video recording from the camera (see Table 4.3-2).

Table 4.3-2

Colour of the camera number border	Camera status
Green	No video recording, camera is disarmed
Yellow	No video recording, camera is armed
Red	Video recording

The combinations of the video surveillance window border colour and the colour of the camera number border are described in Table 4.3-3.

Table 4.3-3

Colour of the window border	Colour of the camera number border	Camera status
Yellow	Yellow	Camera is armed, no video recording is performed
Red	Red	Alarm event occurred on the camera, video recording is started by an alarm or the recording, started by Operator's command before the event, goes on,
Green	Red	Camera is disarmed, but there is recording by Operator's command or post-alarm recording.
Yellow	Red	Camera is armed, recording by Operator's command or post-alarm recording is done.
Green	Green	Camera is disarmed, no video recording is performed
Red	Yellow	Alarm event occurred on camera, but no video recording by alarm is done.

NOTE. All indication schemes presented correspond only to main detector zones with no auxiliary zones taken into account. If the auxiliary camera detector zone has been armed or disarmed, the border around the video surveillance window retains its colour, but after an alarm event in the auxiliary zone the window border becomes red. So, there is no indication of auxiliary detector zone arming and disarming for the camera.

The icon of video absence  appears under the icon of "video camera number" only when there is no video signal. It can be in two cases: video camera is not connected or there is camera restart.

NOTE. The last video frame or blue screen (depending on the video capture card) is displayed in the Video surveillance window if there is no video signal.

The icon of selected disk absence  appears over the icon of “video camera number” only when disk for archive saving is not selected.

When incorrect camera type is given, the icon of disconnect with the camera  appears over the icon of “video camera number” and the frame of video surveillance window becomes black.

4.3.4.3 *Camera arming*

To arm the camera by the main detector zone select the “Arm” option in the functions menu in the required camera window (see Fig. 4.3-8).

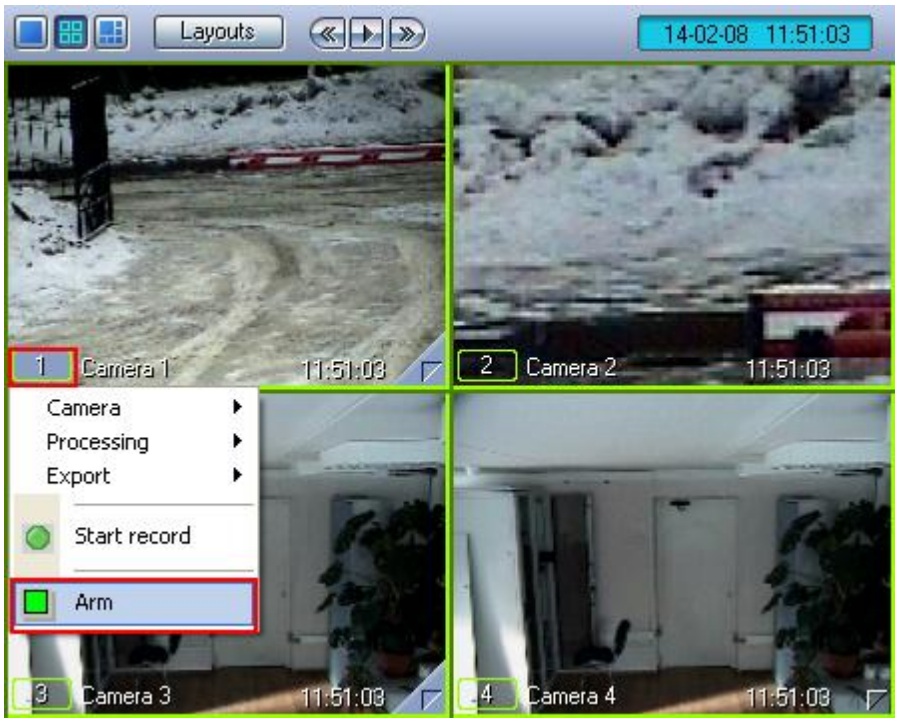


Fig. 4.3-8 Arming the camera by the main detector zone

After this camera is activated, and if an alarm event occurs, video recording starts from the camera (if the system has been set up properly). Camera arming by the main zone is followed by colour indication: the surveillance window border becomes yellow and the camera indicator in the surveillance window functions menu becomes yellow too.

If auxiliary zones are assigned, camera arming by auxiliary zones is performed via the video surveillance window functions menu (see Fig. 4.3-9).

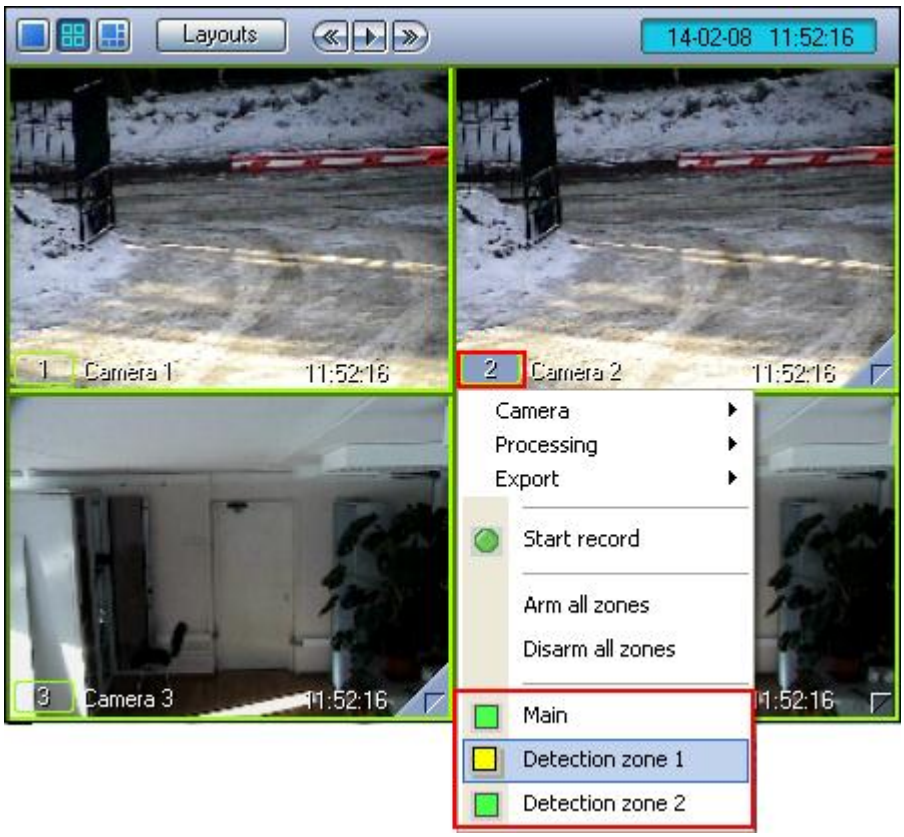


Fig. 4.3-9 Camera arming by auxiliary detector zones

When auxiliary zones are armed, the camera indicator in the functions menu becomes yellow, but the surveillance window border retains its colour.

To arm the camera in the main zone and all auxiliary zones simultaneously, select the “Arm all zones” item in the video surveillance window functions menu (see Fig. 4.3-10).

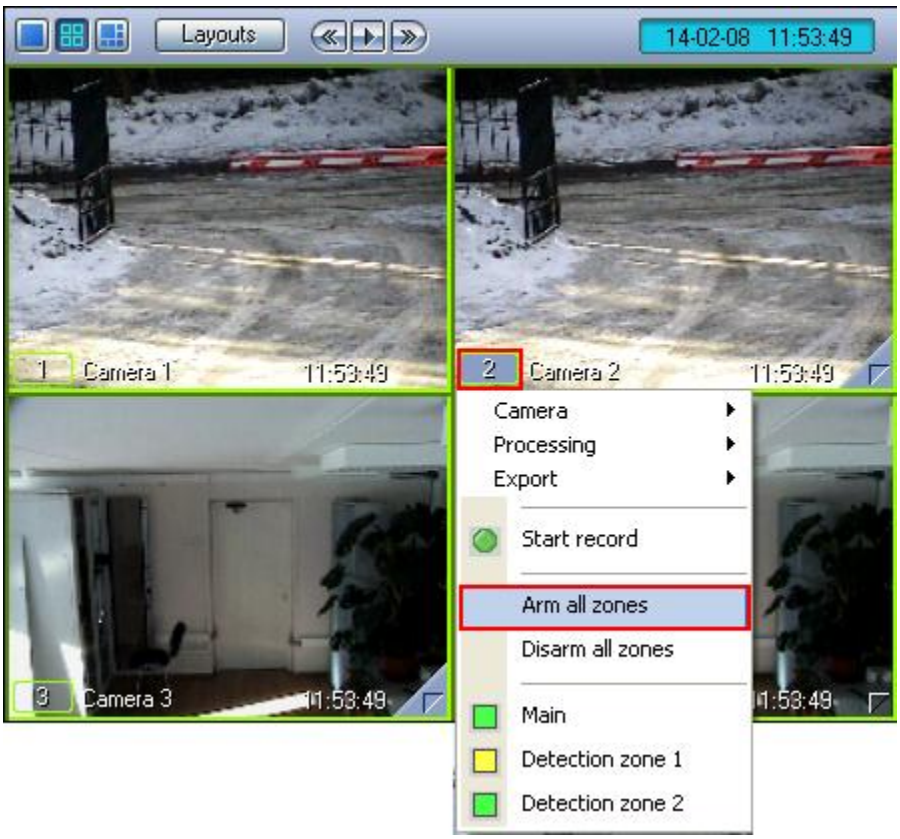


Fig. 4.3-10 Camera arming in the main zone and all auxiliary detector zones

4.3.4.4 *Camera disarming*

To disarm a camera in the main detector zone, select the “Disarm” option in the camera window functions menu (see Fig. 4.3-11).

Fig. 4.3-11 Disarming the camera by the main detector zone

During camera disarming in the main zone, its colour indication changes: the surveillance window border becomes green, and the camera indicator in the surveillance window functions menu becomes green too.

If a camera is armed in the auxiliary zone, then camera disarming is performed via the video surveillance window functions menu (see Fig. 4.3-12).

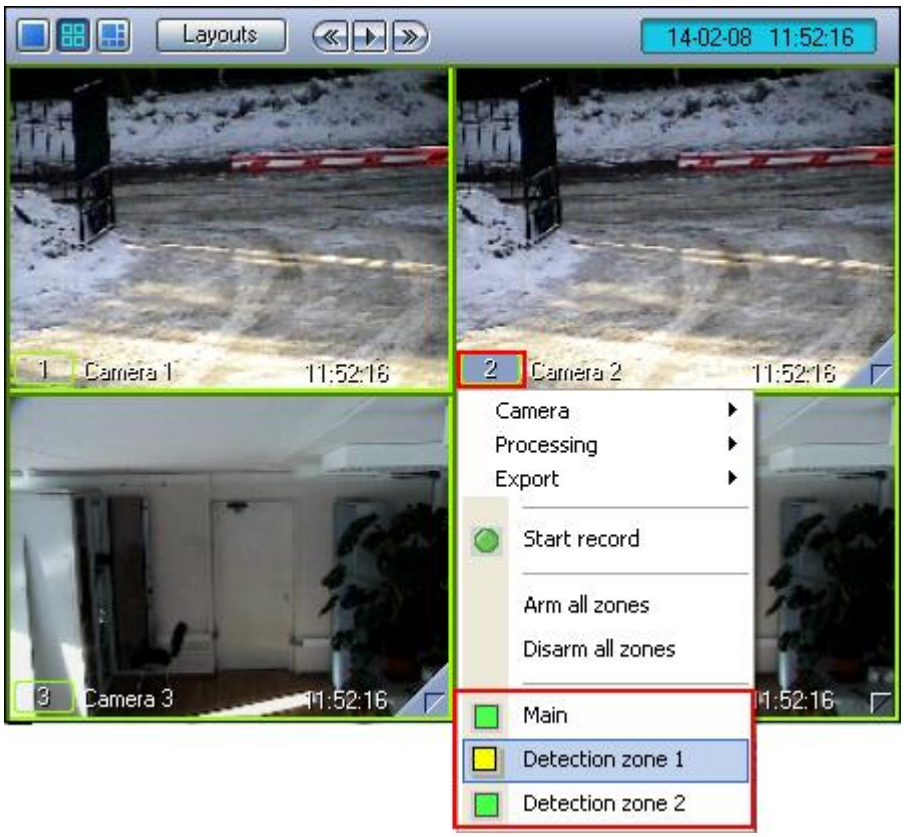


Fig. 4.3-12 Disarming the camera in the auxiliary detector zones

When a camera is disarmed in the auxiliary zone, the camera indicator in the surveillance window functions menu becomes green, but the surveillance window border doesn't change colour.

To disarm the camera in the main zone and all auxiliary zones simultaneously, select the "Disarm all zones" item in the video surveillance window functions menu (see Fig. 4.3-13).

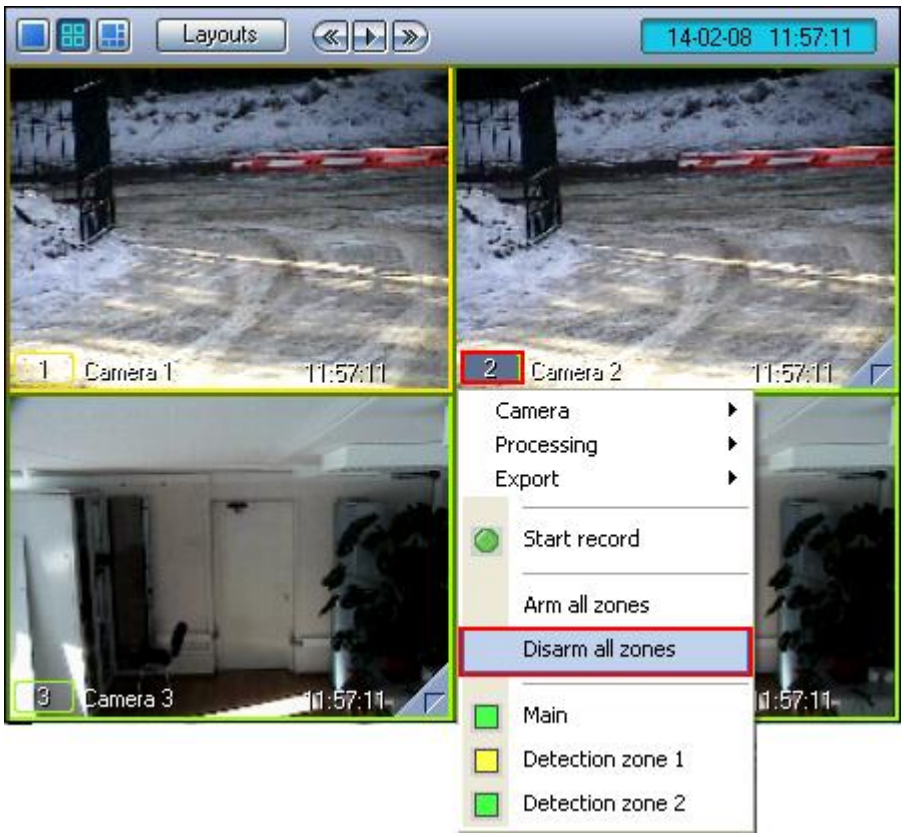


Fig. 4.3-13 Camera disarming in the main zone and all auxiliary detector zones

4.3.4.5 *Masking the Main detector*

Access to main detector mask editing is performed via the video surveillance window functions menu. To enter mask editing mode, select the “Detector mask” item from the “Processing” Submenu (see Fig. 4.3-14).

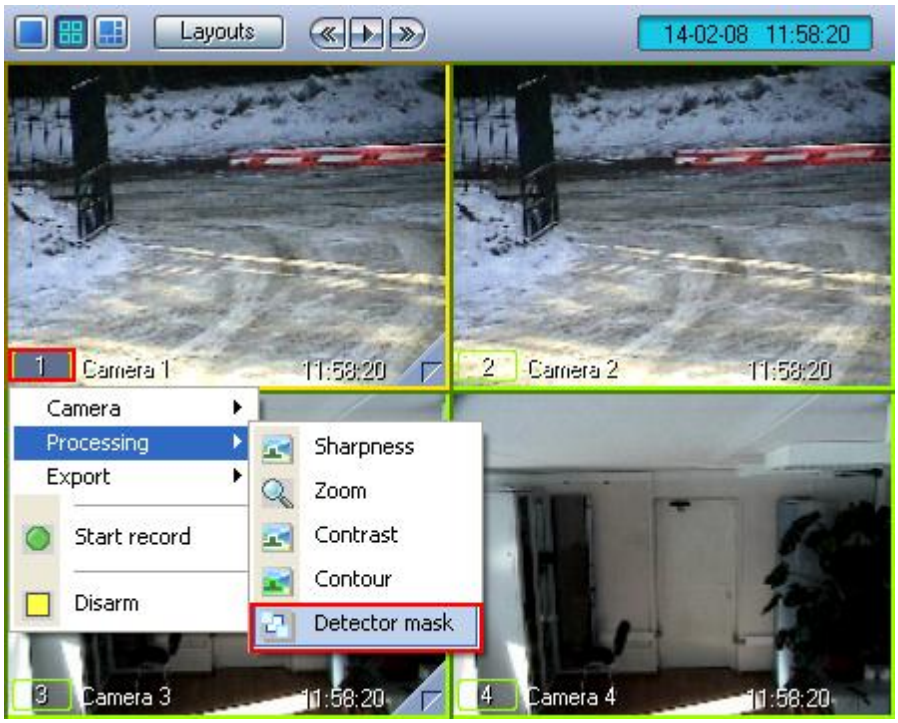


Fig. 4.3-14 Entering mask editing mode

Masks have a rectangular shape. A mask is initiated by a left click: select a dot on the screen, click the left mouse button and pressing the button draw a rectangle – the mask area will be filled with black dots (sey Fig. 4.3-15).

In the mask area there will be no detecting.

Fig. 4.3-15 Detector mask editing mode

Mask removal is performed in a similar way. To clear the screen area from the mask, select a dot on the screen, click the right mouse button and pressing the button draw a rectangle – the resultant rectangular area will be cleared.

To quit the main detector mask editing mode, select the “Detector mask” item from the “Processing” Submenu of the video surveillance window functions menu once more.

NOTE. When quitting the mask editing mode, rectangles with the dots, that have bordered mask areas, vanish from the surveillance window. Nevertheless, the mask areas are still active, i. e. no surveillance occurs in these areas.

4.3.5 Use of motion detectors

4.3.5.1 *General information*

Analysis of the scene obtained from the surveillance camera is performed with the activity detector: Activity detectors are intelligent sensors with various functions: motion detection within the observed scene, face detection, camera tampering etc.

Each camera has its main activity detector. By default, camera arming/disarming means the main activity detector is switched on/off. An alarm event for the main detector takes place (and is registered by the system), when motion within the observed scene begins. If a camera is disarmed, an alarm event is not registered.

Moreover, special auxiliary detectors are available. Such detectors, unlike the main one, register not only the beginning of some motion in the camera, but lens closure and tampering, camera rotation, face recognition and so on.

Main and auxiliary detection zones can be masked Mask is the scene image area with no scene control (for example, when a detector main zone is masked, there is no scene control inside the mask).

4.3.5.2 *Detector types*

4.3.5.2.1 Main motion detector

The main motion detector discovers moving objects and establishes their direct of motion. Detected moving objects are automatically outlined in the surveillance window with their motion direction being marked with an arrow.

4.3.5.2.2 Infrared motion detector

Discovers moving objects within the scene. Detected moving objects are automatically outlined in the surveillance window. Contrary to common motion detectors, it can recognize small objects.

4.3.5.2.3 Face detector

The face detector recognizes every human face within the observed scene. A recognized face is outlined in the surveillance window.

4.3.5.2.4 Lost items detector

The lost items detector is capable of recognizing motionless objects, lost within the scene. If an item is present (or absent) within the scene for a certain time, it is outlined in the surveillance window.

4.3.5.2.5 Focusing detector

The focusing detector is used to identify camera signal distortion. It notifies the Operator about loss of camera focus.

4.3.5.2.6 Video signal stability detector

The video signal stability detector is used to identify camera signal distortion.

4.3.5.2.7 Background change detector

The background change detector is used to identify camera signal distortion. This detector is capable of discovering a change of the scene background due to physical (optical) tampering of the CCTV camera.

4.3.5.2.8 Camera blinding detector

The camera blinding detector is used to identify camera signal distortion. It discovers attempts to over-illuminate the camera lens.

4.3.5.2.9 Lens blocking detector

The lens blocking detector is used to identify camera signal distortion. It recognizes lens blocking and plastering.

4.3.5.3 *Indication of detector status*

Indication of the surveillance camera detector may be found in the video surveillance window functions menu of the camera (see Fig. 4.3-16).

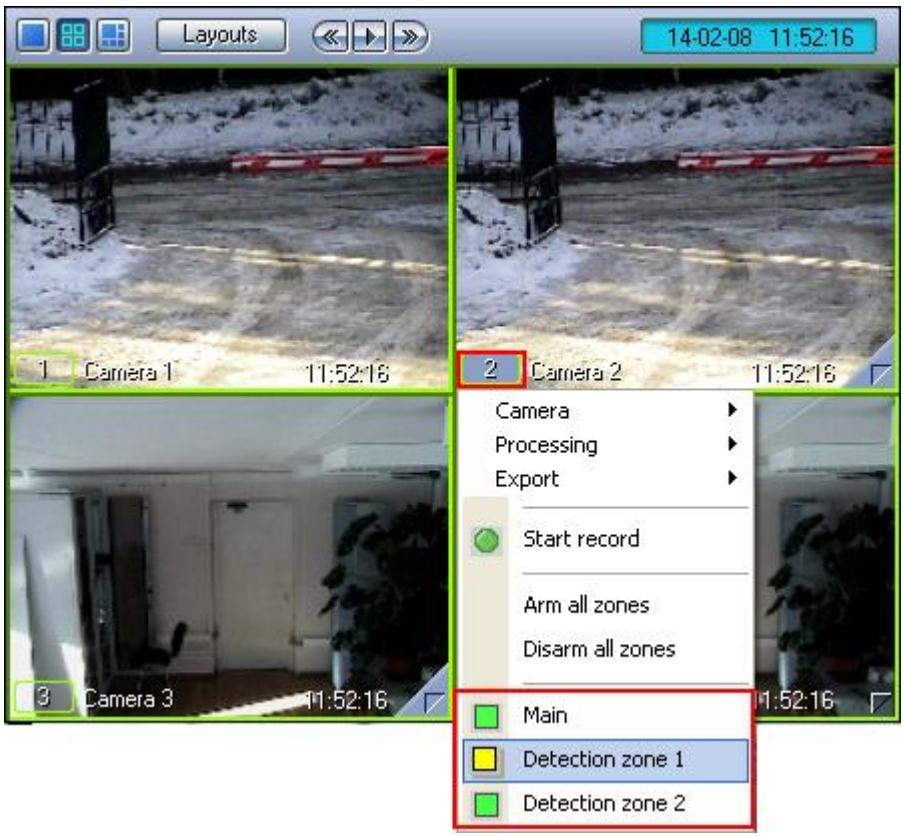


Fig. 4.3-16 Detector status indication

Detector status indication is a square field opposite the detector name. Detector status is shown by the colour of the indicator (see Table 4.3-4).

Table 4.3-4

Indicator colour	**Detector status**
Green	Detector OFF
Yellow	Detector ON

4.3.5.4 *Switching detectors on*

Switching on a video surveillance camera detector is performed via the video surveillance window functions menu of the camera (see Fig. 4.3-17).

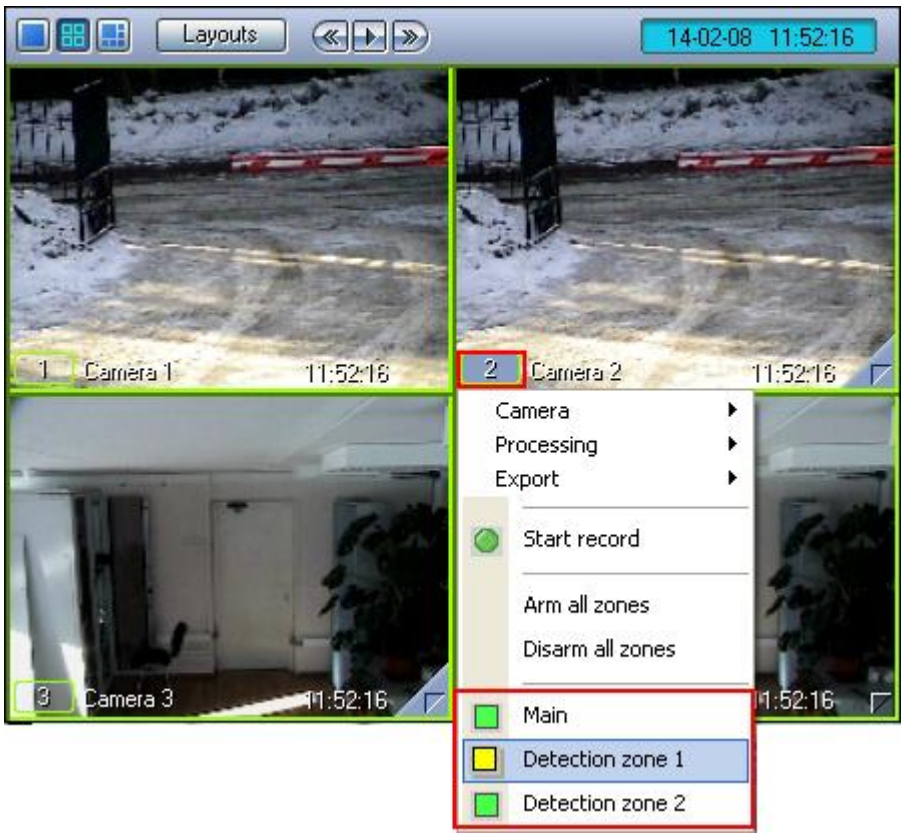


Fig. 4.3-17 Switching on a detector

To switch a detector on, click its name or its indicator in the list of detectors. Then the green indicator of the detector will become yellow.

To switch on all available detectors simultaneously, select the “Arm all zones” item in the video surveillance window functions menu (see Fig. 4.3-18).

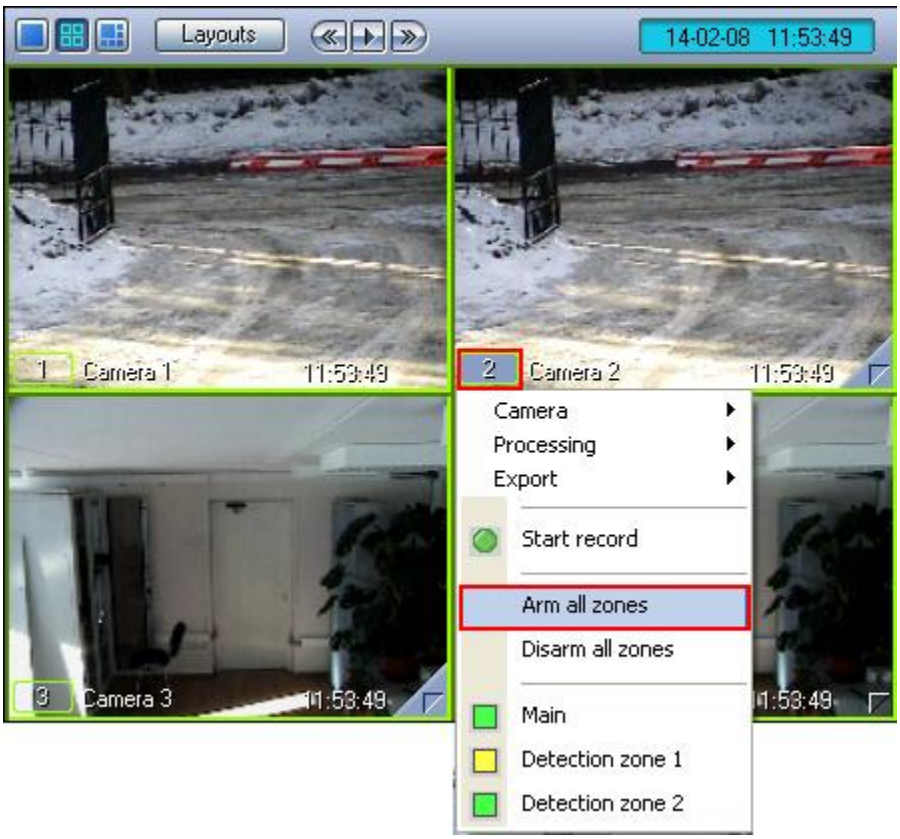


Fig. 4.3-18 Synchronous switching on of all detectors

4.3.5.5 *Switching detectors off*

Switching off a video surveillance camera detector is performed via the video surveillance window functions menu of the camera (see Fig. 4.3-19).

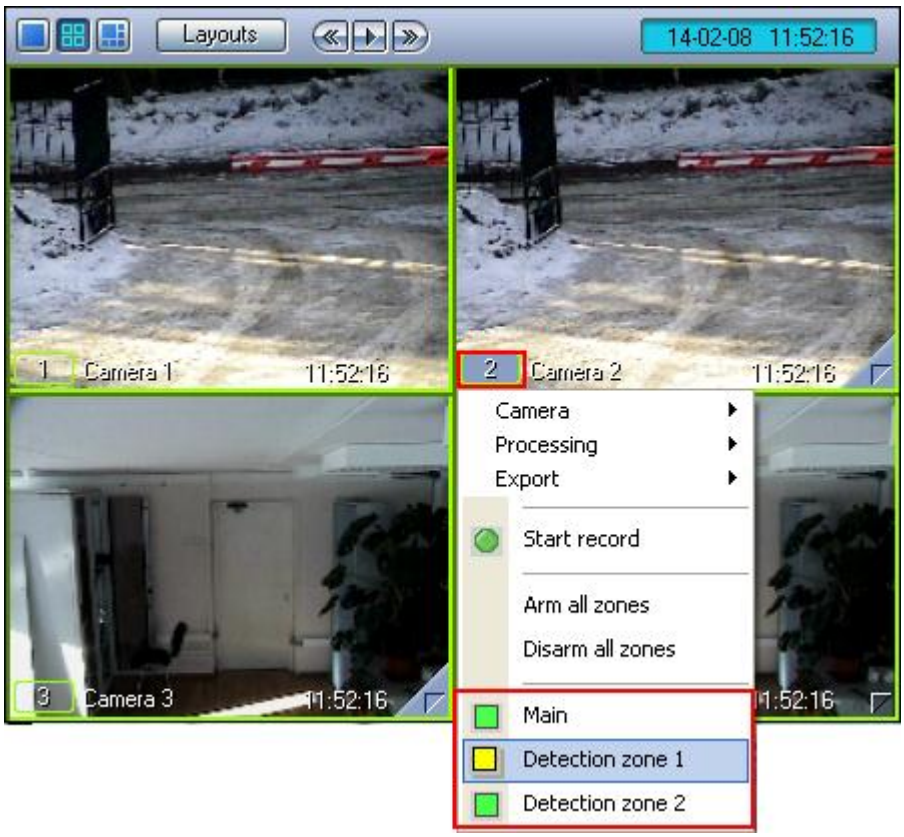


Fig. 4.3-19 Switching off a detector

To switch a detector off, click its name or its indicator in the list of detectors. The detector indicator will become green.

To switch off all available detectors simultaneously, select the “Disarm all zones” item in the video surveillance window functions menu (see Fig. 4.3-20).

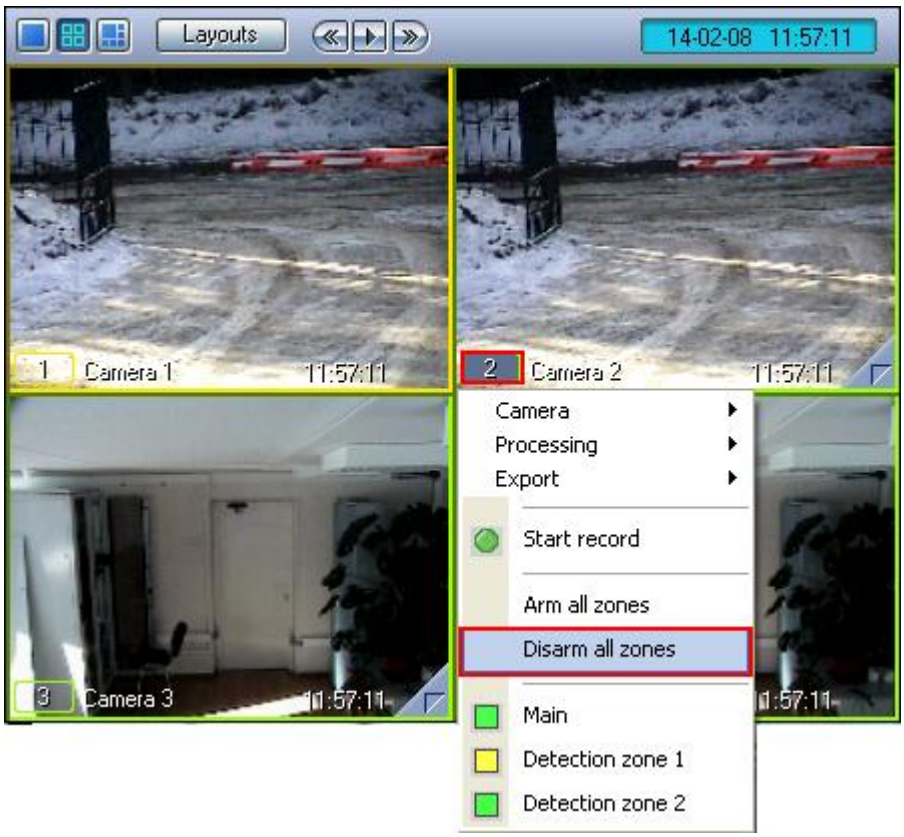


Fig. 4.3-20 Synchronous switching off of all detectors

4.3.5.6 *Detector masking*

To edit detector's masks go to the Surveillance windows, "Processing" Submenu (see Fig. 4.3-21).

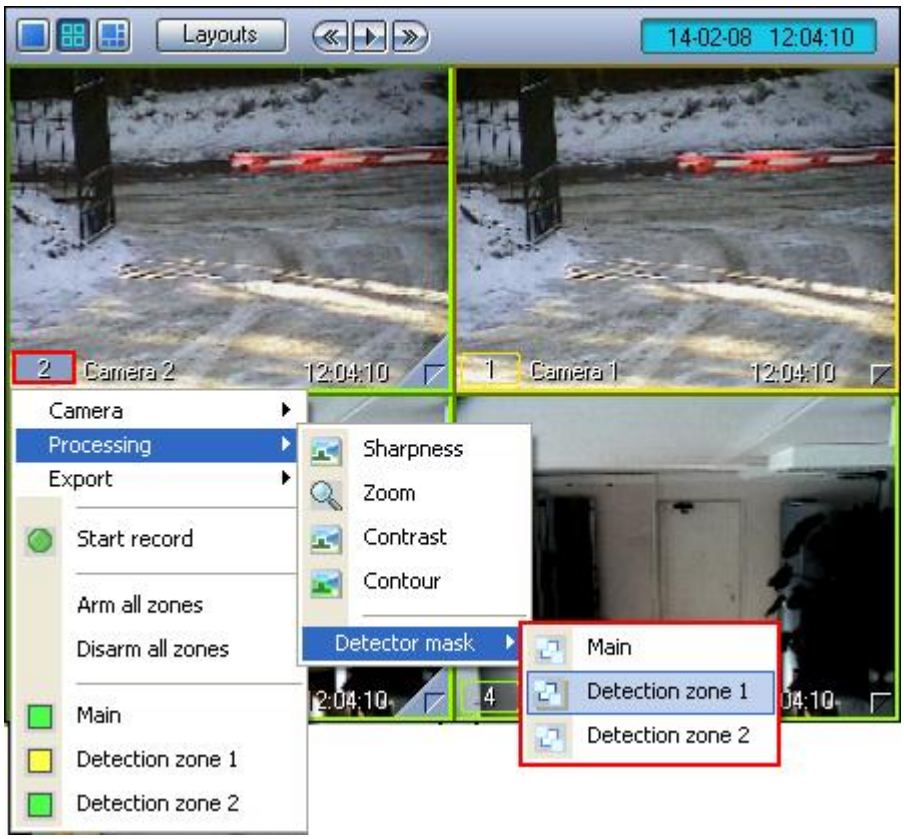


Fig. 4.3-21 Access to mask editing of the main and auxiliary detector zones

To enter mask editing mode, select a detector in the “Detector mask” Submenu. The first detector in the list is the main motion detector (“Main” item), followed by auxiliary motion detectors. If a main detector is the only detector, then the “Detector mask” item will be displayed instead of the detector selection Submenu (see Fig. 4.3-22).

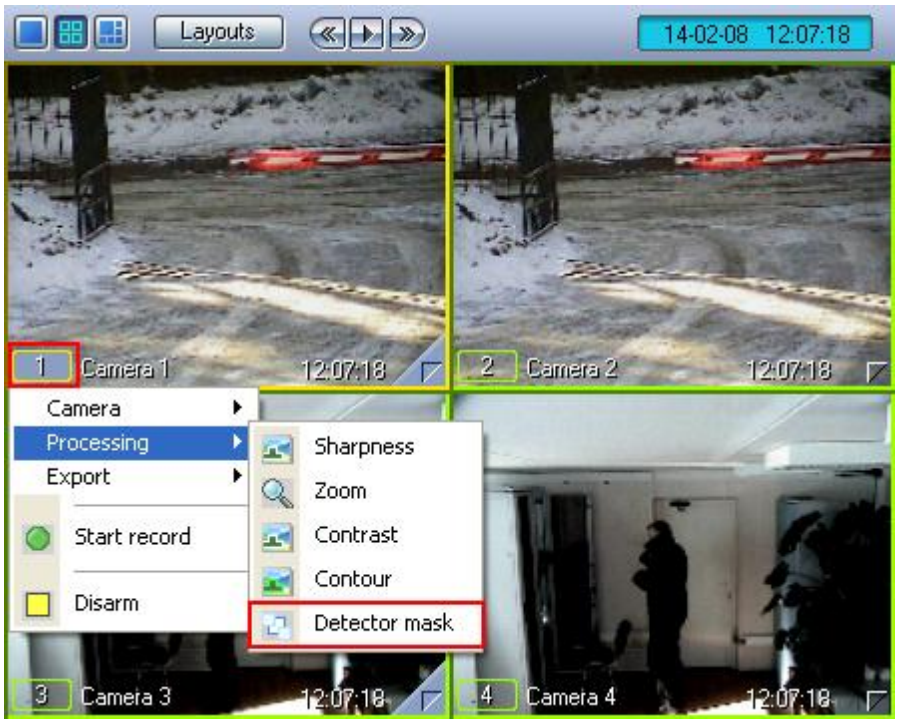


Fig. 4.3-22 Access to mask editing of the main detector zone

Masks are rectangular areas. A mask is imposed by a left click: select a dot on the screen, click the left mouse button and pressing the button draw a rectangle – the mask area will be filled with black dots (see Fig. 4.3-23).

In the mask area there will be no detection.

Fig. 4.3-23 Detector mask editing mode

Mask removal is performed in a similar way. To clear the screen area from mask, select a dot on the screen, click the right mouse button and pressing it draw a rectangle – the resultant rectangular area will be cleared.

To quit the mask editing mode select the “Detector mask” item from the “Processing” Submenu of the video surveillance window functions menu once more.

NOTE. When quitting the mask editing mode, rectangles with dots, that have bordered mask areas, vanish from the surveillance window. Nevertheless mask areas are still active, i. e. no surveillance occurs in these areas.

4.3.6 Events recording

4.3.6.1 *General information*

Video recording can be performed in the modes:

1. alarm video recording;
2. recording by Operator command;
3. audio and video synchro recording.

Event recording options can be performed:

1. Automatic addition of the pre-event fragment with a pre-defined duration at the beginning of the entire recording.
2. Automatic addition of the post-event fragment with a pre-defined duration at the end of entire recording.
3. Forced stop of the video recording in any mode.

The video recording status is indicated by the colour of the camera number indicator border in the surveillance window and by the recording control item in the video surveillance window functions menu.

4.3.6.2 *Recording indication*

Surveillance camera recording is indicated by the camera number indicator border in the video surveillance window of the camera (see Table 4.3-5).

Table 4.3-5

Colour of the camera number border	**Recording status**
Green or yellow	No video recording
Red	Video recording is being performed

The recording status is also displayed in the video surveillance window functions menu of the camera.

The «  » symbol means, that there is no video recording at the moment (see Fig. 4.3-24).

Fig. 4.3-24 Recording indicator in the video surveillance window functions menu (recording is OFF)

The «» symbol means, that video recording is being performed at the moment (see Fig. 4.3-25).

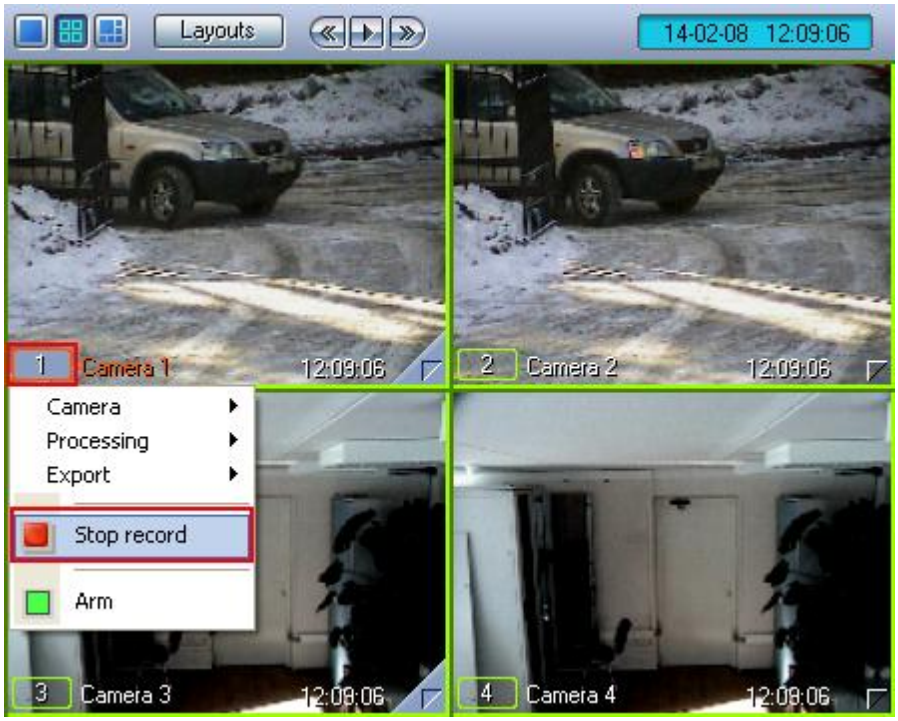


Fig. 4.3-25 Recording indicator in the video surveillance window functions menu (recording is ON)

The synchro audio recording and monitoring indicator is placed in the top right corner of the surveillance window (see Fig. 4.3-26).

Fig. 4.3-26 The synchro audio recording and monitoring indicator

4.3.6.3 *Alarm recording*

Alarm recording starts automatically, if any camera has registered an alarm event. Video recording stops immediately after the end of an alarm event or in a pre-defined time interval after it. With some program settings the pre-event fragment with a pre-defined duration may be automatically added to the beginning of the entire recording.

NOTE. Alarm recording doesn't start, if:

1. *the "Alarm recording" option has not been enabled for the camera –recording is not activated when the main detector registers an alarm event;*
2. *the "Alarm" option has not been enabled on the camera auxiliary detector – recording is not activated when the auxiliary detector registers an alarm event.*

4.3.6.4 *Recording by Operator command*

Recording may be forced by Operator command. To control recording, select the "Start recording"/"Stop recording" item from the functions menu of the video surveillance window.

Select the « » item to start recording (see Fig. 4.3-27).

Fig. 4.3-27 Switching on recording by Operator command

When recording starts, the recording indicator « » changes to « » (see Fig. 4.3-28).

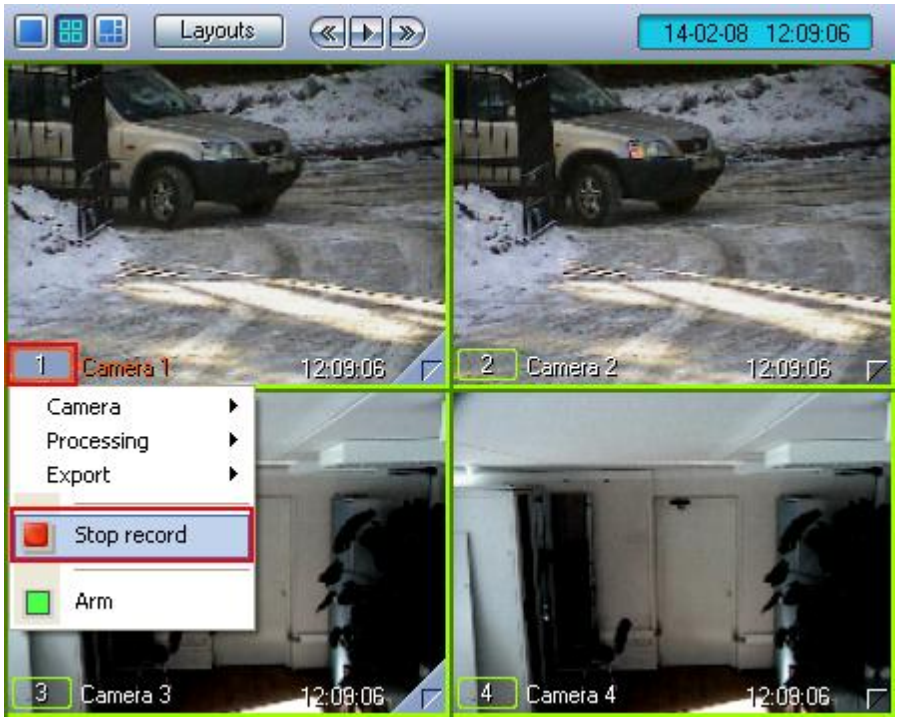


Fig. 4.3-28 Stopping video recording

To stop recording, click the « » item. The « » indicator changes to « ».

Recording by Operator's command has the following options:

1. recording completion delay after it has been stopped by the Operator's command;

2. automatic addition of the pre-event fragment with a pre-defined duration at the beginning of the entire recording.

With proper program settings, the recording completion delay after it has been stopped by the Operator's command is performed automatically. Automatic addition of the pre-event fragment with a pre-defined duration at the beginning of the entire recording is made on the map (see Fig. 4.3-29) (see the "Operations with the cameras" section).

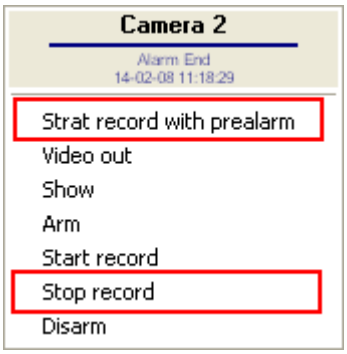


Fig. 4.3-29 Recording control with optional parameters

4.3.6.5 *Audio and video synchro recording.*

Synchro recording is switched on by Operator command or by an occurred alarm event. With this option in the top right corner of the surveillance window, the «  » (or «  ») icon is displayed (see Fig. 4.3-30).

Fig. 4.3-30 Indicator of synchro audio recording

If synchro recording was switched on by Operator command or by an occurred alarm event on a specific camera, an audio recording will start automatically from the attached camera microphone.

The colour of the icon indicates if the Operator can hear the sound from a given microphone, which doesn't affect recording.

NOTE. Synchro audio playback is possible only along with video playback. There are not any icons as to the availability of a synchro audio recording.

The synchro audio track cannot be saved into active archives.

4.3.6.6 *Stopping the recording*

The operator can stop video recording forcibly in any mode and at any time with the "Stop recording" item from the functions menu of the video surveillance window (see Fig. 4.3-31).

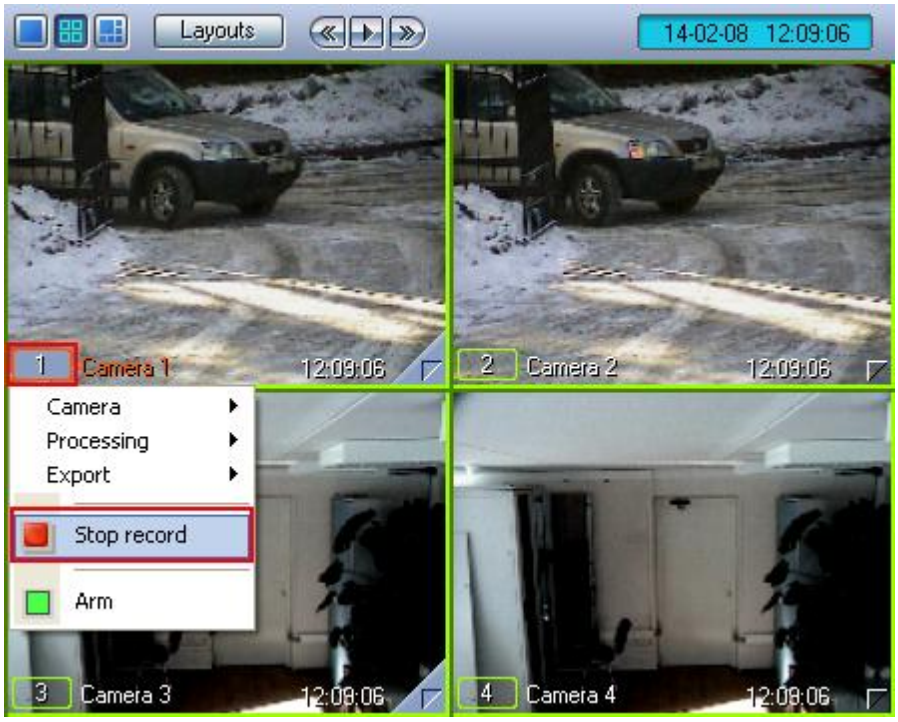


Fig. 4.3-31 Stopping recording by Operator command

NOTE. If recording is not currently activated, the "Start recording" item is displayed instead of the "Stop recording" item.

4.3.7 Image processing

4.3.7.1 *General information*

Image processing options are available through the video surveillance window functions menu: the "Processing" Submenu displays options available for a given image (see Fig. 4.3-32).

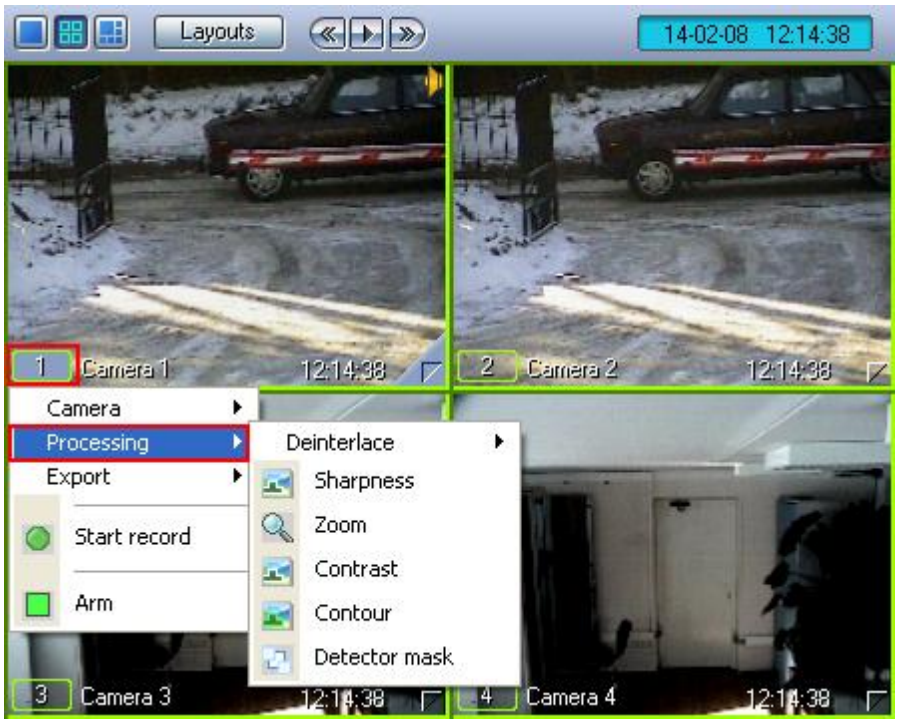


Fig. 4.3-32 Access to image processing options

The same image may be processed by several functions at once (see Fig. 4.3-33).

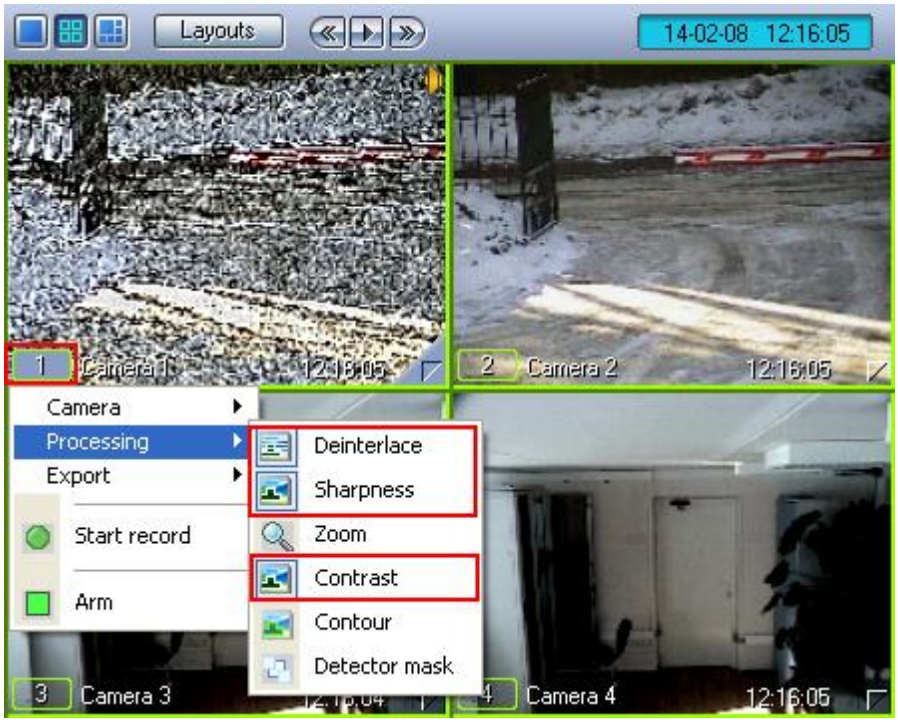


Fig. 4.3-33 Simultaneous multifunctional image processing

Activated options are outlined in the list of options. To switch the option on, click its name or its icon in the list of options. To switch the option off, click its name or its icon once more.

4.3.7.2 *Image scaling*

The “zoom-in” option allows to scale the image (see Fig. 4.3-34, Fig. 4.3-35).

Fig. 4.3-34 “Zoom-in” option (original image)

Fig. 4.3-35 “Zoom-in” option (processed image)

Switching on the “Zoom-in” option magnifies the image by a certain factor. After this the scale may be gradually increased or reduced by fast left or right clicking on the image. To retract the previous scale value, left click the “Zoom-in” item again or right click the image.

Mouse wheel action is also supported for zooming convenience (see the “Window scaling” section).

4.3.7.3 *Maximizing the image contrast*

The «Contrast» option provides maximum image contrast (see Fig. 4.3-36, Fig. 4.3-37).

Fig. 4.3-36 “Contrast” option (original image)

Fig. 4.3-37 “Contrast” option (processed image)

4.3.7.4 *Outlining of moving objects*

Software supports realtime dynamic outlining of moving objects via the “Outlining” option. Fig. 4.3-38 shows how to use the “Outlining” option.

Fig. 4.3-38 Using the “Outlining” option

4.3.7.5 *Image sharpening*

The “Sharpen” option allows sharpening the whole image (see Fig. 4.3-39, Fig. 4.3-40).

Fig. 4.3-39 “Sharpen” option (original image)

Fig. 4.3-40 “Sharpen” option (processed image)

4.3.7.6 *Image de-interlacing*

The aim of de-interlacing is to remove image fluttering, which is observed when moving objects are displayed (see Fig. 4.3-41).

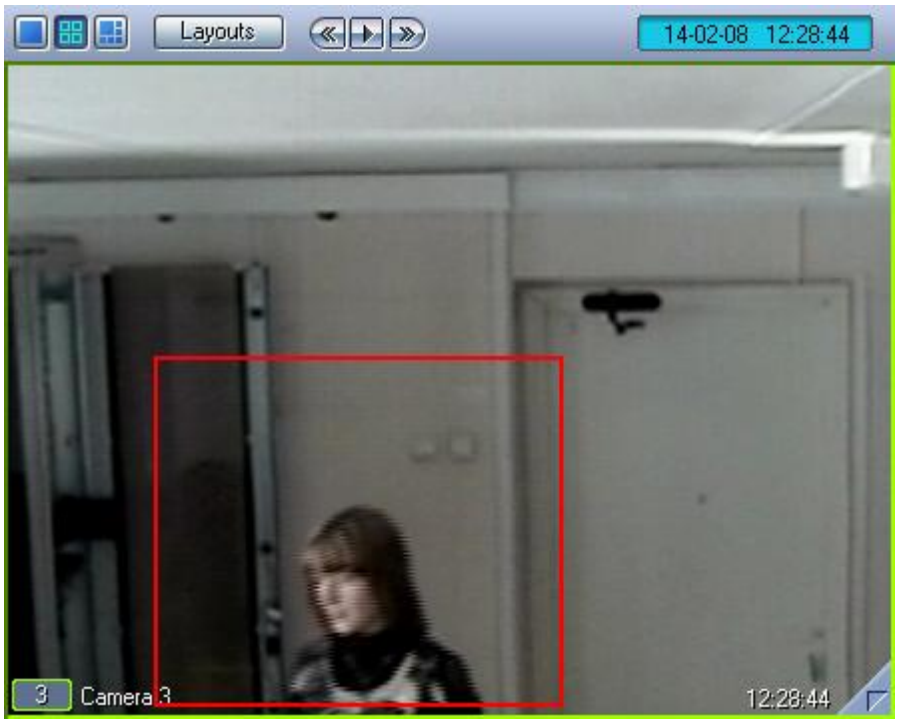


Fig. 4.3-41 Image fluttering

Deinterlace has two options: Deinterlace 1 is used, when an object is moving slowly. If its speed is high, Deinterlace 2 should be used. Deinterlace 2 degrades the vertical resolution of the Fig. 4.3-41. These functions are available via the functions menu of the video surveillance window (see Fig. 4.3-42).

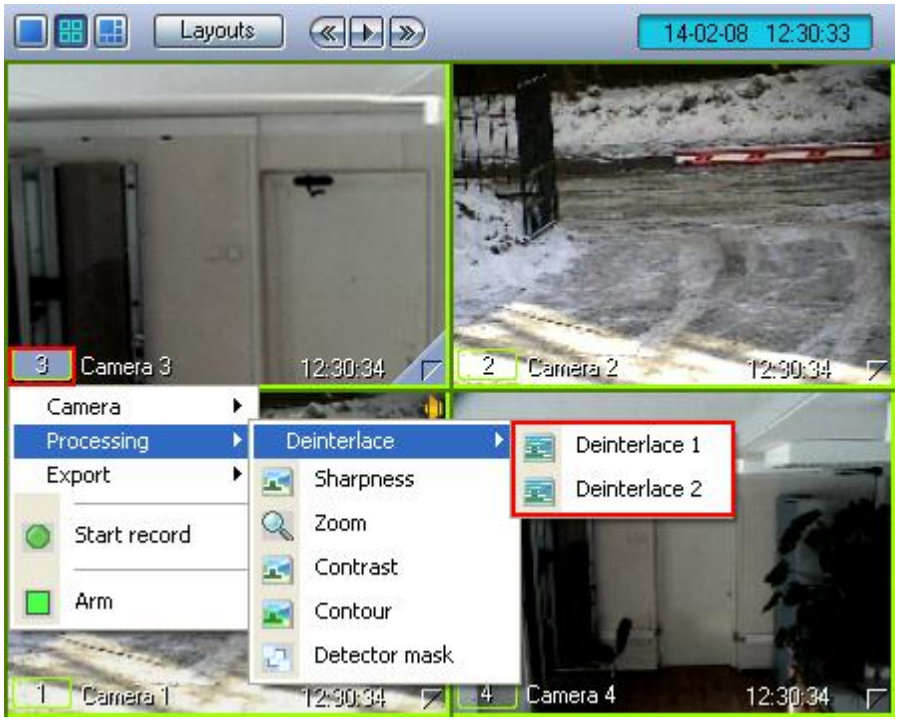


Fig. 4.3-42 Access to interlace options

NOTE: In some cases interlace modes are inaccessible (for example, if camera resolution has not been set to "Full" or if the monitor window is relatively small).

4.3.8 Working with the archives

4.3.8.1 *General*

Video and audio archives store copies of video and audio recordings created by the Intellect program.

All archives are subdivided into the following types:

1. Main archive - the video server archive;
2. Backup archive – an archive developed with the assistance of the functional module active archive.

Table 4.3-6 compares the characteristics of archives and the corresponding functional modules.

Table 4.3-6

Characteristics	Parameter	
Archive Type	Main Archive	Backup Archive
Functional module used to create the archive	-	Active archive
Source of recording	Recordings made by specified cameras and microphones	Copying of recordings made by specified cameras
Distribution of archived recordings (available types of carriers)	Hard and network disks, removable disks	Hard and network disks, removable disks
Tools to access archived recordings	Playback control, converter.exe utility	Active archive control panel, converter.exe utility
Recording modes	End-around (i.e., recording starts from the beginning, erasing all previous recordings, when there is no more free space left on the carrier), rerecording of archive data from the very first recordings is carried out	End-around (i.e., recording starts from the beginning, erasing all previous recordings, when there is no more free space left on the carrier), rerecording of archive data from the very first recordings is carried out
Saving sound (synchro audio recordings) together with audio recordings in the archive	Available	Not available
Recording term	Continuous recording	Continuous recording Recording during pre-set intervals
Recording settings	FPS (number of frames per second)	FPS (number of frames per second), bit rate (data volume per second)
Selection of cameras for recording	Not available	Available

Additionally, a separate video gateway archive is provided. The video gateway is used to reduce the load on the network when sizeable data flows are transmitted from the video servers to the remote workstations.

If the video gateway is on, data from the video servers is not transmitted directly to the remote workstations, but through the video gateway, which in turn distributes received data among the workstations. The video gateway cannot function as an active archive, unless it is the case where recording should be resumed; if the communication line fails, video recording is resumed from the beginning, instead of from the cut-off point.

4.3.8.2 *Operations with the Archives*

4.3.8.2.1 Server Archive Playback

To start main server archive playback, click  in the bottom right corner of the Web server surveillance monitor (see Fig. 4.3-43).

Fig. 4.3-43 Path to the main server archive playback

NOTE. Where the surveillance window is not big enough, the  *icon may sometimes not be displayed. In this case, the surveillance window should be enlarged.*

The playback control panel will be displayed, which will contain recordings of the main video server archive (see Fig. 4.3-44).

Fig. 4.3-44 Playback control of the main server archive

4.3.8.2.2 Active Archive Playback

To start playback of the backup archive, generated by the active archive functional module, the following steps are required:

1. point the mouse cursor at the  icon in the surveillance window of the appropriate camera;
2. press and hold the left mouse button for a few seconds.

Then the context menu will be displayed (see Fig. 4.3-45).

Fig. 4.3-45 Path to the playback of the main and backup archives generated by the active archive functional module

NOTE. Where the surveillance window is not big enough, the  *icon may sometimes not be displayed. In this case, the surveillance window should be enlarged. Also, certain program settings disable displaying the pop-up context menu. In this case, the program switches to the playback control panel of the main, instead of the backup archive.*

Select “Archiver” in the displayed context menu. The playback control panel will be displayed, which will contain recordings of the backup video server archive (see Fig. 4.3-46).

Fig. 4.3-46 Playback control panel of the backup archive generated by the active archive functional module

4.3.8.2.3 Video Gateway Archive Playback

The video gateway archive can be accessed via the surveillance window. To start video gateway archive playback, click  in the bottom right corner of the surveillance window (see Fig. 4.3-47).

Fig. 4.3-47 Path to video gateway archive playback

NOTE. Where the surveillance window is not big enough, the  *icon may sometimes not be displayed. In this case, the surveillance window should be enlarged.*

The playback control panel will be displayed, which will contain recordings of the video gateway archive (see Fig. 4.3-48).

Fig. 4.3-48 Playback control of the video gateway archive

NOTE. The above operation allows accessing both the video gateway archive and the main server archive. If the camera window gateway is off, main archive recordings can be accessed. Otherwise, the above method allows accessing the camera video gateway archive, in which case the main server archive can be accessed through the following steps:

1. *point the mouse cursor at the*  *icon in the surveillance window of the appropriate camera;*
2. *press and hold the left mouse button for a few seconds, until the context menu is displayed (see Fig. 4.3-49);*

Fig. 4.3-49 Path to the main archive playback (where video gateway archive is available)

3. *select "Video Server" in the context menu and the playback control panel, which contains the main video server archive recordings, will be displayed.*

4.3.8.3 *Archive Browsing*

4.3.8.3.1 Archive Browsing with the Time Scale

The archive may be browsed with the time scale (covering from 0 to 24 hours) as shown in Fig. 4.3-50.

Fig. 4.3-50 Time Scale

Blue colour corresponds to the periods of recording, grey colour shows that no recordings were made.

To modify the time scale, click the yellow time tags with the left mouse button (to increase the scale) or with the right mouse button (to reduce the scale).

To scroll the increased time scale move the cursor over it horizontally, keeping the left mouse button pressed.

If you click directly on the time scale, you can set the current playback position with reference to the selected recording segment, which was recorded during a certain period of time.

4.3.8.3.2 Video Sequence Browsing

Apart from the time scale, the archive may be browsed across the list of video sequence, contained in the time stamp column (see Fig. 4.3-51).

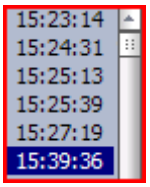


Fig. 4.3-51 Time Stamp Column

To switch over to the required recording segment, click the corresponding time stamp.

4.3.8.3.3 Fragment Search by the Date and Time of Creation

Apart from time scale browsing, the playback control panel also allows searching for certain recording fragments by the exact date and time.

The time table displayed in the bottom left corner of the panel is designed for the above search (see Fig. 4.3-52).

Fig. 4.3-52 Time Table

The upper part of the table shows the date, whereas the current playback position is shown in the bottom part.

To start the search, enter the date and time in the table. Double-click the date and time line and a green cursor will appear (see Fig. 4.3-53).

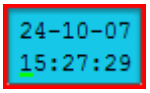


Fig. 4.3-53 Entering a timeframe to search for the required recording

Now, using the keyboard, enter the required time of the recording.

If you double-click on the date, you will see not only the green cursor, but also a calendar to assist you visually in the selection of the required recording date (see Fig. 4.3-54).

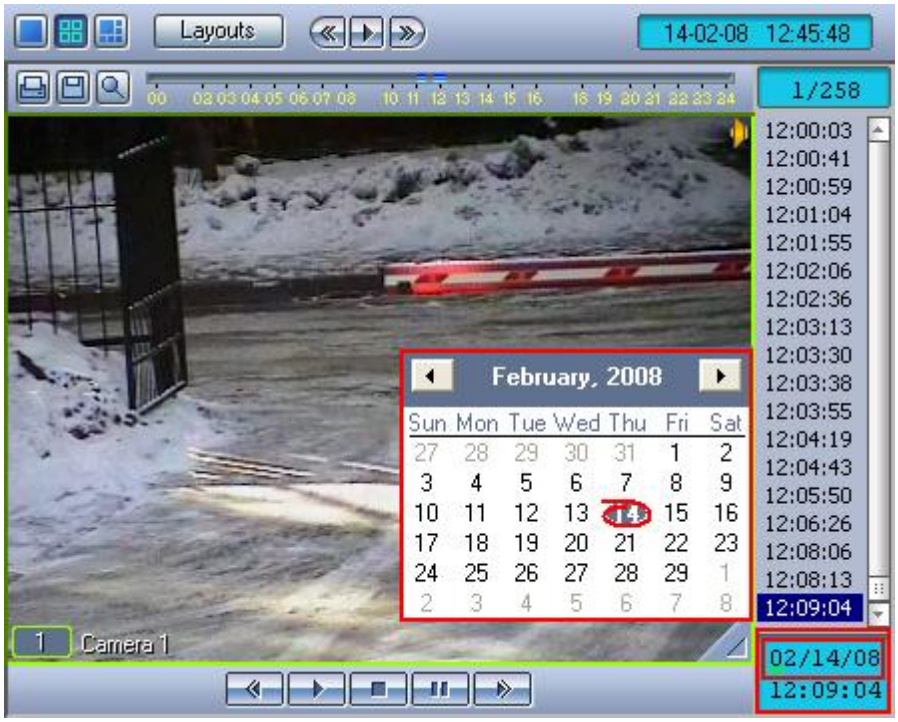


Fig. 4.3-54 Entering the date to search for the required recording

Bold font in the calendar indicates the dates of the recordings.

Note. Working with interface Windows Aero of OS Windows Vista, dates of the recordings are not bolded.

Having entered the date and time, press “Enter” to switch over to the required recording. If the recording with the requested date and time does not exist, the program will switch over to the recording with the nearest time of recording.

Note. In case when the access restriction to the video archive play back is set (see section «Access restriction to the video (and audio) archives » in the document «The Intellect software package. Administrator guide »), the switch will be performed only among the available recordings in the displayed list of all the recordings.

4.3.8.3.4 Search by Line Crossing

It’s possible to search the video recording by line crossing from the functional menu of Video archive window.

Note. Search by line crossing is possible only when Object trajectories DB and the «Tracker» object are created on the camera that is used for searching in Intellect software package (“Detector” object, see “Intellect software package: Administrator’s Guide” manual) .

Search by line crossing runs only on a given day.

Note. How to set a date is described in 4.3.8.3.3 part of this manual.

To search by line crossing do the following:

1. Select “Line crossing” from “Search in archive” dropdown menu in the functional menu (see Fig. 4.3-55) .

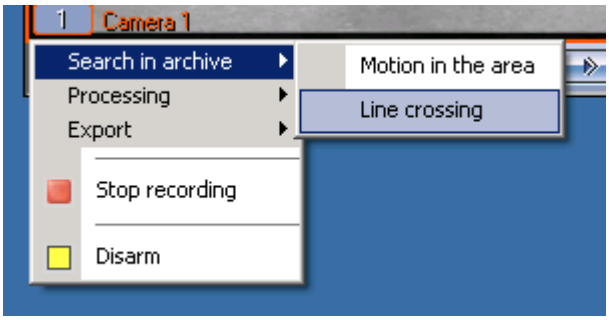


Fig. 4.3-55 Search by line crossing

2. Pressing the left mouse button set end points of the line in video recording display field (see Fig. 4.3-56).

Fig. 4.3-56 Setting the line

3. Do all necessary operations with the line. Operations with the line are performed in Table 4.3-7.

Table 4.3-7 Operations with the line

Operation	Operation result
Press the left mouse button in video surveillance window	End point of the line creating

Operation	Operation result
Hover cursor over the end point and pressing the left mouse button shift the mouse	End point of the line shift
Hover cursor over the end point and double click the left mouse button	Line deleting

4. To select the type of the object that was crossing the set line it's necessary to click  . Available types of the object are performed in Table 4.3-8.

Table 4.3-8 Types of the object

Symbol	Type	Purpose
	Any object	Search will give out the video recordings in which line is crossed by any object
	Human being	Search will give out the video recordings in which line is crossed by a humang being
	Car	Search will give out the video recordings in which line is crossed by a car

5. By pressing the left mouse button to one of grey arrow's end, set the traffic direction of the object across the line. Selected arrow becomes white (see Fig. 4.3-57)

Fig. 4.3-57 Setting the traffic direction

As a result the search selects the video recordings by given parameters. Search results are displayed in timestamps column (see Fig. 4.3-58).

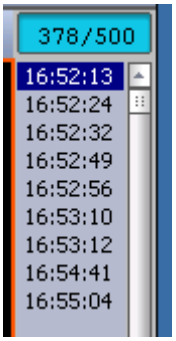


Fig. 4.3-58 Search results

Note. Setting the traffic direction of the object by VMDA detector depends strongly on "Tracker" object settings (see "Intellect software package: Administrator's Guide" manual). With bad settings the traffic direction can be determined incorrectly and, consequently, results can be wrong while searching in line crossing archive. The settings of "Tracker" object should be used experimentally for every case.

4.3.8.3.5 Search by Motion in the Area

It's possible to search the video recording by motion in the area from the functional menu of Video archive window.

Note. Search by motion in the area is possible only when Object trajectories DB and the "Tracker" object are created on the camera that is used for searching in Intellect software package (see "Intellect software package:Administrator's Guide" manual) .

Search by motion in the area runs only on a given day.

Note. How to set a date is described in 4.3.8.3.3 part of this manual.

To search by motion in the area do the following:

1. Select "Motion in the area" from "Search in archive" dropdown menu in the functional menu (see Fig. 4.3-59) .

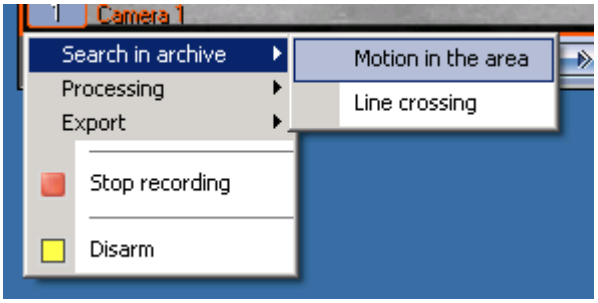


Fig. 4.3-59 Search by motion in the area

2. Pressing the left mouse button set node points of the search area in video recording display field (see Fig. 4.3-60).

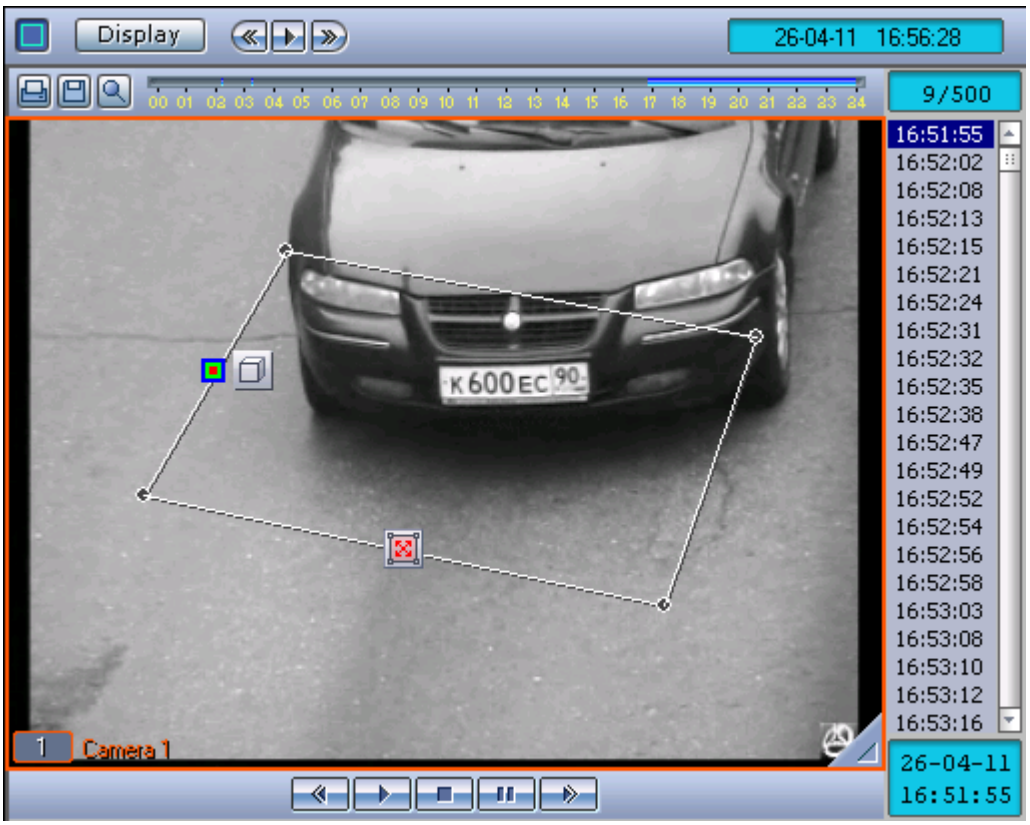


Fig. 4.3-60 Setting the search area

Adding of two areas is possible. The search will find video recordings in which the object passed from one area to another (see Fig. 4.3-61).

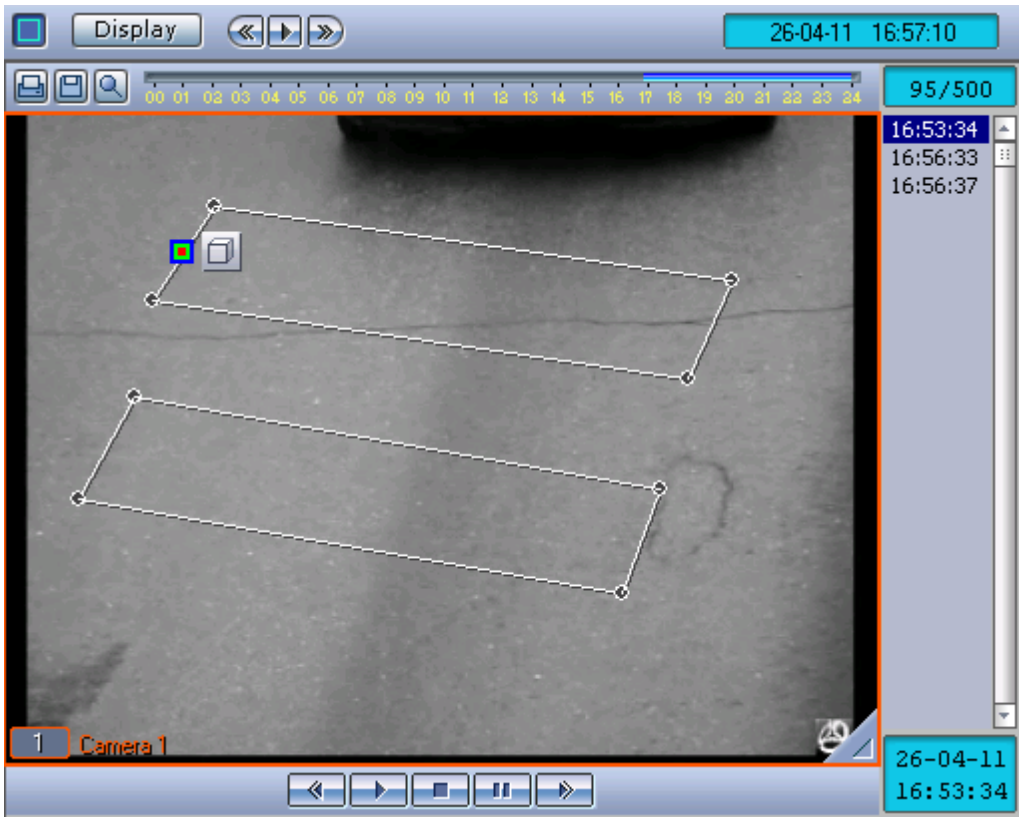


Fig. 4.3-61 Two motion areas setting

3. Do all necessary operations with the area. Operations with the area are performed in Table 4.3-9.

Table 4.3-9 Operations with the area

Operation	Operation result
Press the left mouse button in video surveillance window	Node point adding
Hover cursor over the node point and pressing the left mouse button shift the mouse	Node point shift
Hover cursor over the node point and press the right mouse button	Line deleting. In the presence of three node points the whole area is deleted.

4. To select the type of the object that was moving in the area it's necessary to click  . Available types of the object are performed in Table 4.3-10

Table 4.3-10 Types of the object

Symbol	Type	Purpose
	Any object	Search will give out the video recordings in which any object moves in the area
	Human being	Search will give out the video recordings in which a humang being moves in the area

Symbol	Type	Purpose
	Car	Search will give out the video recordings in which a car moves in the area

5. To select the type of the search it's necessary to click  . Available types of the search are performed in Table 4.3-11.

Table 4.3-11 Types of the search

Symbol	Type	Purpose
	Any motion in the area	Video recordings of any motion in the area will be found
	Entering the area	Video recordings of object entering the area will be found
	Leaving the area	Video recordings of object leaving the area will be found
	Appearance in the area	Video recordings of object appearance in the area will be found
	Disappearance in the area	Video recordings of object disappearance in the area will be found
	Stop in the area	Video recordings of object stop in the area will be found
	Being in the area more than 10 sec	Video recordings of object being in the area more than 10 sec will be found
	Left object	Video recordings of left object in the area will be found

As a result the search selects the video recordings by given parameters. Search results are displayed in timestamps column (see Fig. 4.3-62)

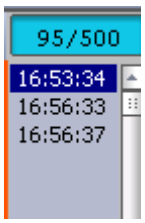


Fig. 4.3-62 Search results

4.3.8.3.6 Search by Colour

Search by colour is performed within the limits of search by line crossing or search by motion in the area.

Note. Colour range setting is a part of search by line crossing or search by motion parameters setting.

To search by colour do the following:

1. Select the type of search (search by line crossing or search by motion in the area).
2. Search by selected type (see “Search by Line Crossing”, “Search by Motion in the Area” parts).
3. To set colour range for which the search will be performed, click at the set line or area (see Fig. 4.3-63)

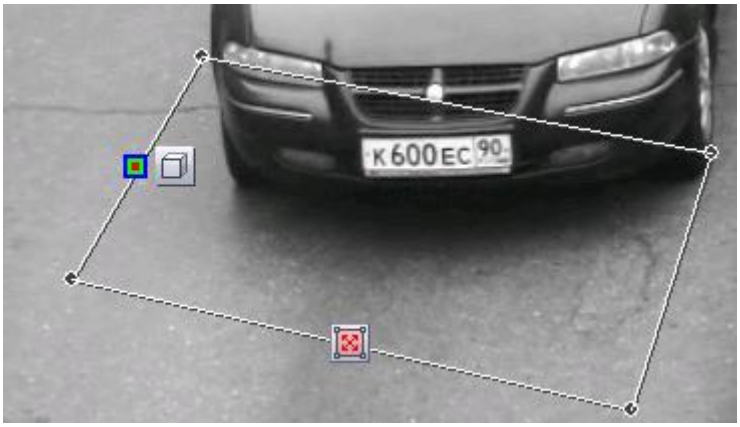


Fig. 4.3-63 Search by colour

Colour range setting form appears (see Fig. 4.3-64).

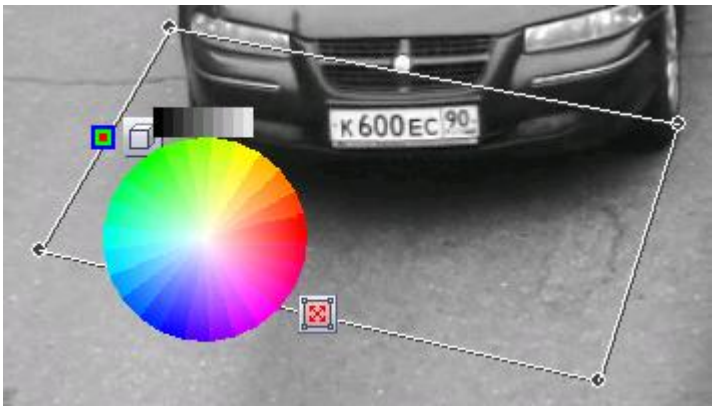


Fig. 4.3-64 Colour range setting form

4. Select colour range for search. Hover cursor over supposed range beginning (coloured or black-and-white) and pressing the left mouse button go till final colour in the circle (see Fig. 4.3-65, Fig. 4.3-66).

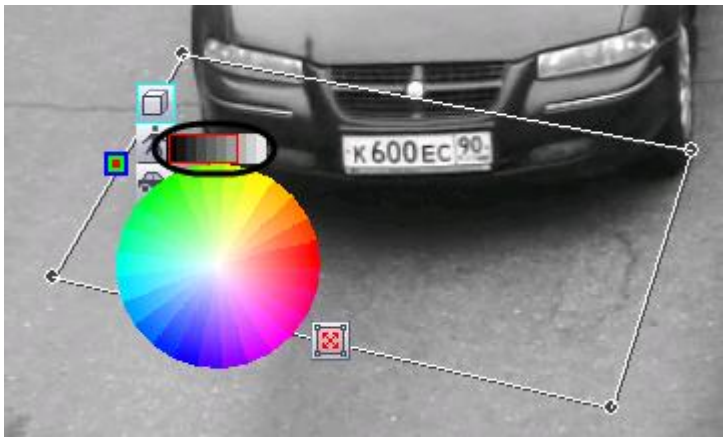


Fig. 4.3-65 Black-and-white range setting

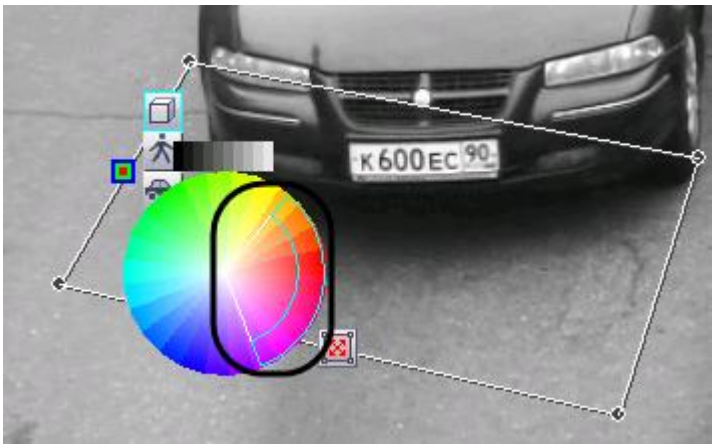


Fig. 4.3-66 Coloured range setting

Note 1. In case of clicking the left mouse button at one colour in spectrum, the search will be performed for adjacent (selected colour is specified by the arrow at Fig. 4.3-67).

Note 2. For the search to be more effective not a specific colour (according to illumination conditions and other surroundings parameters) but a colour range is set. The search checks whether the object is coloured into the colour from colour1-colour2 range. If there is a yes-answer this video recording will be displayed in search results.

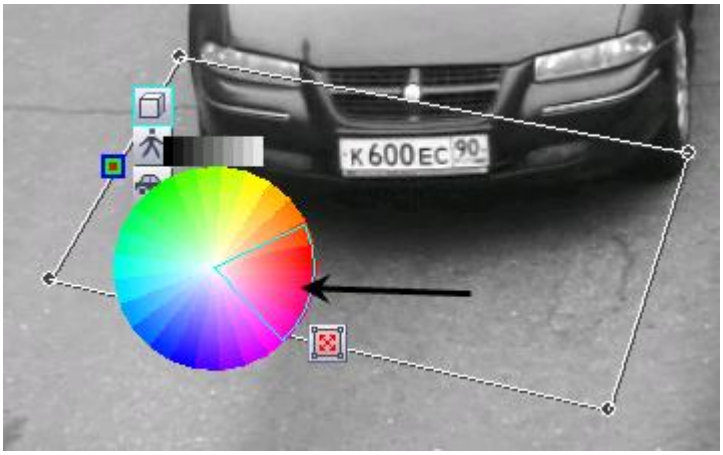


Fig. 4.3-67 Range extension

As a result the search selects the video recordings that correspond to parameters of selected search (search by line crossing or search by motion in the area) and the video recordings in which the moving object contains at least one colour from the colour range. Search results are displayed in timestamps column (see Fig. 4.3-68).

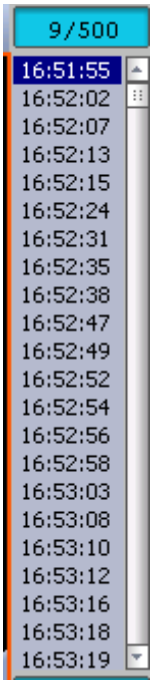


Fig. 4.3-68 Search results

4.3.8.4 *Video Playback*

4.3.8.4.1 Video Playback Controls

Browsing across a selected recording segment uses playback controls (see Fig. 4.3-69).

Fig. 4.3-69 Playback control panel

 This button starts playing back the selected recording segment, the  button stops playback and returns the current playback position of the recording to the beginning of the recording segment.

The  and  buttons increase or decrease the frame rate or slide show rate in the pause mode. To shift to the pause mode, press  , to restore playback – press  .

4.3.8.4.2 Synchro playback of a few video recordings

The program allows to synchronously playback a few archived video recordings on one monitor.

To use this function, display the required surveillance windows on the monitor and switch them over to the archive viewing mode (see Fig. 4.3-70).

Fig. 4.3-70 Access to the synchro playback of a few video recordings

Set entries in the surveillance windows, as required, using, for instance, the time stamp column (see Fig. 4.3-71).

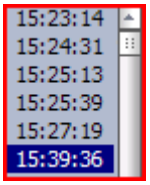


Fig. 4.3-71 Time Stamp Column

Now, controlling video playback in the active window, you will synchronously control the playback in other windows (see Fig. 4.3-72, Fig. 4.3-73).

Fig. 4.3-72 Synchro playback of video recordings (playback is on)

Fig. 4.3-73 Synchro playback of video recordings (playback is paused)

4.3.8.4.3 Synchro playback of video and audio recordings

If the video sequence contains audio recordings, archived video recordings are played back with sound. However audio recordings are not indicated in any way (see Fig. 4.3-74).

Fig. 4.3-74 The absence of indication of synchro audio recordings in the archive viewing mode.

4.3.9 Export and Print Out

4.3.9.1 *General*

Many graphic modules of the program support the following operations with the video image:

1. Frame export – saving the current frame as a standard Windows graphic file (in Bitmap, JPEG formats);
2. Frame print out – sending the current frame to the printer for printing;
3. Video recordings export – saving video recordings as standard Windows video files; Video recordings in this case may be saved together with the synchro sound.

To demonstrate the above functions, we use the camera window as an example.

4.3.9.2 *Frame export*

To save a frame, select the following in the functions menu of the surveillance window: «Export» ⇒ «Save frame» ⇒ «Scale» (100%, 30%, 10%), (see Fig. 4.3-75). In this case the scale defines image compression quality and is equal to the size of the final image file (as compared with the size of the original image frame).

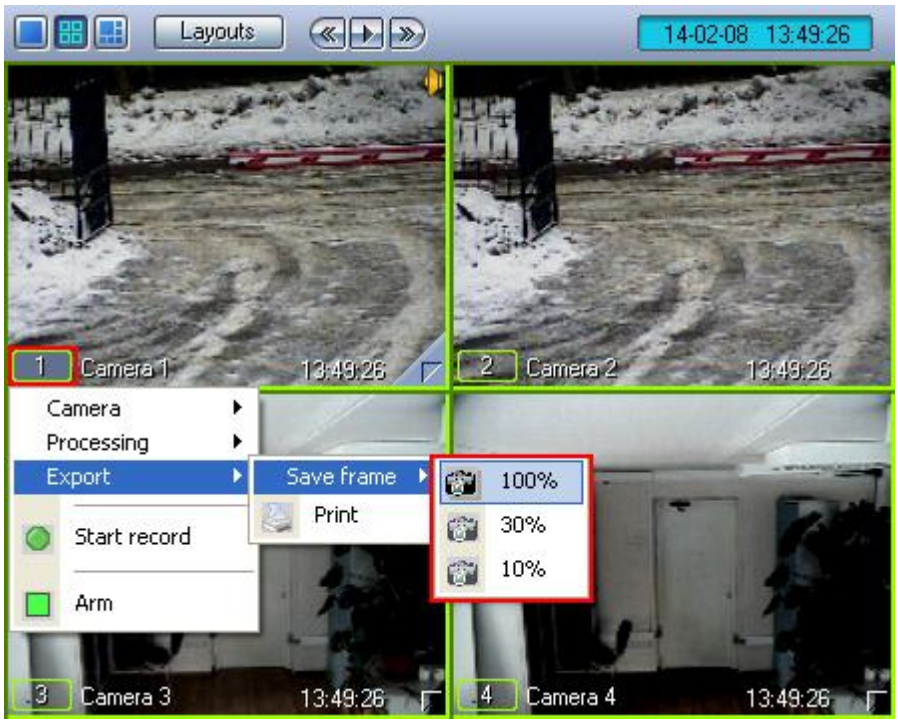


Fig. 4.3-75 Path to the frame export function

The file containing the saved frame is saved to the «export» sub-directory (this sub-directory is within the Intellect™ system directory). The file name is generated as follows: <camera number> (<date> <time>). For instance, 02 (03-10-07 16'28'06).jpg.

NOTE. Where 100% scale was chosen, the image is saved in BMP format, however if other scales are used, the image is saved as JPEG.

4.3.9.3 *Printing the still frame*

To send a frame for printing, choose the “Print” command from the “Export” menu (see Fig. 4.3-76).

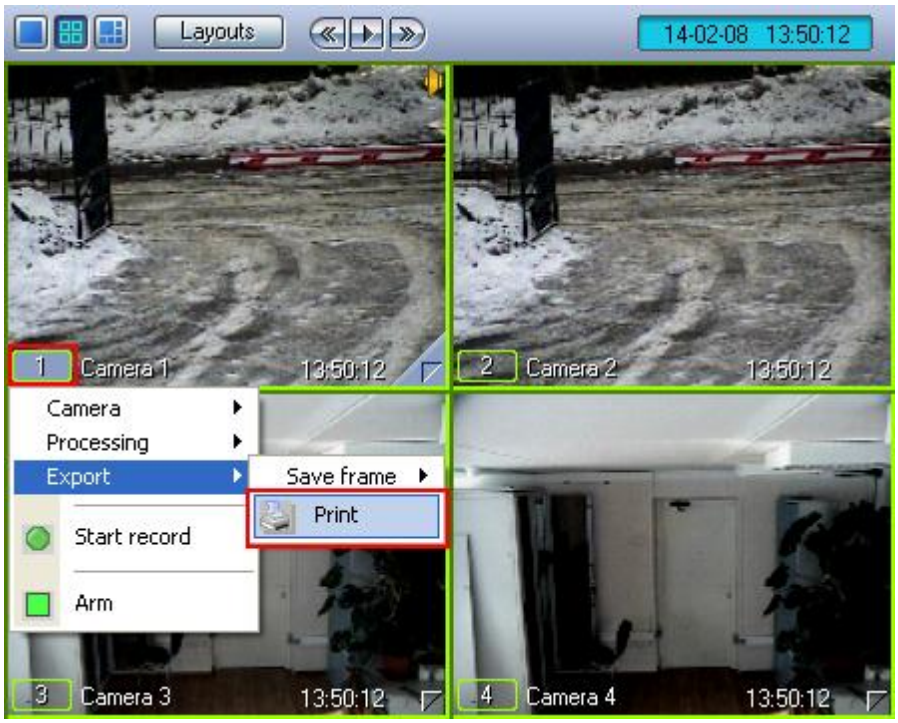


Fig. 4.3-76 Path to the frame print function

As a result of the above actions, the frame image will be queued for printing by default (see Fig. 4.3-77).

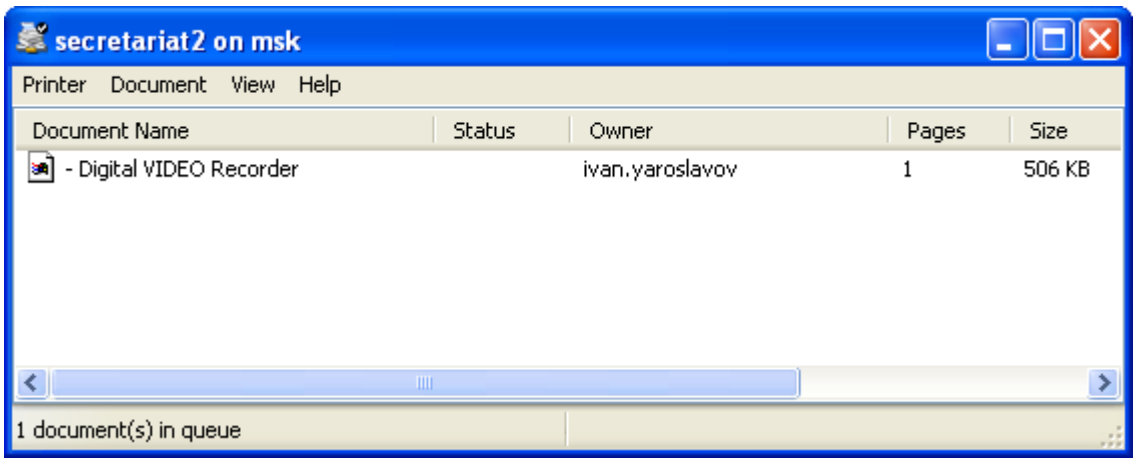


Fig. 4.3-77 Standard "Printout List" of the printer dialog box (OS Windows XP)

NOTE. Standard Printout List of the printer dialog box (OS Windows XP) does not belong to the Intellect Program and is not automatically displayed as soon as the print command is sent.

4.3.9.4 *Export of Silent Video Recordings*

The video recording segment without sound is exported using the playback control panel.

Choose "Export" in the functions menu of the video surveillance window and then select "Save Recording to AVI" (see Fig. 4.3-78).

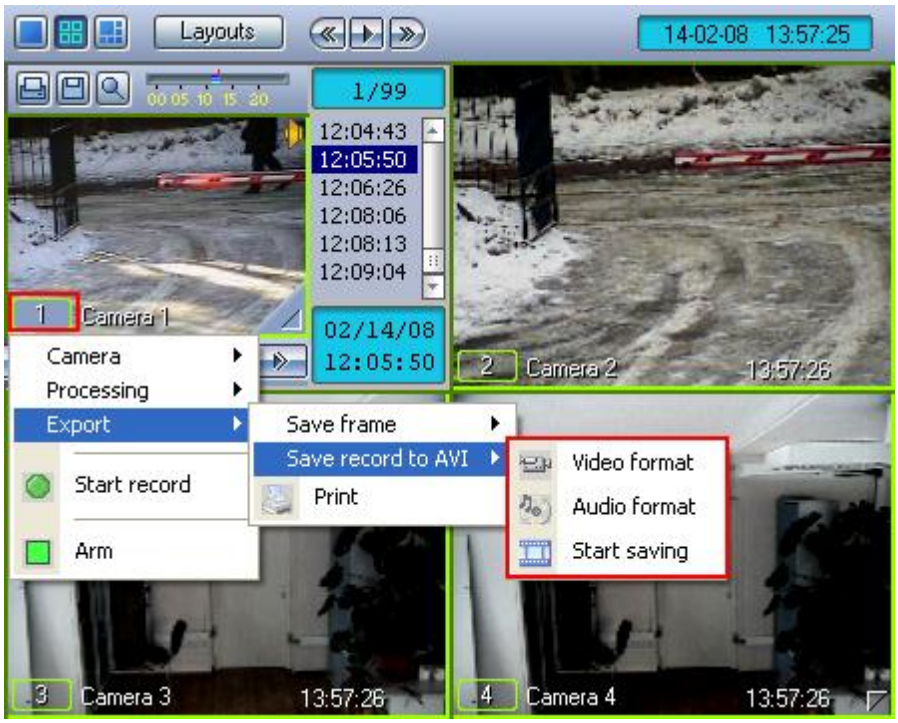


Fig. 4.3-78 Path to the video segment export function

Parameters of the video and audio, which will be saved, may be configured in the displayed window.

Compression quality is selected in the standard Windows dialog box (see Fig. 4.3-79).

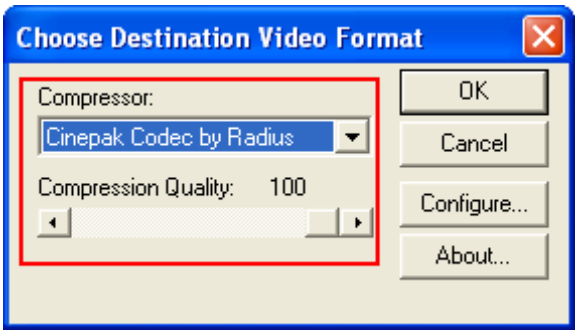


Fig. 4.3-79 Selection of compression quality

Select “Codec” in the dialog box and, if available, compression quality.

As soon as recording saving parameters are selected, the video segment may be exported to the file by selecting the “Start Saving” command. The “Playback” button will be highlighted in the course of saving, whereas the playback position indicator will count down the frame currently being processed (see Fig. 4.3-80).

Fig. 4.3-80 Indication of video segment export process

As soon as the video segment saving process is complete, the “Playback” button is no longer highlighted (see Fig. 4.3-81).

Fig. 4.3-81 Indication of video segment export completion

The file containing the saved video recording is saved to the «export» sub-directory (this sub-directory is within the Intellect™ system directory). The file name is generated as follows: <camera number>

(<date> <time>). For instance, 02 (03-10-07 16'28'06).avi (file extension is controlled through the compression quality configuration).

NOTE. If AVI format is used, the resultant file cannot be bigger than 2 GB.

4.3.9.5 *Export of Video Recording Supported with Sound*

Video recording segment with sound is exported using the playback control panel.

Choose “Export” in the functions menu of the video surveillance window and then select “Save Recording to AVI” (see Fig. 4.3-82).

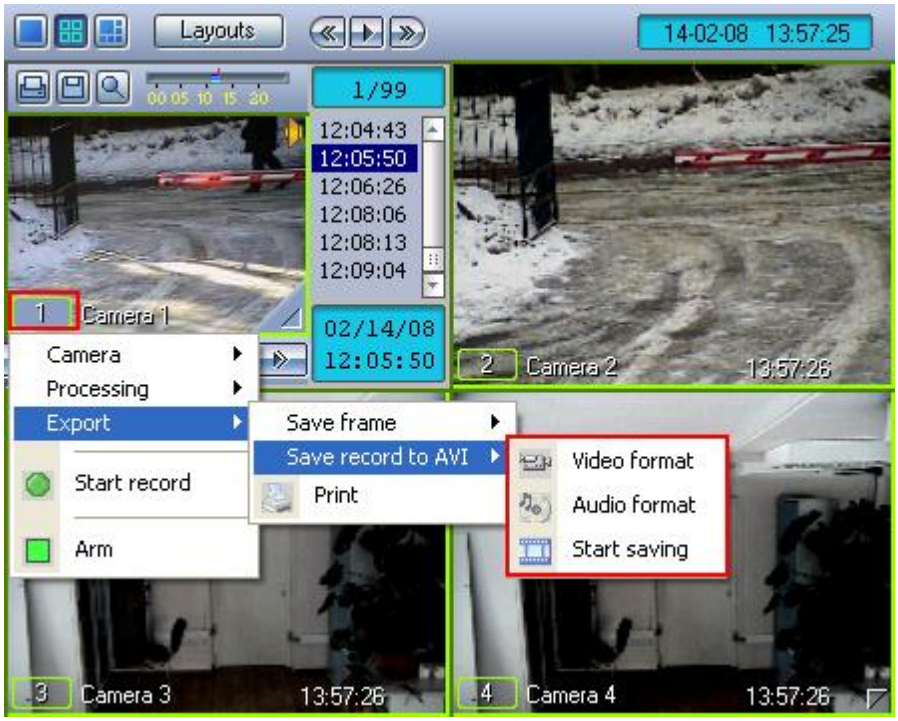


Fig. 4.3-82 Path to the video segment export function

Parameters of the video and sound, which will be saved, may be configured in the displayed sub-menu.

Compression quality is selected in the standard Windows dialog box (see Fig. 4.3-83).

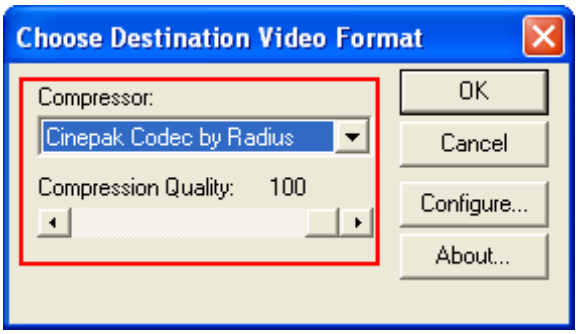


Fig. 4.3-83 Selection of compression quality

Select “Codec” in the dialog box and, if available, compression quality.

Compression quality of the synchro sound is selected in the standard Windows dialog box (see Fig. 4.3-84).

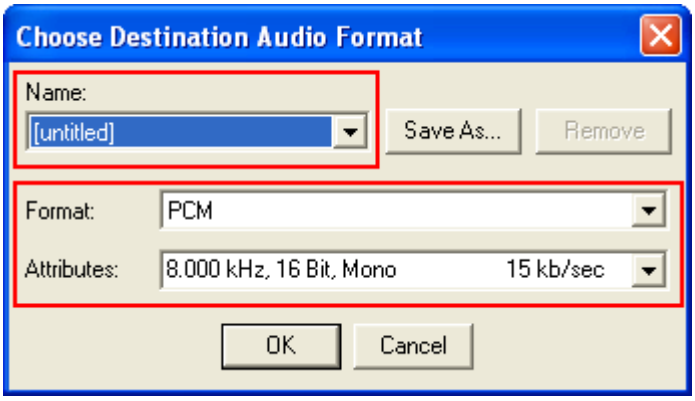


Fig. 4.3-84 Selection of compression quality for the sound

Choose the audio format in the dialog box and select a set of sound quality parameters, or a pre-defined settings profile.

As soon as recording saving parameters are selected, the video segment may be exported to the file by selecting the “Start Saving” command. The “Playback” button will be highlighted in the course of saving, whereas the playback position indicator will count down the frame currently being processed (see Fig. 4.3-85).

Fig. 4.3-85 Indication of the video segment export process

As soon as the video segment saving process is complete, the “Playback” button is not longer highlighted (see Fig. 4.3-86).

Fig. 4.3-86 Indication of video segment export completion

The file containing the saved video recording supported with sound is saved to the «export» sub-directory (this sub-directory is within the Intellect™ system directory). The file name is generated as follows: <camera number> (<date> <time>). For instance, 02 (03-10-07 16'28'06).avi (file extension is controlled through the compression quality configuration).

NOTE. If AVI format is used, the resultant file cannot be bigger than 2 GB.

4.4 Audio Surveillance

4.4.1 General

The audio recording surveillance subsystem allows audio monitoring (eavesdropping on the audio component of the events) and audio recording (recording the audio component of the events), supporting the following functions:

1. Audio monitoring;
2. Synchro recording of audio and video signals;
3. Setting audio recording mode by the Operator's command and using acoustic start;
4. Export of audio recordings.

NOTE. Operations with the audio monitoring (audio surveillance) subsystem are enabled through the connection of earphones or any other acoustic device to the sound card of the PC.

4.4.2 Eavesdropping on the Audio Signal through Microphones

4.4.2.1 *Eavesdropping on Audio Signals through the Microphones Configured to the Synchro Recordings*

Signals are eavesdropped with the microphone configured to synchro recordings through the Camera window.

To eaves drop incoming audio signals from the microphone, matching the given Camera window, use the  button shown in the upper right corner of the window (see Fig. 4.4-1).

Fig. 4.4-1 Indicator of audio signal eavesdropping with the microphone (switched on) for synchro recordings

If the  button is shown red, it means that eavesdropping of the audio signal with the given microphone is currently on (see Fig. 4.4-2).

Fig. 4.4-2 Indicator of audio signal eavesdropping with the microphone (switched off) for synchro recordings

To switch eavesdropping on, click with the left mouse button, and the button will become yellow. To switch audio signal eavesdropping off, click again.

NOTE. If the program is configured in a certain setting, eavesdropping of the audio signal from the microphone may be inaccessible. In this case the button will not be displayed.

4.4.2.2 *Eavesdropping on Audio Signals through the Microphones Initiated through Acoustic Start and Operator Commands*

Eavesdropping on the audio signals through the microphones initiated through acoustic start and Operator commands uses the audio player.

To switch eavesdropping on and off the button is used (see Fig. 4.4-3).

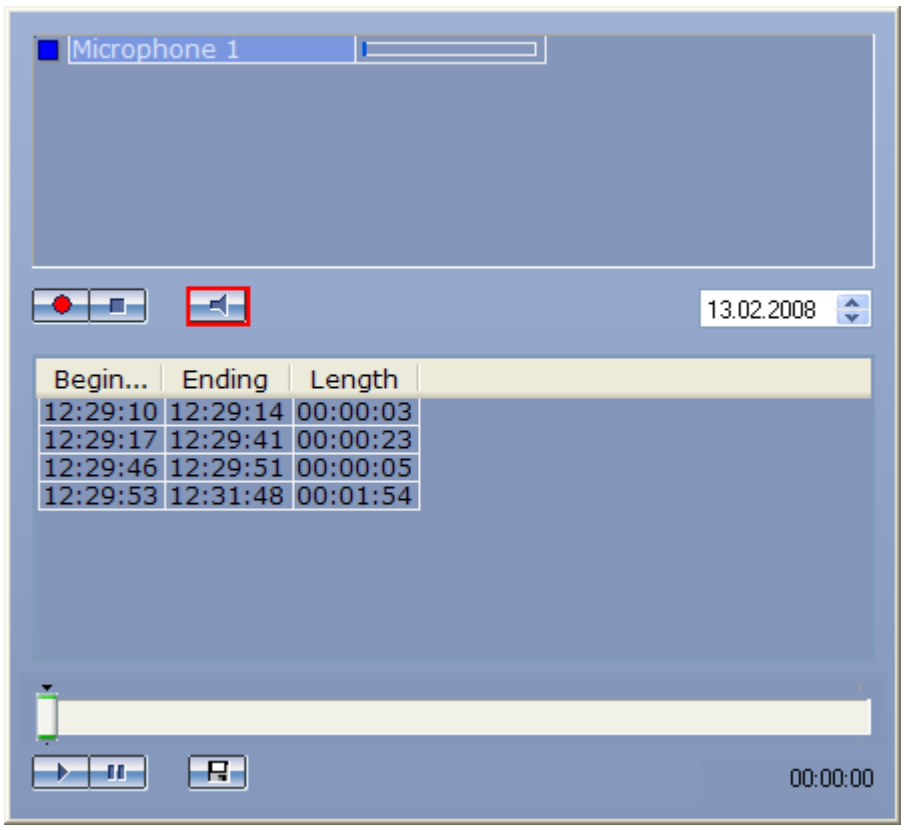


Fig. 4.4-3 Indicator of audio signal eavesdropping via the microphone (switched off) when recording, is initiated by acoustic start or Operator command

If the button is displayed like  , it means that audio signal eavesdropping through the microphone is on at the moment. If the button is displayed like  this indicates that the eavesdropping mode is off.

4.4.3 Microphone arming and disarming

4.4.3.1 *General*

Microphones are armed to use audio recording initiated by acoustic start (see the “Recordings by Acoustic Start” section).

4.4.3.2 *Microphone status indication*

The microphone status indicator is shown in front of the corresponding name of the microphone as enumerated in the list of microphones (see Fig. 4.4-4).

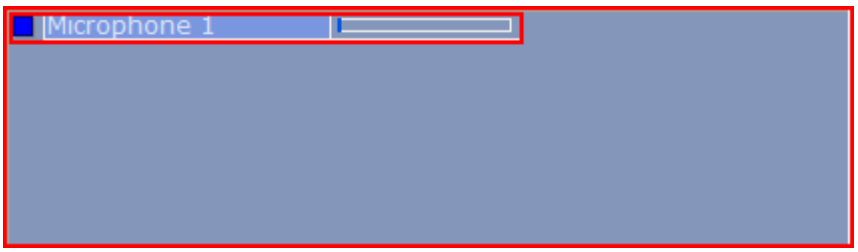


Fig. 4.4-4 Microphone Status Indicator

Microphone status indication is shown in Table 4.4-1.

Table 4.4-1

Indicator Color	Microphone status	Comments
Blue	Microphone is ready for recording, but is not armed	Signal strength of the microphone exceeds the threshold level, required to start recording
Red	Microphone is recording, alarm was triggered	
Green	Microphone is not ready for recording, and is not armed	Signal strength of the microphone is lower than the threshold level, required to start recording
Yellow	The microphone is armed	

4.4.3.3 *Arming the microphone*

To arm a microphone, select it in the microphone list and click  (see Fig. 4.4-5).

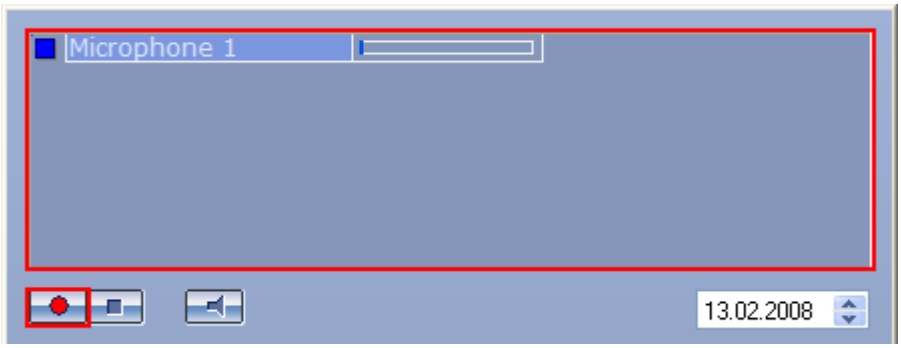


Fig. 4.4-5 Arming the microphone

If the signal strength of the microphone, while being armed, exceeds the threshold, recording will start. Otherwise, the microphone will be armed, and recording will start, when the pre-defined threshold level of the microphone is exceeded. The current status of the recording process is indicated by the microphone indicator (see the “Recordings by Acoustic Start” section).

4.4.3.4 *Disarming the microphones*

To disarm a microphone use the  button  (see Fig. 4.4-6).

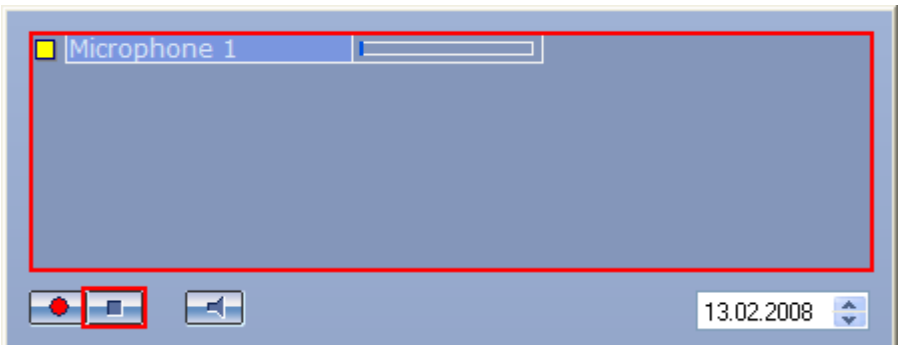


Fig. 4.4-6 Disarming a microphone

If the microphone is being disarmed while recording, the recording will be suspended. As soon as the microphone is disarmed, the microphone indicator becomes blue or green (see the “Recording Indication” section).

4.4.4 Audio Recording of Events

4.4.4.1 *General*

The program supports the following modes of audio recordings:

1. recordings at the Operator’s Command;
2. recordings by Acoustic Start;
3. synchronously with the video recordings.

Audio recording initiated by the Operator’s command or acoustic start uses the Audio Player module, while synchro recording is controlled through the Camera window.

The current status of the recording is displayed by the microphone indicator.

4.4.4.2 *Recording Indication*

The status of microphone recordings is displayed through the corresponding microphone indicator (see Fig. 4.4-7).

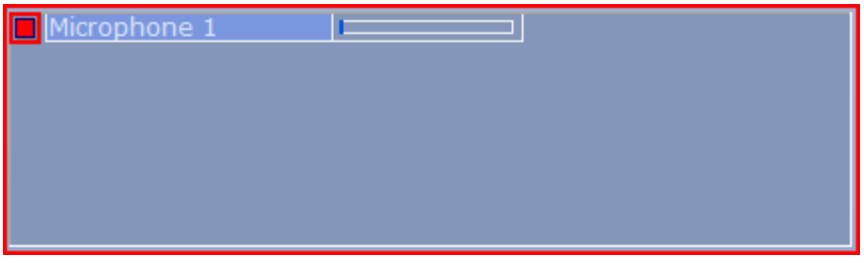


Fig. 4.4-7 Microphone Recording Indicator

The microphone recordings status indication is shown in Table 4.4-2.

Table 4.4-2

Indicator Color	Recording Status

Indicator Color	Recording Status
Red	Microphone is currently recording
Blue	Microphone is not currently recording
Green	
Yellow	

4.4.4.3 *Recordings by Acoustic Start*

To initiate recording by acoustic start, the microphone should be armed. To arm a microphone, select it in the microphone list and click  (see Fig. 4.4-8).

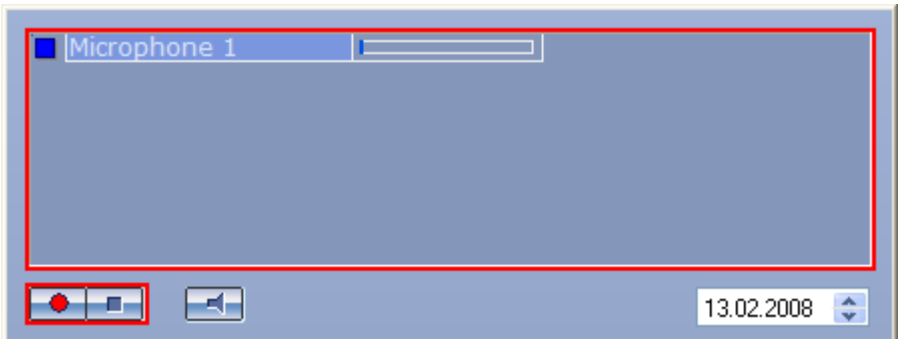


Fig. 4.4-8 Controls for the microphone recordings by acoustic start

If the sound level when arming a microphone is lower that the threshold acoustic start level, the microphone indicator becomes yellow (see Fig. 4.4-9).

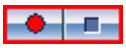
Fig. 4.4-9 Microphone status indicator (no recording is in progress)

If the sound level at the time of arming (or any other time after the microphone has been armed) exceeds the threshold acoustic start level, the recording starts and the microphone status indicator becomes red (see Fig. 4.4-10).

Fig. 4.4-10 Microphone status indicator (recording is in progress)

The recording will continue as long as the microphone sound level is above the threshold acoustic start level. If the microphone sound level decreases below the threshold acoustic start level, the recording stops and the microphone status indicator becomes yellow (see Fig. 4.4-9).

To disarm the microphone and stop recording, press the  button.

NOTE. The  *buttons control recordings through the microphone, initiated both by the Operator's command and by acoustic start. Selection of the recording mode depends on the program settings.*

4.4.4.4 *Recordings by the Operator's Command*

To start recordings via a microphone, select it in the microphone list and click  (see Fig. 4.4-11).

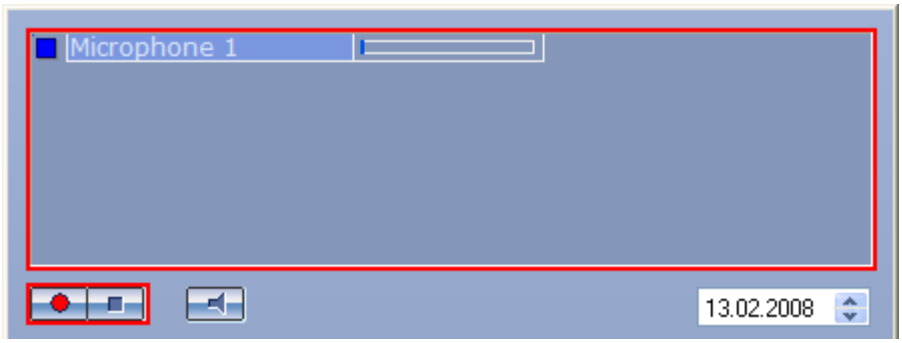


Fig. 4.4-11 Controls for the microphone recordings by the Operator's Command

The microphone indicator becomes red to show that recording has started (see Fig. 4.4-12).

Fig. 4.4-12 Microphone status indicator (recording is in progress)

To stop the recording, press  .

NOTE. The  *buttons control recordings through the microphone, initiated both by the Operator's command and by acoustic start. Selection of the recording mode depends on the program settings.*

4.4.4.5 *Synchro Audio and Video Recordings*

Video recordings supported by synchro sound are controlled in the same way as video recordings without synchro sound support, for instance, through the Camera window (see the "Synchro playback of video and audio recordings" section). However, the Camera window, which besides the camera is connected to the microphone, will also display a synchro recording symbol (see Fig. 4.4-13).

Fig. 4.4-13 Synchro audio and video recording indicator

4.4.5 Operations with the Audio Archives

4.4.5.1 *General*

Archived audio recordings, depending on the method of generation thereof, may be played back either with the Audio Player or the archive viewing mode of the Camera window.

4.4.5.2 *Audio playback*

4.4.5.2.1 General

Audio recordings generated at the Operator's command or by acoustic start are played back using the Audio Player (see Fig. 4.4-14).

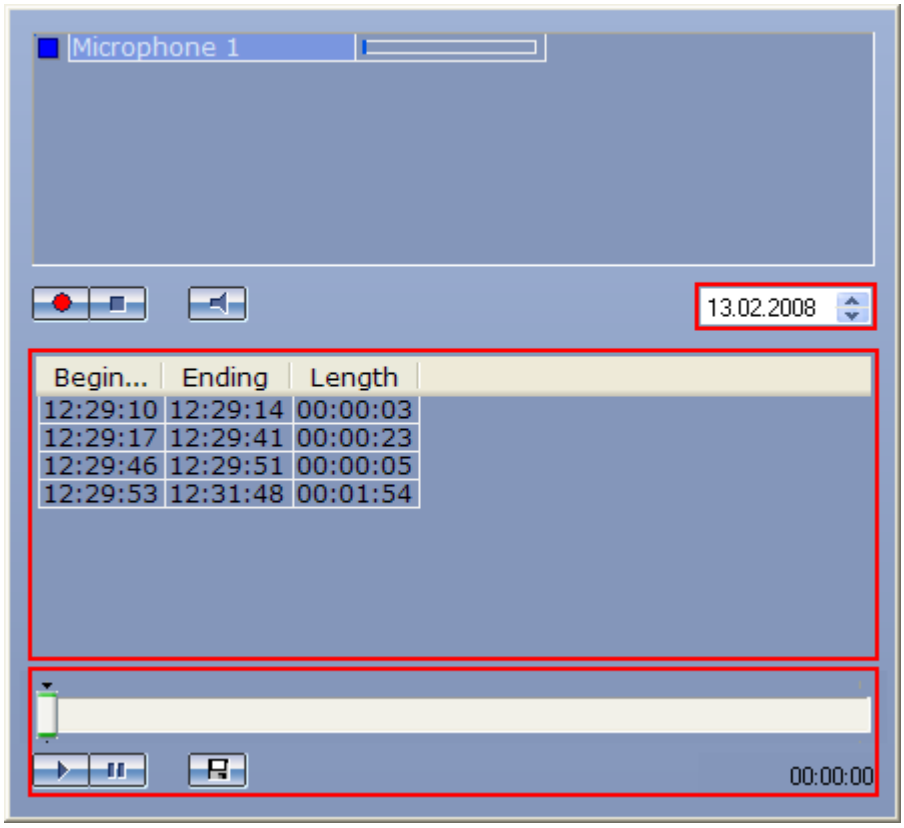


Fig. 4.4-14 Elements of the Audio Player interface for the recording playback

To playback a recording, follow the steps as shown below:

1. select a microphone, which was used for the recording;
2. select the recording date (to filter the recordings made by the given microphone);
3. select the recording;
4. use the playback control panel.

4.4.5.2.2 Select Audio Recordings from the List

To playback a recording, select the one you need from the list (see Fig. 4.4-15), reflecting all the recordings available for the selected date (see the “Search for Audio Recordings by Date” section).

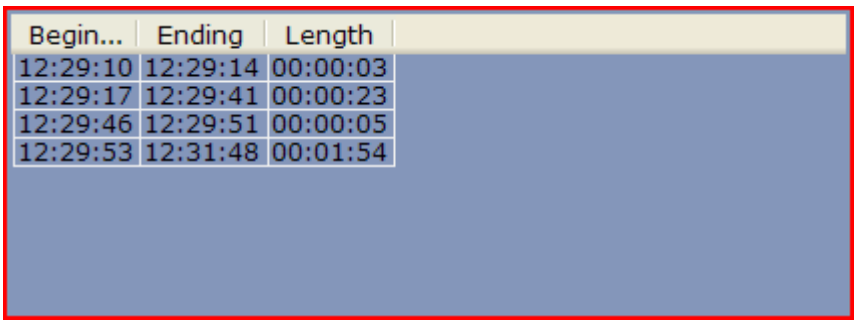


Fig. 4.4-15 List of audio recordings

Each audio recording is described with the following attributes: beginning of recording time, end of recording time and length. To select a recording, click on the line with one of the attributes of the given recording.

4.4.5.2.3 Search for Audio Recordings by Date

To select the date for viewing a list of recordings created on a certain selected date, use the field displayed above the list of audio recordings (see Fig. 4.4-16).

Fig. 4.4-16 Audio recording date field

The list of audio recordings is updated automatically with the selected date, whenever the recording date field is modified.

4.4.5.2.4 Audio Playback

The playback control panel is displayed at the bottom of the Audio Player (see Fig. 4.4-17).

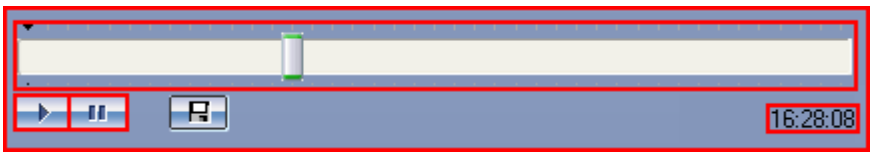


Fig. 4.4-17 Playback control panel of the audio recordings created by acoustic start or Operator command

The  and  buttons are designed to playback and pause playback of a selected recording. The slide is used to browse across the audio recording. The current playback position is displayed as: “HOURS:MINUTES:SECONDS” and is displayed in the right bottom corner of the playback control panel.

4.4.5.3 *Synchro Playback of Audio and Video Recordings*

The synchro audio recording is played back with the corresponding archive playback (see the “Synchro playback of video and audio recordings” section). However audio recordings are not indicated in any way (see Fig. 4.4-18).

Fig. 4.4-18 Synchro audio and video playback

4.4.5.4 *Export of audio recordings*

4.4.5.4.1 Export of audio recordings created by acoustic start and Operator command

File export of the audio recordings created by acoustic start or Operator command uses the Audio Player (see Fig. 4.4-19).

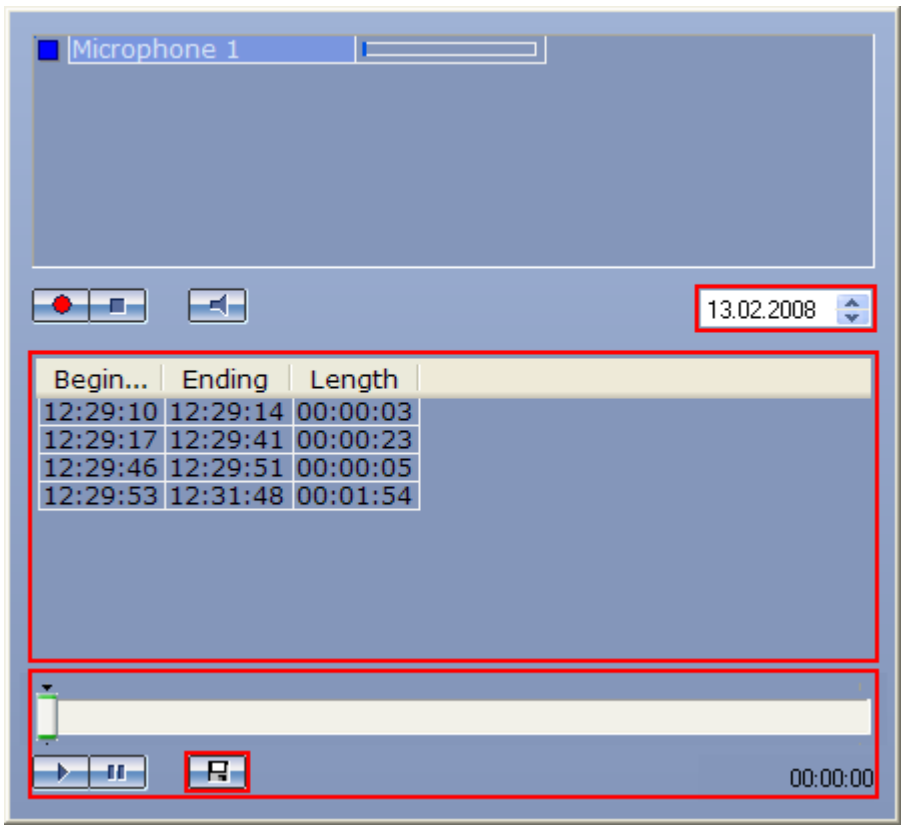


Fig. 4.4-19 Elements of the Audio Player Interface to export audio recordings created by acoustic start or Operator command

To export audio recordings, the following steps are required:

1. select the audio recording date in the date field (displayed in the middle part of the Audio Player window);
2. select an audio recording from the list by clicking one of its attributes (beginning of recording date, end of recording date and length of recording);
3. click  .

Enter the path and file name in the displayed dialog box (see Fig. 4.4-20).

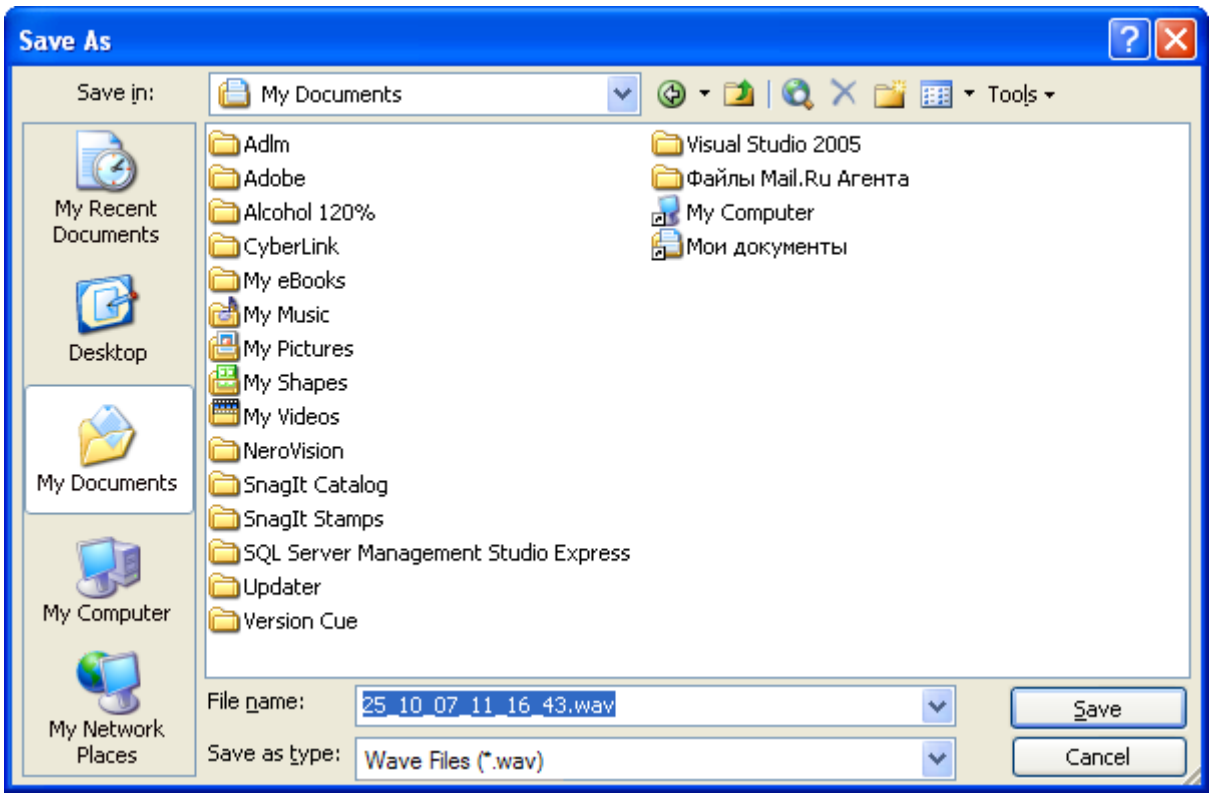


Fig. 4.4-20 Standard dialog box for entering path and file name (OS Windows)

As soon as the “Save” button is pressed, the file with the given name will appear in the selected directory.

4.4.5.4.2 Synchro Export of Audio and Video Recordings

Synchro export of audio and video recordings is controlled through the playback control panel.

Choose “Export” in the functions menu of the video surveillance window and then select “Save Recording to AVI” (see Fig. 4.4-21).

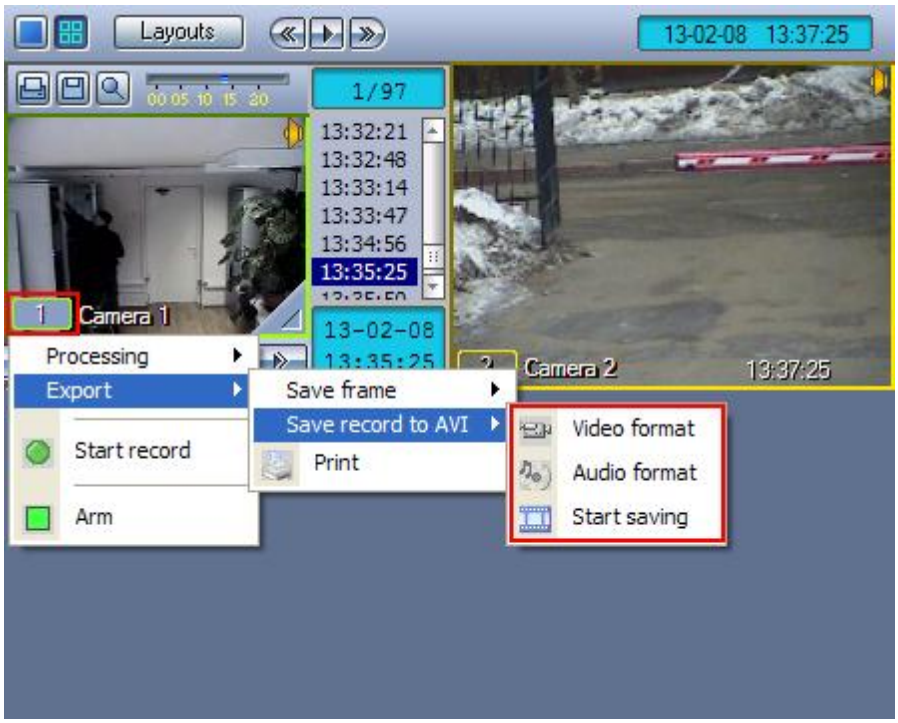


Fig. 4.4-21 Path to synchro audio and video recordings export

Parameters of the video and sound signals, which will be saved, may be configured in the displayed sub-menu.

Compression quality is selected in the standard Windows dialog box (see Fig. 4.4-22).

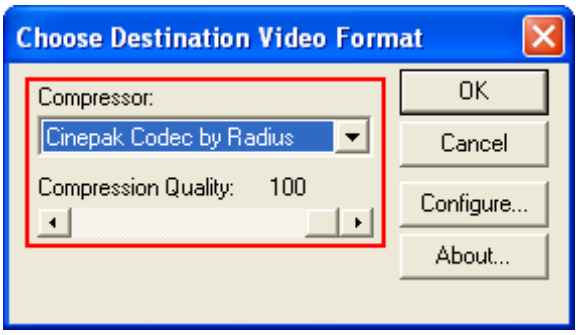


Fig. 4.4-22 Selection of compression quality

Select “Codec” in the dialog box and, if available, compression quality.

Compression quality of the synchro audio recording is selected in the standard Windows dialog box (see Fig. 4.4-23).

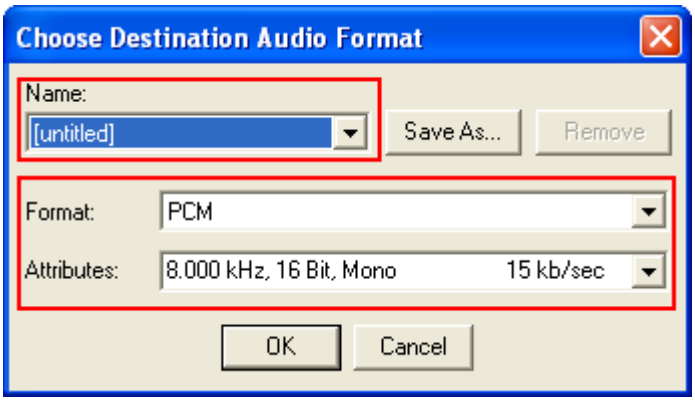


Fig. 4.4-23 Selection of compression quality for the sound signal

Choose audio format in the dialog box and select a set of sound quality parameters, or a pre-defined settings profile.

As soon as recording saving parameters are selected, the video segment may be exported to the file by selecting the “Start Saving” command. The “Playback” button will be highlighted in the course of saving, whereas the playback position indicator will count down the frame currently being processed (see Fig. 4.4-24).

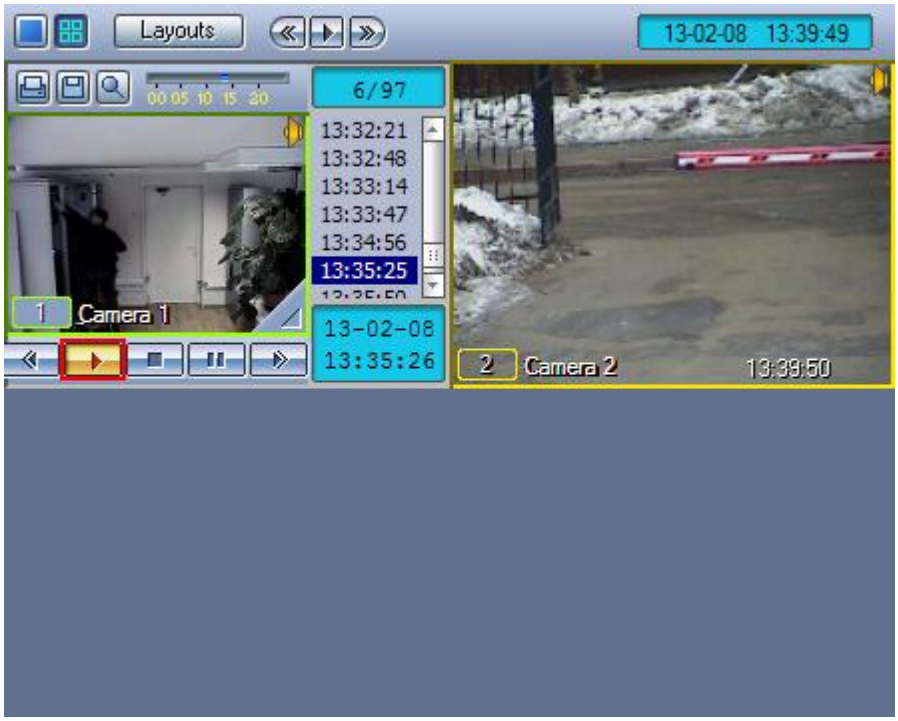


Fig. 4.4-24 Indication of the synchro audio recording being processed

As soon as the video segment saving process is complete, the “Playback” button is no longer highlighted (see Fig. 4.4-25).

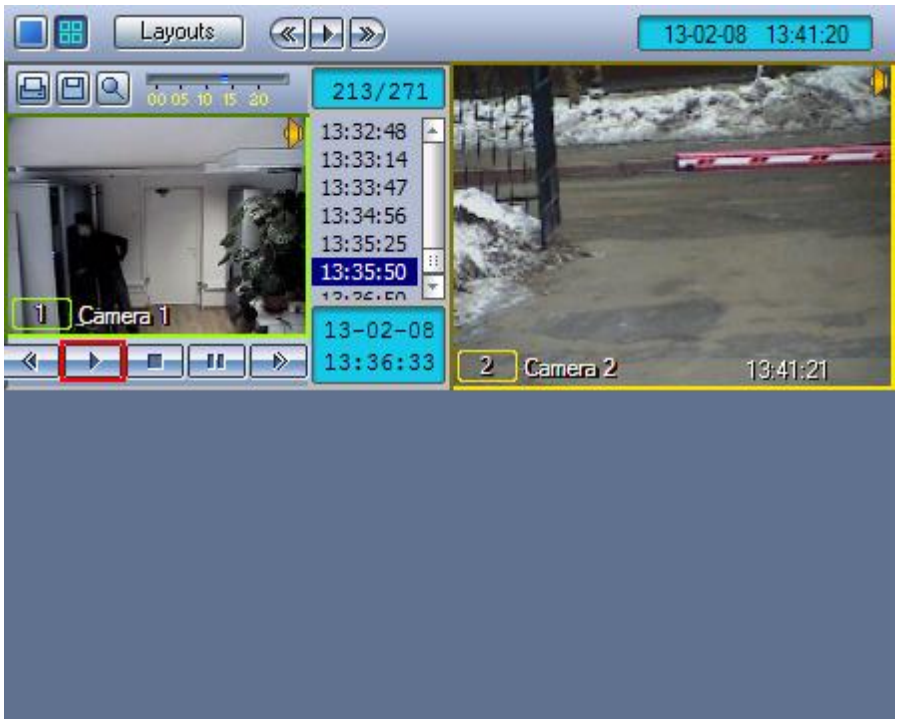


Fig. 4.4-25 Indication of completion of the synchro audio recording

The file containing the saved video recording supported with sound is saved to the «export» sub-directory (this sub-directory is within the Intellect™ system directory). The file name is generated as follows: <camera number> (<date> <time>). For instance, 02 (03-10-07 16'28'06).avi (file extension is controlled through the compression quality configuration).

4.5 Control of PTZ units

4.5.1 General

PTZ units connected to the system may be controlled with the following manipulators and interface windows:

1. PC mouse;
2. Joystick;
3. Control panel;
4. Universal PTZ control panel;
5. Search box of the Operator.

4.5.2 Mouse PTZ control

PTZ control of the camera may be regulated with the mouse in the Camera window corresponding to the given Camera (see Fig. 4.5-1).

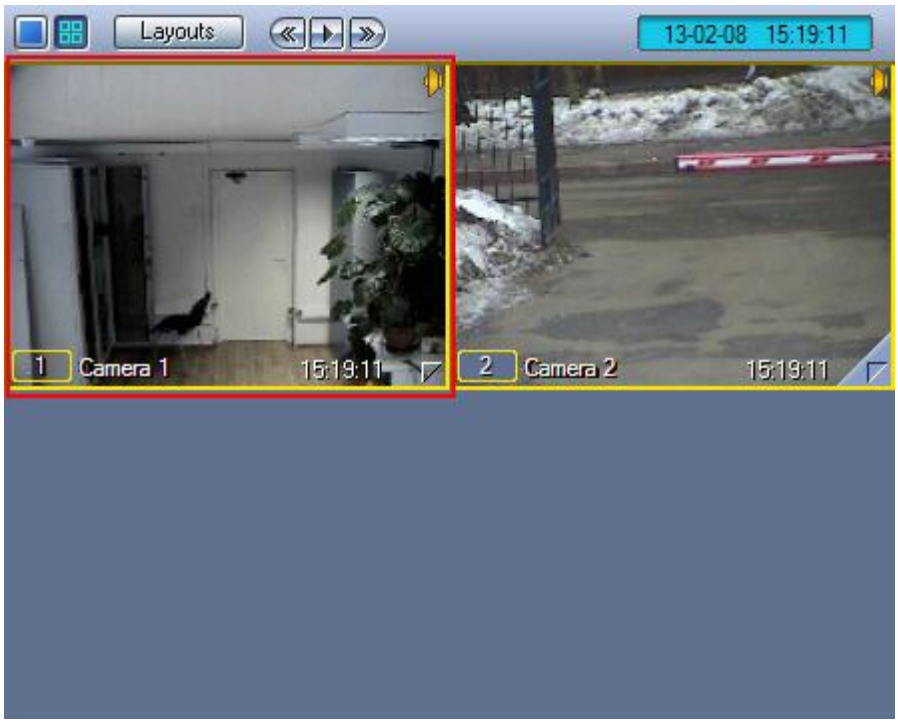


Fig. 4.5-1 Mouse PTZ control

Functions supported by the mouse PTZ controls are given in Table 4.5-1.

Table 4.5-1

Action	**Function**
Left mouse click	Camera's objective stop
Middle mouse click	Automated re-focus of the camera objective to the area of the middle mouse click. Reorientation is done using Intellect software package algorithms.
Right mouse double-click combined with «Ctrl»	Automated re-focus of the camera objective to the area of the right mouse click. Reorientation is calculated by the camera.
Press and hold the middle mouse moving the cursor	Selecting the area, re-focus of the camera objective to the selected area
Press and hold the left mouse button, moving the cursor	Re-focus the mouse camera to the mouse cursor direction
Left hold	Objective's zooming in (enlarge image)
Right hold	Objective's zooming out (decrease the image)
Press and hold the right mouse button combined with «Ctrl», moving the cursor	Selecting the area, image zooming in and centering on the selected area (AreaZoom)
Left hold combined with "Shift"	Increase the digital zooming (zooming the image in)
Right hold combined with "Shift"	Reduce the digital zooming (zooming the image out)

NOTE 1. The above mouse functions are not supported in the Camera windows, corresponding to the surveillance cameras without PTZ.

NOTE 2. Mouse hold combined with "Shift" there is program zooming in or out of the image without any changes in focal length.

4.5.3 Joystick PTZ control

Camera PTZ may be controlled with the joystick.

Below we give an example of PTZ control with the use of the «Shuttle PRO-2» joystick.

NOTE. Functions of the joystick in each case are configured with the program and may differ from the example given below.

The layout of Shuttle PRO-2 joystick control elements are given in Fig. 4.5-2.

Fig. 4.5-2 Layout of Shuttle PRO-2 joystick control elements

Example of the PTZ joystick control elements configuration is given in Table 4.5-2.

Table 4.5-2

Control Element	Function
	Move right-left

	Move up-down
	Save position preset.
	Automated re-focus of the camera to the area of the middle mouse click.
	Zoom in (enlarge the image)
	Zoom out (reduce the image)

	Increase the focal length
	Reduce the focal length

NOTE. The above mouse functions are not supported in the Camera windows, corresponding to the surveillance cameras without PTZ.

4.5.4 PTZ control with control panel

PTZ units may also be regulated with the use of control panels – special manipulators, connected to the PC.

Below we give an example of using Samsung SSC-2000 device to control the camera.

The layout of Samsung SSC-2000 control elements is shown in Fig. 4.5-3.

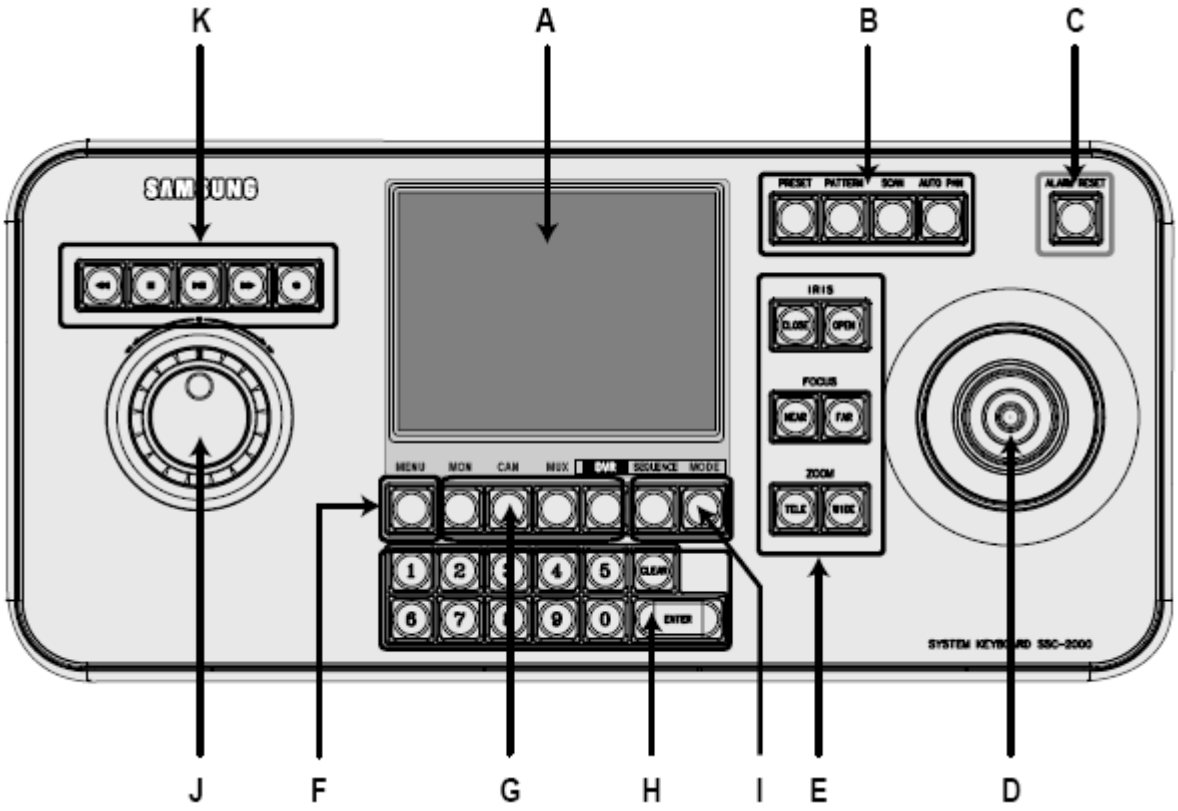


Fig. 4.5-3 Layout of Samsung SSC-2000 control elements

Samsung SSC-2000 control elements are described in Table 4.5-3.

Table 4.5-3

Control Element	Element	Function
A.	LC-display	Displays operation conditions of the control panel
B.	Set of buttons to control PTZ unit focus	PRESET PATTERN SCAN AUTO PAN
C.	Alarm reset button	ALARM RESET
D.	Joystick for manual control of PTZ unit focus	UP DOWN LEFT RIGHT
E.	Set of buttons to control the camera lens (iris, focus, zoom)	IRIS CLOSE/OPEN FOCUS NEAR/FAR

Control Element	Element	Function
		ZOOM TELE/WIDE
F.	Menu button	Path to the control panel settings
G.	Unit select button	MON/CAM/MUX/DVR
H.	Digital keyboard unit	Is used to enter digits when required for control panel operations
I.	Control over camera operating mode	SEQUENCE MODE
J.	Rotating disk manipulator	Is used to browse across recording archives
K.	Control over camera recordings and archive viewing from the camera	PLAY/PAUSE STOP FAST FORWARD REWIND RECORDING

NOTE. For more detailed information refer to the original User Manual for the given device.

4.5.5 Universal PTZ control panel

Universal PTZ control panel allows controlling all types of PTZ units, connected to the system.

To access PTZ controls, select 

from the list, corresponding to the given PTZ (see Fig. 4.5-4).

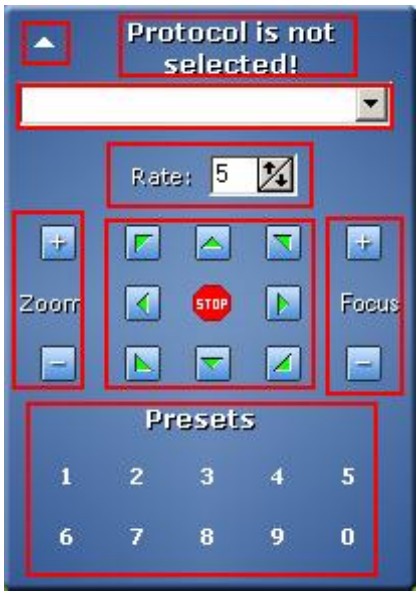
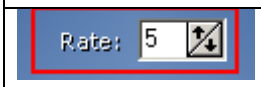


Fig. 4.5-4 Elements of the Universal PTZ control panel

The elements of the Universal PTZ control panel are described in Table 4.5-4.

Table 4.5-4

Element Image	Function
	Move camera lens up-down
	Move camera lens left-right
	Change camera lens focus across and diagonally
	
	Stop camera lens to change the focus
	Set conditional speed of the camera lens movement while changing the focus

Certain types of cameras allow focus setting and lens enlargement.

Focus is set with the following control element (see Fig. 4.5-5).

Fig. 4.5-5 Setting camera lens focus (manually)

Focus is set with the  and  buttons. Apart from that, the focus may be set automatically. To do so, select “Focus” with the mouse pointer and, when the text in the box changes to “Auto”, click it with the left mouse button (see Fig. 4.5-6).

Fig. 4.5-6 Setting camera lens focus (auto mode)

Zoom lens (zoom-in) is set with the following control elements (see Fig. 4.5-7).

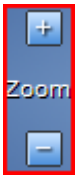


Fig. 4.5-7 Setting camera lens zoom

Zoom-in and zoom-out is set with the + and − buttons.

In addition, to make control of PTZ units more convenient, the PTZ units may also be controlled with the user settings. User settings include the data describing PTZ focus, as well as camera lens zoom and focus.

PTZ user settings are selected and adjusted by the “Preset” group of control elements.

To select a preset user setting, click the corresponding number of the setting with the left mouse button. After a short delay, the number of the selected setting becomes highlighted in red and the heading of the given control element group changes to “Go to present No. <number of the selected setting>”, whereas current PTZ settings will be coordinated with the selected user setting (see Fig. 4.5-8).

Fig. 4.5-8 Loading camera lens parameters from preset values

To adjust a user setting, click the setting number with the left mouse button and hold it for a few seconds until the setting number becomes highlighted in red and the heading of the control elements group changes to “Save preset No. <number of the selected setting>” (see Fig. 4.5-9).

Fig. 4.5-9 Saving camera lens parameters

After this operation, the current settings of the PTZ unit will be recorded into the selected user setting.

Note. When IP device Lilin is used, user setting is done differently:

1. *set the number of user setting with the left mouse click upon it;*
2. *set the PTZ unit to the required position;*
3. *press and hold the left mouse button upon the set number of user setting for a few seconds until the number is lighted in red and text of the headline of PTZ units will be changed to «Save preset №<number of the selected setting>».*

4.5.6 PTZ control using the Operator’s search box

The Operator’s search box can be used to control specific types of PTZ.

Below we give an example of how to control Dynacolor-D7720 PTZ.

To call up the Operator's search box, select Dynacolor-D7720 in the "Run" menu of the main control panel of Intellect (see Fig. 4.5-10).

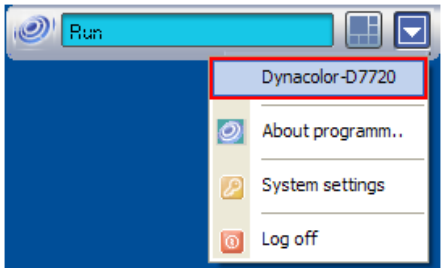


Fig. 4.5-10 Calling up a specific Operator search box to control Dynacolor-D7720 PTZ

The appearing window will allow controlling Dynacolor-D7720, which is connected to the system (see Fig. 4.5-11).

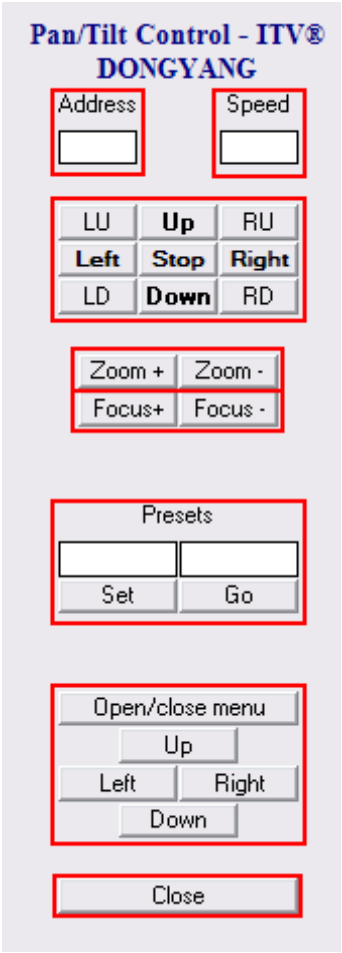
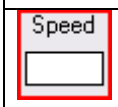
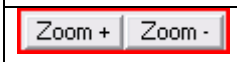
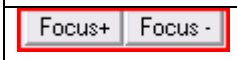
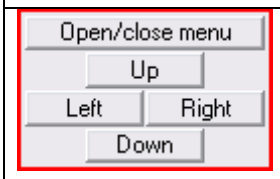
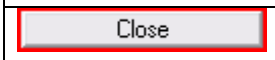


Fig. 4.5-11 Control panel interface for operating Dynacolor-D7720

Table 4.5-5 gives a brief description of the control panel interface for operating Dynacolor-D7720.

Table 4.5-5

Element Image	Function

	PTZ unit address
	Conventional PTZ unit speed with the change of direction
	PTZ direction controls
	Setting the lens zoom (zoom-in)
	Setting of the camera lens focus
	Selection and setting of PTZ user settings
	Path to and control of the in-built OSD menu of the Dynacolor-D7720 camera
	Dynacolor-D7720 hidden panels

NOTE. Certain types of system units are operated with a separate control panel (Operator's search box), which has an appropriate interface and functionalities. In addition, the box for calling up the control panel (Operator's search box) in the "Run" menu is configured with the program settings and may differ from the PTZ type corresponding to the given control panel.

4.6 Operations with Sensors

A sensor is an external security device connected to the system.

The sensor may be operated in the following modes:

1. circuit closure: the sensor is armed when the circuit is open, and whenever the sensor circuit is closed, an alarm event is registered;

2. circuit interruption: the sensor is armed when the circuit is closed, and whenever the sensor circuit is interrupted, an alarm event is registered.

Whenever an alarm event is registered by a sensor, the Operator should confirm that the event did take place.

Each security device of the "sensor" type is equipped with an intrusion sensor, which is a physical device, giving a specific warning to the Operator that an alarm event has occurred. The map displays symbols of the following types of intrusion sensors:

1. Infra Red;
2. Ceiling;
3. Glass;
4. Heat;
5. Window;
6. Flue gas;
7. Hermetic contact;
8. No specified type.

To operate the sensors, the Operator uses the map (see the “Operations with sensors” section) or pre-defined macro commands (“Run” menu in the main control panel).

4.7 Operations with Relay

Relay is an external security device connected to the system.

The relay can be setup in one of the following statuses:

1. On;
2. Off.

Each executive object like relay is furnished with an executive device, which is a physical device, switched on and off with the relay. The map displays symbols of the following types of executive devices:

1. Light;
2. Acoustic alarm;
3. Lock;
4. No specified type.

To operate the relay, the Operator uses the map (see the “Operations with the relay” section) or pre-defined macro commands (“Run” menu in the main control panel).

4.8 Use of the Specialized Keyboard

The specialized keyboard is a keyboard designed to operate INTELLECT™ software.

Using the specialized keyboard, both certain system units and the entire system can be operated. The keys of the keyboard may be configured at random at the program configuration stage.

An example of using a specialized GIGATEK KB950A keyboard to operate the program monitor is shown in Fig. 4.8-1.

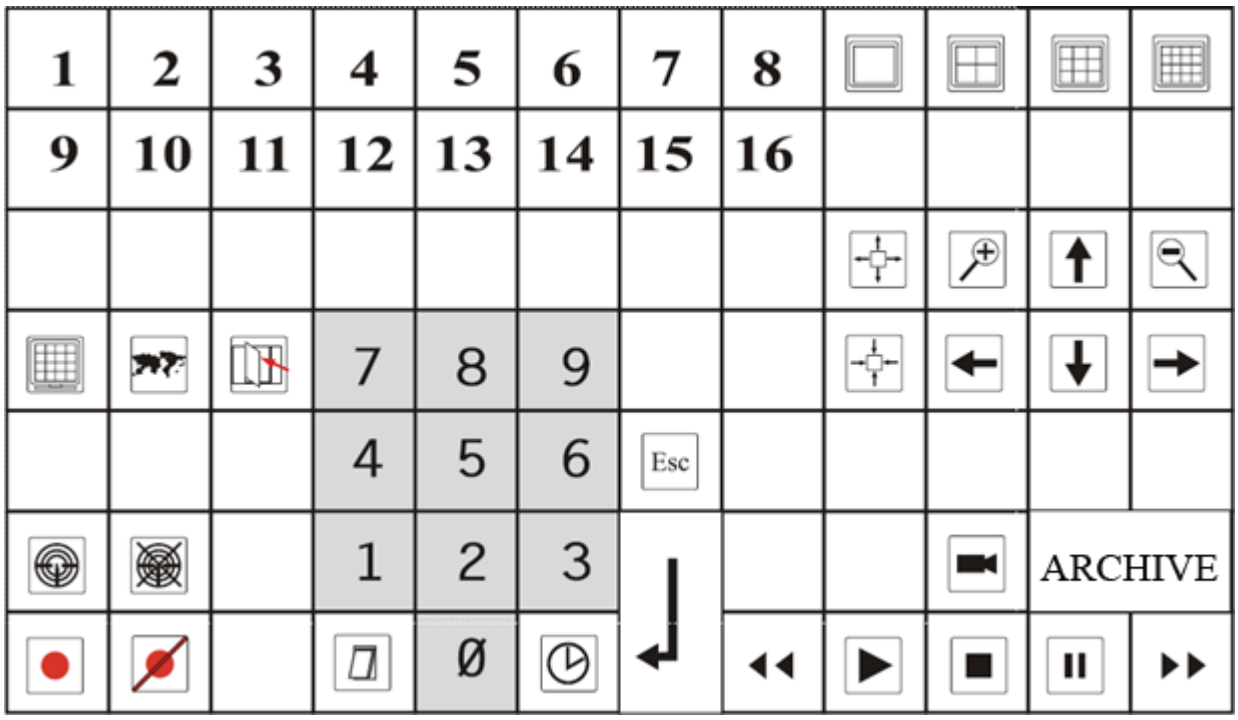
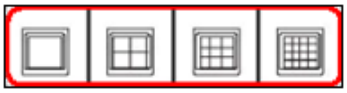
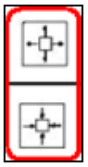
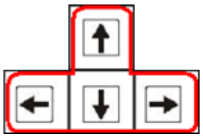
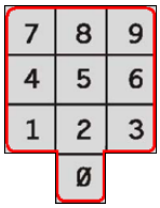
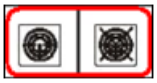


Fig. 4.8-1 Example of using a specialized GIGATEK KB950A keyboard to operate the program monitor (keyboard layout)

Table 4.8-1

Element	Function
	**A number of keys, enabling cameras from 1 to 16 dependent on the key number.**
	**A number of keys changing the number of video surveillance windows on the monitor (1, 4, 9 or 16 correspondingly).**
	**A number of keys rolling up and down the video surveillance window.**
	**A number of keys responding for video scaling (zooming in and out).**
	**A number of keys (up arrow, down arrow, right arrow, left arrow) to list video surveillance windows.**

	**A number of keys responding for blocking and unblocking**
	**Video archive navigation key.**
	**A number of keys responding for changing the date and time of video recordings in the archive:** **- accept changes;** **- escape;** **- delete.**
	**A number of keys – digits from 0 to 9.**
	**Key«ESCAPE».**
	**Key «ENTER»**
	**Key responsible for getting to video archive mode.**
	**A number of keys responding for arming and disarming the camera.**
	**A number of keys responding for video recording by the command (start /stop).**
	**Key to go to video surveillance mode.**
	**Time markers column navigation key.**
	**A number of keys responding for viewing the video recordings (roll back/forward, playback, stop, pause).**

4.9 Video Surveillance using an Analog Monitor

Where the program is configured in a certain way, an analog video image can be output to the external devices connected to the system (for instance, to the analog monitor).

If the program supports the above functionality, the output of the analog signal can be switched on (off) using one of the following tools:

1. Press a command in the context menu of the object on the map. To do so, use the “Video out” box (“Video in”) in the context menu of the corresponding object on the map (see Fig. 4.9-1).

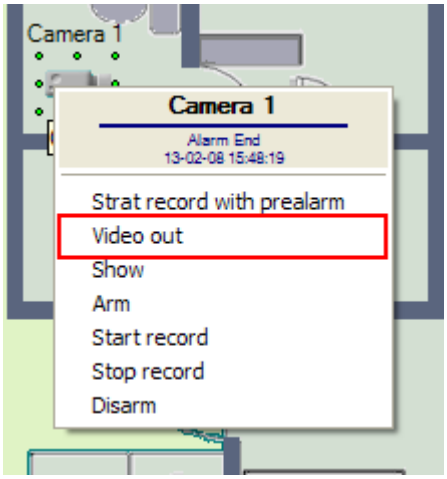


Fig. 4.9-1 Output of video image to the analog monitor (using the functional menu of the object on the map)

2. Use a macro command to use this option, select an appropriate box in the “Run” menu of the main control panel (see Fig. 4.9-2).

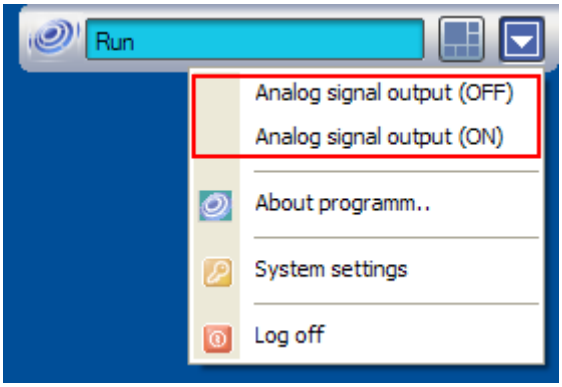


Fig. 4.9-2 Output of video image to the analog monitor (using a macro command)

NOTE. The availability and names of the macro commands in the “Run” menu used to switch on and off the analog signal output to the external devices, depends on the program configuration.

4.10 Archives of Video and Audio Recordings

4.10.1 General

Video and audio archives store copies of video and audio recordings created by the Intellect program.

All archives are subdivided into the following types:

1. Main archive - the video server archive;
2. Backup archive – an archive developed with the assistance of the Active archive functional module.

Table 4.10-1 compares the characteristics of archives and the corresponding functional modules.

Table 4.10-1

Characteristics	Parameter	
Archive Type	Main Archive	Backup Archive
Functional module used to create the archive	-	Active archive
Source of recording	Recordings made by specified cameras and microphones	Copying of recordings made by specified cameras
Distribution of archived recordings (available types of carriers)	Hard and network disks, removable disks	Hard and network disks, removable disks
Tools to access archived recordings	Playback control, converter.exe utility	Active archive control panel, converter.exe utility
Recording modes	End-around (i.e., recording starts from the beginning, erasing all previous recordings, when there is no more free space left on the carrier)	End-around (i.e., recording starts from the beginning, erasing all previous recordings, when there is no more free space left on the carrier)
Saving sound (synchro audio recordings) together with audio recordings in the archive	Available	Not available
Recording term	Continuous recording	Continuous recording Recording during pre-set intervals
Recording settings	FPS (number of frames per second)	FPS (number of frames per second), bit rate (data volume per second)
Selection of cameras for recording	Not available	Available

4.10.2 Coping Video Sequence to the Active Archive

4.10.2.1 *General*

Video sequences may be copied to the active archive both manually and automatically using the active archive control panel (see Fig. 4.10-1).

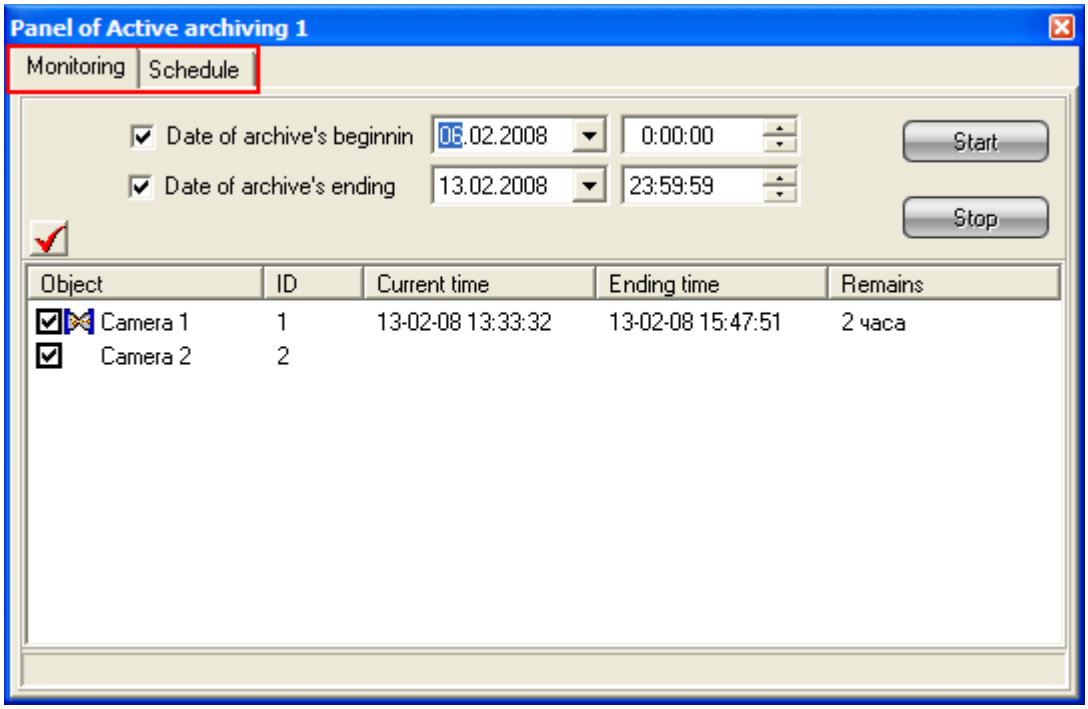


Fig. 4.10-1 Selection of modes for copying to the active archive

The monitoring tab is used for manual control of the active archive, whereas the Schedule tab is used to set parameters for automated operation of the active archive.

NOTE. The active archive always saves soundless video sequences. This means, that video sequences carrying synchro sound are copies without sound.

4.10.2.2 *Active Archive Monitoring*

Active archive monitoring and control uses the Monitoring tab on the active archive control panel (see Fig. 4.10-2).

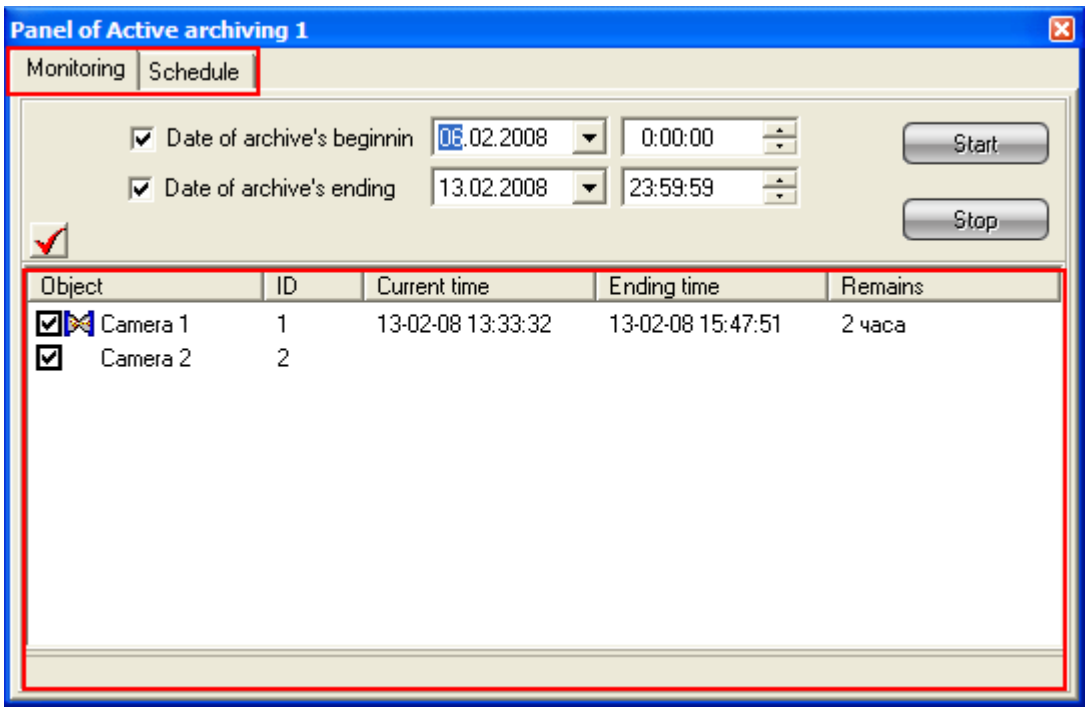


Fig. 4.10-2 Active Archive Monitoring

The table shows the copying status data for all the available cameras:

1. Camera – camera number;
2. ID – camera identification code;
3. Current time – date and time of the archive frame currently under processing;
4. Completion time – date and time, when the archive was completed;
5. Time left – number of days remaining for processing (archive completion time minus the currently processed archive frame);
6. The symbol near the camera shows that recordings of the given camera are currently copying.

4.10.2.3 *Manual Copying*

Manual copying uses the Monitoring tab (see Fig. 4.10-3).

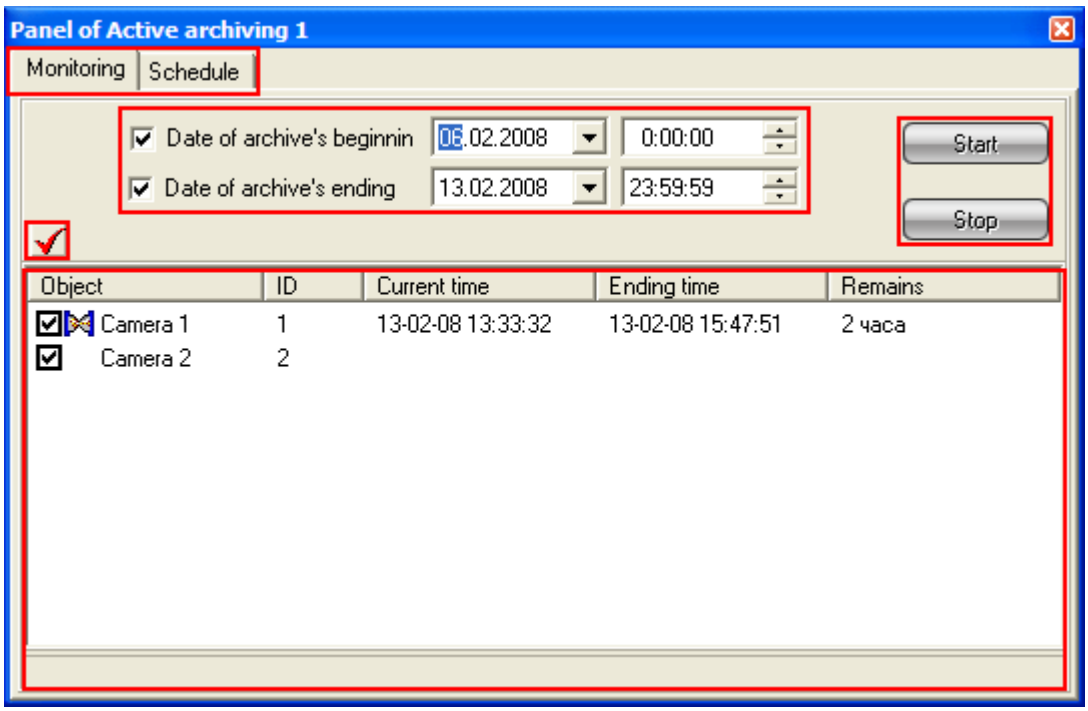


Fig. 4.10-3 Manual Copying

Manual copying can be started and stopped using the Start and Stop buttons, correspondingly. Elements for setting time intervals for copying recordings of all available cameras can be found to the left of the copying controls.

To start copying, the following steps should be performed:

1. Set date and time to start and stop copying. If the start and stop date and time for copying are not identified, all recordings from the pre-defined cameras will be copied to the active archive.
2. Select the cameras, whose recordings will be copied. To select cameras, check the corresponding boxes. In addition,  is used to select (or cancel the selection) all cameras in the table concurrently.
3. Initiate copying by clicking Start. After a short delay,  appears to confirm that recordings of the selected cameras are now copying.
4. To stop copying, click Stop.

NOTE. Copying may be significantly delayed after Start has been pressed.

4.10.2.4 *Automated Copying*

Automated copying is configured with the Schedule (see Fig. 4.10-4).

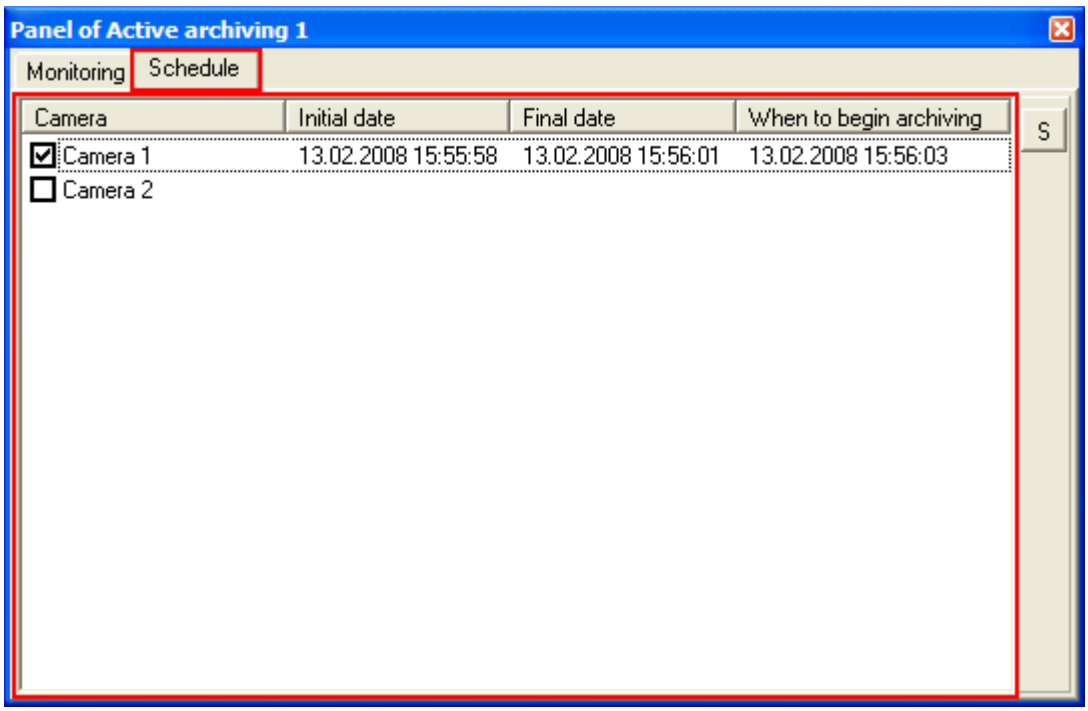


Fig. 4.10-4 Automated Copying

The table shows the current schedule for copying recordings from all available cameras. Copying start and completion dates will be identified for each camera, as well as the actual start time for copying.

To activate and de-activate the specified schedule for the camera, check (double check) the corresponding box.

An existing schedule may be modified by changing the contents of the corresponding table cells. For instance, to modify the completion date of the first camera recording, double click Camera 1: Completion Date (see Fig. 4.10-5).

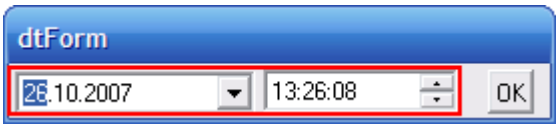


Fig. 4.10-5 Modifying Automated Copying Parameters (Recording Completion Date)

Specify the date and time in the appearing dialog box and click OK.

NOTE. To perform scheduled automated copying, the program should always be running, even if the active archive panel is not on.

4.10.3 Viewing Archives

4.10.3.1 *Viewing Archives with the Video Surveillance Monitor*

Playback of various types of archives using the surveillance window is described in section “Operations with the Archives”.

4.10.3.2 *Viewing Archives with Converter.exe Utility*

4.10.3.2.1 General

To launch Converter, select “Video player and file converter” from the Windows Start menu. (Start/Programs/Intellect/Utilities/Playback and Conversion) or use the corresponding Desktop shortcut.

The Converter interface is shown in Fig. 4.10-6.

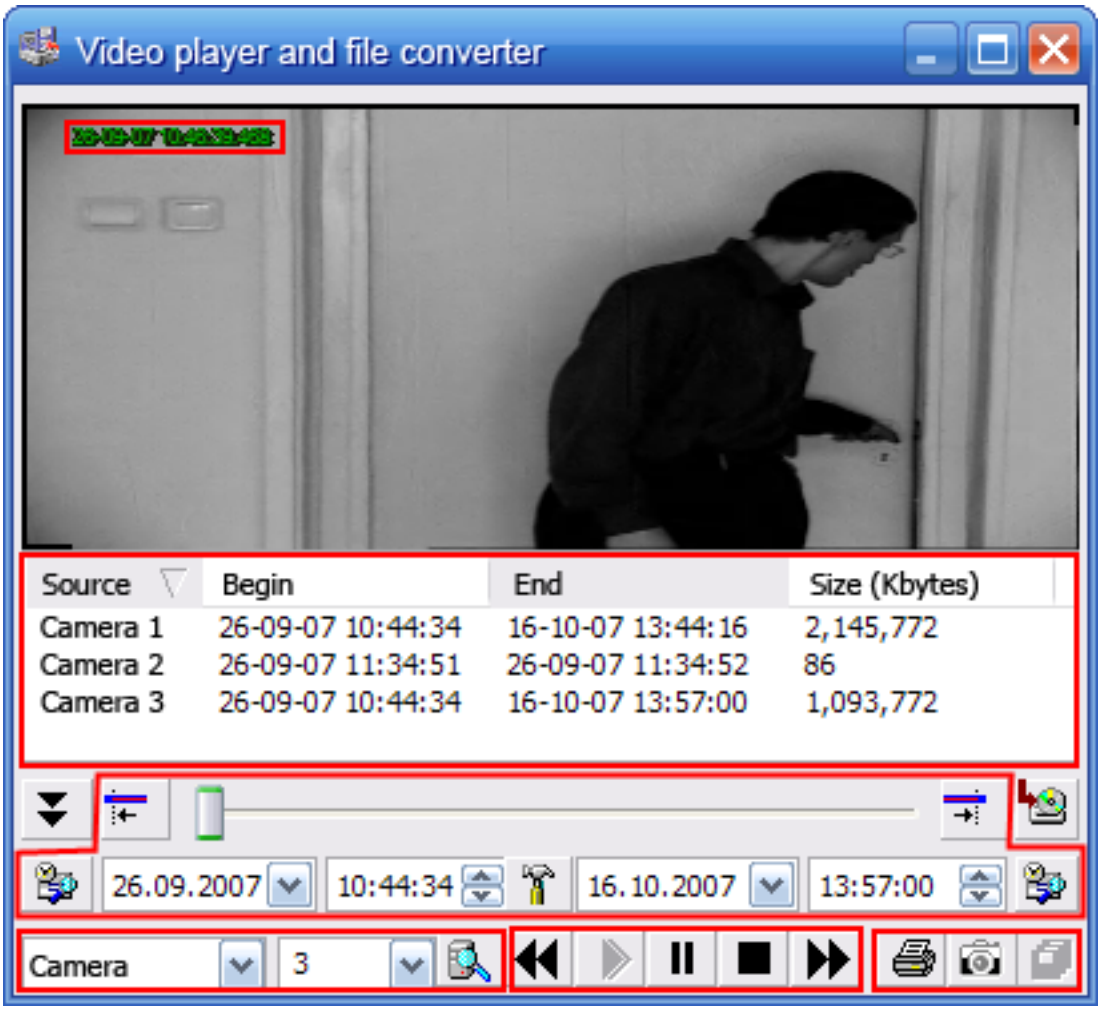
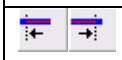
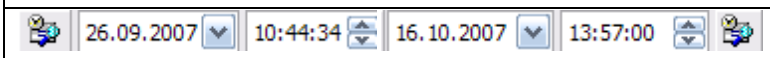


Fig. 4.10-6 Converter Interface

The image display occupies the middle part of the window. Below the image display window you can see the control elements of the program (see Table 4.10-2).

Table 4.10-2

Control Element	Description	Purpose
Source Begin End Size (Kbytes)	List of segments of exported recordings	Exports files
( )	Show/Hide Total Exported List	Displays (hides) segments of exported recordings

Control Element	Description	Purpose
	Show/Hide Total Exported List	Adds a segment of the currently playing recording to the list of segments of exported recordings
	Fast viewing.	Views and selects the currently playing recording (segment). The currently playing position is displayed in the upper left corner of the image display field.
	Cut left, Cut right	Cuts a currently playing recording from the left or from the right within the given segment
	Set of elements to specify recording timeframes	Sets timeframes for recording
	Settings	Allows access to the Converter utility
	Set of elements for archive downloading	Controls downloading of audio and video archives from the carriers
	Set of elements for playback control	Controls playback of the current recording
	Set of elements for printing and exporting separate frames and recordings	Prints, saves separate frames to files, exports video sequences to files (see section Video Sequence Export)

4.10.3.2.2 Archive Downloading

Fig. 4.10-7 shows conventional archive structure.

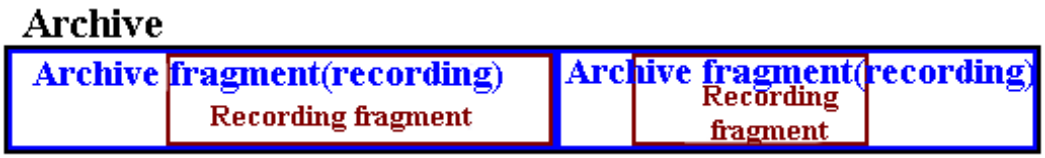


Fig. 4.10-7 Conventional Archive Structure

To download the archive with recordings, follow these steps:

1. select recorder type from the list Camera (microphone or a camera);

2. select recorder identifier 3 (if selected digital number exceeds 32, use the keyboard for manual entry);

3. click . Indicate the path to the archive in the appearing window and, if appropriate, enter password to the archive (see Fig. 4.10-8);

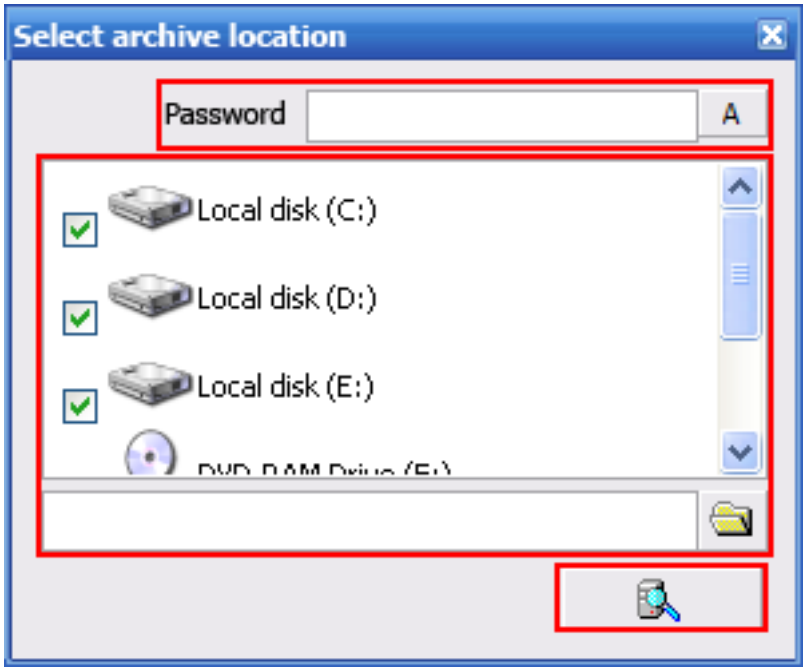


Fig. 4.10-8 Dialog Box to Select Archive Location and Enter Password to the Archive

3.1. if the archive is located in the root directory of the carrier (in the “VIDEO” and/or “AUDIO” folders), it is sufficient to select a carrier in the logic disk by checking a box corresponding to the required carrier;

3.2. otherwise click and indicate the path to the archive in the dialog box or enter it manually in the field ;

3.3. the password is indicated in the field Password . Button A is used to hide the password display while entering it into the field.

4. Having indicated the path to the archive and password, click  . The dialog box closes and, if the path and password to the archive are correct, the required archive will be downloaded.

4.10.3.2.3 Archive Browsing

Archive browsing is described below.

First of all, select the archive segment. To do this, use the set of elements specifying timeframes for recording. For instance, to set left-hand timeframe for recording, enter the date and time in the left fields  and  , then click  . Right-hand timeframes are defined in the same way.

Now we can drag the current recording playback position within the specified timeframes, using the fast position slider. To do this, drag the position slider with the left mouse button to the required position.

Playback is controlled using a set of playback control elements (see Table 4.10-3).

Table 4.10-3

Pos.	Function
 ()	Plays and stops playback of the current segment (per-segment playback) Plays the total recording sequence, without stops at the segment borders (on-line playback).
	Stops playback and releases playback mode (sets per-segment mode)
	Suspends recording playback
	Returns to the previous (goes to the next) segment in the playback mode. Returns to the previous (goes to the next) frame in the pause mode.

Two playback modes can be used: frame and line modes. Frame mode plays only the current frame of the recording and stops as soon as the frame is completed. Line mode plays the recording entirely within established recording timeframes, without stopping at the segment borders. Segment playback is set as default mode and is activated by  . To switch to the line playback mode, press  in the playback mode and keep your finger on it for a few seconds, until it is displayed as  .

To return to the segment mode, just stop playback by pressing  .

4.10.3.2.4 Frame Export and Printout

To printout the current frame, click  , select the printer and the appropriate print settings in the appearing standard dialog box (OS Windows XP) (see Fig. 4.10-9).

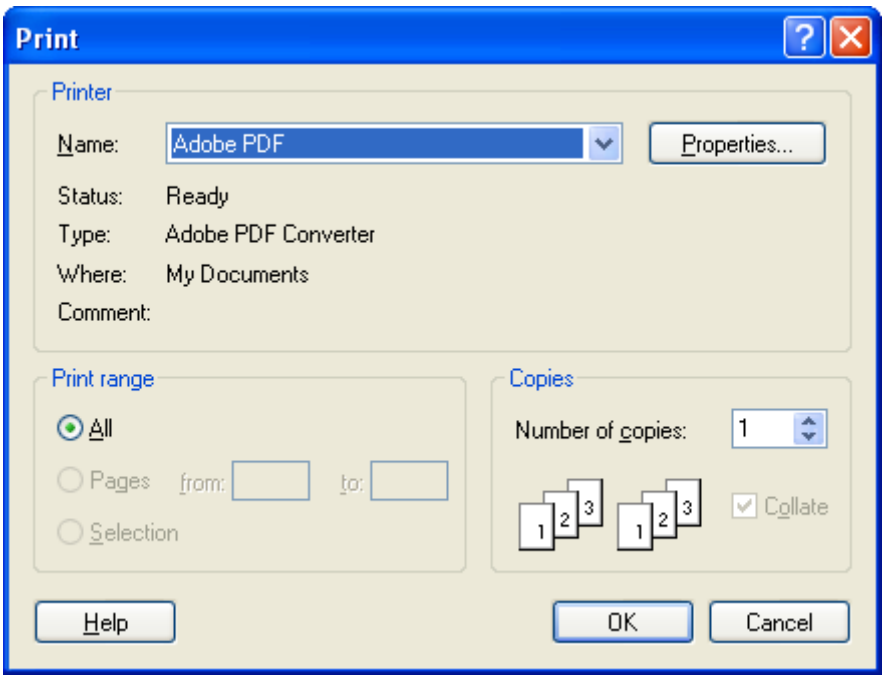


Fig. 4.10-9 Standard "Print" dialog box (OS Windows XP)

As soon as you click OK, the frame image will be added to the printout list of the selected printer (see Fig. 4.10-10).

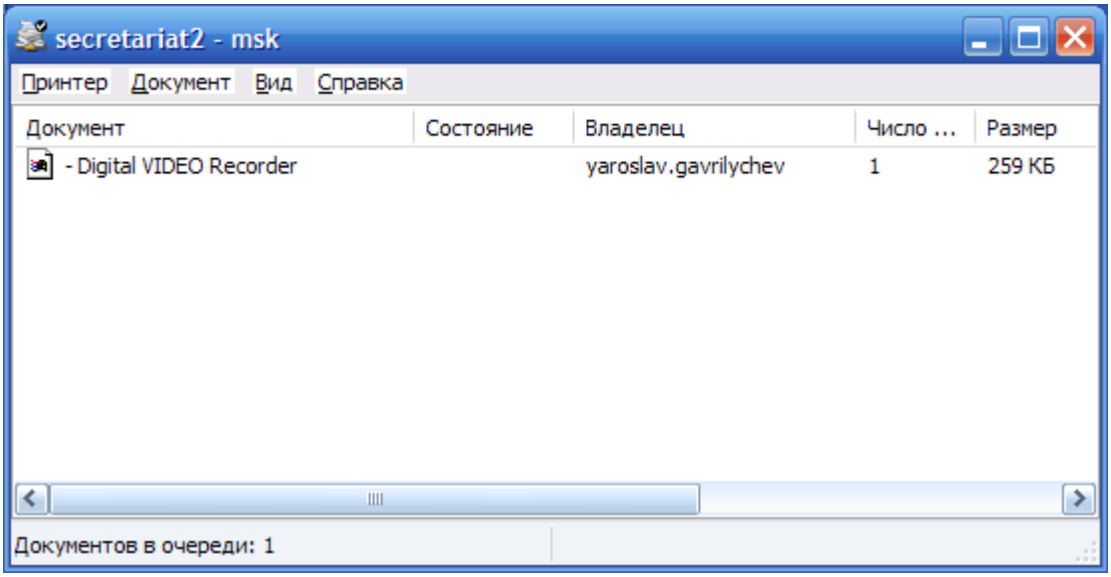


Fig. 4.10-10 Standard "Printout List" of the Printer dialog box (OS Windows XP)

NOTE. Standard Printout List of the Printer dialog box (OS Windows XP) does not belong to Intellect Program and is not automatically displayed as soon as the print command is sent.

To export a frame to a file press  . In the appearing dialog box specify the path and file name (see Fig. 4.10-11).

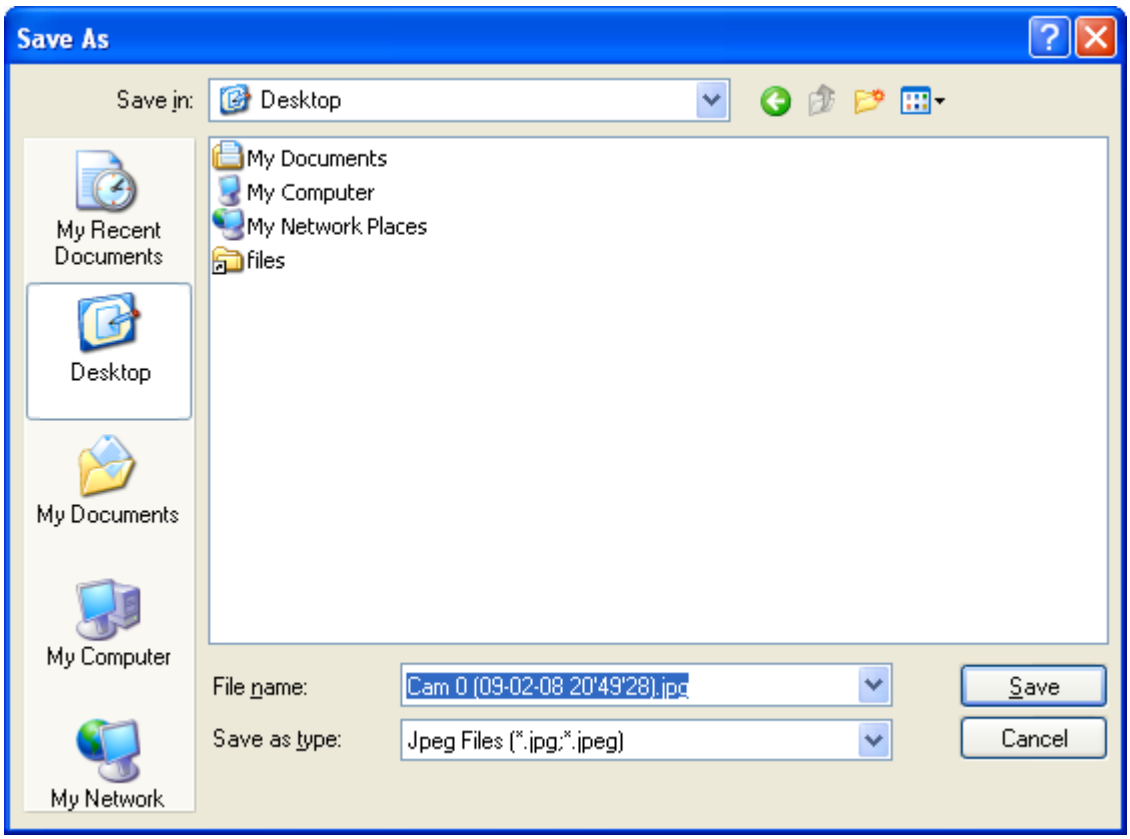


Fig. 4.10-11 Standard dialog box for specifying the path and file name (OS Windows)

As soon as the Save button is pressed, you will see a JPEG format file in the directory with the given name, containing the image of the selected frame.

4.10.3.2.5 Video sequence export

Video sequence is exported through the following steps:

Download the Archive footage. See section “Archive Download”.

1. Select archive (recording) segment. See section “Archive Browsing”.
2. Cut recordings. Cut recordings using  and  . To cut lift the side of the recording, place the current position of the playback slider to the required left edge position and click  . The right side edge of the recording is cut in the same way, using the  button. Now you have a recording segment, which can be added to the list of recording segments.
3. Add a recording segment to the list of segments of exported recordings. To add the currently playing segment to the list, press  . To delete segments, click “Delete”.
4. Recording export. Having created the recording segment list, we can proceed to the compilation and export of the created recording. To compile a recording out of created segments and export it, click  .

4.1. Type the file name in the appearing box (see Fig. 4.10-12) and click “Continue”.

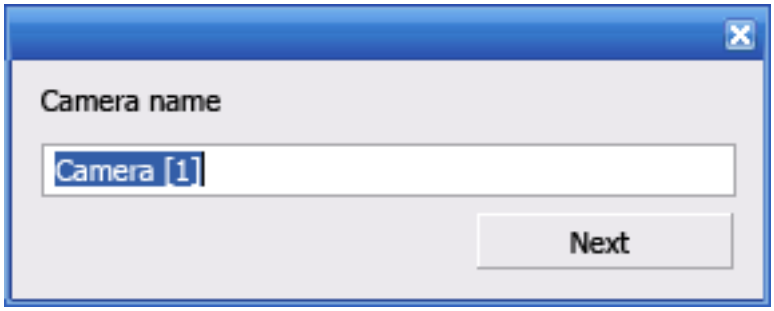


Fig. 4.10-12 Dialog box for file name specification

4.2. Recording export to file is now initiated. The current export status is displayed in the upper left corner of the image output field and in the program box heading (see Fig. 4.10-13).

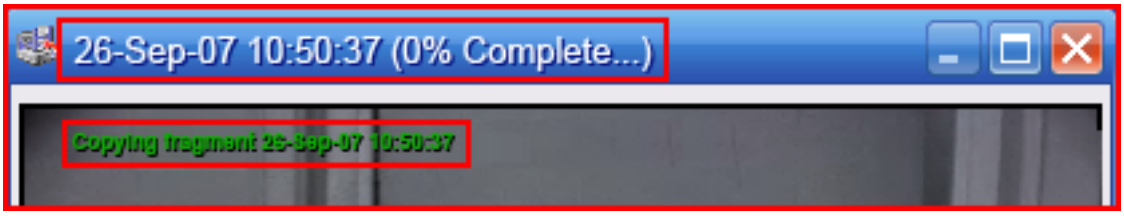


Fig. 4.10-13 Indicator of in-process recording export to file

4.3. The export process can be interrupted any time by pressing ■ in the set of playback control elements.

4.4. Export process completion is indicated in the box heading (see Fig. 4.10-14).

Fig. 4.10-14 Indicator of completed recording export to file

The file containing the created recording appears in the “Backup” folder of the root directory in the C logic drive. A full file name is generated based on the following pattern: «<File name given during recording export> (<Recording start date and time> - < Recording stop date and time >)-<Ordinal recording number (if file names are identical)>.avi». Example: «Camera [1] (01-10-07 16'44'24) - (01-10-07 16'55'30) - 5.avi».

NOTE. If AVI format is used, the resultant file cannot be bigger than 2 GB.

4.11 Events Control and Processing

4.11.1 General

Events registered by the system can be controlled and processed by the Operator using the alarm notification window and event log. In addition, there is an option for fast creation and printout of reports from the log of events registered by the system based on pre-defined criteria.

4.11.2 Events Control and Processing using the Alarm Notification Window

An Operator can recieve on-line notifications whenever the system registers any alarm or information events, if the program is set appropriately. Where this function is on, an alarm notification window appears as soon as the system registers any alarm or information event (see Fig. 4.11-1).

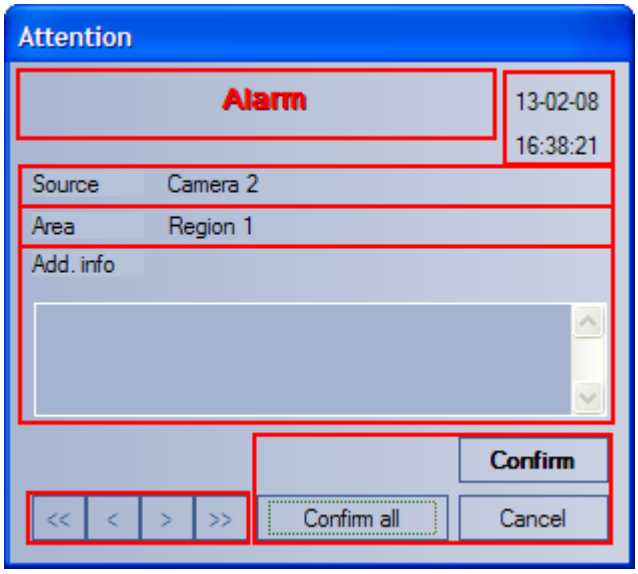


Fig. 4.11-1 Interface elements of the alarm notification window

The appearing alarm notification window shows information about the latest registered event: name, date and time, source object of the event, conventional field (region) of the event source object location, as well as additional information describing the event (if any).

An Operator can confirm the event by pressing the Confirm button or cancel it using the Cancel button. Accepting the event, the Operator confirms the actual occurrence of the event and initiates an appropriate response of the Program.

As soon as the event is confirmed or cancelled, the alarm notification window hides. However, if an event still remains unprocessed, the alarm notification window will not be hidden and the system will transfer to processing the next event in line. To select the event for processing manually, use the set of event browsing controls (see Table 4.11-1).

Table 4.11-1

Element Image	Function
<<	Transfer to the first notification in line
>>	Transfer to the last notification in line
<	Transfer to the previous notification in line

Element Image	Function
>	Transfer to the next notification in line

In addition, all notifications in line can be confirmed immediately by pressing Confirm all.

4.11.3 Event Control via Event Log

The event log window displays all notifications according to their type registered by the system (see Fig. 4.11-2).

Source	Event	Region	Additional information	Date	Time
Microphone 2	Record start			13-02-08	16:48:30
Camera 2	Alarm	Region 1		13-02-08	16:48:30
Camera 1	Alarm End	Region 1		13-02-08	16:48:14

Fig. 4.11-2 Interface Elements of the Event Log Window

The event log window shows a table containing a list of events registered by the system, which are broken down according to object type. Object types, registered events for which are displayed in the event log, as well as the number of events simultaneously displayed within one event window, are specified at the system configuration stage.

The table gives the following data for each event: source object of the event, event name, conventional field (region) of the event source object location, date and time of the event, as well as additional information describing the event (if any). Additionally, a symbol near the source object of the event reflects the current status of the given source object.

To show the actual location of the source object of the event, use “Show on the Map” function in the source object menu. As soon as this function is on, the map depicting the location of the given source object is displayed (see Fig. 4.11-3) (see the “Working with the map” section).

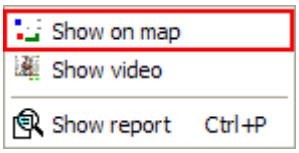


Fig. 4.11-3 Access to the event source object location in the Map

To play the video sequence of the event from the event source camera, use the "Video Playback" function in the source object menu (see Fig. 4.11-4).

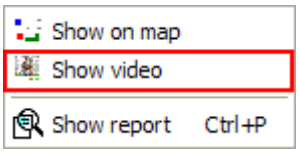


Fig. 4.11-4 Access to video playback of the event from the event source camera

The camera window pops up in the archive playback mode (see Fig. 4.11-5).

Fig. 4.11-5 Camera window playing back video archived for the event log

The current playback position will be set to the position corresponding to the video recording start time.

4.11.4 Generation, printout and export of the registered events report using Event Log

Event log allows for the expedient generation and printout of the event list based on the specified criteria.

To generate and printout a report, select the “Report Output” function in any source object menu in the table or press simultaneously Ctrl + P (see Fig. 4.11-6).

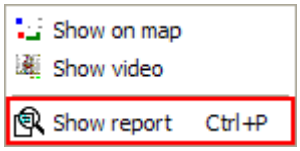


Fig. 4.11-6 Access to event log report generation function

Specify the start and completion date and time of the event, which will be used in the report (see Fig. 4.11-7).

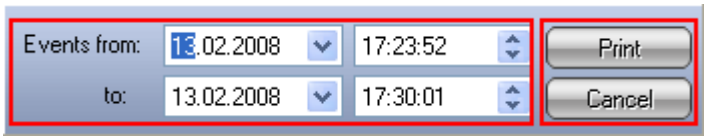


Fig. 4.11-7 Setting the start and completion date and time of the event to generate the report

As soon as you press the “Print” button, the preview window of the generated list of events appears, the interface of which is shown in Fig. 4.11-8.

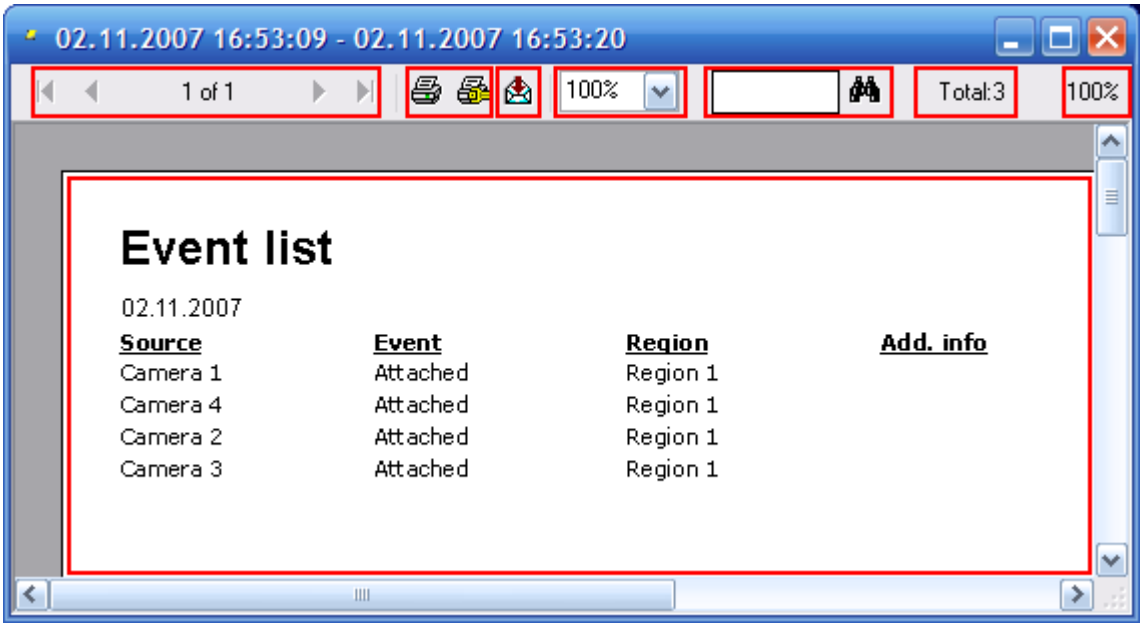


Fig. 4.11-8 Interface of report preview window

The appearing window will show the generated report as it will be printed out.

The upper part of the window displays a tools panel with the report control elements (see Table 4.11-2).

Table 4.11-2

Element Image	Comments
1 of 1	Set of elements for browsing report pages
	Report printout and print pre-setting control elements
	Report export control elements
100%	Report display scale
	Search function through the report text
Total:3	Number of event recordings contained in the given report
100%	Report generation indicator (percentage of the events downloaded up to a certain point in time into the preview window).

Browsing through the report uses the following set of elements 1 of 1. Report view scale is specified using 100%.

Search through the report text uses  . To search through the report text, enter the item you are looking for into the field and click  . Found items will be highlighted in the report text (see Fig. 4.11-9).

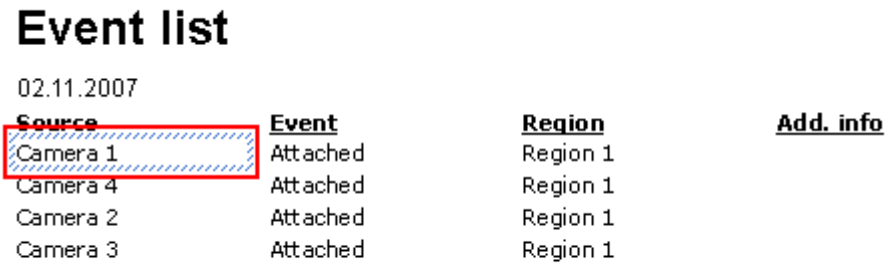


Fig. 4.11-9 Search through the report text

To find the next required item press  once more.

To send the generated report for printing, press  . Specify printer parameters using  (see Fig. 4.11-10).

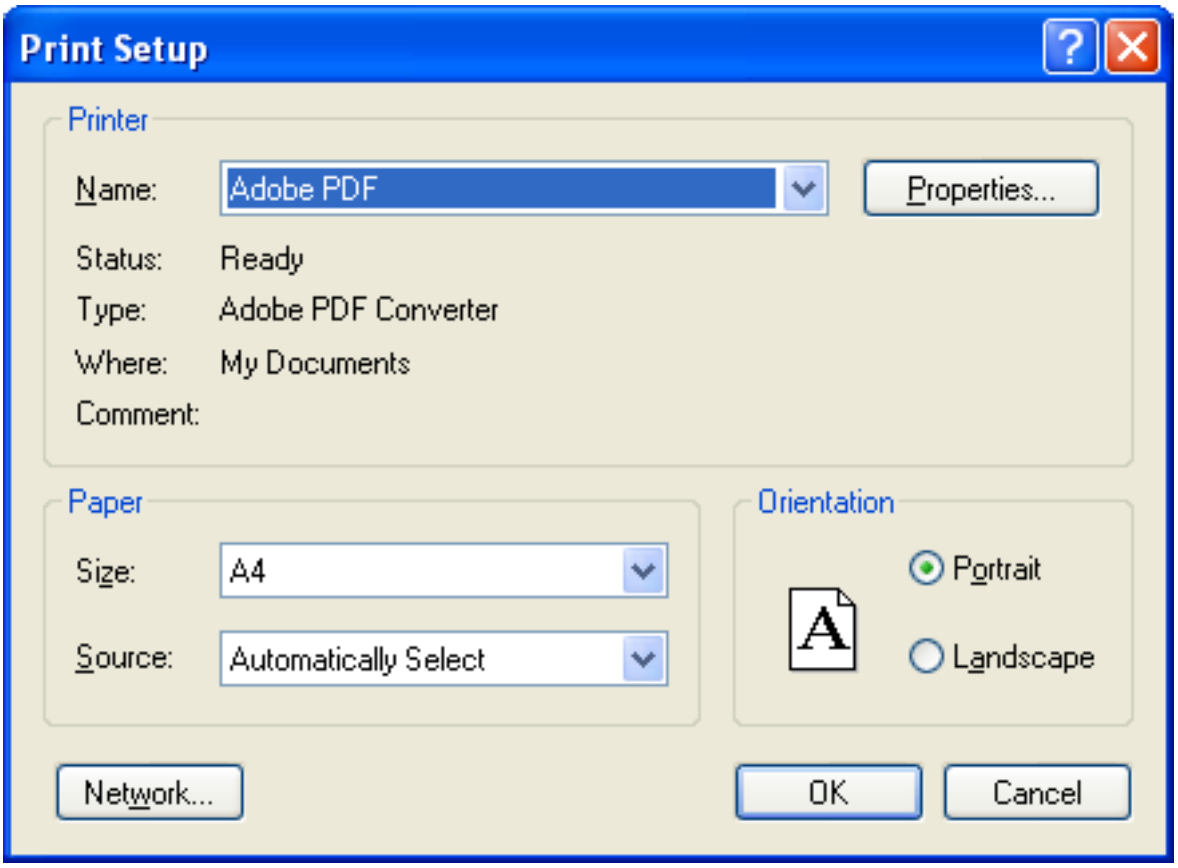


Fig. 4.11-10 Standard "Print" dialog box (OS Windows XP)

NOTE. Standard dialog box "Print" (OS Windows XP) does not refer to the Intellect™ system and is a Windows system dialog box.

Additionally, the report may be exported to a specified file format, saved to a disk, opened in an associated application or sent by e-mail. To export the report press  .

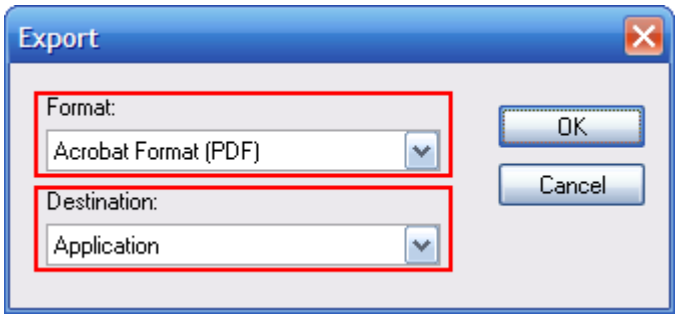
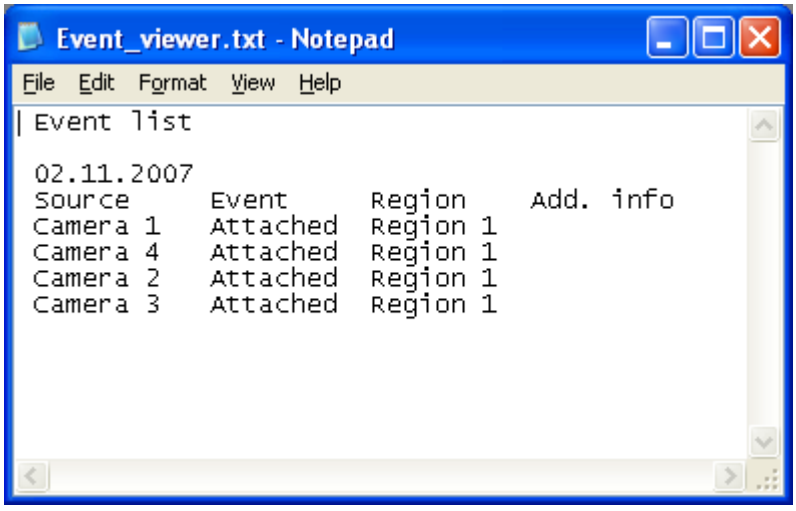


Fig. 4.11-11 Dialog box to select the file format for export and further operations with the report file

In the appearing box (see Fig. 4.11-11) select the required file format to export the report (Format field) and further operations with the file (Destination field). Operation options with the report file are given in Table 4.11-3.

Table 4.11-3

Destination field meaning	Comments
Application	Report is exported to the file of a pre-defined format (Format field) and opens in the associated application (see Fig. 4.11-12).  Fig. 4.11-12 Example of opening a file with the saved report (text file opened by Notepad, OS Windows XP)
Disk file	Report is exported to the file of a pre-defined format (Format field) and is saved in the specified file (see Fig. 4.11-13).

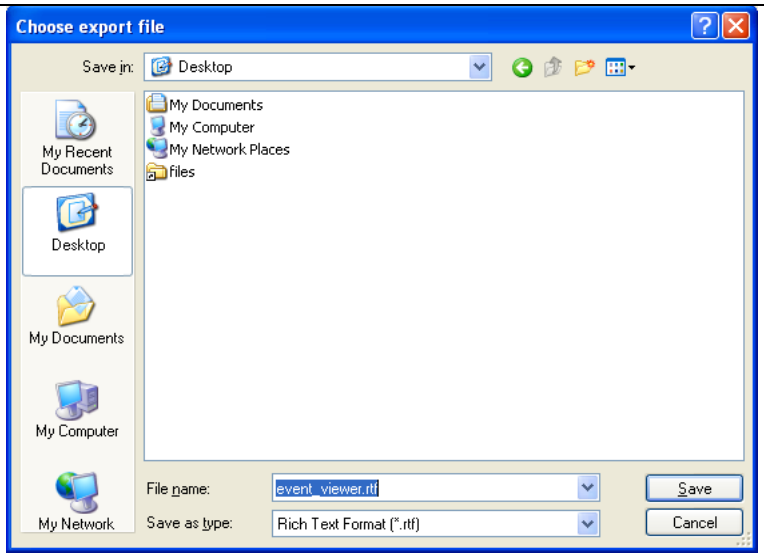
<table>
<tr><th>Destination field meaning</th><th>Comments</th></tr>
<tr><td></td><td> 

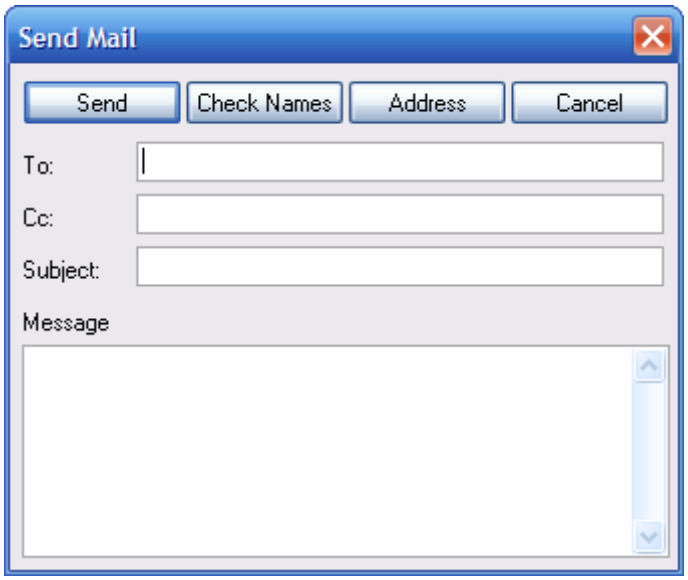
Fig. 4.11-13 Example of saving a report to a file (text file, standard dialog box for showing the path and defining the file name of the saved file, OS Windows XP)</td></tr>
<tr><td>Exchange Folder
Lotus Domino
Microsoft Mail (MAPI)</td><td>Report is exported to the pre-defined file format (Format field) and attached to the new message in the Destination field of the mail program (see Fig. 4.11-14).
 

Fig. 4.11-14 Example of attaching a report to a new message (Microsoft Mail)</td></tr>
</table>

NOTE. In certain cases additional report export parameters may be requested (for instance, the number of exported report pages).

All further operations with the exported report file are controlled through the associated applications and do not depend on the Intellect™ system.

4.12 Working with the map

4.12.1 General

Map is an interactive graphic diagram of a distributed system designed to monitor and control external system devices (cameras, microphones, sensors, relays).

Security devices are displayed on the map as symbols: each device is described by its status; access to the device functions is provided via the functional menu, which is called up by a right mouse click on the required device image on the Map. Macro commands are also displayed in the Map as symbols, which are started from the functional menu of the given macro command symbol.

If the distributed system diagram has only one level (for instance, one guarded floor of a building), the Map will consist of one level depicting the system diagram (single level map). If the guarded territory has a few levels (for instance, a multi-floor guarded building), the Map will be made up of a corresponding number of levels, where each level will depict a system diagram of the corresponding level (multilevel map). Additionally, the system diagram may be shown on the Map broken down into conventional fields and regions.

If the Map is multilevel, the level switch-over function shall be provided. To enable this, special links between the Map levels are established at the program configuration stage. To switch between the Map levels use the  interlayer link button. Additionally, the interlayer link button shows the device status on the corresponding Map level. In addition, automated switch-over between the Map levels and recursive search for alarm links in the Map are supported.

4.12.2 Graphic Objects on the Map

Security devices of the System (cameras, microphones, sensors, relays) are reflected on the Map as symbols (conventional characters, see Fig. 4.12-1).

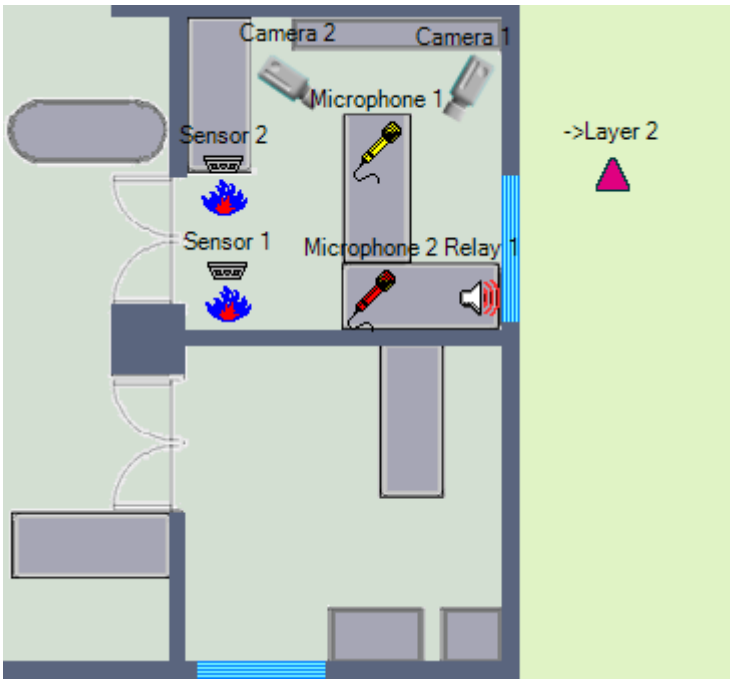


Fig. 4.12-1 Layout of graphic objects on the Map (example)

The graphic symbol of the device in the Map shows the current status of the given device (see Table 4.12-1).

Table 4.12-1

Graphic symbol of device on the Map	Status of device
Green	Device is disarmed
Grey	Device is armed
Red blinking	Device registers an alarm event
Grey blinking	Device is not connected to the system

NOTE. The above indication pattern is used for all types of security devices of the system. However certain modifications can also include certain types of devices.

Interlayer links integrated in the given level reflect the status of devices on other Map levels (see Fig. 4.12-2).

Fig. 4.12-2 Interlayer symbol as it appears on the Map

Whenever any security device registers an alarm event on any of the existing levels, the interlayer link symbol starts blinking. The interlayer link symbol continues blinking as long as the current registered alarm event is occurring, whereas no other alarm events arise within the given level.

Device functions can be accessed via a functional menu called up by a right mouse click on the symbol of the device shown on the Map. For instance, the functional menu of the Camera object is shown in Fig. 4.12-3.

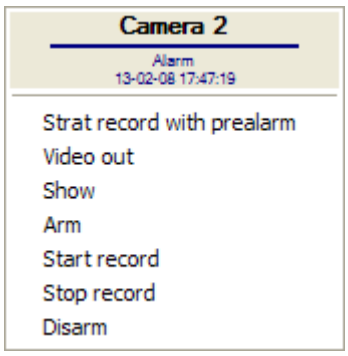


Fig. 4.12-3 Functional menu of the Camera object

4.12.3 Switch-Over between Map levels

If the Map is multilevel, the level switch-over function will be provided. To enable this, special links between the Map levels are established at the program configuration stage.

To switch between the Map levels uses the appropriate  button (see Fig. 4.12-4).

Fig. 4.12-4 Interlayer symbol as it appears on the Map

Each level of the Map may accommodate an indefinite number of interlayer link symbols referring to any level existing on the Map.

To switch to another Map level, click the  symbol, which corresponds to the required level with the left mouse button.

Automated switch-over between Map levels is also supported. If automated switch-over is enabled, the program automatically transfers to the Map level, where one of the devices has registered an alarm event. For instance, if the Map window is displaying A level and at this point of time an alarm event is registered on B level, the program will automatically switch-over to B level and show it in the window. In this case a window displaying the Map may be shown overlaid over all other windows. Automated switch-over between Map levels is configured and initiated at the program configuration stage.

In addition, recursive search for alarming links in the Map is also supported. If this feature is on, devices, which have registered an alarm event, are searched for automatically across all Map levels. For instance, there are supposedly 3 levels, where level 1 is linked to level 2, and level 2 is linked to level 3. If the Recursive Alarming Links Search option is enabled, a 3 level link symbol on level 2 and also a 2 level link symbol on level 1 will start blinking as soon as an alarm event is registered on level 3. Otherwise, if Recursive Alarming Links Search is not on, only a 3 level link symbol on level 2 will be blinking. The Recursive Alarm Links Search option is initiated at the program configuration stage.

4.12.4 Operations with the cameras

4.12.4.1 *Camera status indication*

The camera symbol as shown on the Map is given in Fig. 4.12-5.

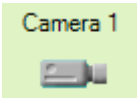


Fig. 4.12-5 Camera symbol as shown on the Map

The camera status is indicated through different colours and intermittent blinking of the given camera symbol on the Map (see Table 4.12-2).

Table 4.12-2

Camera Symbol	**Camera Status**
Green, the symbol is not blinking 	Camera disarmed
Grey, the symbol is not blinking 	Camera armed

Red, the symbol is blinking 	Camera is armed, an alarm event is registered
Grey, the symbol is blinking 	No signal from the camera

NOTE. The status of the camera recordings is not displayed on the Map.

4.12.4.2 *Camera Operations*

The camera is operated via the functional menu of the given camera symbol shown on the Map.

The functional menu of the camera is called up by a right mouse click on the corresponding camera symbol (see Fig. 4.12-6).

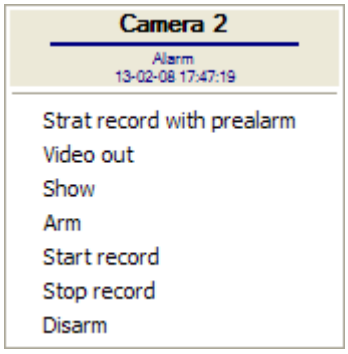


Fig. 4.12-6 Functional menu of the Camera object

The functional menu of the camera provides access to various operating functions of the camera (see Table 4.12-3).

Table 4.12-3

Functional menu item	**Function**	**Comments**
Camera No./Connection	Displays the selected camera identifier, as well as the date and time of the first connection of the camera	
Start recording with backtracking	Starts video recording upon Operator's command, including history	See section: Video Surveillance/Events video recording/Recording at the Operator's Command
Connect camera to output	Outputs the camera image to the analogue monitor connected to the system	See section: Video Surveillance through analogue monitor
Arm	Arms the camera in the main detector zone	See section: Video Surveillance/Camera Arming and Disarming
Start recording	Starts recording at the Operator's command	See section: Video Surveillance/Events video recording/Recording at the Operator's Command

Functional menu item	Function	Comments
Stop recording	Stops recording	See section: Video Surveillance/Events video recording/Stop recording
Disarm	Disarms the camera in the main detector zone	See section: Video Surveillance/Camera Arming and Disarming

4.12.5 Operating the microphones

4.12.5.1 *Microphone status indication*

The microphone symbol as shown in the Map is displayed in Fig. 4.12-7.

Fig. 4.12-7 The microphone symbol as shown on the Map

The microphone status is indicated by the colour of the symbol used to show the microphone on the Map (see Table 4.12-4).

Table 4.12-4

Microphone symbol image	Microphone status
Blue 	Microphone is ready for recording, but is not armed
Red 	Microphone is recording, an alarm event has been registered
Green 	Microphone is ready for recording, but is not armed
Yellow 	Microphone is ready for recording, but is not armed

4.12.5.2 *Microphone Operations*

The microphone is operated via the functional menu of the given microphone symbol shown on the Map.

The functional menu of the microphone is called up by a right mouse click on the corresponding microphone symbol (see Fig. 4.12-8).

Fig. 4.12-8 Functional menu of the Microphone object

The functional menu of the microphone provides access to various operating functions of the microphone (see Table 4.12-5).

Table 4.12-5

Functional menu item	Function	Comments
Microphone No./Recording date and time	Reflects an identifier of the selected microphone in the program, as well as the type, date and time of the latest recording	
Start recording	Arms the microphone, starts recording	See the "Microphone arming and disarming" section
Stop recording	Disarms the microphone, stops recording	

4.12.6 Operations with sensors

4.12.6.1 *Sensor status indication*

Identification of the sensor symbol on the Map depends on the current operating mode and sensor status, as well as the type of intrusion sensor (see Table 4.12-6).

Table 4.12-6

Type of intrusion sensor of the sensor	Indication of the sensor symbol on the Map				
Sensor Status	**Disarmed**		**Armed**		
Alarm event	**Not available**	**Available**	**Not available**	**Available**	**Accepted**
No specified type					
Infra Red					
Ceiling					
Glass					
Heat					

Type of intrusion sensor of the sensor	Indication of the sensor symbol on the Map				
Sensor Status	**Disarmed**		**Armed**		
Alarm event	**Not available**	**Available**	**Not available**	**Available**	**Accepted**
Window					
Flue gas					
Hermetic contact					

Sensor type security devices operated on the basis of circuit closure, interpret any sensor closure as an alarm event, whereas devices operated on the basis of circuit interruption, identify any sensor interruption as an alarm event.

Whenever a sensor is initiated on the Map, the colour of the symbol is changed depending on the occurrence of the alarm event (grey or blue). As soon as the sensor is armed, the colour of the symbol changes to green. As soon as the armed sensor registers an alarm event, the sensor symbol on the Map becomes red and starts blinking. When the Operator accepts an alarm event, the sensor symbol changes colour to green, however keeps blinking until it is disarmed. Where a new alarm event is registered after the first alarm event, the symbol of the sensor starts blinking and turns red again.

NOTE 1 Reference «» means that the image of the given symbol is blinking.*

NOTE 2. When an alarm is registered by any sensor , connected through IP-device Samsung SNC-M300P, Sensor symbol with 1channel number is activated (the given IPdevice supports two connection channels of sensors).

4.12.6.2 *Operations with the sensor*

The sensor is operated via the functional menu of the given sensor symbol shown on the Map.

The functional menu of the sensor is called up by a right mouse click on the corresponding sensor symbol (see Fig. 4.12-9).

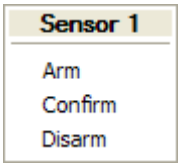


Fig. 4.12-9 Functional menu of the Sensor object

The functional menu of the sensor provides access to various operating functions of the sensor (see Table 4.12-7).

Table 4.12-7

Functional menu item	Function	Comments
Sensor No./Date and time of the latest	Shows the identifier of the selected	See the “Operations with Sensors”

Functional menu item	Function	Comments
status modification	sensor in the program, the current status of the sensor, the date and time of the latest sensor status modification	section
Arm	Arms the sensor	
Accept the alarm	Confirms alarm event registration by the sensor	
Disarm	Disarms the camera	

4.12.7 Operations with the relay

4.12.7.1 *Relay status indication*

Identification of the relay symbol on the Map depends on the current status of the relay, as well as the option of the relay (see Table 4.12-8).

Table 4.12-8

Relay option	Indication of the relay symbol on the Map	
	Relay status	
	Off	On
No specified type		
Light		
Acoustic alarm		
Lock		

NOTE. Reference «» means that the image of the given symbol is blinking.*

4.12.7.2 *Operations with the Relay*

The relay is operated via the functional menu of the given relay symbol shown on the Map.

The functional menu of the relay is called up by a right mouse click on the corresponding relay symbol (see Fig. 4.12-10).

Fig. 4.12-10 Functional menu of the Relay object

The functional menu of the relay provides access to various operating functions of the relay (see Table 4.12-9).

Table 4.12-9

Functional menu item	Function	Comments
Relay No./Date and time of the latest status modification	Shows the identifier of the selected relay in the program, the current status of the relay, the date and time of the latest relay status modification	See the "Operations with Relay" section
Switch-off	Switches the relay off	
Switch-on	Switches the relay on	

4.12.8 Area and region operation

To delimit secured territory in Intellect software package the *Area (Region*) object is used. Secured territory delimiting helps to monitor and control objects of security system more efficiently.

Monitoring function is performed by giving information about the region – relative area of event source-object location. If any event comes from security system object (camera, sensor and so on), in this event there will be information about the region where present object is. Information about object's belonging to one or another *Area (Region*) is displayed in "Alarm notification window" (see "Alarm notification window" part) and «Events log» (see "Events log" part).

The *Map is used* for *Area (Region)* operation in Intellect software package. Markings the *Area (Region)* object on the *Map* are given in the table (see Table 4.12-10).

Table 4.12-10 Marking the Area (Region) object on the Map

Marking	State
	Security mode is deactivated in the region
	Security mode is activated in the region
	Alarm in the region. Alarming event from one or several objects that belong to this region is detected

You can set any state to *Area (Region)* by right mouse clicking at the region symbol and select command in opening contextual menu (Fig. 4.12-11).

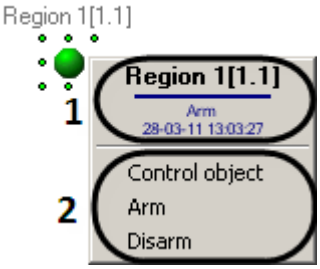


Fig. 4.12-11 "Region" object contextual menu

There is general information at the top of contextual menu: region name, name and time of the latest completed action (Fig. 4.12-11, 1). After general information the list of possible commands goes (Fig. 4.12-11, 2).

4.12.9 Macros commands operation

The macro command determines how this or that object would react to events, that have happened in the system. The macro command symbol as shown on the Map is given in Fig. 4.12-12.

Fig. 4.12-12 Macro command symbol as shown on the Map

With the help of macro commands one can work with area objects (section). Cameras, microphones, sensors and relays may be combined in the group with the help of these objects and the system will respond to the events that have happened with them. The following events can be received from the area:

1) Safety locking;
2) Safety locking is;
3) Fire unlocking;
4) Fire unlocking is disarmed;
5) Arm;
6) Disarm;
7) Armed locking;
8) Armed locking is disarmed.

Each macro command integrates a functional menu providing access to the execution of the given macro command and output of the data about the macro command (see Fig. 4.12-13).

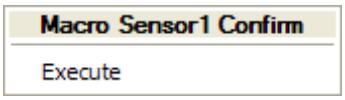


Fig. 4.12-13 Functional menu of the macro command object

The name of the macro command, the date and time of the latest macro command execution are entered into the functional menu, where the “Execute” command to start the macro command is initiated.

To execute the macro command, right click the mouse on the corresponding macro command and select “Execute”.

4.12.10 Hide/Display graphic objects on the Map

The object symbol on the Map may be visible or hidden (which is configured at the program configuration stage). Visible objects are always reflected on the Map, whereas hidden objects are reflected only in “view hidden objects” mode.

To switch-off “view hidden objects”, use the functional menu of the Map, calling it up with a right mouse click on any place on the Map, which is free from object symbols (see Fig. 4.12-14).

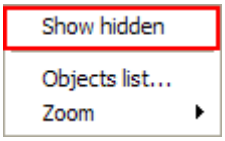


Fig. 4.12-14 Modes for hidden objects shown on the Map (off)

Hidden objects are viewed and hidden through the "Show hidden objects" function. The status of the mode is indicated by a checkmark near the “Show hidden objects” button (see Fig. 4.12-15), which indicates that hidden objects can be viewed.

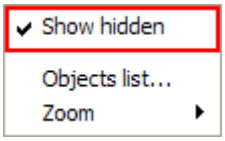


Fig. 4.12-15 Operations with hidden objects shown on the Map (on)

NOTE. Hidden objects view and hide function applies across all Map levels.

4.12.11 Map Scaling

Map scaling allows enlarging and reducing the size of the image shown in the Map window.

The scale is selected via the functions menu of the Map, which is called up by a right mouse click on any place on the Map, which contains no object symbols (see Fig. 4.12-16).

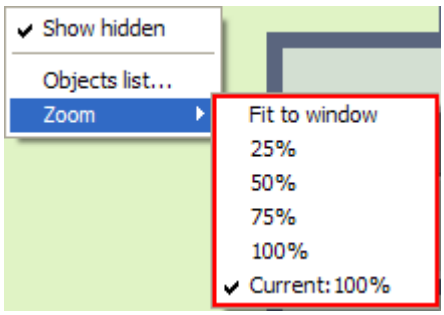


Fig. 4.12-16 Map scaling

To set the scale, select the required scale value in the “Scale” sub-menu or click the "Fit to window" point, which is designed to set the scale allowing the full Map image to fit into the Map window. The last line of the “Scale” sub-menu shows the current scale of the Map image.

4.12.12 Object status monitoring with the objects list

The object status can be monitored not only by object symbols depicted on the Map, but also by using the Object list.

The Object list can be accessed via the “Object list” functions menu of the Map, which is called up by a right mouse click on any place on the Map, free from object symbols (see Fig. 4.12-17).

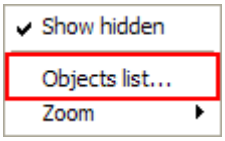


Fig. 4.12-17 Access to the Object list on the Map

The interface of the Object list window is shown in Fig. 4.12-18.

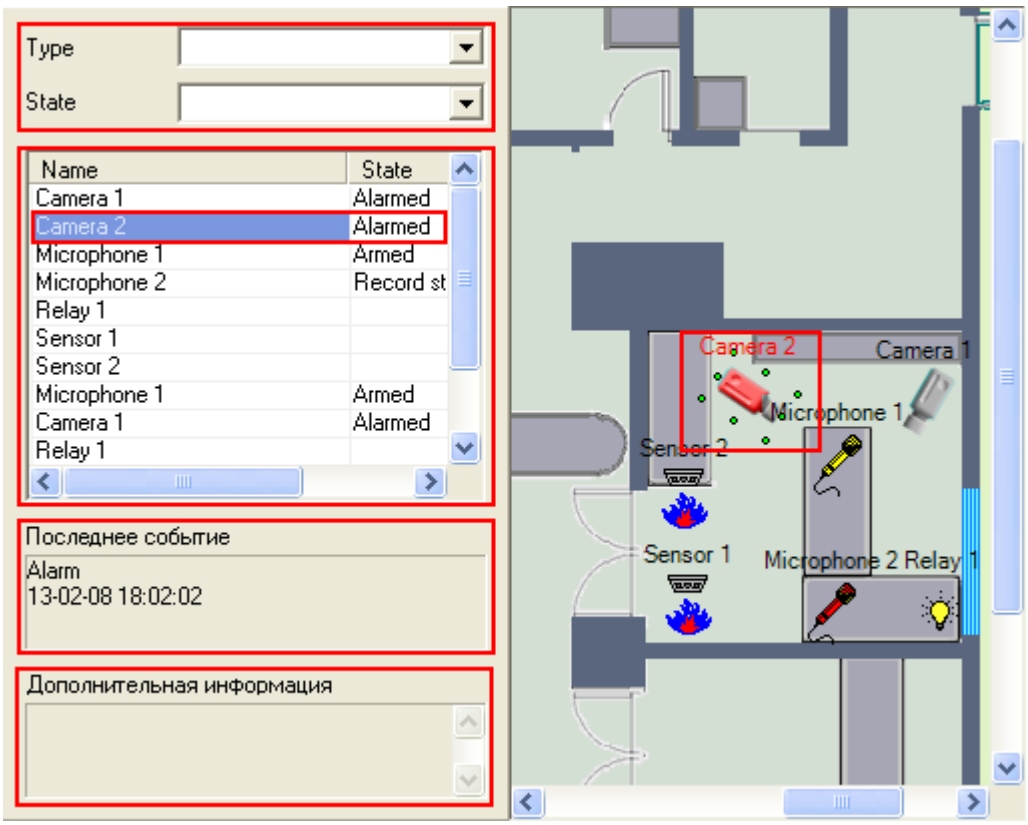


Fig. 4.12-18 Object list window

The middle part of the Object list window displays a table describing object statuses on all levels of the Map: each object is described by the name and current status. The table shows both visible and hidden objects, regardless of the display mode selected to show hidden objects on the Map. Each object of the Object list has a functions menu (which is called up by a right mouse click on the line displaying the object name), which is completely identical to the functional menu of the object on the Map (see the “General” section).

The upper part of the Object list window contains the fields for filtering the object in the status table: The “Type” field is used to filter the objects according to their types, whereas the "Status” field is used to filter the objects according to the status of the given object type. Type-based object filtering is only possible, if the type of object in the “Type” field is selected.

The lower part of the Object list window contains the “Latest event” and “Additional information” fields, which is designed to display the information about the object selected within the table (to select the object, click the left mouse button on the line containing the object in the table). The “Latest event” field reflects the data about the latest event registered for the selected object: name, and date and time of the event. The “Additional information” field is designed to display additional information about the event (if any).

To open the Object list window, click on the Object list in the functional menu of the Map again (see Fig. 4.12-19).

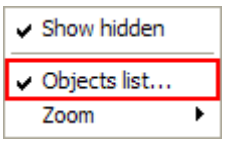


Fig. 4.12-19 Hiding the Object list window

4.13 Using the Notification System

4.13.1 Sending SMS

As soon as the system registers an event related to one of the pre-defined event types, the system automatically generates and sends out an SMS of pre-defined content to the pre-defined phone number.

4.13.2 Sending e-mail messages

As soon as the system registers an event related to one of the pre-defined event types, the system automatically generates and sends out a pre-defined e-mail message to pre-defined e-mail addresses.

4.13.3 Sending voice messages

As soon as the system registers an event related to one of the pre-defined event types, the system automatically calls up pre-defined phone numbers and reproduces a pre-defined voice message.

4.13.4 Using voice notifications

As soon as the system registers an event related to one of the pre-defined event types, the system automatically reproduces a pre-defined voice message via an acoustic device (loudspeakers, ear phones) of the computer, which uses the program.

4.14 Using the restart service

The restart service operates in the background mode and automatically checks if separate modules of INTELLECT™ software are operating correctly. Where any hanging module is found, the Restart service automatically restarts the module. This event is registered by the system and, if the program is set appropriately, is entered into the event log and (or) is displayed in the alarm notification window.

4.15 Operations with the Remote Work Station (RWS)

4.15.1 General

Remote Work Station is a PC, where Intellect™ system, configuration Remote Monitoring Work Station is installed.

4.15.2 Launching Intellect™ software ("Remote Work Station" configuration)

Remote Work Station configuration of the program can be launched in one of the following ways:

1. Automatically: the program is launched automatically as soon as the operating system is downloaded.

2. Manually: to launch the program manually, select Client Site in the Windows Start menu (Start/Programs/Intellect/Client Site) or use an appropriate shortcut on the Desktop.

4.15.3 Connection to the Server

As soon as Remote Work Station configuration of the Program is launched, the system automatically starts a search for an active kernel of the server program (see Fig. 4.15-1).

Fig. 4.15-1 Search for the server program

NOTE. When Remote Work Station configuration of the program is launched for the first time, the search uses IP-address 127.0.0.1 («local host»). In all other cases, which will follow, the search will use the last entered IP-address.

If the program kernel is not found, the Operator will be suggested to manually enter the IP-address of the PC, where the server program is operated, or quit the program (see Fig. 4.15-2).

Fig. 4.15-2 Entering the IP-address of the server program

To complete the operations, press the “Exit” button. To start a search using another IP-address, enter the required address in the IP-address field and press the “Registration” button. As soon as the “Registration” button is pressed, the system will start searching for the active program kernel at the entered address.

If the active program kernel is found at the given IP-address, the system will automatically connect to the established program kernel. If required, an access password to the server program will be requested (see Fig. 4.15-3).

Fig. 4.15-3 Entering a password to the server program

Having entered the password, press the “Registration” button. If connection is established successfully, the user interface of the Remote Work Station configuration of the program will start downloading. Otherwise, the system will display an error message (see Fig. 4.15-4).

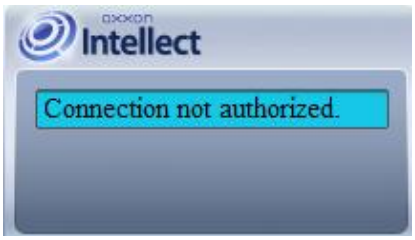


Fig. 4.15-4 Example of an error message while connecting to the server program

4.15.4 Video surveillance and audio monitoring using Remote Work Station

Operations with the Remote Work Station configuration of the Intellect™ system is completely identical to the “Client Site” configuration, described in the manual.

4.16 Video surveillance using the Web browser

4.16.1 General

The video surveillance monitor for the Web-browser (see Fig. 4.16-1) is designed for remote video surveillance over the guarded objects using the Web browser and TCP/IP communication environment. However remote video surveillance through the Web browser does not require INTELLECT™ software be installed (however, the browser you are using should support Java).

Fig. 4.16-1 Video monitor for surveillance with the Web browser

The colour of the video surveillance window border and text of the camera name reflect the status of the surveillance camera corresponding to the given surveillance window (see Table 4.16-1).

Table 4.16-1

Color of the window border	Color of the camera number border	Camera Status
Yellow	Yellow	The camera is armed, no video recording is in process
Red	Red	An alarm event has been registered with the camera, alarm response recording starts and recording initiated at the Operator's command before the alarm, continues
Green	Red	Camera is disarmed, recording initiated by the Operator's command or alarm response recording is underway
Yellow	Red	Camera is armed, recording initiated by the Operator's command or alarm response recording is underway
Green	Green	Camera is disarmed, no recording in process
Red	Yellow	An alarm event has been registered with the camera, however no alarm response recording starts

NOTE. All indication diagrams as presented correspond only to the basic detector zones, without auxiliary zones. Whenever a camera is armed or disarmed within auxiliary detector zone, the colour of the video surveillance window border remains unchanged, however in case of an alarm event in the auxiliary zone, the window border becomes red. That is why camera arming and disarming within an auxiliary zone is not indicated.

4.16.2 Connection to the Server

To launch the Web server surveillance monitor, enter the IP-address of the corresponding video server in the browser address line and press "Enter"" (see Fig. 4.16-2).

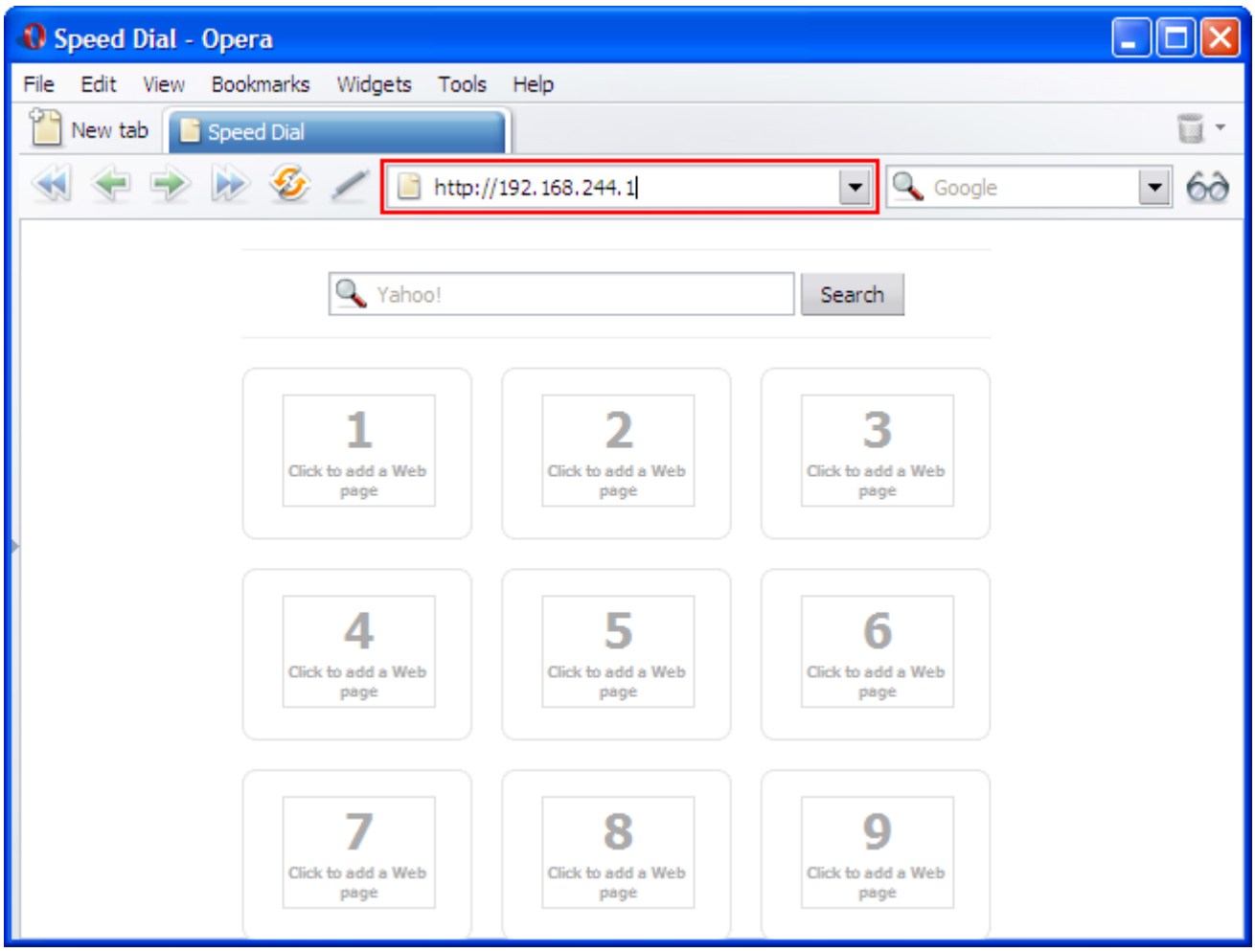


Fig. 4.16-2 Connection to the Server

Interface of the surveillance monitor for the given Web server will be downloaded in a few minutes (see Fig. 4.16-3).

Fig. 4.16-3 Surveillance monitor interface for the Web server

NOTE. Remote access to the Web server can be restricted using the appropriate settings. In this case a login or user password will be required to access the Web server.

4.16.3 Changing the number of windows

The number of surveillance windows within one Web browser monitor is changed using the set of buttons  in the video monitor tools panel of the Web browser (see Fig. 4.16-4).

Fig. 4.16-4 Changing the number of surveillance windows within one Web browser monitor

The button  opens only one window, all the others are used when a few windows are required to be displayed simultaneously (4, 6 or 9) in the Web server surveillance monitor.

4.16.4 Camera arming and disarming

Cameras are armed and disarmed via the functions menu of the Web server video surveillance window.

To arm the camera, select “Arm” in the functions menu (see Fig. 4.16-5).

Fig. 4.16-5 Arming the camera

To disarm the camera, select "Disarm" (see Fig. 4.16-6).

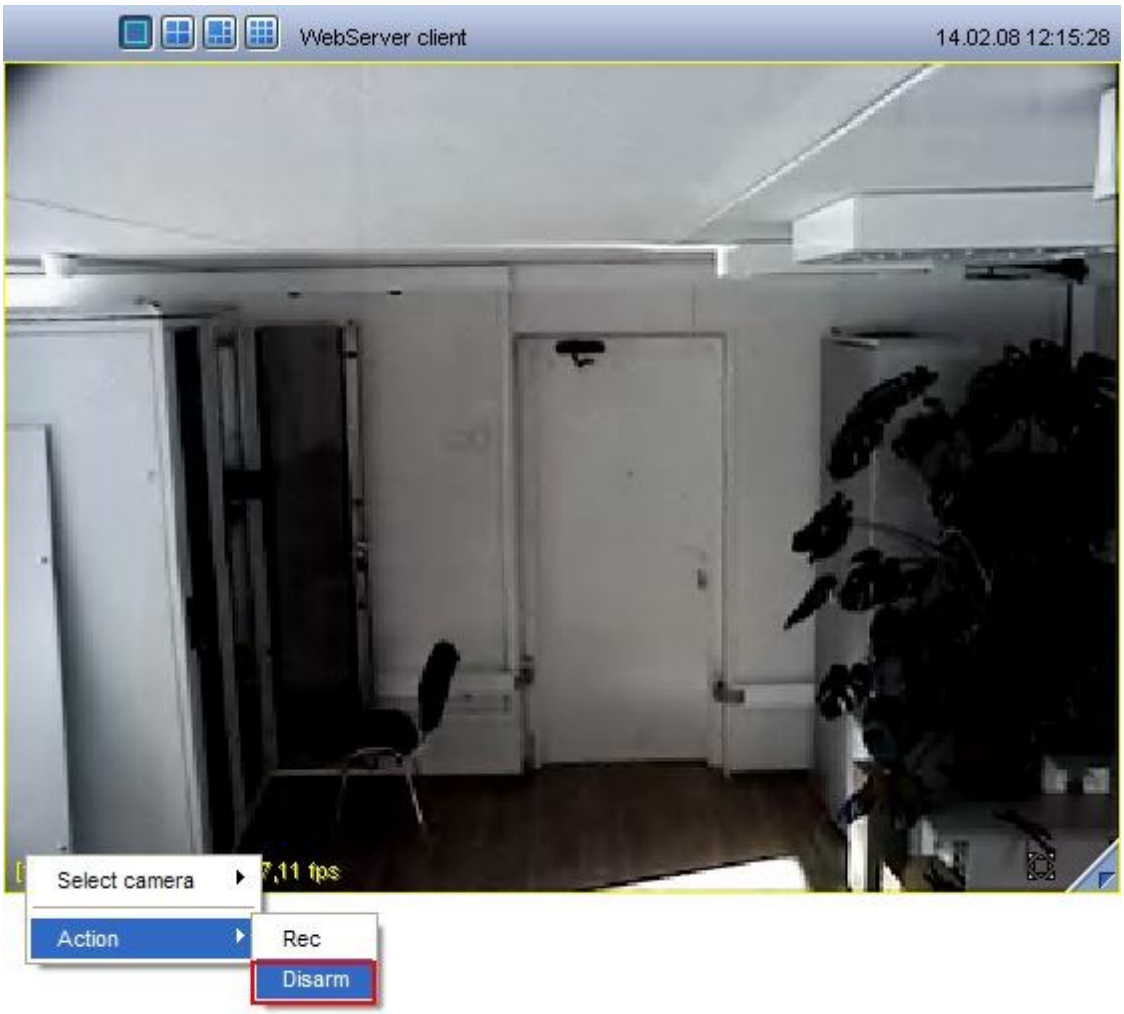


Fig. 4.16-6 Disarming the camera

Camera arming and disarming is supported with the appropriate indication (see the “General” section).

4.16.5 Switching video motion detectors on and off

Camera detectors are switched on and off via the functions menu of the Web server surveillance window (see Fig. 4.16-7).

Fig. 4.16-7 Switching detectors on and off

To switch a detector on or off, click its name in the detector list in the “Action” sub-menu of the functions menu of the video surveillance window.

To switch on (off) all detectors of the camera simultaneously, select “Arm all zones” (“Disarm all zones”).

Switching detectors on and off is indicated appropriately (see the “General” section).

4.16.6 Video recording

Video recording via the camera is controlled through the functions menu of the Web server video surveillance window.

To start video recording through the camera, select “Start recording” in the functions menu of the video surveillance window, which corresponds to the given camera (see Fig. 4.16-8).

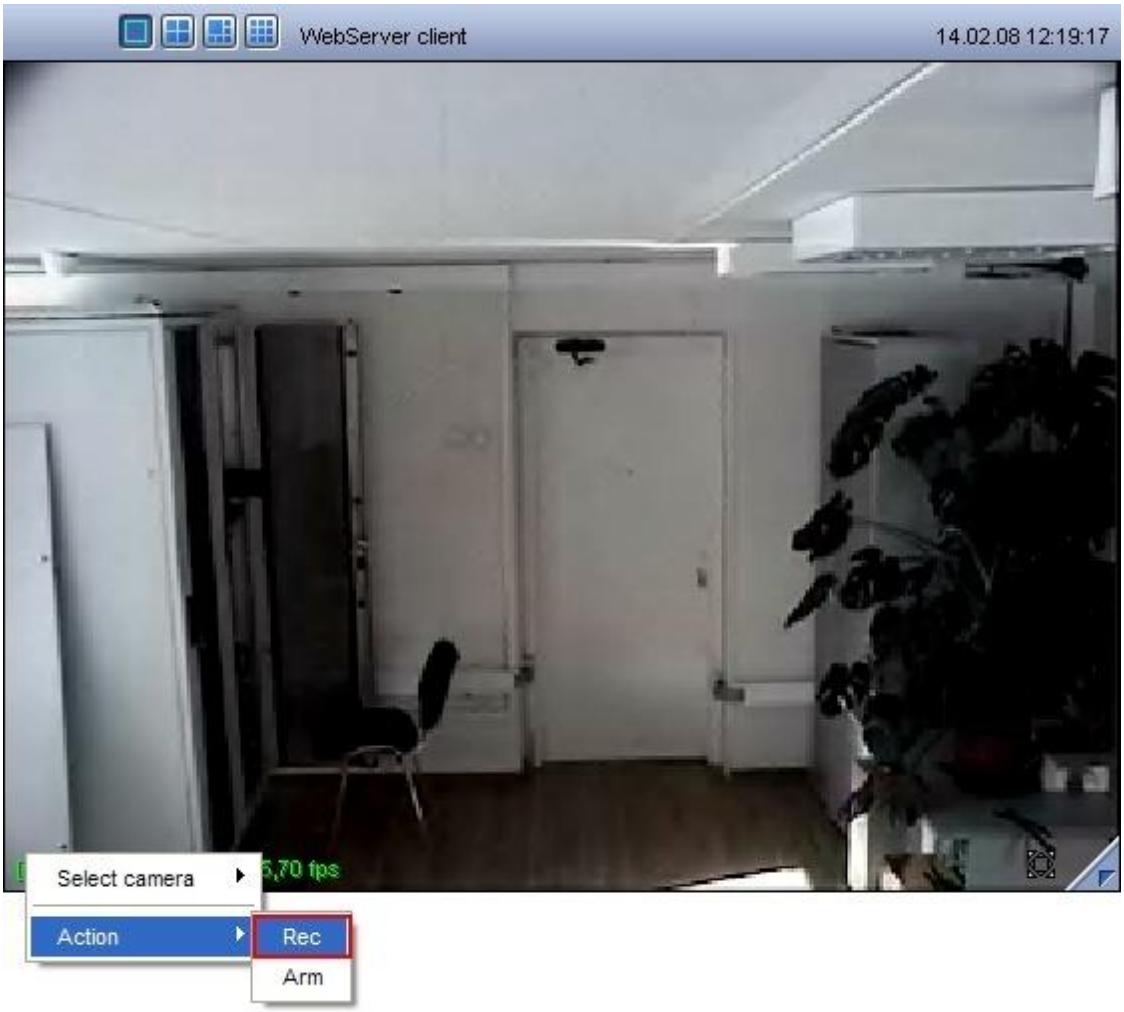


Fig. 4.16-8 Start recording

To stop recording, select “Stop recording” from the functions menu of the video surveillance window (see Fig. 4.16-9).

Fig. 4.16-9 Stop recording

The current status of recording is indicated by the colour of the camera number border in the surveillance window (see the “General” section).

4.16.7 Working with the archive

To start archive playback, click  in the bottom right corner of the Web server surveillance monitor. The tape transport panel for playback control will be downloaded (see Fig. 4.16-10).

Fig. 4.16-10 Archive playback control panel interface for the Web browser

Elements of the playback control panel are described in Table 4.16-2.

Table 4.16-2

Element Image	Description	Comments
30.10.07	Recording date filter	Editable field used to filter displayable recordings by date
14:33:31 14:34:07 14:34:29 14:34:50	List of recording segments	Lists recording segments made on the date indicated on the recording date filter
1/19	Playback position indicator	Shows the current playback position in the frame against the selected recording segment
	Playback control panel	Controls video playback
[1] Camera 1	Camera indicator	Indicates the camera status and calls up the functions menu of the video surveillance window
	Quit archive playback mode	Quits archive playback mode and returns to video surveillance

An algorithm for browsing through the archive may be as follows:

1. Choose, appropriately, the camera, the archive of which will be accessed, using the functions menu of the video surveillance window (see Fig. 4.16-11).

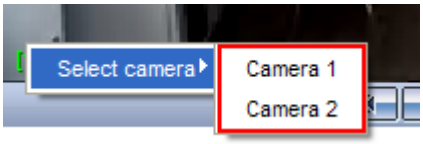


Fig. 4.16-11 Selecting a camera

2. Select the day during which the required archive was recorded, specifying the appropriate date on the recordings date filter.
3. Select the video sequence segment based on the time tag out of the list of recording segments.
4. Playback the selected segment, using the control panel (see Fig. 4.16-12).

Fig. 4.16-12 Playback control panel

The  button starts playing back the selected recording segment, the  button stops playback and returns the current playback position of the recording to the beginning of the recording segment.

The  and  buttons are used to rewind and fast forward the recording segments in the playback mode, as well as to list the frames in the pause mode. To shift to the pause mode, press  , to restore playback – press  .

4.16.8 Control of PTZ units

The window of the Web server surveillance monitor allows controlling PTZ unitsIf the PTZ unit control function is available, the surveillance window of the camera will display  (see Fig. 4.16-13).

Fig. 4.16-13 Access to the PTZ unit control

To access PTZ unit controls, click  with any mouse button. You will get an image of the PTZ unit control panel (see Fig. 4.16-14).

Fig. 4.16-14 PTZ unit control panel for the Web browser

Table 4.16-3 describes elements of the PTZ unit control panel interface.

Table 4.16-3

Element Image	Description	Comments
	Control unit for camera lens adjustment	 - upward movement of the lens  - downward movement of the lens  - left-side movement of the lens  - right-side movement of the lens
	Control unit for zoom adjustment of the camera lens	 - reduce image scale (zoom out)  - enlarge image scale (zoom in)
	PTZ control panel element	Hide/display the PTZ control panel

To hide PTZ unit controls, click  with any mouse button again.

4.17 Working with panoramic video surveilance window

4.17.1 General

The Panoramic video surveillance window is designed for creating and using the panoramic image.

4.17.2 Starting the panoramic video surveillance

Starting the Panoramic video surveillance window is done in the following way:

1. Display the control panel Вывести на экран Главную панель управления (see Interface description).
2. Select Interface button on the control panel (Fig. 4.17-1).

Fig. 4.17-1 Interface button

2. Control menu of the Intellect PC user interface will be displayed in result
3. Select the Screen point.
4. The Panoramic video surveillance window will be displayed in result (Fig. 4.17-2).

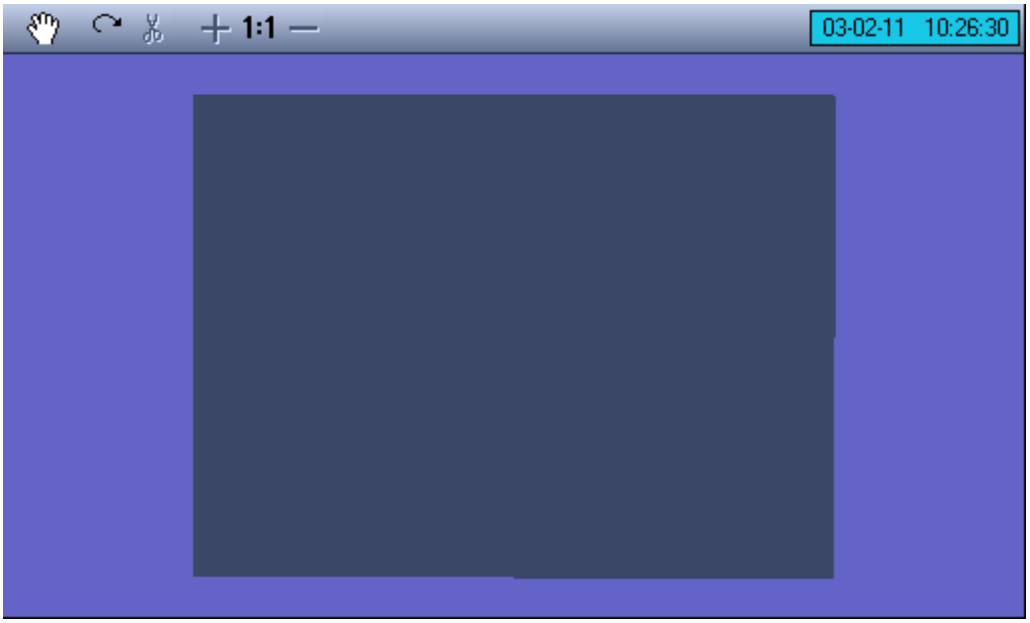


Fig. 4.17-2 panoramic video surveillance window

4.17.3 Navigation mode

Navigation mode is used for monitoring the scene. To enable this mode click Navigation button (Fig. 4.17-3). With this mode doesn't let enabling the other modes of image processing (inactive buttons).

By default this navigation mode is disabled.

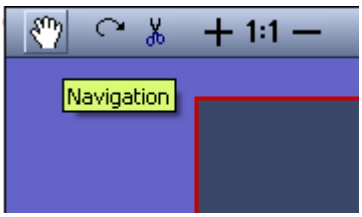


Fig. 4.17-3 Navigation button

4.17.4 Image arrow mode

Image arrow mode is designed for comfortable placing the images within the video displaying window. Moving the images is performed by means of the mouse.

Enabling the Arrow mode is performed by clicking upon the displayed video that has to be moved. The moving indicator is the evidence of Arrow mode activation (Fig. 4.17-4).

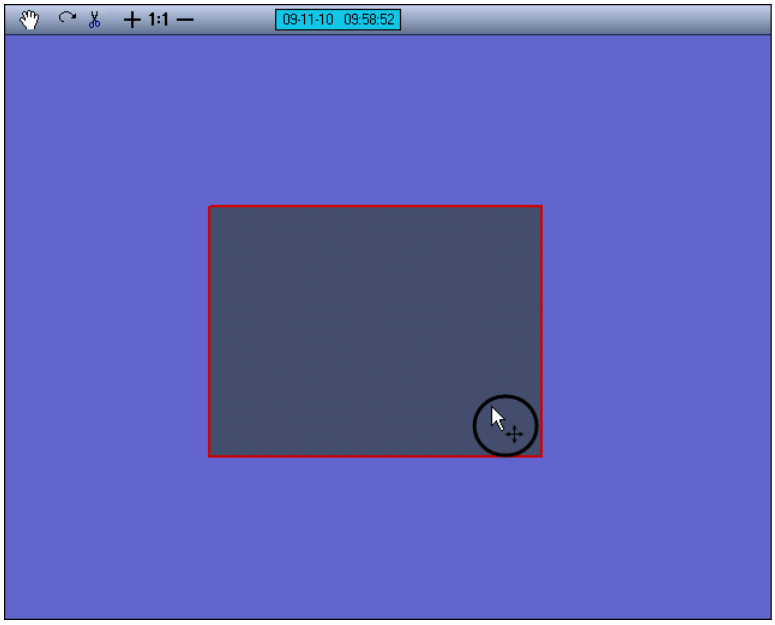


Fig. 4.17-4 Arrow mode

To move images do the following:

1. Activate the Arrow mode;
2. Navigate the mouse cursor to the object that has to be moved;
3. Press left mouse button and holding it move the cursor to a required area of video displaying window;
4. Release left mouse button.

4.17.5 Perspective correction mode

Perspective correction mode is designed for changing the shape of video Image by user-defined manner.

Perspective correction mode activation is performed by mouse click upon the image. The perspective indicator near the framed video image is the evidence of Perspective correction mode activation (Fig. 4.17-5).

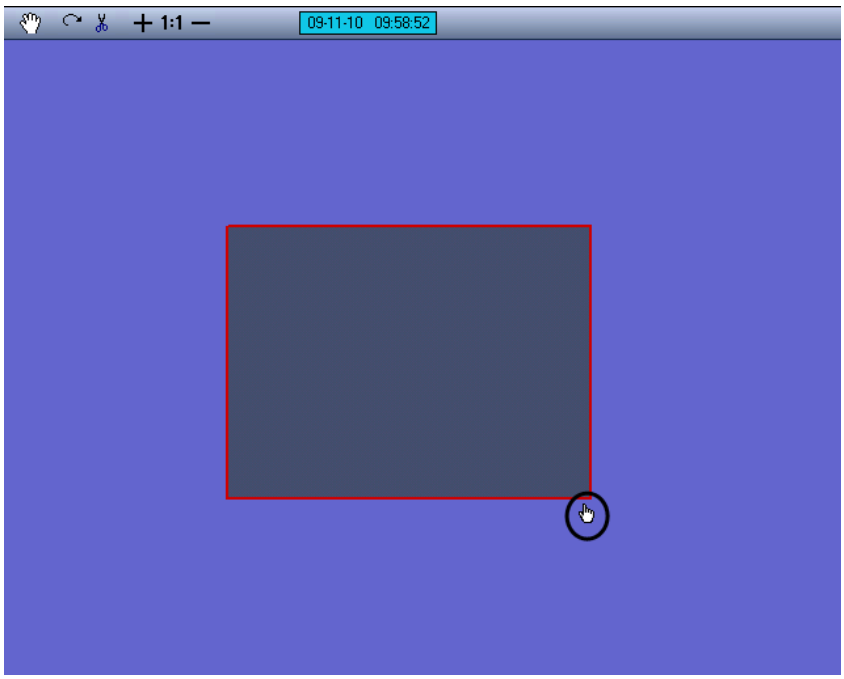


Fig. 4.17-5 Perspective correction mode

To correct the video image perspectives do the following:

1. Enable the Perspective correction mode;
2. Navigate the mouse cursor to one of the corners of active image. The cursor will be in the form of a hand with forefinger up;
3. Click left mouse button and holding it move the image corner to a required video displaying window;
4. Release left mouse button.

4.17.6 Video panning mode

Video panning mode is designed for panning the video about video image perpendicular plane and running through its centre. The video can be panned about this axis to any desirable angle.

Video panning mode activation is performed by clicking the Pan button on the control panel (Fig. 4.17-6).

Fig. 4.17-6 Pan button

To pan the video image do the following:

1. Activate the Video panning mode;
2. Navigate the mouse cursor to video image that has to be panned;
3. Click left mouse button and holding it move the cursor to a required area of video displaying window;

4. Release left mouse button.

4.17.7 Cut borders mode

Cut borders mode is designed for more detailed video images adjustment. Cutting the borders is performed by the set number of pixels, calculated from the image borders. The area, left after cutting the borders, will be increased up to initial image sizes.

Select the video image that has to be cut and click cut borders button on the control panel to activate the Cut borders mode (Fig. 4.17-7).

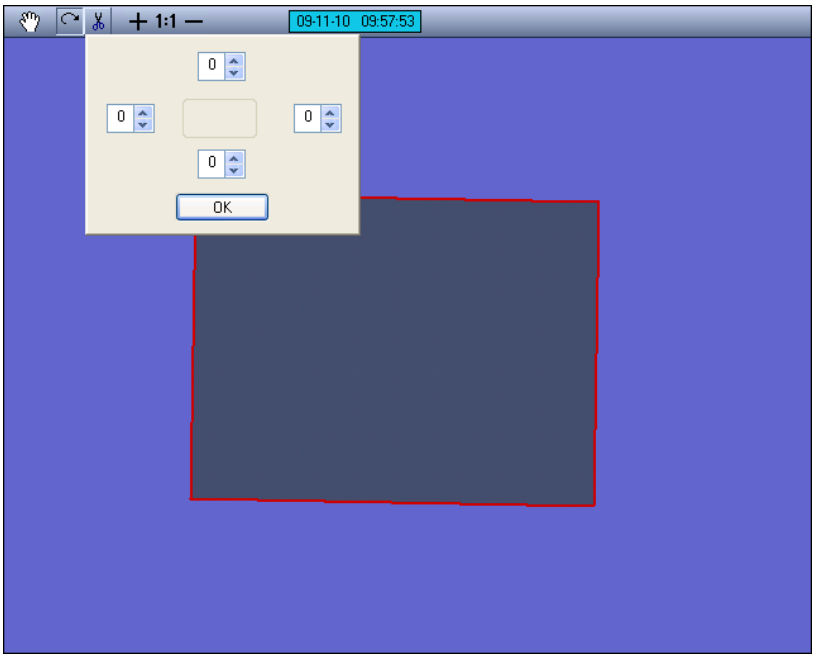


Fig. 4.17-7 Cut borders button

The panel of setting the sizes of image area that has to be cut will be displayed. In the fields of this panel there is set the width of image area that has to be cut in pixels. Every field corresponds to one of the image borders: upper field –upper border, right field – right border e.t.c.

Click OK button in the bottom part of the panel after setting the width of image area that has to be cut.

Note 1. If Accept button has been pressed after setting the width of image area that has to be cut one can return to initial image sizes only by zeroizing the set cut borders and clicking OK button.

Note 2. The maximum cut of each border of the selected video image is equal to 15 pixels.

4.17.8 Zooming in and out

Modes of scaling in and out the image are available in any mode of video processing.

For zooming in select the image that has to be processed and hold zoom in button indicated by + sign until the image gets required size (Fig. 4.17-8).

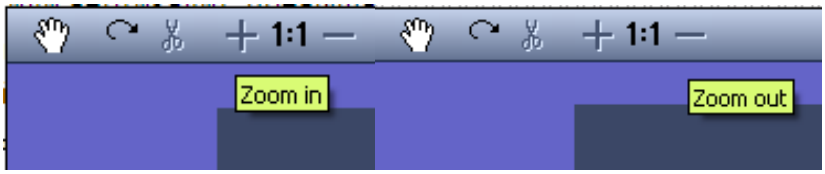


Fig. 4.17-8 Zoom in and zoom out buttons

Zooming the image in until the sizes (horizontally and/or vertically), exceeding the size of Scene object window are attended by appearance of scroll bar in the bottom and/or right part of Scene object window. Transfer to a hidden part of an image that has been zoomed in is performed by moving the square scroll box to a required position.

To zoom out the video image it is necessary to select an image that has to be processed and keep clicking zoom out button presented by – sign until image gets required size (Fig. 4.17-8).

Note. Restrictions for minimum size of the image are not posed while working with Scene interface object. Pay attention that the image may get out of sight while repeated zooming out.

4.17.9 Image restore

Image restore mode is designed for image restoring (to restore the sizes, shape and location parameters, used by default).

The video image may be restored in ratio 1:1. Ratio 1:1 corresponds to video image displaying in accordance with its real resolution. For example of the video signal frame has resolution 352x288 pixels (standard),in ration 1:1 its sizes on the screen will be 352 pixels horizontally and 288 pixels vertically.

Image restore mode is available in any mode of video processing.

To restore the image in ration «1:1» select the image(it will be framed in red in result) and click Restore button presented by «1:1» sign (Fig. 4.17-9).

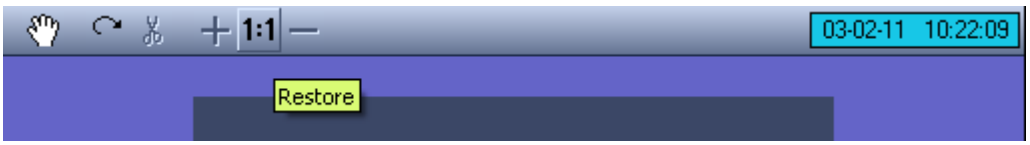


Fig. 4.17-9 Restore button

5 Postscript

If while operating the given software product you have faced difficulties and problems, you are welcome to contact us. However before addressing us, we kindly ask you to answer the following questions:

1. What is the problem?
2. When the problem occurred and what happened before it occurred?
3. Which conditions give rise to the problem?

Remember, that the more detailed and precise information you give us, the faster our experts will resolve your problem.

Contact details: www.axxonsoft.com

We are striving to improve the quality of our products, and hence welcome any proposals and suggestions how to improve our software and documentation.

Please forward your suggestions to the following e-mail addresses documentation@axxonsoft.com (documentation)