AxxonSoft

INTELLECT™ Software Package

Administrator's Guide

Installation and Configuration Manual

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1 INTRODUCTION

1.1 Purpose of the INTELLECT™ intelligent video surveillance system

INTELLECT™ software is designed for the deployment of industrial scalable, flexible (adjustable) integrated security systems, based on the digital video surveillance and audio monitoring systems.

INTELLECT™ software possesses the following basic features:

1. Integration of digital video surveillance and audio monitoring systems with the existing data systems, various security equipment, auxiliary software of other developers, using integrated open interfaces of the data exchange.

2. Compatibility with diverse security devices and data systems, in particular, with the fire and security alarm and access control systems, video surveillance cameras, data analysis systems and systems for recognition of objects (events) and identification by their images.

3. Single-source registration and processing of events, generation of notifications and controlling response in compliance with the flexibly modified logics.

4. Ultimately unlimited capabilities for scaling, solution—specific adjustments, re-distribution of resources with changes in the number or quality of tasks in monitoring guarded locations and operating various equipment.

1.2 Setting up logical interrelations among objects in the Intellect software system

Functional facilities of Intellect software complex are based on logical cooperation of objects. Common data about ways of setting up the logical interrelation is given in Table 1.2-1.

Table 1.2-1

Ways of setting up the logical interrelation	Description	Realization	Example
Objects settings panels	Base setting of system objects interrelation	Is realized with the use of system objects functionality-see. Intellect software: Administrator guide.	Setting up the video signal displaying in Monitor interface window
Macros	Setting up simple interrelations among objects which functionalities do not allow to carry out the required operations	Is realized with the use of Macros object functionality-see. Intellect software: Administrator guide.	Setting of enabling the additional executive relay with ray closed
Program	Setting up complex interactions among objects, when Macros object functionality does not allow to carry out the required operations	Is realized on the basis of Program object as a code on the embedded Intellect program language-see. this guide	It is necessary to return the cameras to the reference position and make a frame
Script		Is realized on the basis of Script object as a code on embedded JScript language – see. Intellect program complex: Program	

Ways of setting up the logical interrelation	Description	Realization	Example
		guide (JScript).	

1.3 Purpose and structure of the guide

Documentation for the INTELLECT™ intelligent video surveillance system, Video surveillance and audio monitoring Administrator Guide is a reference and information handbook on programming on embedded Intellect software language, which is designed for system administrators, installation and configuration technicians, users with administrator rights to the digital video surveillance and audio monitoring systems, developed on the basis of INTELLECT™ software.

Programming in the INTELLECT™ enables system control by setting up complex logical interactions among objects. This guide contains the following materials:

1. Software programming;
2. Description of embedded program language syntax;
3. Examples of program on the embedded language.

1.4 License method of the INTELLECT™ software

Licensing of the INTELLECT™ software is performed by means of software and program protection.

The INTELLECT™ software protection is built on one of the following components:

1. dallas-codes of video capture cards' cryptochips (FS-5B, FS-6C, FS-8, FS-16(Exp), WS-7, WS-17);
2. dallas-codes of the electronic hardware security key «Guardant»;
3. codes of HID devices (hardware id).

The key file, connecting the software protection with program modules, belongs to the program protection part. A list of available for using functional program modules depends on the configuration of security system's delivery and is registered in the key file.

While extending the system configuration (for example while installing a new functional subsystem) for activating the program module functionality, corresponding to the installed subsystem, in the previous key file has to be changed by a new one, which the updated system functionality will be regulated with.

While using the distributed architecture a single key file is used for all the computers of the system.

Note! If the video capture card is changed, its dallas-codes are changed too, so the previous key file should be respectively changed by a new one. While using the distributed architecture the key file should be changed on all the computers of the system.

If video capture cards, manufactured by AxxonSoft Company are used on the video server, the Guardant electronic hardware security key connection will result in impossibility of starting the software.

2 General description of the INTELLECT™ software

2.1 INTELLECT™ software functionality

This section provides information on the main basic user functions of the distributed digital video and audio surveillance system based on the INTELLECT™ software.
The INTELLECT™ software provides the following basic user functions:

2.1.1 Video surveillance functionality

1. Multiple camera/video servers split screen image simultaneously displayed on a single PC monitor.

2. Priority-oriented automatic selection of displayed video images from alarm or active cameras to bring the required scenes into Operator focus (selection of images depending on set parameters).

3. Flexible split screen configuration including the number of sources observed.

4. Priority window magnification (surveillance windows), magnified surveillance windows slideshow option for a selected camera.

5. Color coding of surveillance window (camera) state: “armed”, “alarm”, “recording”, etc.

6. Remote access to audiovisual streams from any workplace with both local and remote archive recording option.

7. Video recording can be performed:

   7.1. continuously;

   7.2. on schedule;

   7.3. on alarm or by Operator’s command with a pre-event recording option.

8. Pre-event video recording.

9. Freeze frame by Operator’s command selection and viewing, without interruption of the recording.

10. Image burn-in option.

    10.1. Current time;

    10.2. Current date;

    10.3. Camera No (ID).

11. On demand video recording.

12. Real time viewing of images from video cameras.

13. Priority-oriented viewing of critical video stream based on alarm detection.

14. Web interface-based surveillance.

15. Audio- and video-archive management.
16. Viewing of recorded video with search and retrieve options (time/event type/camera ID criteria).
17. Synchro playback of footage recorded by several cameras.
18. Recorded time calculation.
19. Timestamp based footage search.
20. Image processing:
    20.1. Digital zooming;
    20.2. Contrast maximizing;
    20.3. Image sharpening;
    20.4. masking;
    20.5. Dynamic outlining.
21. Management of end devices using:
    21.1. the 3rd party programmable interface panel;
    21.2. the universal control panel for end devices;
    21.3. a PC mouse;
    21.4. a joystick.
22. Viewing video server footage from any system workplace using the TCP/IP communications environment.
23. Storage and exporting of single frames and video sequences.
24. Integrated use of various types of multi-zone detectors:
    24.1. main motion detector;
    24.2. motion;
    24.3. focus loss;
    24.4. video signal stability;
    24.5. changes in the image background;
    24.6. light-struck camera lens;
    24.7. closing camera lens;
    24.8. abandoned items;

24.9. infra-red

25. Detector zone(s) masking.

26. Image de-interlacing.

27. Analog video-signal output.

2.1.2 Audio monitoring functionality

1. Audio monitoring.
2. Audio and video synchro recording.
3. Sound activated audio recording.
4. Manually activated audio recording.
5. Exporting audio recordings.

2.1.3 Structuring guarded objects

1. Virtual subdividing of guarded objects.

2. Multilevel hierarchical object mapping to obtain:

   1.1. Automatic switching and recursive structural event analysis possibility;

   1.2. Graphical representation of active objects on the map (on different levels) for simple device control via the shortcut menu.

2.1.4 Event registration functionality

1. Event log maintenance.

2.1.5 Notification functionalities

1. Automatic notification using:

   1. SMS (Short Message Service);

   2. email;

   3. V-dial auto dialing service;

   4. Audible/voice notification.

2.1.6 Functions of workability control

1. Software control of workability - the “Restarting system service” object.

2. Hardware control of workability - Watchdog

2.1.7 Management functionality

Macro commands programming of user specific functions.

2.1.8 Integration of the distributed video surveillance and audio monitoring system

1. Remote interaction of the software cores and automated replication of internal databases (containing system setup parameters and data about the events registered in the system)

between Servers and Remote workstations that are the components of the distributed digital video surveillance system.

2. Creating the integrated database of system setup parameters and registered events, followed by their processing in compliance with standards and specialized adjustable algorithms, including generation of notifications and system responses.
3. Software-rogrammable optimization of video data flows within the distributed digital video surveillance system when there is a lack of channel capacity (optional videogate functionality).

2.2 Technical features of the digital video surveillance and audio monitoring system based on INTELLECT™ software

Digital video surveillance systems based on INTELLECT™ software have the following features:

1. Maximum number of video input channels for videosignal processing in the live video and/or multiplexing modes is limited by the Server hardware resources - processor power, RAM memory space, etc.
2. Maximum number of simultaneous output analog videosignals is limited by the number of video capture cards (with analog video outputs) in use on the Server.
3. Maximum number of PTZ devices (analog) in use is 64.
4. Maximum number of remote workstations connected to the Server to receive videos is limited by the number and parameters of transmitted videosignals, video surveillance system architecture and network bandwidth.
5. Maximum number of Servers, videosignals from which are transmitted simultaneously to a remote workstation, is limited by the number and parameters of transmitted videosignals, video surveillance system architecture and network bandwidth.
6. Maximum number of simultaneous video images displayed on the screen of a remote work station is limited by video image parameters and network bandwidth.
7. Maximum video stream rate transmitted via a videogate is limited by the videogate hardware parameters and network bandwidth.
8. Supported video capture cards: FS-5, FS-6, FS-16, FS-8, FS15, FS115, FX2, FX4, FX8, FX16, FX116, FX416, FX HD4, MS416, WS-7, WS16, WS-17, WS216, VRC6004, VRC6008, VRC6416, VRC7008L, VRC6404HD and DS-4016HCI(R).
9. Supported video cards: any PCI-E video cards, not integrated in the motherboard, mainframe memory is to be at least 256 Mb.
10. Maximum number of simultaneous processed signals from the microphones or telephone lines is 64.
11. Maximum number of audio output channels (to the loudspeakers, earphones, etc.) depends on the audio card used for playback.
12. Supported audio cards: standard audio cards, MidiMan Delta, Comart Hera and Olkha 9P. Digitization bandwidth depends on the audio card parameters and software limitation from 0 to 48 000 Hz.

2.3 Structure of the digital video surveillance and audio monitoring system based on INTELLECT™ software

The versatile structure of the digital video surveillance and audio monitoring system based on INTELLECT™ software and standard hardware and software is shown in Figure 2.3-1.

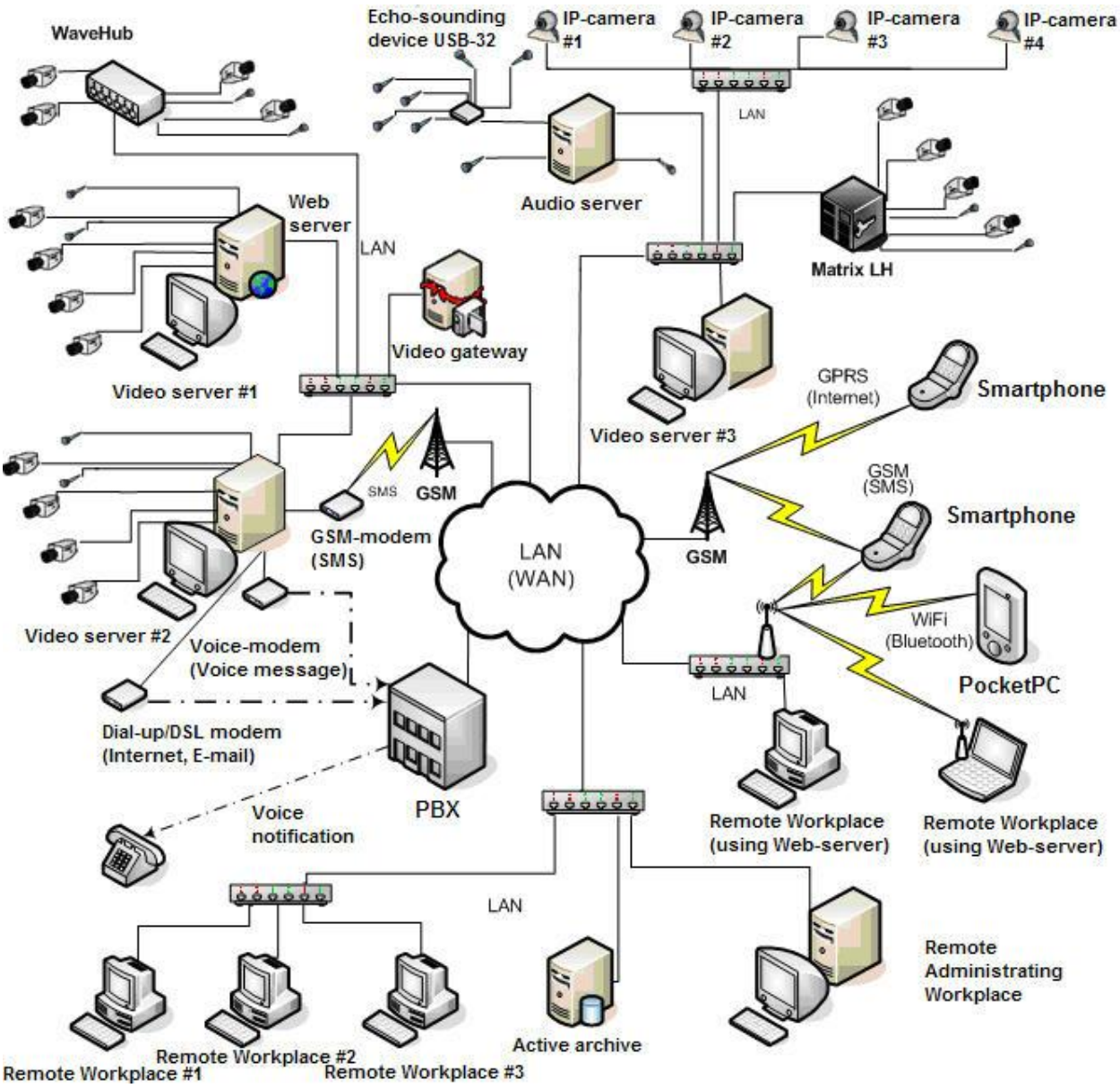


Figure 2.3-1. Versatile structure of the digital video surveillance and audio monitoring system based on INTELLECT™ software

2.3.1 Basic hardware components of the digital video surveillance system

The distributed video surveillance and audio monitoring system based on the INTELLECT™ system may be deployed using the following basic hardware and software components:

1. Servers and Remote workstations based on PCs (IBM PC–based).
2. Network video hubs (WaveHub, Linux Hub, etc.).
3. Network video servers (Matrix, etc.).
4. Analog and IP video cameras.
5. Audio input devices.
6. TCP/IP communication.

2.3.2 Software

2.3.2.1 *Operating system*

INTELLECT™ runs Microsoft Windows operating systems (see “Operating system requirements” section).

2.3.2.2 *Software kernels*

INTELLECT™ system can be implemented in the following options (installation options):

1. Based on the full-featured INTELECT software kernel (this option corresponds to the intellect.exe software module) The full-featured software kernel ensures operation the video server, Administrator and Operator workstation.

2. Software kernel with minimized functionality supporting the Remote Operator Workstation functions (this option corresponds to the slave.exe software module).

Software of the Remote Operator Workstation does not support system administration (create, delete, set system objects, register users, user rights administration), as well as local database maintenance (operations with ROW use a remote database operated by the intellect.exe kernel and belonging to the video server or Remote Administrator Workstation).

Intellect.exe, the fully software kernel, is the central software component of the system. The system kernel interacts with the program modules, which form the software basis for the subsystems.

Integration of the distributed digital video surveillance and audio monitoring system is provided by the data exchange between software kernels.

2.3.2.3 *Program modules*

Program modules support direct interworking of the hardware, and also serve as a source of data about controllable objects. The software kernel of the system processes the incoming data from various program modules, providing their integration.

The list of the program modules available for the operations depends on the configuration option of the system. Executive files, corresponding to the subsystems are automatically launched by the kernel as the system is configured

For instance, if the “Surveillance Camera” object is created and as soon as the relevant settings are confirmed, the video sub-system executive module (video.run executive file) will be launched.

2.3.2.4 *Interaction of basic modules with the Intellect kernel*

Basic modules interact with the Intellect kernel via the data exchange interface of the Intellect kernel, using module.mdl, a dynamic library.The program modules and Intellect kernel interaction scheme are shown in Figure 2.3-2.

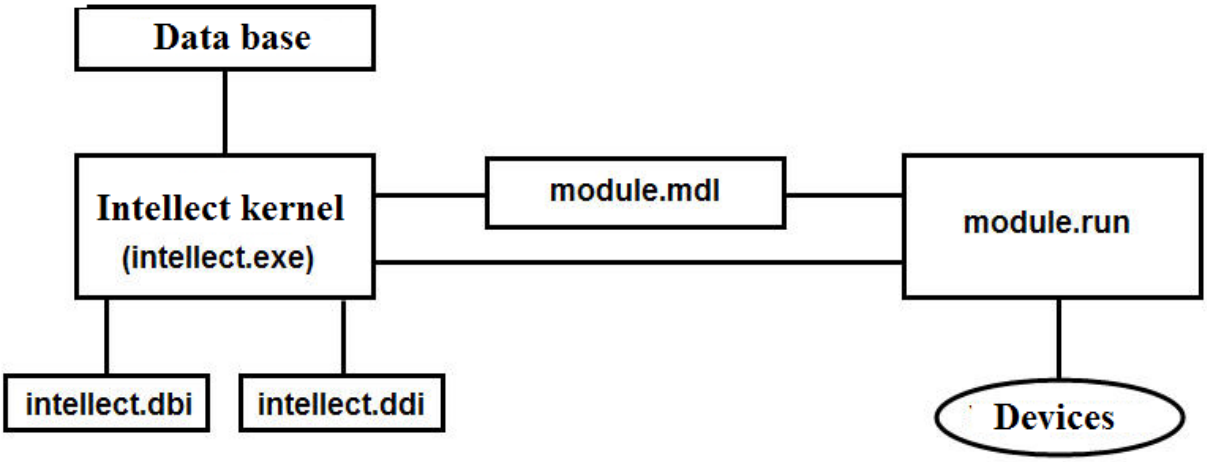


Figure 2.3-2. Scheme of the modules and Intellect kernel interaction, using the Intellect kernel data exchange interface (intellect.exe process)

Intellect.dbi and intellect.ddi object setting files contain the information about integrated modules (objects) required to support operation of the Intellect kernel. System setting files are edited using ddi.exe, a specialized utility. At the object integration stage, the names and parameters of the integrated object and related system events and responses, used for this object, and the values thereof are recorded in the system setting files.

The module.mdl file supports operation with objects of the same type: creation, modification, deletion, changing object parameters at the configuration stage or during operation and saving updated parameters in the database, as well as certain special operations with the object. Apart from that, the module.mdl transmits parameters of the created or modified objects to the executive module.

The module.mdl file stores the configuration of the object setting panels.

The module.run execution file supports interworking with the units, transmits information about events to the kernel and also supports unit control.

Consequently, module.mdl supports two-way data exchange between the Intellect kernel and module. The responses and events, which are used, will be described in the system manuals of the appropriate object (in intellect.ddi file).

To simplify integration with the joint data systems, auxiliary software or extension modules, Intellect™ system offers an alternative interface for data exchange between modules and the Intellect kernel – IIDK.

2.3.2.5 *Interaction of modules of other vendors with Intellect kernel*

INTELLECT™ software architecture is designed for intertask communication between the Intellect kernel and modules (joint information systems) using the TCP/IP communication environment, requiring the following parameters to support connection:

1. port number;
2. IP address of the PC using the Intellect kernel;

3. ID, an identifier of the connectable object;

To enable the above mechanism, the IIDK interface object should be created in the Intellect software tree based on the PC object at the stage of Intellect software configuration.

Where the IIDK interface is used, setting panels for the integrated modules (of already existing software) are not created.

To enable interworking between modules and the Intellect kernel, one of the following prerequisites should be complied with:

1. Integrated software should be adjusted for TCP/IP data exchange in the Intellect kernel format.

2. An interface program module should be developed to support transmission of events and responses of the integrated software in the Intellect kernel format and interoperate with the kernel through TCP/IP. This option is used in cases where integrity of the integrated software (for instance, integration of ATM software) is especially important.

The Intellect kernel adjusts to the data exchange over the specified port, as soon as the IIDK interface is created in the program (Figure 2.3-3).

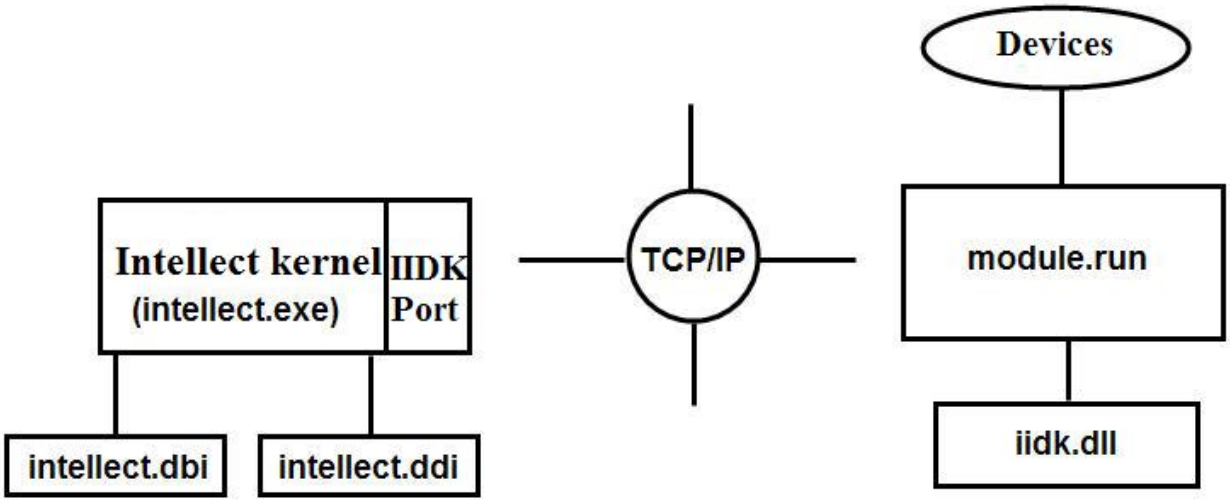


Figure 2.3-3. Scheme of interaction between the Intellect kernel and external software (modules) within the TCP/IP communication environment

Being a module and hierarchy object-based structure, INTELLECT™ software ensures efficient extension of functionalities through the integration of modules supporting new equipment or new service functions. INTELLECT™ software offers IIDK (Intellect Integration Developer Kit) to the vendors, integrating proprietary security equipment with INTELLECT™ software.

The above kit includes the software tools required for the development of integrated modules (auxiliary software) or modification of existing software to process messages, events and responses in the Intellect kernel format.

2.3.3 Activation key

Functionality (configuration) of the system is restricted by the activation key supplied together with the INTELLECT™ software installation package. Operations with the activation files are described in the “Installing and removing INTELLECT™ software” section.

The activation key activates the system functionality. Whenever the system configuration needs to be extended (for instance, where a subsystem, which is not included in the basic configuration, is required), to enable functionality of the program module corresponding to the subsystem which needs to be installed, the previous activation key is to be replaced with a new one, which will restrict updated system functionality.

Replacement of the previous activation key with a new activation key initiates the updated set of functional subsystems when the system is reset.

In a distributed system the configuration of each computer depends not only on this computer’s activation key, but on the activation keys of other computers in the distributed system. That is, the maximum functionality of each computer in the distribute system is limited by the activation key of the computer with minimum capabilities. Thus, the same activation key is recommended to be used on all computers in the distributed system.

The activation key is bound to computer equipment. The bind to the equipment is performed by three means:

1. Binding to dallas-codes of video capture cards and to “Guardant” hardware keys;
2. Binding to computer equipment (HID);
3. Binding to both dallas-codes of video capture cards and to computer equipment (HID).

In order to install an Administrator Workstation on a certain PC, a “Guardant” dongle is to be installed on the given PC. The “Guardant” dongle is also required when the video server is used to which IP devices and/or video capture cards without cryptochips are connected (e.g., FX116).

2.3.3.1 *Binding the activation key to computer equipment*

HID (Hardware ID) – is encrypted information about computer equipment which is gathered by CodeReader utility and is transferred to AxxonSoft for activation key generation.

At the moment of writing the documentation the binding of following elements has been realized:

1. motherboard;
2. processor;
3. hard disk;
4. RAM;
5. video card;
6. netcard

Note. Before releasing 4.8.3 version in INTELLECT™ the activation key was generated using the information about other equipment. If the activation key was generated for INTELLECT™ software of earlier version ,then its features are saved — see documentation about earlier versions https://doc.axxonsoft.com/confluence/display/ASdoc/AxxonSoft+documentation+repository

If main utilities of Server are replaced, then the licence is not active. For instance, simultaneous replacement of motherboard and processor will cause the license loss. However, simultaneous replacement, installation or deinstallation of hard disk, RAM, video card or netcard will not cause the key deactivation.

2.3.3.2 *Match search in the activation key*

Codes match search in the activation key with devices codes in the computer is performed in the following way:

1. Computer HID is read where the Intellect PC is run.
2. Activation key is read.
3. For every computer, stated in the activation key, the following actions are performed:
   - 3.1 If the computer in activation key is bound via HID:
     - 3.1.1 If there are video capture cards manufactured by AxxonSoft company in the activation key , the match search of board codes on the computer and board codes in the activation key will be performed (if there is no match , the following computer in the key will be checked);
     - 3.1.2 If there are no video capture cards manufactured by AxxonSoft Company in the activation key, the match search of computer HID and computer equipment codes in the key will be performed (if there is no match , the following computer in the key will be checked).
   - 3.2 If the computer in activation key is not bound via HID, the match search of video capture cards manufactured by AxxonSoft company on the computer and board codes in the activation key will be performed (if there is no match , the following computer in the key will be checked).

If there is at least one match found the Intellect PC will be run.

2.3.3.3 *Features of the Intellect software operation when the object limit is exceeded*

When the INTELLECT ™ software is started with the key and exceeded object limit, there is the message with the name of object because of which the limit is exceeded (Figure 2.3-4).

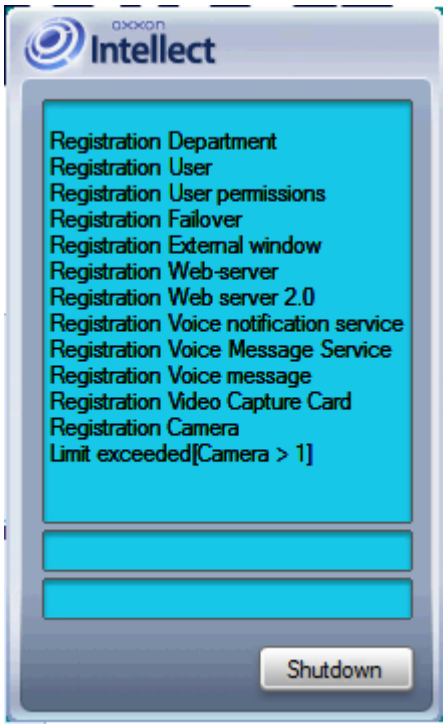


Figure 2.3-4 Message about the limit exceeding

In this case to start the INTELLECT ™ software operation, do the following:

1. Forward the intellect.sec key from the INTELLECT directory to another folder, e.g. “D:\Temp”.
2. Run the INTELLECT ™ software in a demo mode.
3. Remove a redundant object.
4. Shutdown the INTELLECT ™ software.
5. Restore the key from the “D:\Temp” folder to the INTELLECT installation directory.
6. Start the INTELLECT ™ software.

If you try to add an object that is not provided by the key, there will be the message that current system configuration does not allow more than 1 object of this type (Figure 2.3-5).

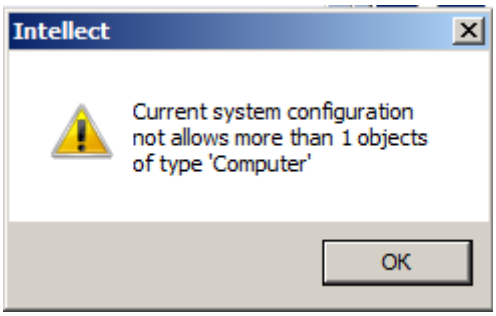


Figure 2.3-5 Message that an object can not be created

2.3.4 Internal video Server database

The internal video Server database contains the following information:

1. system settings (objects created in the system, their attributes, users and user rights and other additional data);

2. events registered by the system within the period specified at the system configuration stage (event logs).

The internal video Server database is maintained in the MS SQL format. The list of MS SQL Server versions, supported by Intellect, is given in Table 2.3-1

Table 2.3-1

MS SQL Server version	Supportes edition
MS SQL Server 2005 - see http://www.microsoft.com	Express Edition (Maximum memory capacity restriction – 1 Gb, maximum database size – 4Gb)
	Workgroup Edition
	Standard Edition
	Enterprise Edition
MS SQL Server 2008 R2 – see http://www.microsoft.com	Enterprise Edition (Restrictions– maximum number of processors and memory capacity, supported by OS)
	Developer Edition (Restrictions– maximum number of processors and memory capacity, supported by OS)
	Standard Edition (Restrictions - 4 supported processors; maximum memory capacity, supported by OS)
	Express Edition (Restrictions- 1 supported processor, maximum database size -10 Gb)
	Web Edition (Restrictions - 4 supported processors; maximum memory capacity, supported by OS)
	Workgroup Edition (Restrictions - 2 supported processors; maximum memory capacity, supported by OS (32-bit version), or memory capacity – 4Gb (64- bit version))

Note1. Free of charge version MS SQL Server 2008 R2 Express is installed with Intellect PC on default.To get information about technical features and limitations of free version see http://www.microsoft.com.

Note 2. If an error occurs while installing Microsoft SQL Server 2008 R2 Express it is necessary to create "Repair.bat" file, following the instructions, given at the site "http://support.microsoft.com/kb/958043".

Note! While exceeding maximum database memory capacity (when MS SQL Server edition with memory capacity is used) there is no guarantee of stable operation for INTELLECT™.

Information about the objects, settings of the digital video surveillance and audio monitoring system and event logs can be automatically replicated from the video Server database to the databases of all other video Servers of the system. Communication between full featured program kernels of INTELLECT system is supported by the TCP/IP environment (if the system configuration defines certain program kernels, between which communication is to be provided).

Information about system objects and their settings is initially stored to the database of the video Server where the objects belong to. Replication is initiated automatically whenever data is changed, the kernel is launched or communication is restored.

Replication is used to create a common event environment within the distributed digital video surveillance system. Replication is a hidden process for the user.

2.3.5 Communication environment

The communication facilities of INTELLECT™ software allows deployment of distributed digital video surveillance systems, which control lengthy and versatile objects. Remote system components interact automatically with each other forming a common security system.

Data exchange and communication between distributed digital video surveillance and the audio monitoring system is supported by the local access networks (LAN), Internet (WAN), telephone lines (Dial-Up) and leased communication channels, when TCP/IP telecommunications transportation protocol is used.

3 REQUIREMENTS FOR THE SOFTWARE AND HARDWARE PLATFORM

3.1 Requirements for base PCs

INTELLECT™ software is designed for use with IBM compatible PCs. Efficiency and performance of the Intellect system depends, in particular, on the technical parameters and performance of the PCs. Before you start system design, you should carefully study the requirements for the hardware components and check if they are able to support the target performance of the system.

3.1.1 General requirements for PCs used as Servers

Servers are designed for digitization, processing, recording, transmission and displaying the incoming video signals from the cameras of the video surveillance system.

Minimal requirements for server configuration are specified in Table 3.1-1.

Table 3.1-1

Component	Description	QTY	Parameter
Tower	Any ATX (eATX) with additional cooling.	1	-
Motherboard	Any type on an Intel chipset or Nvidia PCI-e.	1	Pay attention to the number of free PCI (-e) slots and the type of processor, which is installed.
Processor	Any AMD or Intel processor corresponding to the recommended platform with a standard fan	1	-
Memory	At least 1 Gb.	-	The number of modules should match the number of memory channels.
Hard drive 1	For installation of the OS and application SW (20 Gb is sufficient).	1 (+1)	Mirroring can be used to improve the fault-tolerance.
Hard drive 2	To maintain video/audio archive compatible with the requirements for the archive depth.	-	External disk systems can be connected via SAS, SCSI, Fiber Channel interfaces.
FDD	Any 3.5” floppy disk drive of 1.44 Mb.	1	For fallback recovery (not compulsory).
DVD-RW	Any type of DVD-RW.	1	To write the archive to an external carrier (not compulsory).
Video card	Any PCI-E card that is not integrated into the motherboard. RAM memory space is at least 256 Mb.	1	Not compulsory, if the image is not required to be displayed on a monitor.
Power supply unit	Any ATX matching the PC tower. Capacity depends on the hardware configuration.	1	Two fans are recommended: a suction fan and an induced draft fan. A redundant fan can also be installed.
FAN&Temp Control	Any temperature control module.	1	Not compulsory
OS	OS Windows supported versions (see Operating system requirements” section).	1	Internet access is recommended to be switched off.

Note. The system clock on the server must be synchronized with the client’s system clock, or run a couple of seconds ahead. Otherwise, problems during re-connecting (for example, on connection loss) may occur.

3.1.2 General requirements for PCs used as Remote Administrator Workstations

Remote Administrator Workstations are designed for remote monitoring of video signals, for creating gateways and archives of video sequences, for logging the events registered by INTELLECT™ software and use as a web server for the transmission of video signals over HTTP (this protocol is used to transmit signals over the Internet and display them with standard Web-browsers).

Configuration requirements for the Remote Administrator Workstation depend on the functions it is designed to perform. Table 3.1-2 shows general requirements, including comments.

Table 3.1-2

Component	Description	QTY	Parameter
Tower	ATX (eATX) of any type with additional cooling.	1	-
Motherboard	Any Intel on a chipset or Nvidia PCI-e.	1	-
Processor	Any Intel on a chipset.	1	HT function in BIOS should be switched off.
Memory	At least 1 Gb.	-	The number of modules should match the number of memory channels.
Hard drive 1	For installation of the OS and SW application (20 Gb is sufficient).	1 (+1)	Mirroring can be used to improve the fault-tolerance.
Hard drive 2	To maintain video/audio archive compliant with the requirements for the archive depth.	-	External disk systems can be connected through SAS, SCSI, Fiber Channel interfaces. Will be installed in cases where video/audio archives are required.
FDD	Any 3.5” floppy disk drive of 1.44 Mb.	1	For fallback recovery (not compulsory).
DVD-RW	Any type of DVD-RW.	1	To reload the archive to an external carrier (not compulsory).
Video card	Any from 256 Mb.	1	Not compulsory, if the image is not required to be displayed on a monitor.
Power supply unit	Any ATX matching the PC tower. Capacity depends on the hardware configuration.	1	Two fans are recommended: a suction fan and an induced draft fan. A redundant fan can also be installed.
FAN&Temp Control	Any temperature control module.	1	Not compulsory
OS	OS Windows supported versions (see. Operating system requirements).	1	Internet access should be diskonnected, if the Remote Administrator Workstation will be used as a Web server.

Note. The system clock on the server must be synchronized with the client’s system clock, or run a couple of seconds ahead. Otherwise, problems during reconnecting (for example, on connection loss) may occur.

3.1.3 General requirements for PCs used as Remote Monitoring Workstations

Remote Monitoring Workstations are designed to playback incoming video and audio signals from video surveillance system servers and to control cameras, microphones, PTZ units, etc.

Minimal requirements for Remote Monitoring Workstation configuration are given in Table 3.1-3.

Table 3.1-3

Component	Description	QTY	Parameter
Tower	ATX (eATX) of any type with additional cooling.	1	-
Motherboard	Any Intel on a chipset or Nvidia PCI-e.	1	-
Processor	Any Intel on a chipset.	1	HT function in BIOS should be switched off.
Memory	At least 1 Gb.	-	The number of modules should match the number of memory channels.
Hard drive 1	For installation of the OS and SW application (20 Gb is sufficient).	1 (+1)	Mirroring can be used to improve the fault-tolerance.
FDD	Any 3.5" floppy disk drive of 1.44 Mb.	1	For fallback recovery (not compulsory).
DVD-RW	Any type of DVD-RW.	1	To reload the archive to an external carrier (not compulsory).
Video card	Any from 256 Mb.	1	-
Power supply unit	Any ATX matching the PC tower. Capacity depends on the hardware configuration.	1	Two fans are recommended: a suction fan and an induced draft fan. A redundant fan can also be installed.
FAN&Temp Control	Any temperature control module.	1	Not compulsory
OS	OS Windows supported versions (see. Operating system requirements).	1	Internet access should be diskonnected.

Note. The system clock on the server must be synchronized with the client's system clock, or run a couple of seconds ahead. Otherwise, problems during re-connecting (for example, on connection loss) may occur.

3.1.4 Operating system requirements

Intellect software is compatible both with 32 and 64 bit licensed versions of Microsoft Windows operating system (Table 3.1-4). File system – NTFS.

Table 3.1-4

Windows version	Supported architecture	Supported release	Note
Windows XP SP2	x64	Windows XP Professional	OS edition, enabling to use all realized product features
Windows	x86	Windows XP	Restrictions, imposed by OS release (1 physical processor, 5 SMB connections) – see. http://www.microsoft.com

Windows version	Supported architecture	Supported release	Note	
XP SP3		Home Edition		
		Windows XP Professional	OS edition, enabling to use all realized product features.	
		Windows XP Tablet PC Edition	OS edition, enabling to use all realized product features.	
		Windows XP Media Center Edition	OS edition, enabling to use all realized product features.	
Windows Server 2003 R2 SP2	x86, x64	Standard Edition	OS edition, enabling to use all realized product features.	
		Enterprise Edition	OS edition, enabling to use all realized product features.	
		Datacenter Edition	OS edition, enabling to use all realized product features.	
		Web Edition (x64 edition does not exist)	Restrictions, imposed by OS release (2 Gb of main memory, 2 physical processors) – see http://www.microsoft.com	
Windows Vista SP2	x86, x64	Home Basic	Restrictions, imposed by OS release (1 physical processor, 5 SMB connections) – see. http://www.microsoft.com	
		Home Premium	Restrictions, imposed by OS release (1 physical processor) – see. http://www.microsoft.com	
		Business	OS edition, enabling to use all realized product features.	
		Enterprise	OS edition, enabling to use all realized product features.	
		Ultimate	OS edition, enabling to use all realized product features.	
Windows Server 2008 SP2	x86, x64	Enterprise	OS edition, enabling to use all realized product features.	Full Installation type is supported.Server Core Installation type is not supported
		Datacenter	OS edition, enabling to use all realized product features.	
		Standard	OS edition, enabling to use all realized product features.	
		Web	OS edition, enabling to use all realized product features.	
		HPC	OS edition, enabling to use all realized product features.	
Windows Server 2008 R2 SP1	x86, x64	Enterprise	OS edition, enabling to use all realized product features.	Full Installation type is supported.Server Core Installation type is not supported
		Datacenter	OS edition, enabling to use all realized product features.	
		Standard	OS edition, enabling to use all realized product features.	
		Web	OS edition, enabling to use all realized product features.	
		HPC	OS edition, enabling to use all realized product features.	
		Foundation	OS edition, enabling to use all realized product features.	
Windows	x86, x64	Starter (x64 edition does not	Restrictions, posed by OS edition (2GB of main memory, 1 physical processor, 1 monitor) - see. http://www.microsoft.com	

Windows version	Supported architecture	Supported release	Note	
7 SP1		exist)		
		Home Basic	Restrictions, posed by OS edition (1 physical processor) - see http://www.microsoft.com	
		Home Premium	Restrictions, posed by OS edition (1 physical processor) – see http://www.microsoft.com http://www.microsoft.com/	
		Professional	OS edition, enabling to use all realized product features.	
		Enterprise	OS edition, enabling to use all realized product features.	
		Ultimate	OS edition, enabling to use all realized product features.	
Windows Server 2012*	x64	Foundation	Restrictions, posed by OS edition (1 physical processor) – see http://www.microsoft.com	Full Installation type is supported. Server Core Installation type is not supported.
		Essentials	Restrictions, posed by OS edition (2 physical processors) — see http://www.microsoft.com	
		Standard	OS edition, enabling to use all realized product features.	
		Datacenter	OS edition, enabling to use all realized product features.	
Attention! The latest drivers are to be installed on video adapter for proper operation of interface objects in INTELLECT™ and vertical solutions in OS Windows Server 2012.				
Windows 8	x86, x64	Windows 8 (Windows 8 Core)	OS edition, enabling to use all realized product features.	
		Windows 8 Pro	OS edition, enabling to use all realized product features.	
		Windows 8 Enterprise	OS edition, enabling to use all realized product features.	

Attention! For stable and proper Intellect operation, the swap file (the size is selected according to system requirements) is to be enabled in OS.

3.1.5 Processor and motherboard requirements

Table 3.1-5 gives summarized information about the platforms recommended for different video surveillance system configurations. Short symbols in Table 3.1-5 correspond to the types of processors required to support the appropriate performance of the video surveillance system of a certain configuration. Table 5 displays a legend to the processor type symbols. The colors of Table 3.1-5 cells indicate the motherboard requirements. Table 6 describes the meaning of the cell colors.

Note. It is recommended to use 64-bit OS (Windows 7 x64 Ultimate, Windows 7 x64 Professional or Windows Server 2008 R2 x64) when total number of cores is more than 8.

Table 3.1-5

System	Resolution	Color	Number of channels													
			1	2	4	6	8	12	16	20	24	32	40	48	56	64
D (4 fps)	352x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	352x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220

System	Resolution	Color	Number of channels													
			1	2	4	6	8	12	16	20	24	32	40	48	56	64
	704x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x576	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x576	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
E (6 fps)	352x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	352x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x576	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x576	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
F (8 fps)	352x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	352x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x576	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570
	704x576	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci5 3570
G/2 (12 fps)	352x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	352x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	704x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci5 3570
	704x576	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci5 3570	Ci7 3770K
	704x576	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci7 3770K	Ci7 3770K	E5 2620
G (25 fps)	352x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220
	352x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci5 3570	Ci5 3570
	704x288	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci7 3770K	Ci7 3770K	E5 2620
	704x288	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci7 3770K	Ci7 3770K	E5 2620	E5 2620
	704x576	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci7 3770K	E5 2620	E5 2640	E5 2670	E5 2670
	704x576	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci3 3220	Ci5 3570	Ci5 3570	Ci7 3770K	E5 2620	E5 2640	E5 2670	E5 2670	E5 2690
HD (50 fps)	704x576	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci7 3770K	Ci7 3770K	E5 2640	E5 2690	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	704x576	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci7 3770K	Ci7 3770K	E5 2640	E5 2690	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1280x1080	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci7 3770K	Ci7 3770K	E5 2690	E5 2690	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1280x1080	Color	Ci3 3220	Ci3 3220	Ci3 3220	Ci7 3770K	Ci7 3770K	E5 2690	E5 2690	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HD(25 fps)	1920x1080	Bw	Ci3 3220	Ci3 3220	Ci3 3220	Ci7 3770K	E5 2640	E5 2690	E5 2690	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1920x1080	Color	Ci3	Ci3	Ci5	Ci7	E5	E5	E5	N/A	N/A	N/A	N/A	N/A	N/A	N/A

System	Resolution	Color	Number of channels													
			1	2	4	6	8	12	16	20	24	32	40	48	56	64
			3220	3220	3570	3770K	2640	2690	2690							

Table 3.1-6 gives a legend to the brief processor symbols used in Table 3.1-5.

Table 3.1-6

Symbol	Description
Ci3 3220	Intel Core i3-3220 processor
Ci5 3570	Intel Core i5-3570 processor
Ci7 3770K	Intel Core i7-3770K processor
E5 2620	2 Intel Xeon E5-2620 processors
E5 2640	2 Intel Xeon E5-2640 processors
E5 2670	2 Intel Xeon E5-2670 processors
E5 2690	2 Intel Xeon E5-2690 processors
N/A	More productive processors have not been tested

Table 3.1-7 describes the meaning of Table 3.1-5 cell colors corresponding to the requirements of the motherboard.

Table 3.1-7

Symbol	Motherboards
Green	Asus P8Z77-V LK
Orange	Asus P8Z77-V LX2
Violet	Intel Gasper DZ77GA-70K, Gigabyte GA-Z77-D3H
Red	Supermicro X9DR3-F

3.1.6 Free disk space (video archive size) required

Intellect™ system allows saving the video recordings to the hard drives (maintain video recordings archive). Archived information can be saved to the hard drives of such types as SCSI, IDE, SATA, USB and also RAID arrays. SCSI disks and RAID arrays (in particular RAID-5) allow accelerating data search and recording.

The size of the redundant array defines the length (time based length) of the saved and archived video recording. The size of the redundant array is selected based on the required parameters of the video recording.

Attention! For proper operation of video archive recording the disk space size must exceed «Ring» parameter, that has been stated in «Video Subsystem» section of advanced system settings utility (see The settings panel for the Video subsystem section).

Table 3.1-8 below shows the average frame size of a PAL video signal depending on frame resolution, video signal compression, color grade of the image and frame resolution, frame chromaticity and motion level in the frame.

Table 3.1-8

Video card type	Resolution	Colour	Frame size (Kb) with 50% of motion in the frame	Frame size (Kb) with 75% of motion in the frame	Frame size (Kb) with 100% of motion in the frame
WS16	704x576	colour	15	30	61
		black-and-white	10	22	42
	704x288	colour	6	10	30
		black-and-white	4	9	18
	352x288	colour	4	6	17
		black-and-white	2	5	10
WS216	704x576	colour	19	35	101
		black-and-white	11	33	65
	704x288	colour	8	12	49
		black-and-white	6	11	29
	352x288	colour	4	7	25
		black-and-white	3	6	15
FX416	704x576	colour	24	41	64
		black-and-white	23	40	63
	704x288	colour	13	22	45
		black-and-white	11	21	43
	352x288	colour	7	10	23

Video card type	Resolution	Colour	Frame size (Kb) with 50% of motion in the frame	Frame size (Kb) with 75% of motion in the frame	Frame size (Kb) with 100% of motion in the frame
		black-and-white	6	10	21
FX116	704x576	colour	25	41	70
		black-and-white	23	40	57
	704x288	colour	13	22	46
		black-and-white	12	21	43
	352x288	colour	7	11	23
		black-and-white	6	10	22
FX16	704x576	colour	28	46	116
		black-and-white	26	44	97
	704x288	colour	17	23	64
		black-and-white	14	21	48
	352x288	colour	11	13	46
		black-and-white	10	12	38
FS15\FS115\FX4\FX8	704x576	colour	39	53	145
		black-and-white	32	51	134
	704x288	colour	23	27	57
		black-and-white	20	25	53
	352x288	colour	14	16	48
		black-and-white	13	15	44
FS5\FS6\FS8\FS16	704x576	colour	26	59	103
		black-and-white	24	42	91
	704x288	colour	17	26	52

Video card type	Resolution	Colour	Frame size (Kb) with 50% of motion in the frame	Frame size (Kb) with 75% of motion in the frame	Frame size (Kb) with 100% of motion in the frame
		black-and-white	16	24	47
	352x288	colour	11	15	39
		black-and-white	10	14	37

Note. Table 3.1-8 shows the examples of frames for video cameras with set frame frequency – 25 f\s.

Archive size will be calculated on the basis of frame resolution and compression, image color grade, rate of video signal frames per second, number of cameras, recording events continuously to the hard drives.

Archive size can be calculated from formula no. 1:

$$Archive\ size\ (days) = (1024\ (Mb\ /\ Cb) * 1024\ (Mb\ /\ Kb) * Hard\ drive\ size\ (Gb))/(60\ (min\ /\ sec) * 60\ (sec\ /\ hr) * 24\ (hr\ /\ day) * Frame\ size\ (Kb) * Frame\ rate\ (frames\ /\ sec) * Numbe$$

Formula no. 1. Calculation of the archive size as a function of daily recording time of a camera, frame ize and rate and number of cameras

Comments relating to Formula no. 1. To estimate the archive size, the following should be performed: the size of hard drive in Kb (the rates for converting Gb into Kb are included into the numerator of Formula no. 1) divide by the frame size, defined in Table A as a function of video signal parameters, and by the frame rate per camera and the number of cameras, connected to the video server. Archive size in this case will be measured in seconds. Now, the archive size expressed in seconds should be converted to the number of days (the rates to convert seconds to days are given in the denominator of Formula no. 1).

Note. Archive size can also be calculated from a simplified formula, where numerical conversion factors are reduced to a numerical value (Formula no 2).

$$Archive\ size\ (days) = 12\ \left({}^{Kb}/_{Gb} * {}^{day}/_{sec}\right) * \frac{Hard\ Drive\ Size\ (Gb)}{Frame\ size\ (Kb) * Frame\ Rate\ \left(\frac{Frame}{sec}\right) * Number\ of\ cameras}$$

Formula no. 2. Simplified formula to calculate video archive size

Example. If the size of a hard drive, for instance, is 40 GB, 4 cameras are continuously recording PAL video signals with 10 frames per second and 150Kb frame size. Based on the formula, you work out:

$$Archve\ size\ (days) = 12\ \left({}^{Kb}/_{Gb} * {}^{day}/_{sec}\right) * \frac{40\ (Gb)}{150\ (Kb) * 10\ \left({}^{frames}/_{sec}\right) * 4} = 0.08\ (days)$$

The arithmetic calculation shows, that the video archive size in the particular case will be 0.08 days (about 1 hour 55 minutes).

For the purpose of calculations, frame size can be defined in Table 3.1-8 above.

Note. To calculate the size of a hard drive, the following specific features should be accounted for: 1) About 5-10% of the hard drive size is taken up by the filing subsystem data. To ensure that Windows OS is operating properly, at least 20% of free disk space is required. By default, Windows OS auxiliary files are assigned 1000Mb. To modify the above value, Windows OS catalogue should be updated, using Tweaki.exe utility, supplied together with the INTELLECT distribution software package.

Table 3.1-9 shows archive sizes calculated for hard drives of various sizes, based on a continuous incoming PAL video signal recording, from 1 camera with a frame rate of 25 f/sec.

Table 3.1-9

Resolution	Hard drive size			
	80 GB	160 GB	400 GB	750 GB
352x288 b/w	2,1	4,3	10,7	20,0
352 x 288 color	1,9	3,8	9,6	18,0
704x288 b/w	1,6	3,2	8,0	15,0
704 x 288 color	1,5	3,1	7,7	14,4
704x576 b/w	1,2	2,3	5,8	10,9
704 x 576 color	1,1	2,3	5,6	10,6

3.2 Requirements for TCP/IP Network bandwidth

Throughput capacity of the network refers to the factors restricting performance of the distributed network. Data exchange flow is primarily made up of image data. For instance, where surveillance cameras are used to monitor remote objects, likes ATMs, the data flow (image flow) is transmitted over communication links.

Table 3.2-1 shows the maximum number of remote surveillance cameras as a function of the throughput capacity of various communication links. The frame rate of the image flow (reference format is PAL) for calculation purposes was accepted as equal to 1 frame per second.

Table 3.2-1

Communication mode	Link capacity	Black and white image			Color image		
		standard	high	full	standard	high	full
Dial-Up	56 Kb/sec	<1*	<1*	<1*	<1*	<1*	<1*
ADSL, Ethernet	128 Kb/sec	1	<1*	<1*	<1*	<1*	<1*

Communication mode	Link capacity	Black and white image			Color image		
		standard	high	full	standard	high	full
ADSL, Ethernet	256 Kb/sec	2	1	1	1	1	<1*
ADSL, Ethernet	512 Kb/sec	4	3	2	3	3	2
ADSL, Ethernet	1 Mb/sec	7	5	4	6	5	4
ADSL, Ethernet	1.5 Mb/sec	11	8	6	10	8	6
Ethernet	2 Mb/sec	14	11	8	13	10	8
Ethernet	10 Mb/sec	71	53	39	64	51	38
Ethernet	100 Mb/sec	711	533	388	640	512	376
Ethernet	1 Gb/sec	7282	5461	3972	6554	5243	3855

1. max. one surveillance camera, provided that maximum compression and/or image flow gapping is supported.

To calculate the maximum number of remote cameras transmitting image flow to the network with a rate over 1 f/sec, the corresponding value shown in the table should be divided by the number of frames.

Example: To transmit live video, a 100 Mb/sec network should be used (25 frame/sec – PAL), video image – color; frame resolution – standard. As the table shows, the Mb/sec link can transmit the image flow at a rate of 1f/sec, specified color grade and resolution from max. 640 surveillance cameras. Consequently, if the image flow rate is 25 frames per second, the maximum number of cameras will decrease by 25 times and will be equal to: 640/25=25 cameras.

NOTE. More often than not, video signal processing, transfer and recording requirements take up only a small proportion of the digital video surveillance system resources. While calculating performance of the video surveillance system, the proportion of resources, consumed by audio monitoring, may be neglected.

3.3 Requirements for PTZ and control panels

INTELLECT™ software is compatible with PTZ units, control panels and tilt IP-cameras from such manufacturers as Panasonic, Samsung, Videotec, Sanyo, etc. You can find an updated list of PTZ units and control panels that are compatible with INTELLECT™ software on the sithe of AxxonSoft in the Integration section at:
http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php

3.4 Requirements for audio input units

INTELLECT™ software can use the following audio inputs:

1. FS/WS/FX/VRC video capture cards. These cards support simultaneous digitization of 1-16 audio signals, depending on the type of the card used. The list of video capture cards compatible with INTELLECT™ software and their features are given in the *Configuring components guide*.

2. Standard sound cards, including cards, integrated with the motherboard. Standard sound cards, as a rule, support simultaneous digitization of up to 2 audio signals.

3. Multi-channel sound cards and converters for digitization of outgoing audio signals from microphones and telephone lines, software and hardware complex for the digital audio registration, etc. You can find an updated list of multi-channel audio inputs that are compatible with INTELLECTTM software on the AxxonSoft site in the Integration section at: http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.

4. IP-units. You can find an updated list of IP-units for audio input that are compatible with INTELLECTTM software, as well as specific application features thereof on the AxxonSoft site in the Integration section at: http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.

3.5 Requirements for IP devices of audio and video input

INTELLECT™ software is compatible with IP devices of video and audio input of the following vendors: Axis, Panasonic, Sony, Arecont Vision and others.

Note. The updated list of IP devices compitable with Intellect system and the range of IP device's functionalities supported by INTELLECT™ the system are at the company's site in the ***Integration*** *section: http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.*

Number of IP devices connected to one Server depends on TCP/IP network bandwidth (see *Requirements for TCP/IP Network bandwidt* section) and functions performed on the basis of these devices. For instance, virtual memory consumption (for video.run process) increases when VMDA detectors are in use (see *Configuring forensic search in an* archive section). One camera with configured VMDA detector can use 30-40 Mb (depending on camera resolution) of virtual memory. As there are only 2 Gb of virtual memory for video.run process, it is not recommended to connect more than 40 IP cameras with embedded VMDA detectors to one Server.

For proper video recording and playing back time that is set on IP camera (if the device supports this setting) is to be the same as system time on the Server.

Specific application features of certain IP devices:

1. To ensure correct sound recording from Axis IP-cameras when AAC audio codec is used, avoid setting the audio stream bit rate at 8 or 12 Kb/s, if the digitizing rate is 8 kHz: the bite rate should be 16, 24, 32, 48 or 64 Kb.

2. To ensure correct sound recording from Sony IP cameras, avoid using G.726 audio codec: use G.711 codec instead.

Note! It is possible to install update drivers and codecs , taking into account the changed distributive structure, irrespective of the general Intellect version update.

3.6 Requirements for GSM Equipment

GSM equipment is used in the INTELLECT™ software to send SMS, whenever the program registers pre-defined events (detector alarms, Operator commands, etc.). The list of said GSM equipment includes GSM modems, GSM adapters or mobile phones supporting such standards as ETSI GSM 07.07 or ETSI GSM 07.05.

3.7 Requirements for voice modems

Voice modems are used in the INTELLECT™ software to automatically send out voice messages, whenever the program registers pre-defined events (detector alarms, Operator commands, etc.). INTELLECT™ software is compatible with the voice modems, which are not designed to code (compress) audio streams, or the voice modems, which support such audio stream coding standards as 4-bit Rockwell ADPCM 7200 Hz, 4-bit IMA ADPCM 4800 Hz, 4-bit IMA ADPCM 7200 Hz, 4-bit IMA ADPCM 8000 Hz, 8-bit unsigned linear PCM at 7200 Hz, 8-bit unsigned linear PCM at 8000 Hz, 4-bit Rockwell ADPCM 7200 Hz, 8 bit u-law (G.711) at 8000 Hz, 8 bit A-law (G.711) at 8000 Hz.

3.8 Requirements for software which is used while integrating

The Intellect software allows integrating with contiguous information systems, additional software or functional expansion modules.

Use InternetExplorer browser while working with Intellect software from browser through the CamMonitor Active X-object.

3.9 Requirements for TCP/IP network working of database synchronization functionality

If the Intellect software operates in the distributed environment where several Servers and/or Remote Admin Workstations are combined the «Configuration» databases synchronization is performing (see section).

The fulfilling of following minimal requirements for network is needed for correct synchronization of «Configuration» databases:

1. Minimal speed of data transferring by link channel (capacity) is 64 kbit/sec.
2. Maximal delay while packet transferring is 500 milliseconds.

With more badly parameters value the correct operation of databases synchronization functionality is not guaranteed.

4 Personnel skills requirements

The Administrator of a digital video surveillance system based on INTELLECT™ software should possess the following qualifications:

1. «Windows 2000/XP local network administrator».

2. AxxonSoft product expert. The above qualifications can be obtained through authorized training in AxxonSoft Products in the AxxonSoft Training Centre.

5 Installing and removing INTELLECT™ software

5.1 Installing INTELLECT™ software

5.1.1 Description of INTELLECT™ software distribution package

INTELLECT™ software is offered as a software installation package (distribution package) on a compact disk (Figure 5.1-1).

Figure 5.1-1 Installation CD of INTELLECT™ software

The distribution disk (software bundle) contains all software components necessary for the installation of INTELLECT™ software on the base PC.

The software is made operable with the intellect.sec key file. The key file is a part of the software bundle and can be found in the Key folder on the CD. The key file defines the configuration of the INTELLECT™ software delivery package.

Note. If there is no key file INTELLECT™ software will operate in demo mode within two month from the intellect.exe file creation date, from 8 a.m till 12 midnight.

To install and configure INTELLECT™ software, administrator rights are required.

5.1.2 Installation of INTELLECT™ software as a Server

This section outlines a step-by-step instruction on how to install INTELLECT™ software as a “Server”.

Note. The following features are to be taken into account while installing INTELLECT™ software:

INTELLECT™ software is to be installed on a "clean" Windows OS (see the "Operating system requirements" section).

To install INTELLECT™ software, administrator rights are required.

To install INTELLECT™ software, do the following:

1. Insert INTELLECT installation disk in the CD-ROM drive, its contents will be displayed in a dialog box (Figure 5.1-2).

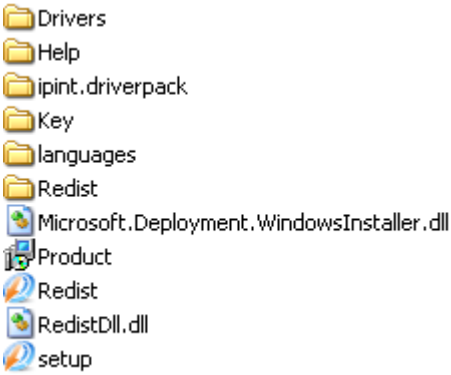


Figure 5.1-2 Contents of INTELLECT installation software

2. Run the setup.exe file to start the INTELLECT™ software installation procedure.

As a result the dialog box of choosing language is displayed (Figure 5.1-4).

Note. The notification box is displayed if Microsoft.Net Framework 2.0 has not been installed (Figure 5.1-3).

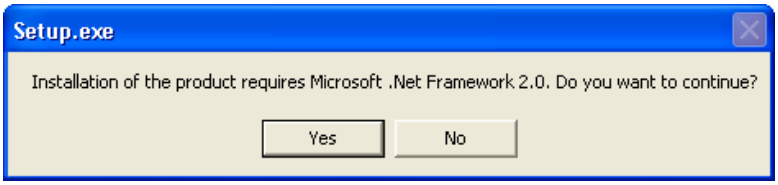


Figure 5.1-3 Notification window

Click "Yes" for Microsoft.Net Framework 2.0 auto installation.

Attention! When INTELLECT™ is installed on Windows 8 and Windows Server 2012 OS, the Microsoft.Net Framework 3.5 is to be installed. If the Microsoft.Net Framework 3.5 has not been installed, then the warning is displayed. In this case stop installing INTELLECT™ and install the Microsoft.Net Framework 3.5. You will find the instructions on how to install it at:
http://msdn.microsoft.com/en-gb/library/hh506443.aspx

3. Choose the language of INTELLECT™ software installation and click "Install" (Figure 5.1-4).

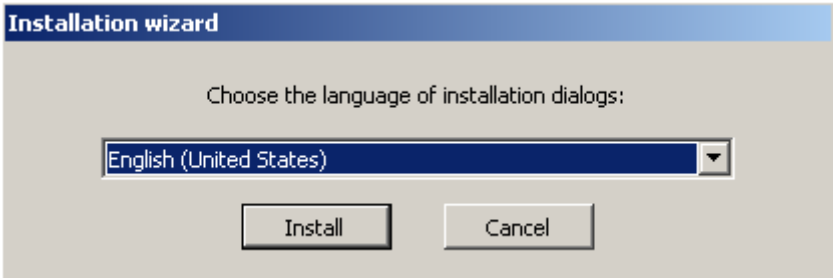


Figure 5.1-4 The dialog box of choosing language

As a result the “Type of installation” dialog box is displayed (Figure 5.1-5).

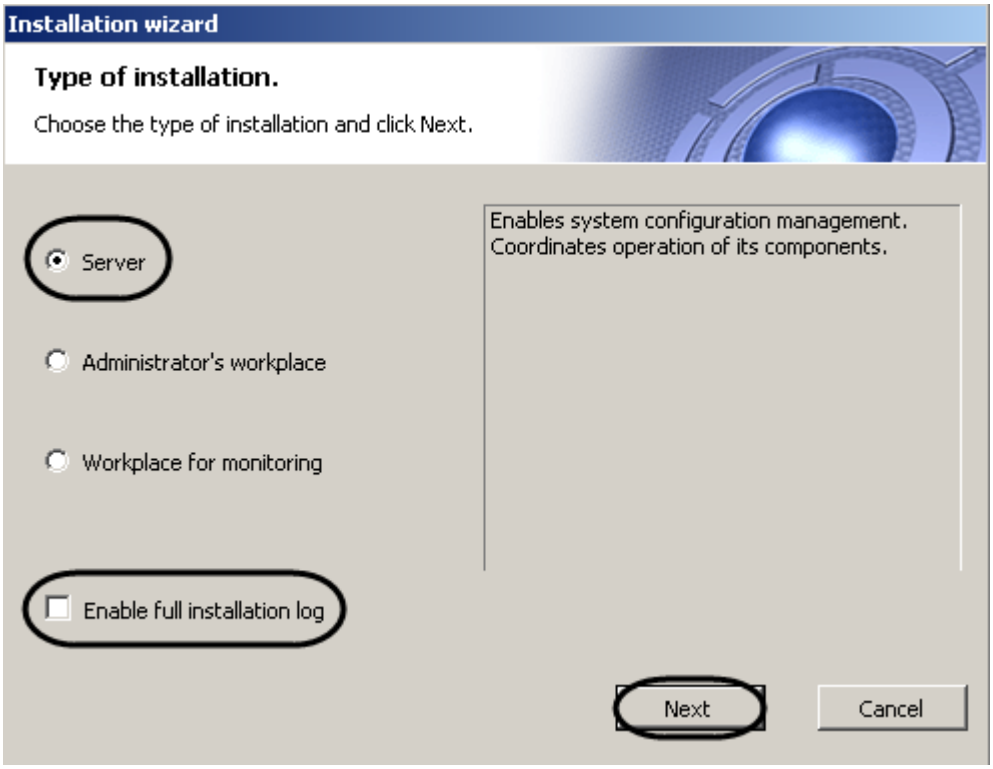


Figure 5.1-5 The “Type of installation” dialog box

4. Select the “Server” type of installation (Figure 5.1-5).
5. To log all installation events, set the “Enable full installation log” checkbox (Figure 5.1-5).

Note. While installing and uninstalling the software events are logged to Intellect.log and Intellect uninstall.log correspondingly. To collect log-files, the “Support.exe” tool is to be used (see “The utility for collecting configuration data on servers and RWS for the Technical Support” section).

6. Click “Next” (Figure 5.1-5).

The “Selecting components for installation” dialog box is displayed (Figure 5.1-6).

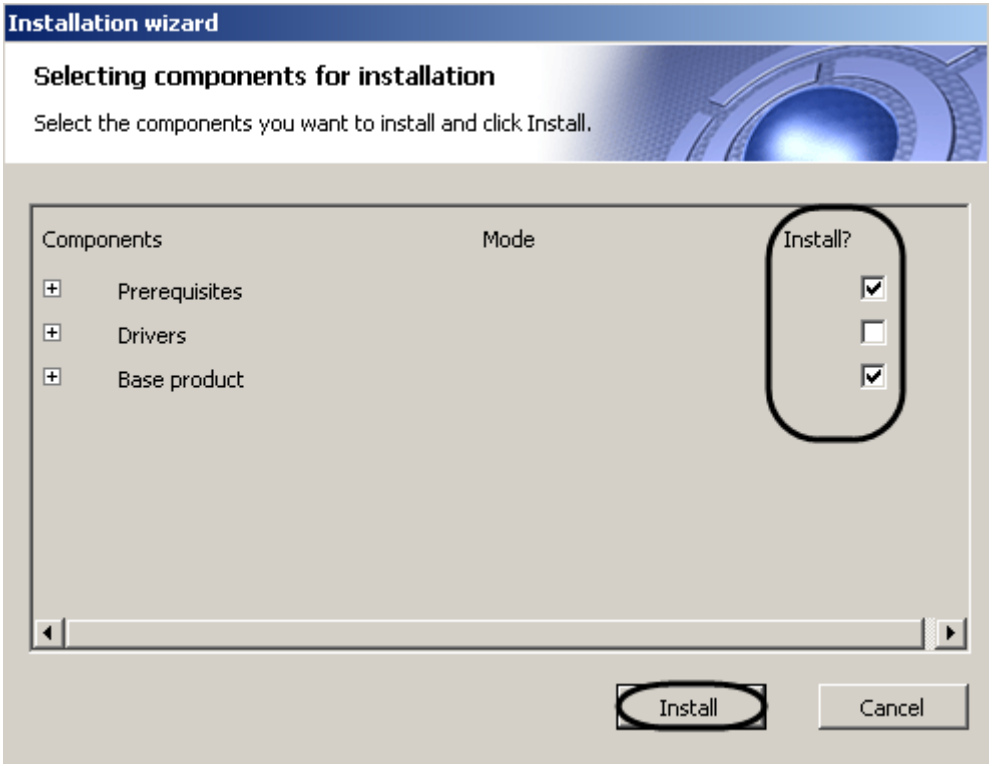


Figure 5.1-6 The "Selecting components for installation" dialog box

7. Set the checkboxes next to the components that are to be installed (Figure 5.1-6).

Note. All offered components are recommended to be installed.

8. Click the "Install" button (Figure 5.1-6).

The selected components are automatically installed except Microsoft SQL Server Express 2008 R2 database (necessary for work with INTELLECT™ databases), that is installed manually (see "Appendix 5. «Microsoft SQL Server 2008 Express R2» " section) (Figure 5.1-7).

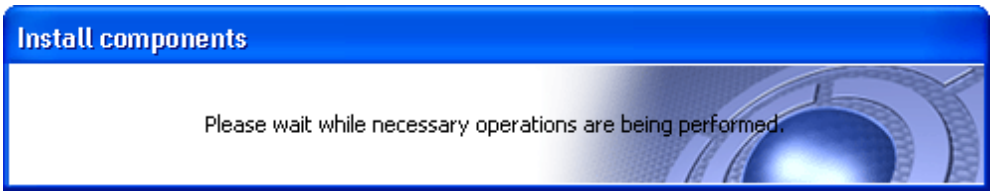


Figure 5.1-7 Auto installation of necessary prerequisites

Note! Auto installation of necessary prerequisites may require more than 10 minutes.

Note. Desktop Experience Feature is to be enabled in Windows Server 2008 for correct installation of the "Microsoft ActiveSync/WMDC" component.

After this the "Welcome to the Intellect Setup Wizard" box is displayed (Figure 5.1-8).

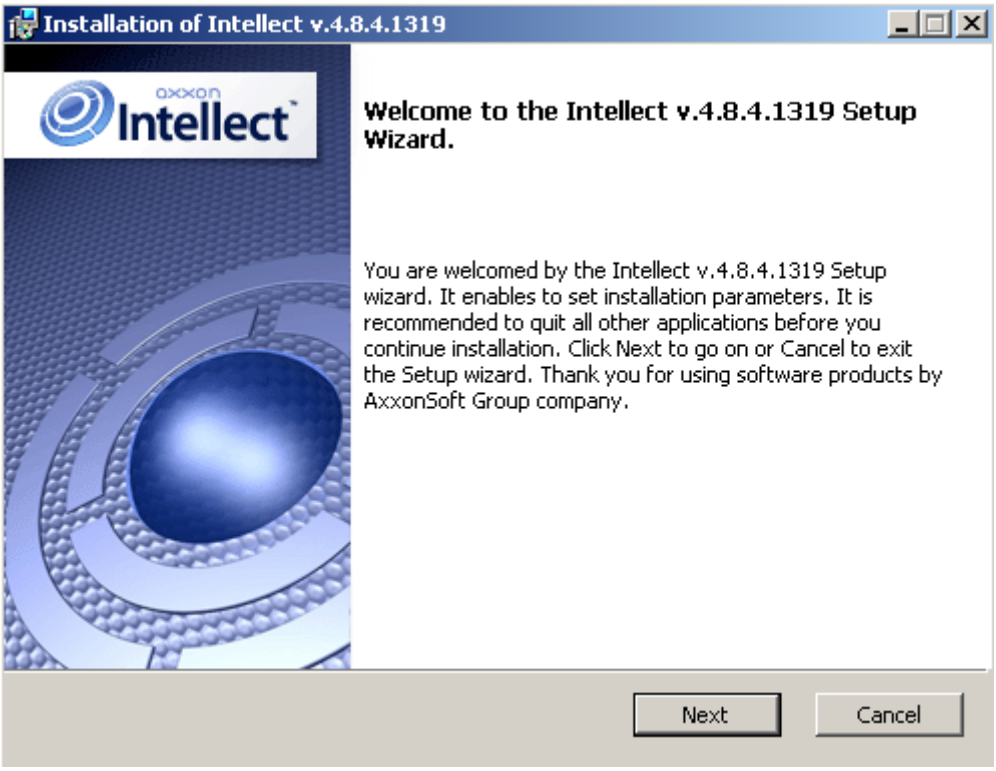


Figure 5.1-8 Welcome to installation wizard

9. Click the “Next” button (Figure 5.1-8).

The “License Agreement” dialog box is displayed (Figure 5.1-9).

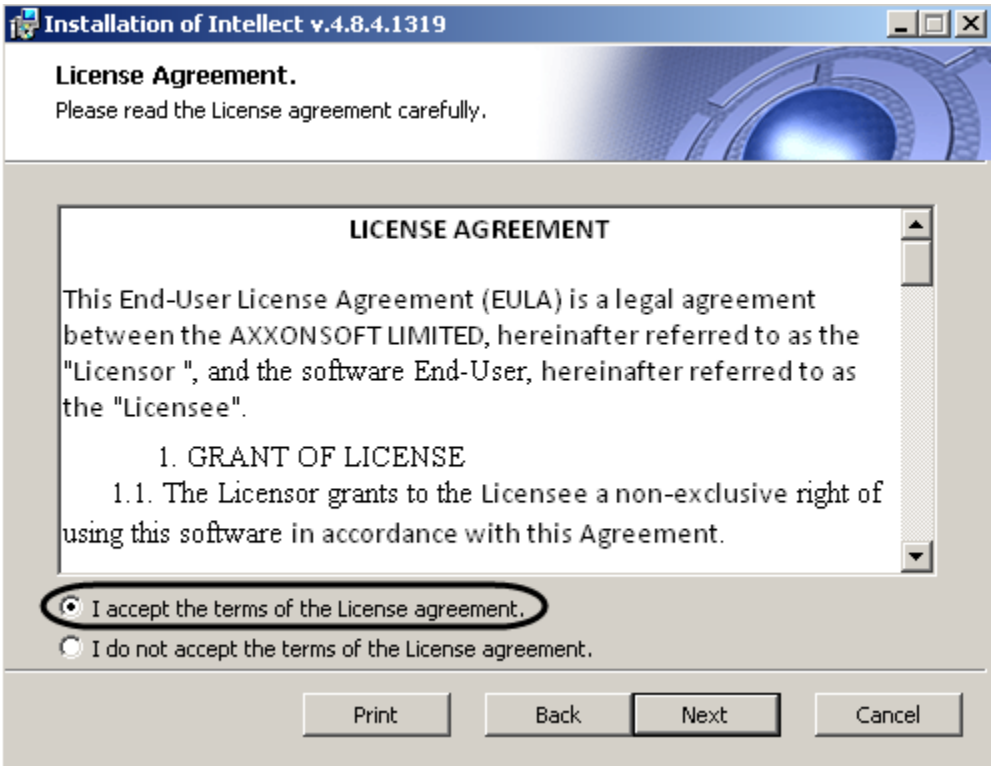


Figure 5.1-9 The “License Agreement” dialog box

10. Read the License agreement and accept its terms by setting the switch into the «I accept the terms of the License agreement» position, otherwise the INTELLECT™ installation will be stopped (Figure 5.1-9).
11. Click the “Next” button (Figure 5.1-9).

The dialog box of choosing language is displayed (Figure 5.1-10).

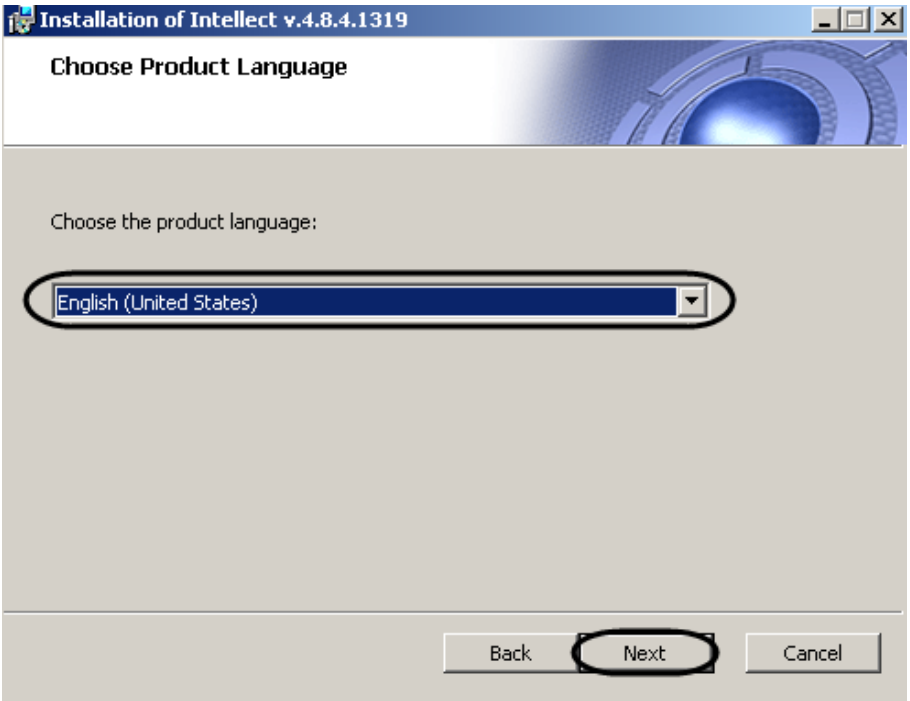


Figure 5.1-10 The “Choose Product Language” dialog box

12. Choose the required language in the list (Figure 5.1-10).
13. Click the “Next” button (Figure 5.1-10).

The dialog box of installation mode selection is displayed (Figure 5.1-11).

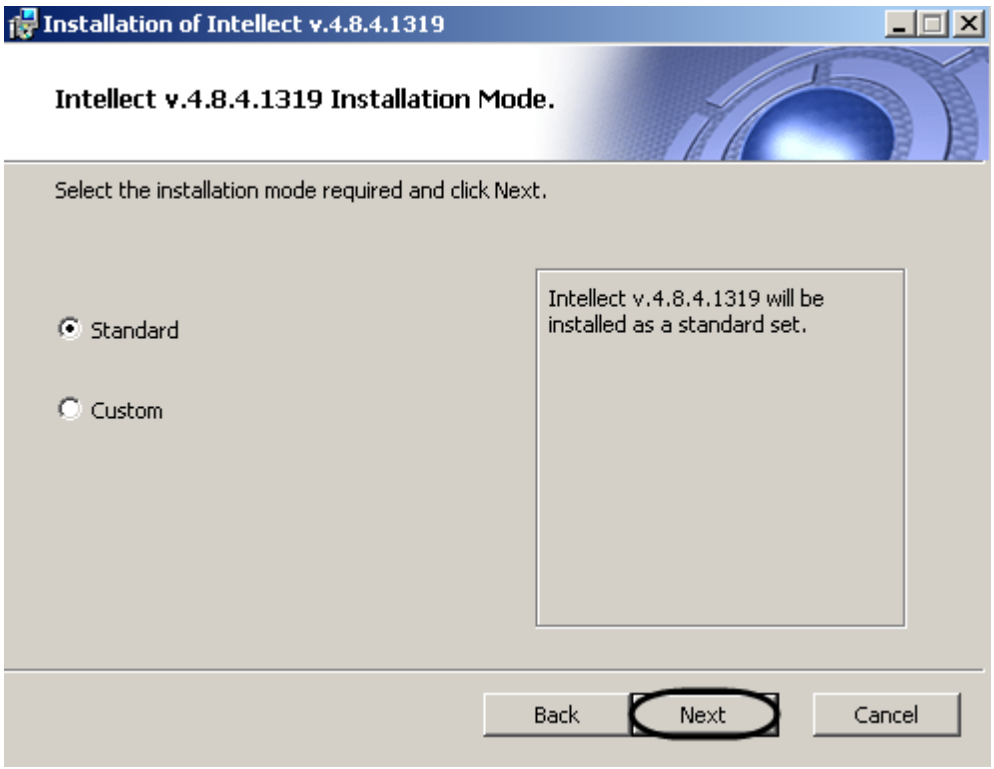


Figure 5.1-11 Installation mode selection

14. Select the installation mode (Figure 5.1-11).
15. Click the “Next” button (Figure 5.1-11).

Note. When the “Custom” installation mode is selected, the dialog box of choosing the installation folder is displayed (Figure 5.1-12), and then the“Select components” dialog box is displayed (Figure 5.1-13). This step is omitted when the “Standard” installation mode is selected.

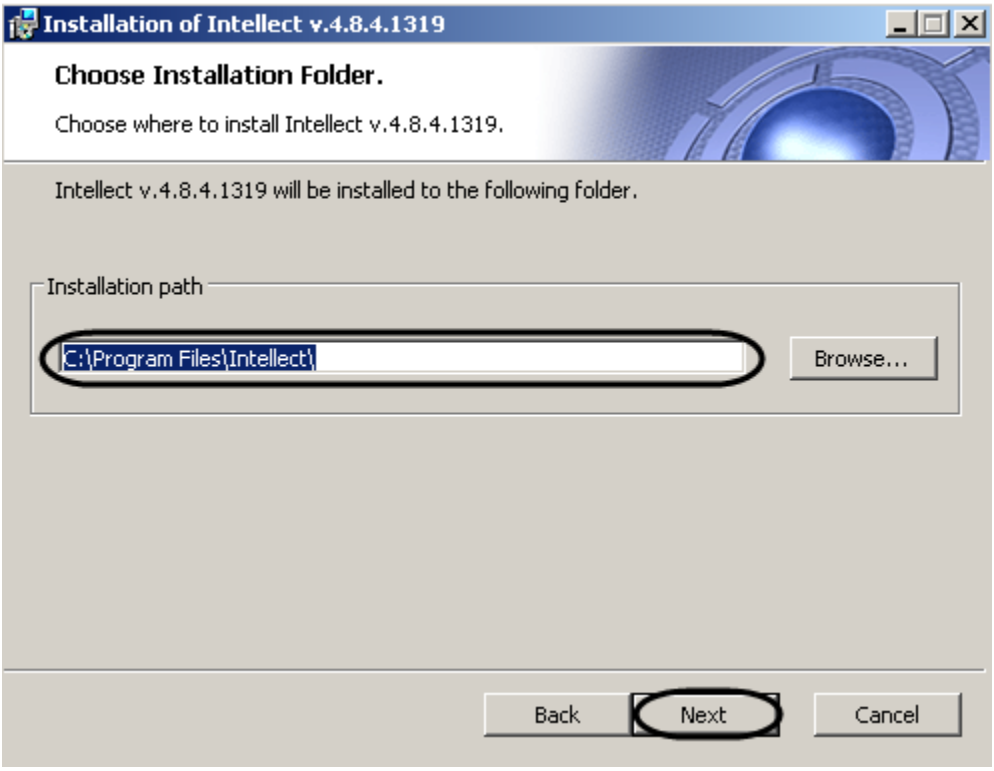


Figure 5.1-12 The dialog box of choosing the INTELLECT™ installation folder

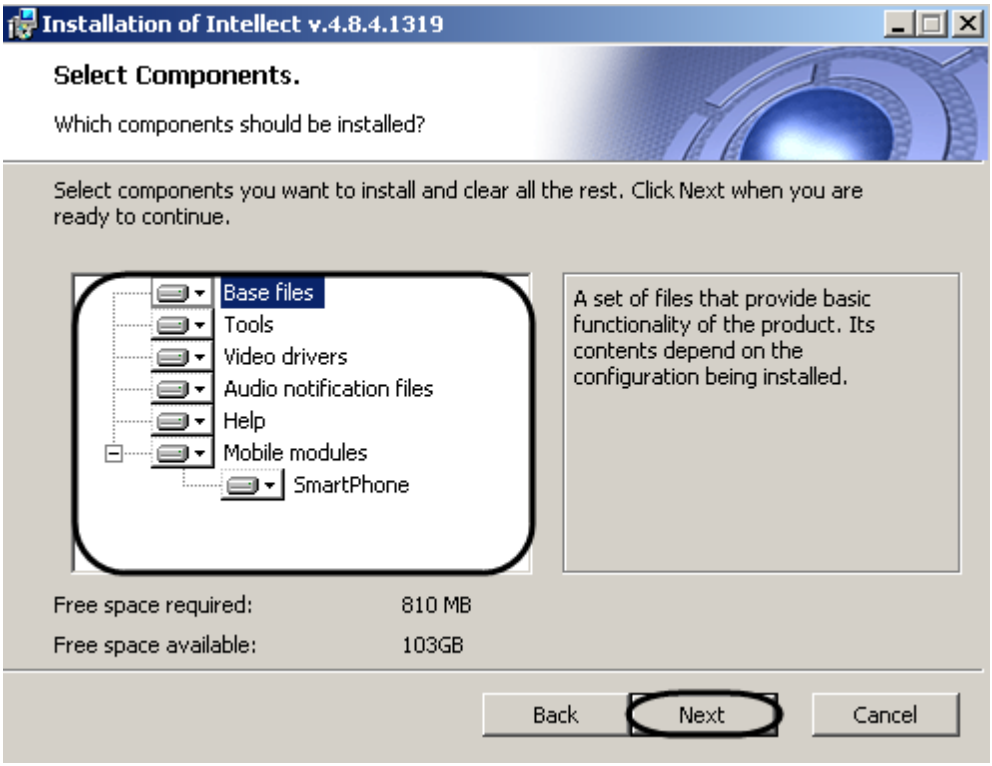


Figure 5.1-13 The "Select components" dialog box

The dialog box of specifying the path to the key file is displayed (Figure 5.1-14).

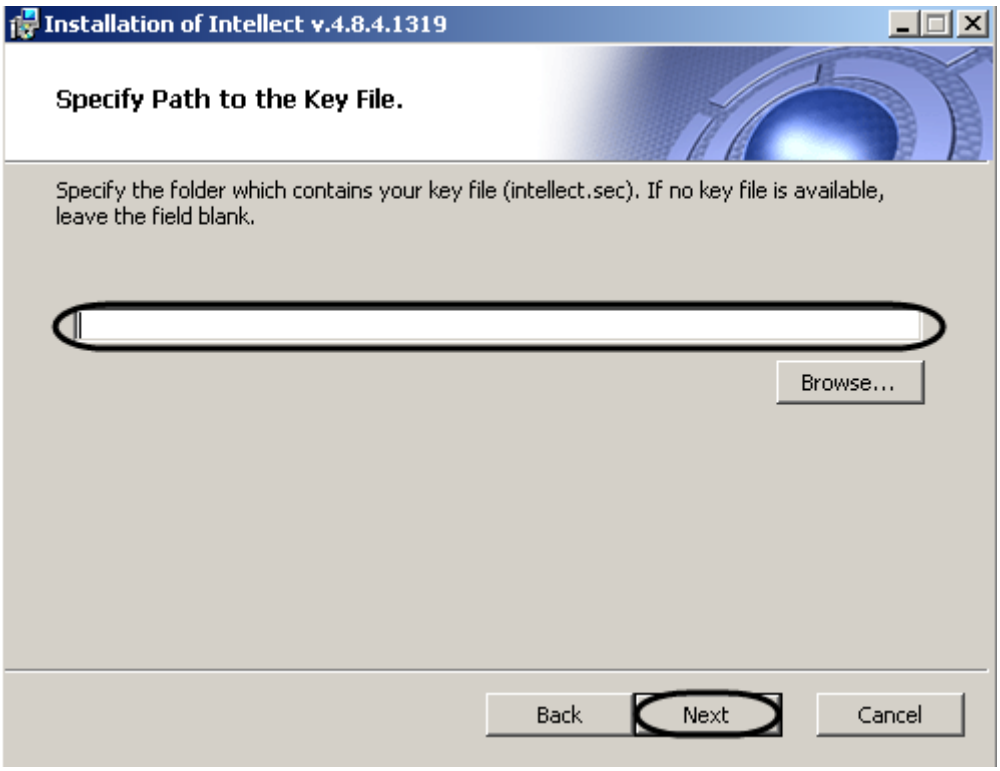


Figure 5.1-14 Indicate the folder dialog box

Note. Keep the field blank if the key file will be copied later.

16. Click the “Next” button (Figure 5.1-14).

The dialog box of installing Intellect as a service is displayed (Figure 5.1-15).

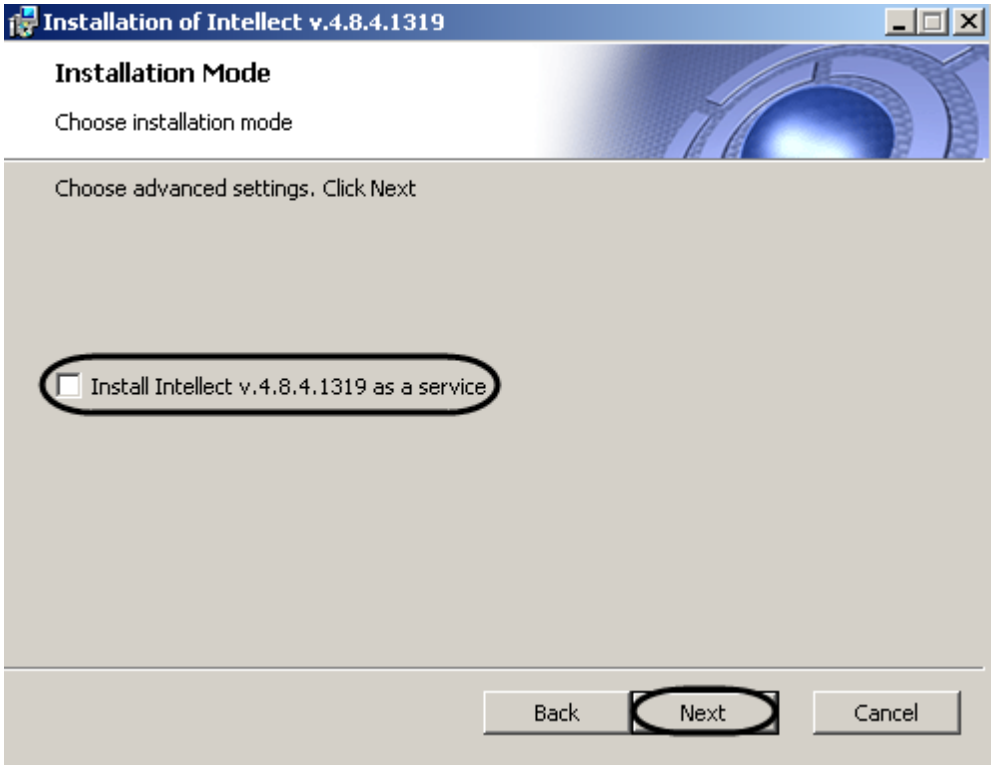


Figure 5.1-15 The “Install Intellect as a service” dialog box

17. Set the “Install Intellect as a service” checkbox if INTELLECT™ software is to be started before the user is authorized by the Windows OS and before Windows applications are started (including the Explorer application) that is used for starting Windows OS intrrfaces and various other applications installed on the Server (see “*Working with Windows OS services for operating Intellect™ installed as a Service*” section).

18. Click the “Next” button (Figure 5.1-15).

The dialog box of database server selection is displayed (Figure 5.1-16).

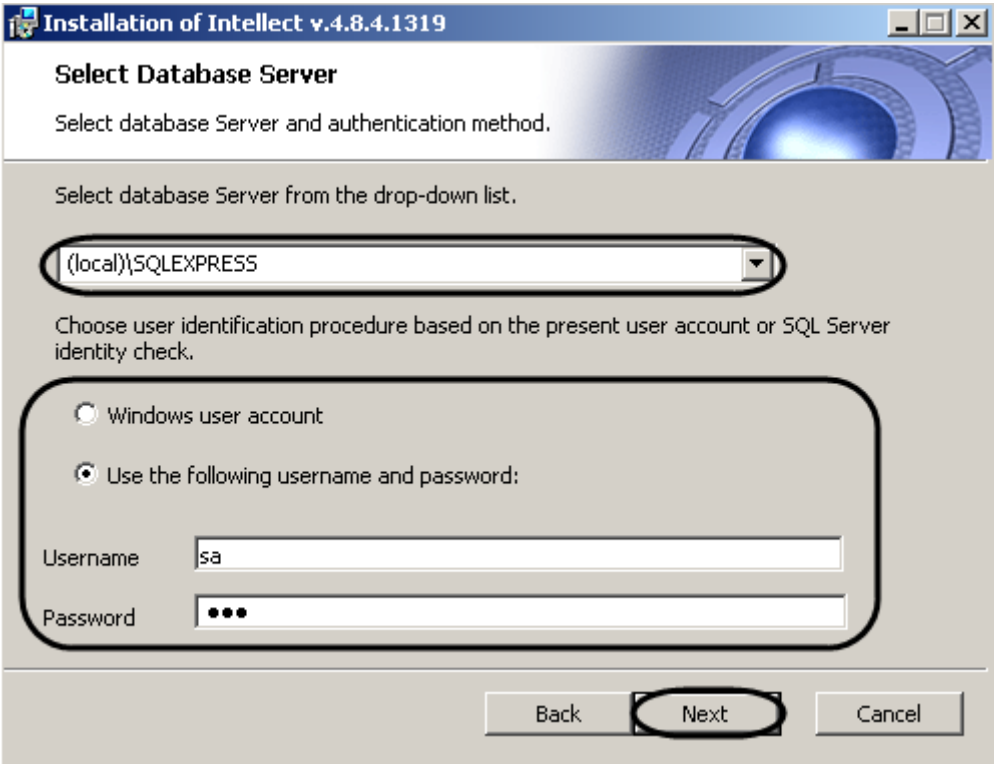


Figure 5.1-16 Database server selection dialog window

19. Select the SQL-server using the drop-down list (Figure 5.1-16).

Note. If there is necessity to use the SQL-server installed on this (local) computer, the “(local)\SQLEXPRESS” item (set bydefault) is to be selected.

Attention! You cannot connect different Servers to one database.

Server can use remote database, but requirements to network and other resources become higer and this can cause delays while transmitting events and states of cores.

20. Set the authorization parameters that will be used by INTELLECT™ while connecting to the SQL-server.

Note. If INTELLECT™ is installed as a Service, select the SQL Server identity check, i.e. set the «Use the following username and password” checkbox and specify the username and password to login the Server database.If the database is to be connected via the Windows account, then for proper operation of INTELLECT™ any other the user is to have corresponding SQL Server permissions.

Ways of authorization performed in the dialog box (Figure 5.1-16, Table 5.1-1).

Table 5.1-1 Ways of authorization

Ways of authorization	Windows user account	Use the following username and password (recommended)
Usage	SQL Server from Intellect distributive (or from the distributive of the external vendor) and Intellect is installed on the same computer	SQL Server from Intellect distributive and Intellect are installed on the same computer. Meanwhile connection to SQL Server with the set username (login) and password may be performed from any remote computer that is in the same net domain of TCP/IP net with a computer, where SQL Server is being installed.
	SQL Server and Intellect are installed on different computers that are connected through TCP/IP net and are in the same net domain. Meanwhile the account for the user currently authorized in Windows OS on the computer, where Intellect is being installed is to be created in Windows OS on the computer with installed MS SQL Server.	SQL Server from Intellect distributive and Intellect are installed on different computers that are connected through TCP/IP net and are in the same net domain. Meanwhile the username (login) and password are to correspond to the username (login) and password used for access to SQL-server.
	Full-scale SQL Server (supplementary installed) and Intellect are installed on different computers, connected through TCP/IP net and are in the same net domain. Meanwhile the account for the user currently authorized in Windows OS on the computer, where Intellect is being installed is to be created on the remote SQL Server.	Full-scale SQL Server (supplementary installed) and Intellect are installed on the same or different computers that are connected through TCP/IP net and are in the same net domain. Meanwhile the username (login) and password are to correspond to the username (login) and password used for access to SQL-server.

Note. For SQL Server installed from Intellect distributive, the "sa" username and "Intellect_default_DB_4" password are used by default. While installing the Microsoft SQL Server Express 2008 R2 the password may be changed for any other.

21. To continue the installation, click the "Next" button (Figure 5.1-16)

The dialog box of selecting or setting names for databases is displayed (Figure 5.1-17).

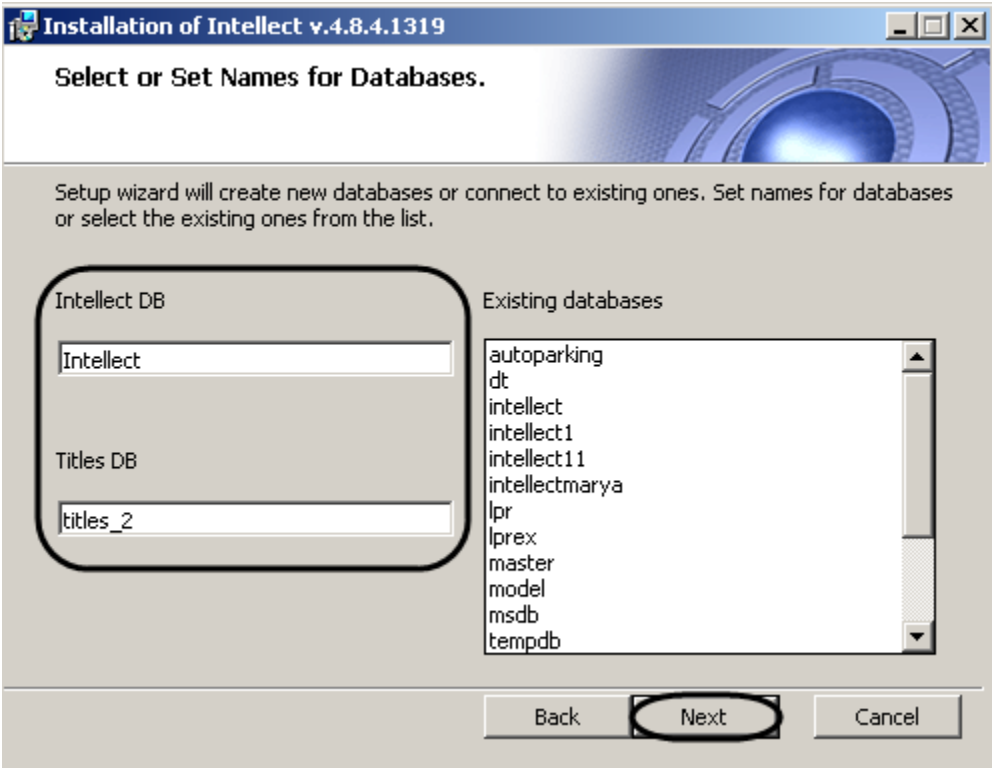


Figure 5.1-17 The "Select or set names for databases" dialog box

22. Click the "Next" button (Figure 5.1-17).

Note. If the system while being installed displays the "Rights are required to create or edit databases" message, then the installation process must be stopped and then restarted again.

The "Advanced settings" dialog box is displayed (Figure 5.1-18).

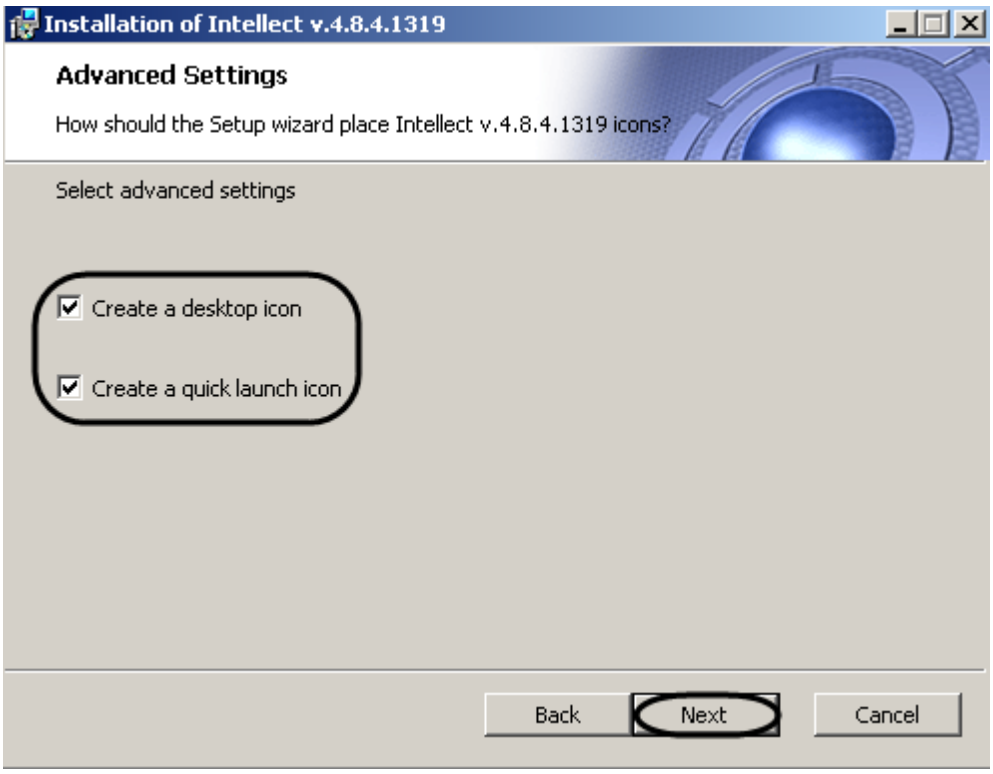


Figure 5.1-18 The "Advanced settings" dialog box

23. If a desktop icon is to be created, set the corresponding checkbox (Figure 5.1-18).
24. If a quick launch icon is to be created, set the corresponding checkbox (Figure 5.1-18).
25. Click the "Next" button (Figure 5.1-18).

The "Ready to install" dialog box is displayed (Figure 5.1-19).

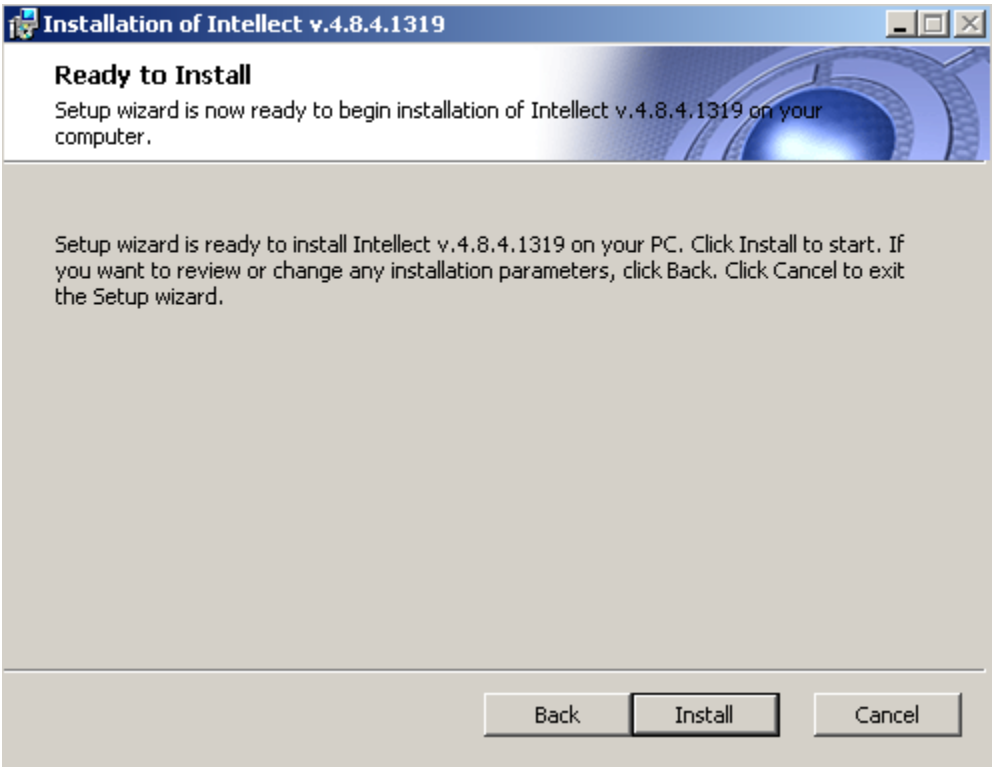


Figure 5.1-19 The "Ready to install" dialog box

*Note. To change the setting, click the "Back" button (*Figure 5.1-19*).*

26. Click the "Install" button (Figure 5.1-19).

The "Installing Intellect" dialog box is displayed (Figure 5.1-20).

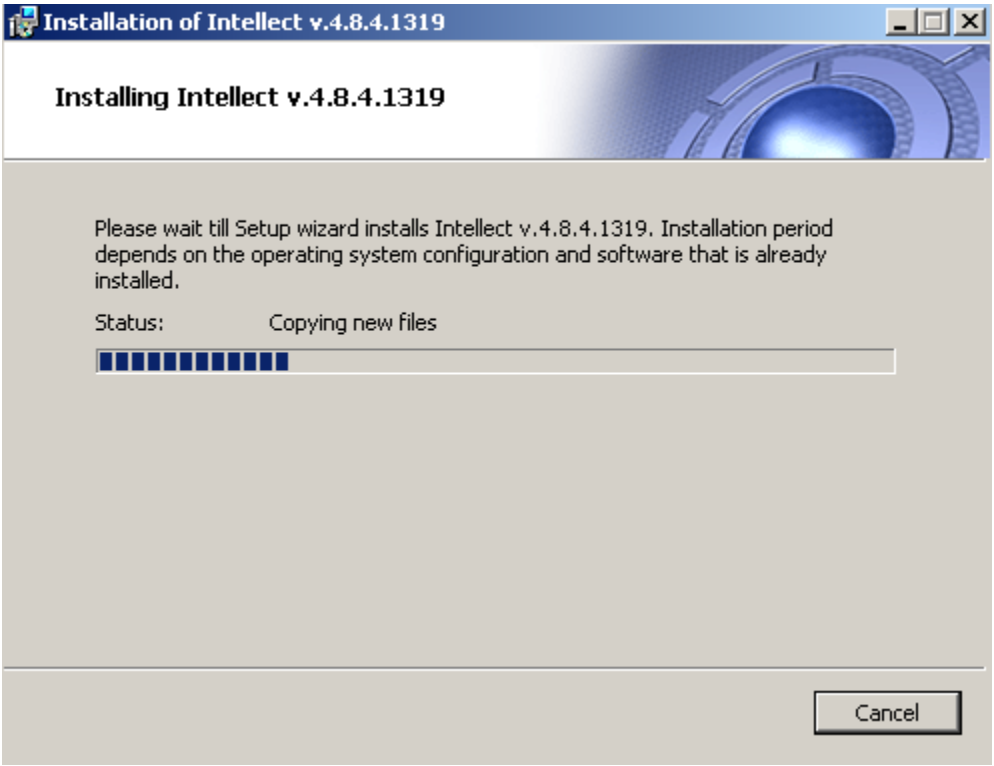


Figure 5.1-20 The "Installing Intellect" dialog box

Note. If the "SmartPocketPC" module installation was selected, the "SmartPocketPC" software module will be installed on the pocket PC.

The "Software Installation" dialog box is displayed (Figure 5.1-21).

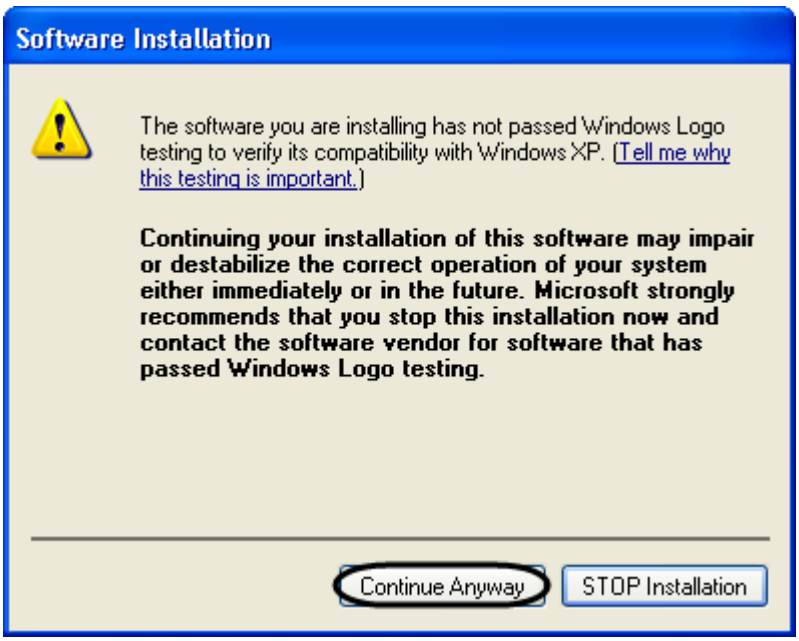


Figure 5.1-21 The "Software Installation" dialog box

27. To continue the installation, click the "Continue Anyway" button (Figure 5.1-21).

The "Installation Complete" dialog box is displayed (Figure 5.1-22).

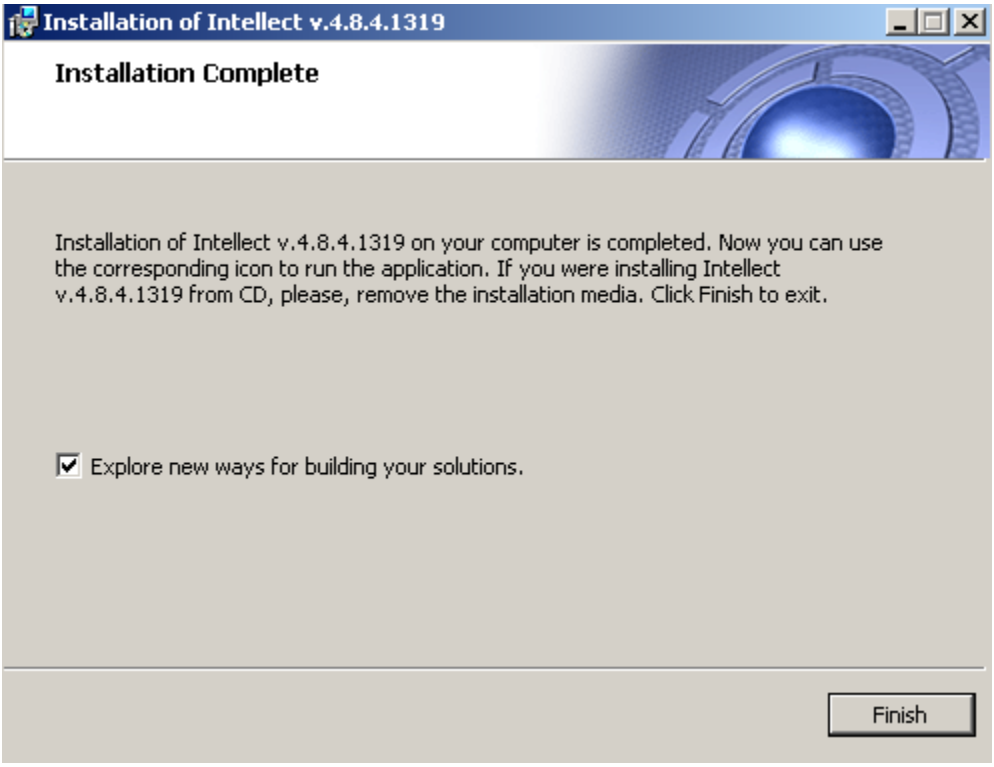


Figure 5.1-22 The "Installation Complete" dialog box

28. Set the "Explore new ways for building your solutions" checkbox, to view thw document containing information about new features of the installed Intellect (Figure 5.1-22).
29. Click the "Finish" button (Figure 5.1-22).

Note. Then the Axxon Driver Pack will be installed.

Then the Installation wizard dialog box is displayed, containg the information on the mode (installed or not) of Intellect components (Figure 5.1-23).

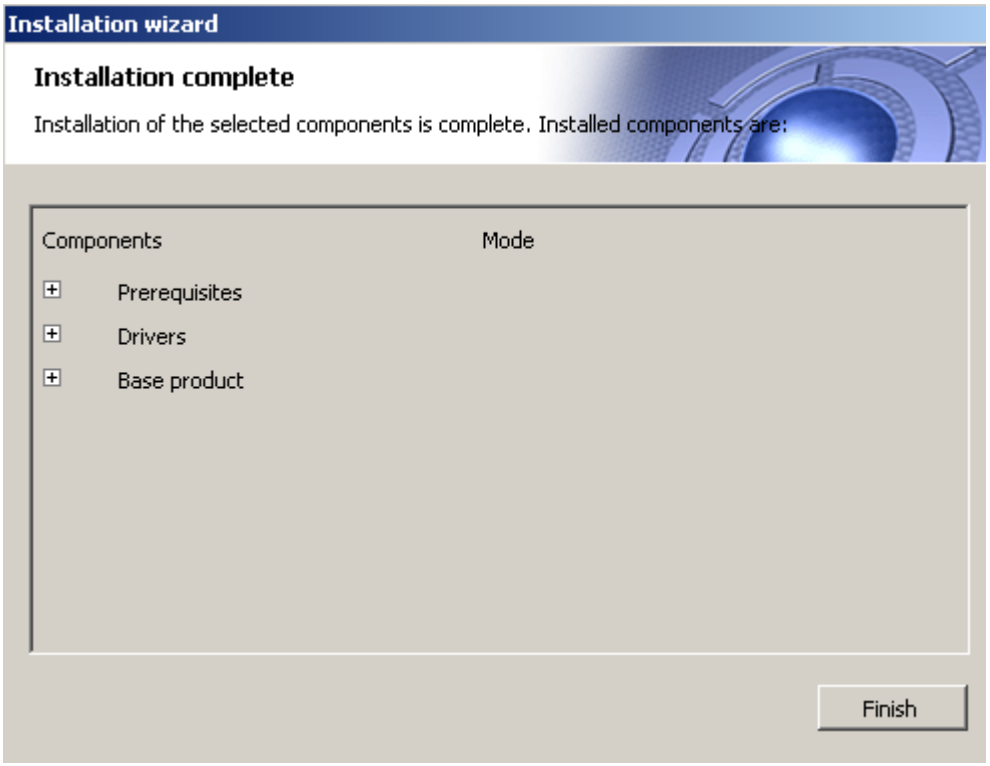


Figure 5.1-23 The "Installation complete" dialog box

30. Click the "Finish" button (Figure 5.1-23).

The dialog box offering to restart the system is displayed (Figure 5.1-24).

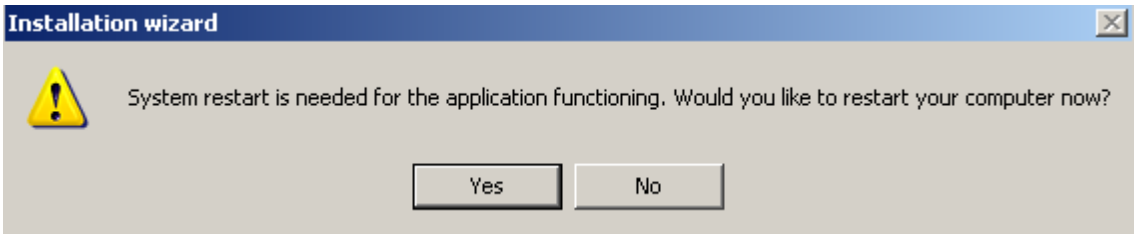


Figure 5.1-24 Redist message window

Note. The variant with installation completion and system restarting is the most recommended.

The Intellect as a Server is now installed.

5.1.3 Installation of INTELLECT™ software as an Administrator's workplace

The installation of INTELLECT™ software with the "Administrator's workplace" type of installation is similar to the installation for the "Server" and one is to select the "Administrator's workplace" at the stage of selecting the type of installation (Figure 5.1-25).

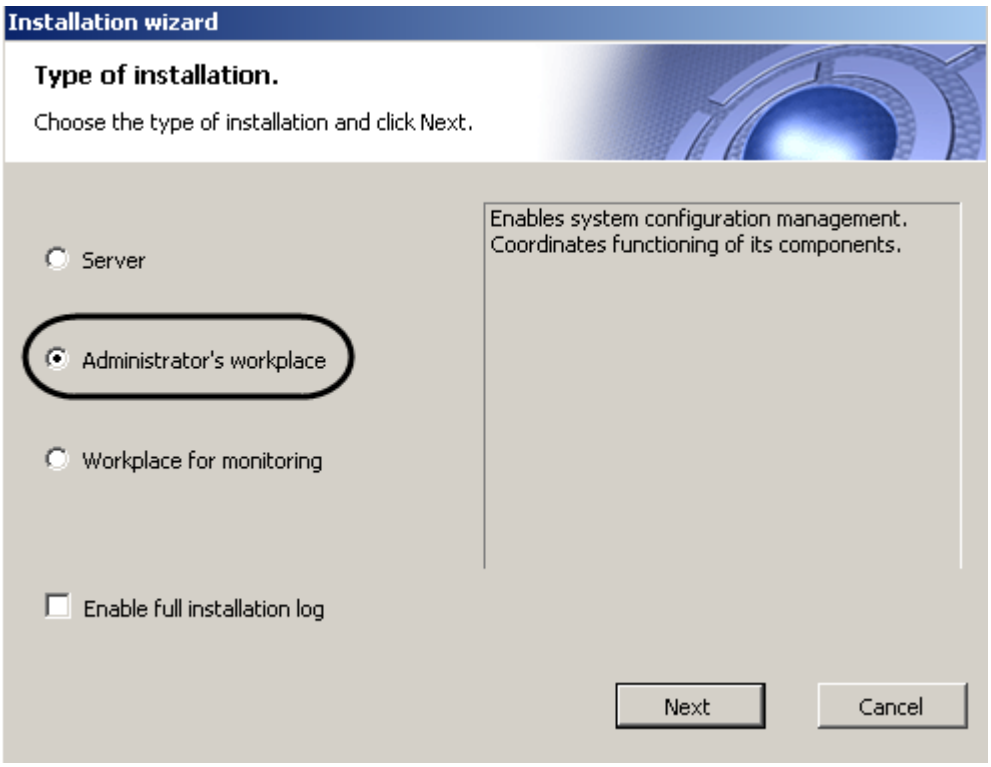


Figure 5.1-25 The "Type of installation" dialog box

5.1.4 Installation of INTELLECT™ software to the Workplace for monitoring

This section outlines a step-by-step instruction on how to install INTELLECT™ software onto a workplace for monitoring.

Note. The following features are to be taken into account while installing INTELLECT™ software:

INTELLECT™ software is to be installed on a "clean" Windows OS (see the "Operating system requirements" section).

To install INTELLECT™ software, administrator rights are required.

INTELLECT™ software is to be installed in the folder, which appears by default in the corresponding dialog box of the installation program (i.e., "C:\Program Files \ Intellect"). It is not recommended to change the names of the logical disk and folder for the installation.

To install INTELLECT™ software – "Workplace for monitoring", do the following:

1. Insert INTELLECT installation disk in the CD-ROM drive, its contents will be displayed in a dialog box (Figure 5.1-26).

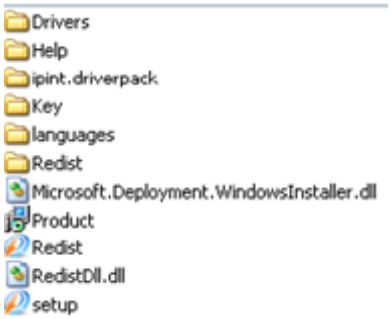


Figure 5.1-26. Contents of INTELLECT installation software

2. Run the setup.exe file to start the INTELLECT™ software installation procedure.

As a result the dialog box of choosing language is displayed (Figure 5.1-28).

*Note. The notification box is displayed if Microsoft.Net Framework 2.0 has not been installed (*Figure 5.1-27*).*

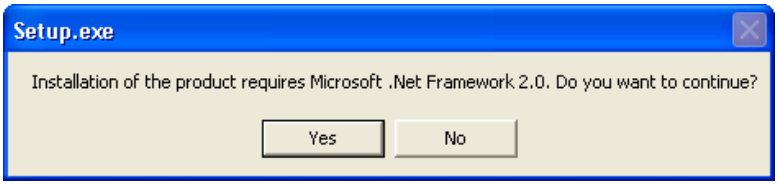


Figure 5.1-27 Notification window

Click "Yes" for Microsoft.Net Framework 2.0 auto installation.

Attention! When INTELLECT™ is installed on Windows 8 and Windows Server 2012 OS, the Microsoft.Net Framework 3.5 is to be installed. If the Microsoft.Net Framework 3.5 has not been installed, then the warning is displayed. In this case stop installing INTELLECT™ and install the Microsoft.Net Framework 3.5. You will find the instructions on how to install it at: http://msdn.microsoft.com/en-gb/library/hh506443.aspx

3. Choose the language of INTELLECT™ software installation and click "Install" (Figure 5.1-28).

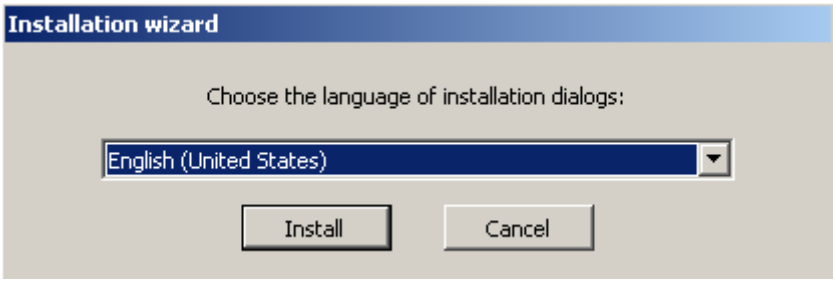


Figure 5.1-28 The dialog box of choosing language

As a result the "Type of installation" dialog box is displayed (Figure 5.1-29).

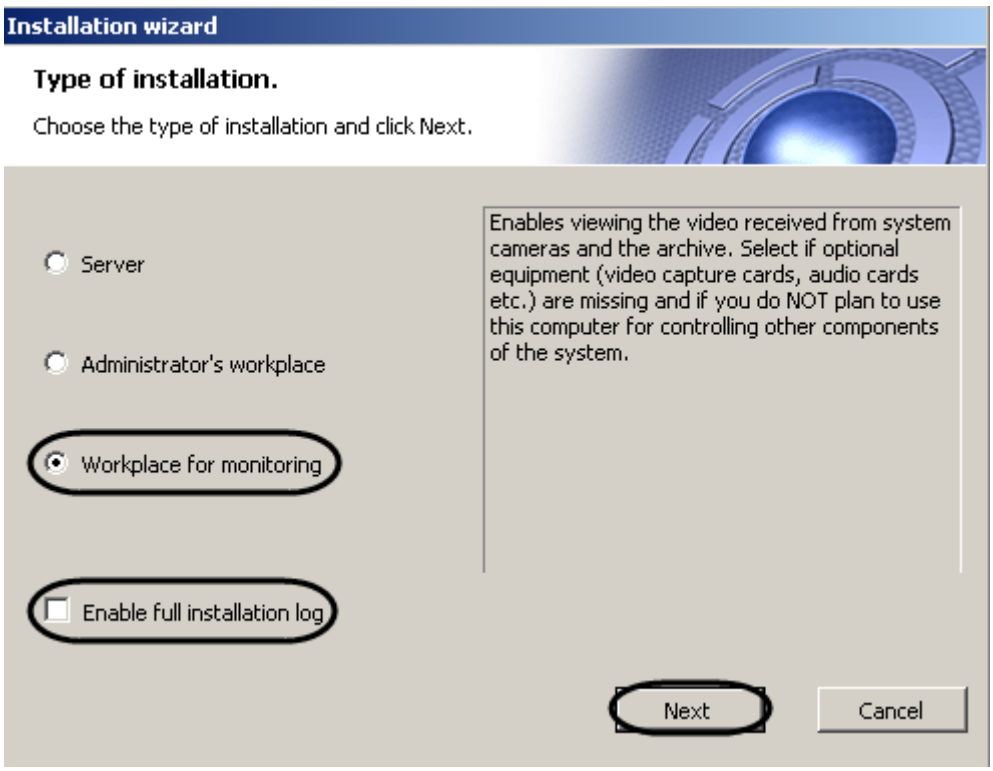


Figure 5.1-29 The "Type of installation" dialog box

4. Select the "Workplace for monitoring" type of installation (Figure 5.1-29).
5. To log all installation events, set the "Enable full installation log" checkbox (Figure 5.1-29).

Note. While installing and uninstalling the software events are logged to Intellect.log and Intellect uninstall.log correspondingly. To collect log-files, the "Support.exe" tool is to be used (see "The utility for collecting configuration data on servers and RWS for the Technical Support" section).

6. Click the "Next" button (Figure 5.1-29).

The "Selecting components for installation" dialog box is displayed (Figure 5.1-30).

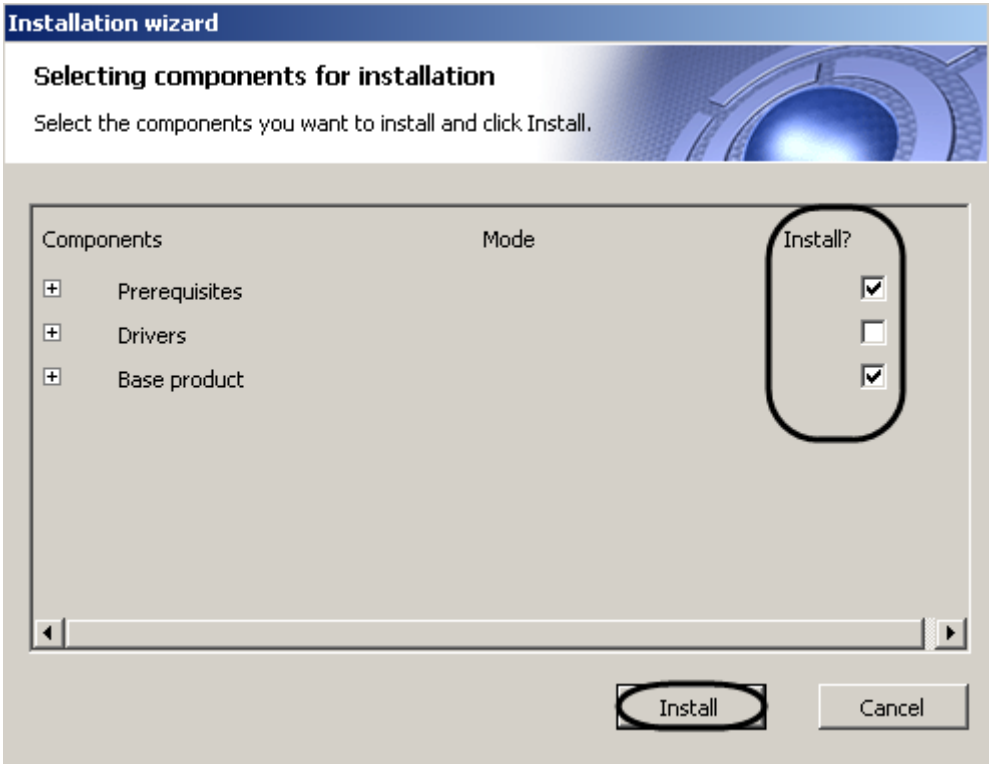


Figure 5.1-30 The "Selecting components for installation" dialog box

7. Set the checkboxes next to the components that are to be installed (Figure 5.1-30).

Note1. All offered components are recommended to be installed.

Note2. Note. Desktop Experience Feature is to be enabled in Windows Server 2008 for correct installation of the "Microsoft ActiveSync/WMDC" component.

8. Click the "Install" button (Figure 5.1-30).

Necessary prerequisites auto installation will be performed (Figure 5.1-31).

Figure 5.1-31 Auto installation of necessary prerequisites

Note! Auto installation of necessary prerequisites may require more than 10 minutes.

After this the "Welcome to the Intellect Setup Wizard" box is displayed (Figure 5.1-32).

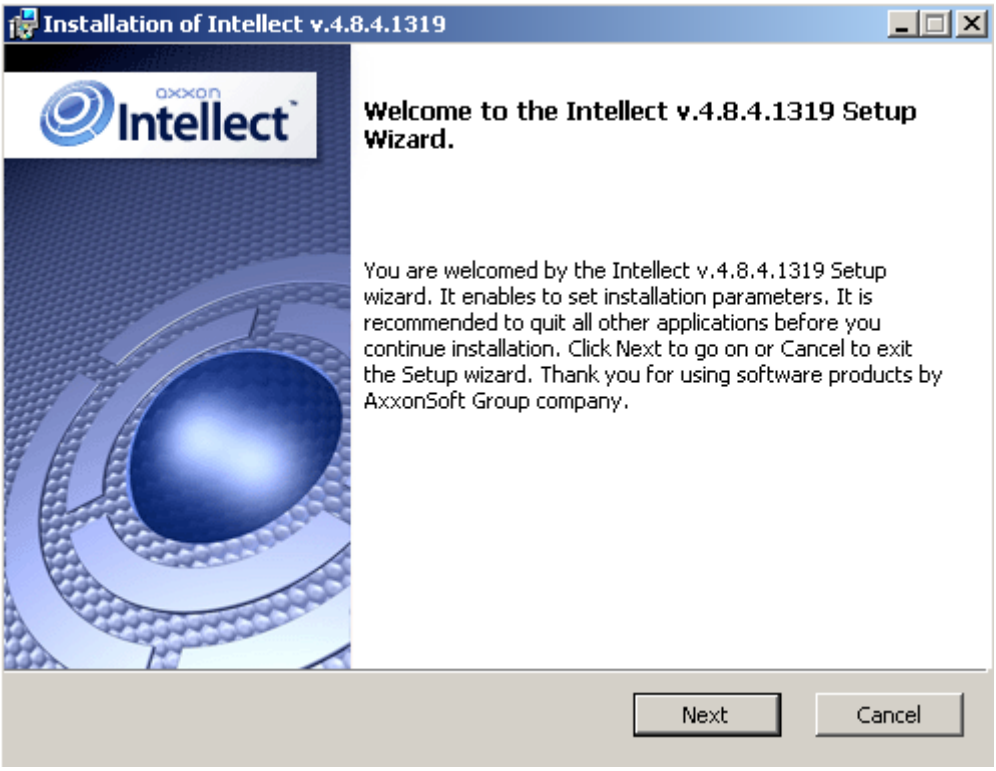


Figure 5.1-32 The “Welcome to the Intellect Setup Wizard” box

9. Click the “Next” button (Figure 5.1-32).

The “License Agreement” dialog box is displayed (Figure 5.1-33).

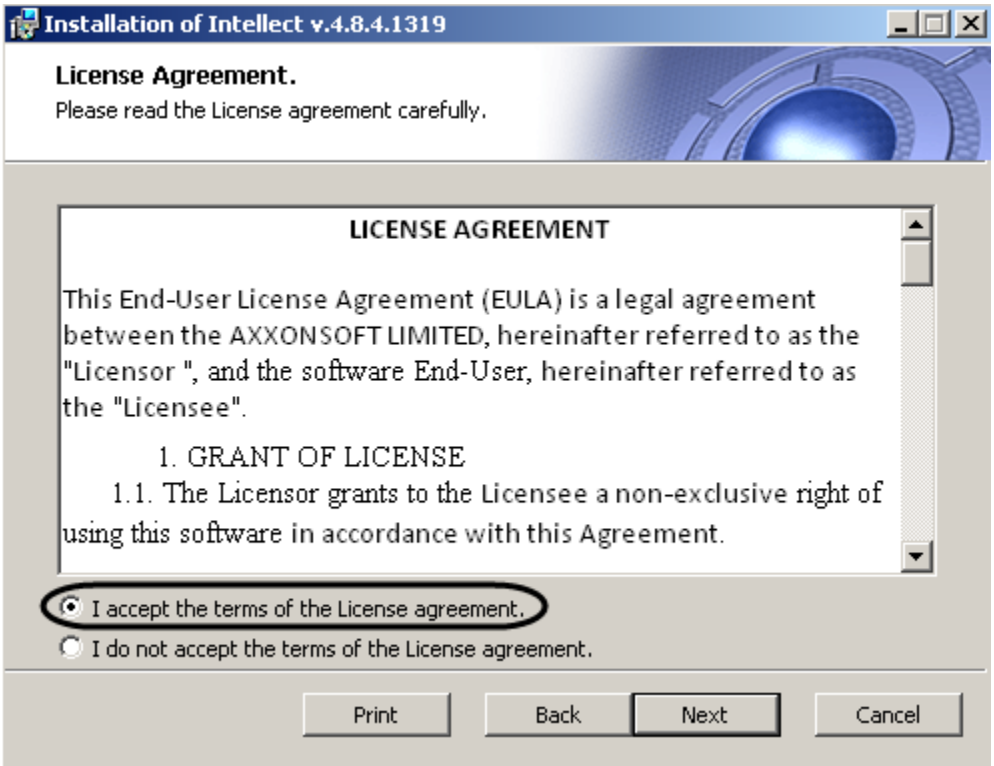


Figure 5.1-33 The “License Agreement” dialog box

10. Read the License agreement and accept its terms by setting the switch into the «I accept the terms of the License agreement» position, otherwise the INTELLECT™ installation will be stopped (Figure 5.1-33).
11. Click the “Next” button (Figure 5.1-33).

The dialog box of choosing language is displayed (Figure 5.1-34).

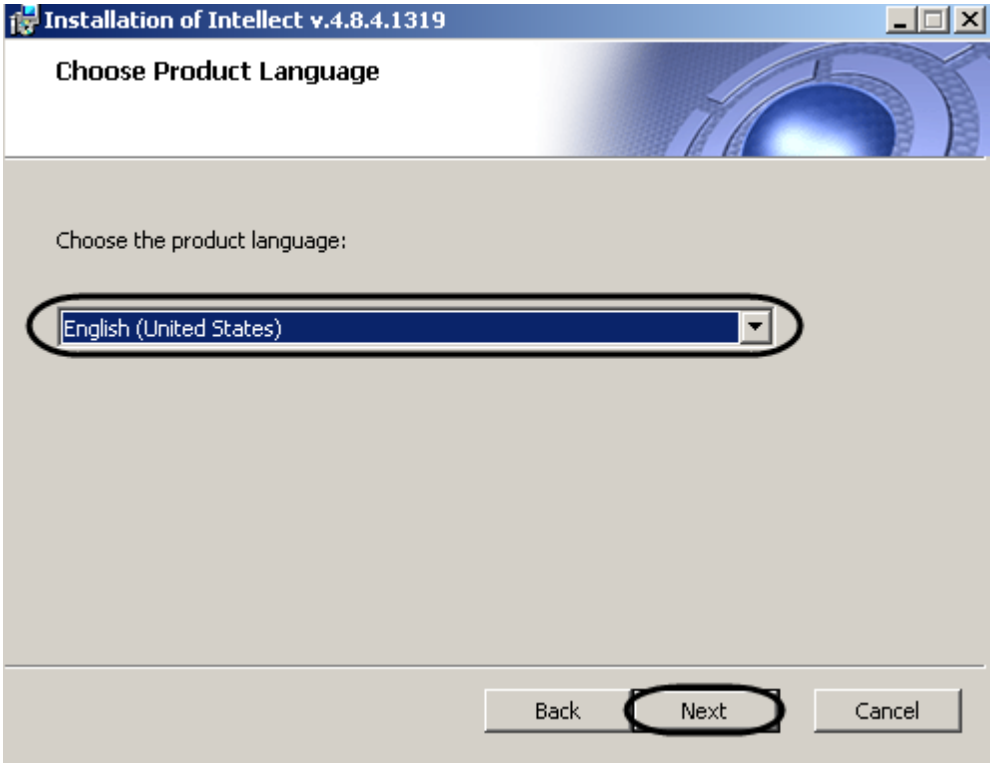


Figure 5.1-34 The “Choose Product Language” dialog box

12. Choose the required language in the list (Figure 5.1-34).
13. Click the “Next” button (Figure 5.1-34).

The dialog box of installation mode selection is displayed (Figure 5.1-35).

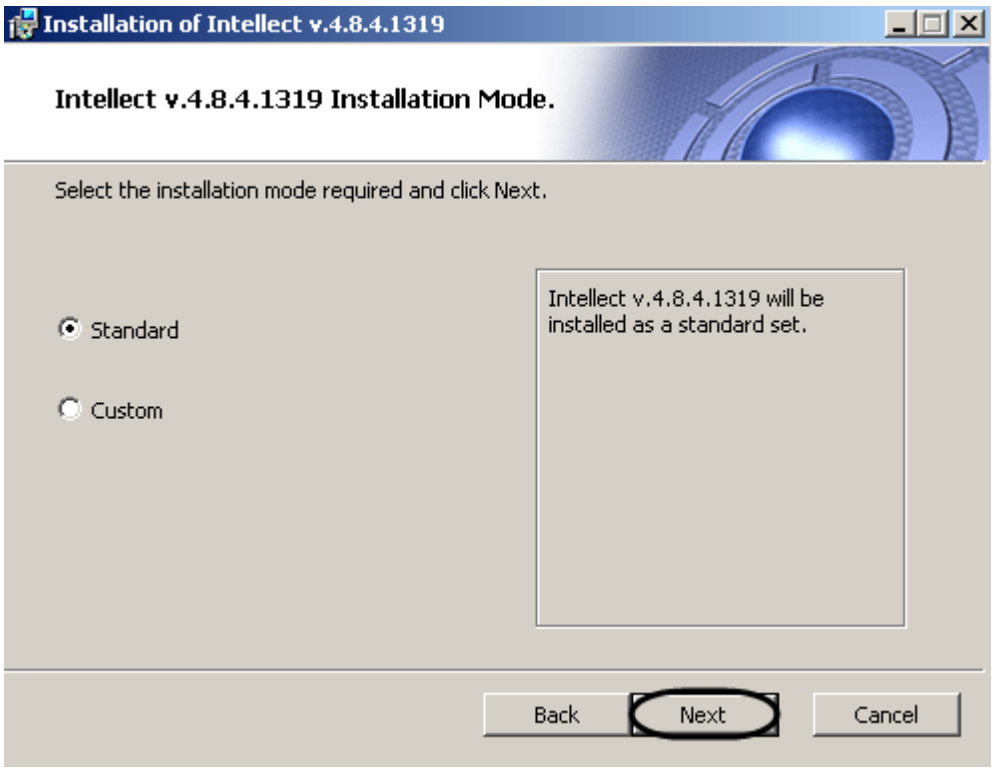


Figure 5.1-35 Installation mode selection

14.Select the installation mode (Figure 5.1-35).
15.Click the “Next” button (Figure 5.1-35).

Note. When the “Custom” installation mode is selected, the dialog box of choosing the installation folder is displayed (Figure 5.1-36). This step is omitted when the “Standard” installation mode is selected.

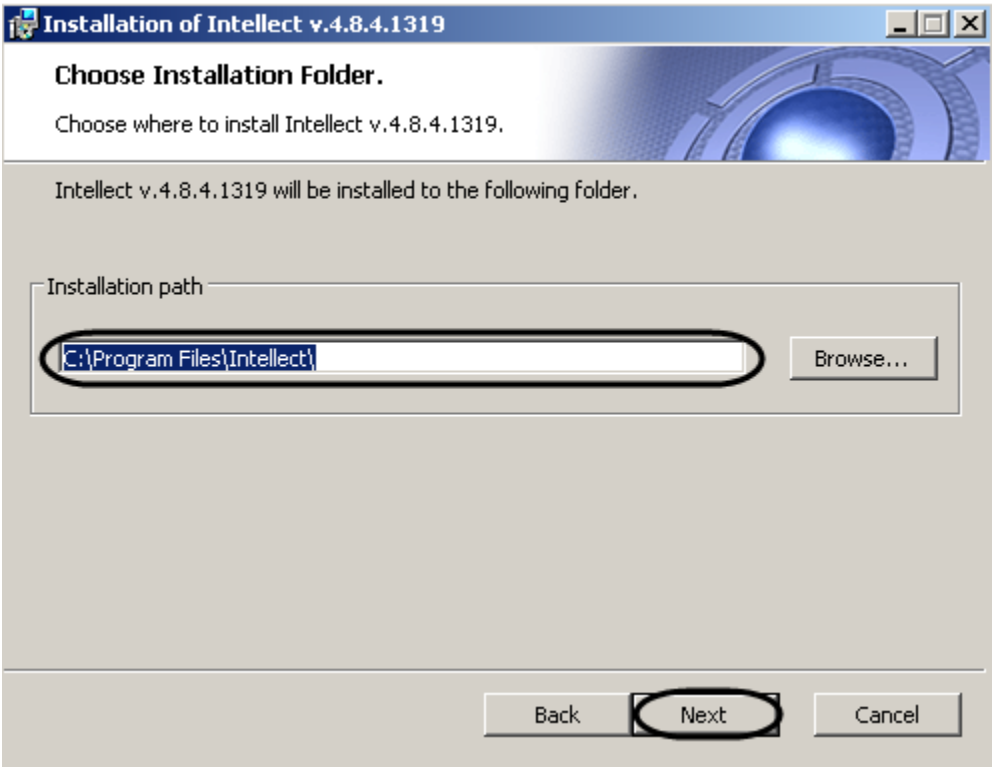


Figure 5.1-36 The dialog box of choosing the INTELLECT™ installation folder

The “Advanced settings” dialog box is displayed (Figure 5.1-37).

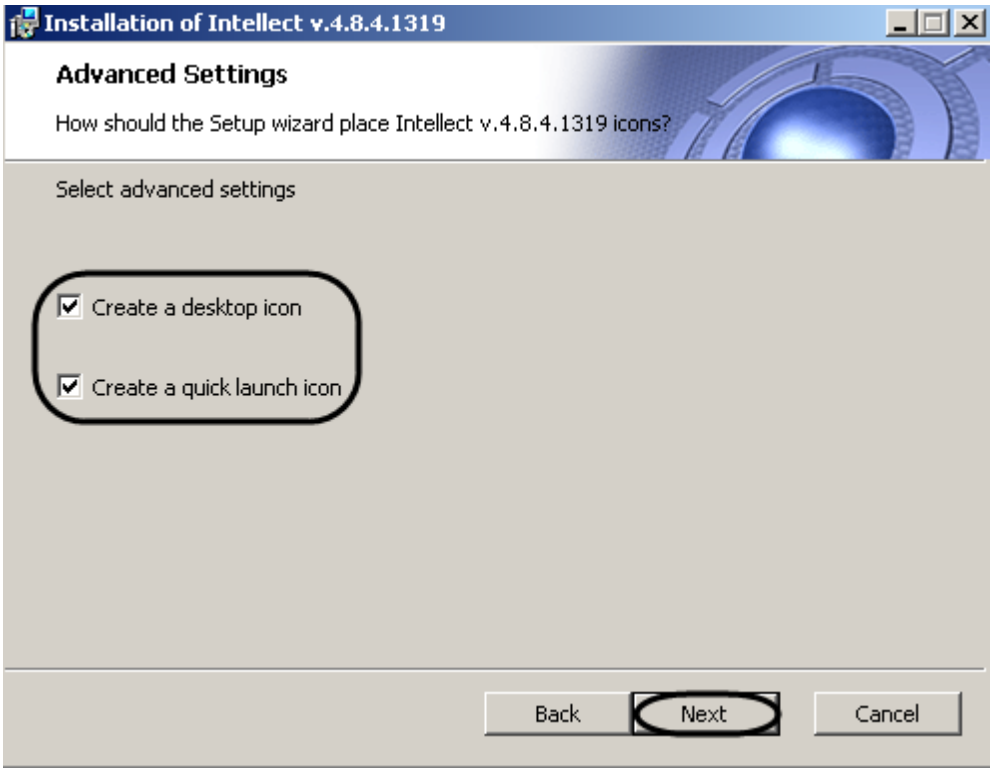


Figure 5.1-37 The “Advanced settings” dialog box

16. If a desktop icon is to be created, set the corresponding checkbox (Figure 5.1-37).
17. If a quick launch icon is to be created, set the corresponding checkbox (Figure 5.1-37).
18. Click the “Next” button (Figure 5.1-37).

The “Ready to install” dialog box is displayed (Figure 5.1-38).

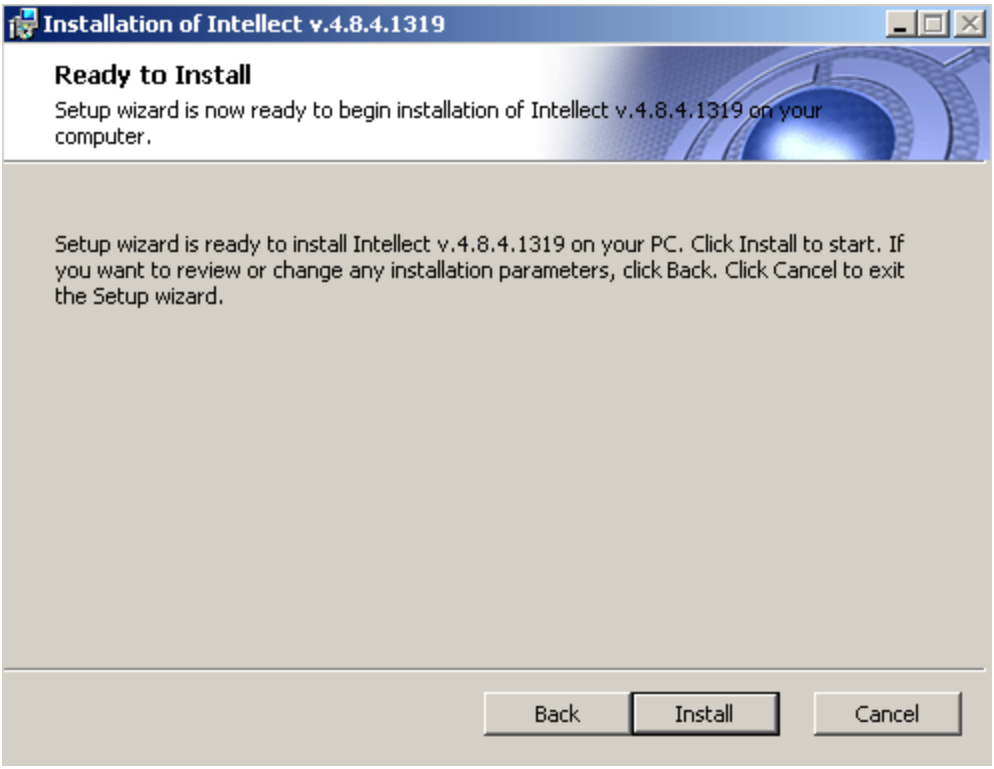


Figure 5.1-38 The “Ready to install” dialog box

Note. To change the setting, click the “Back” button (Figure 5.1-38).

19.Click the “Install” button (Figure 5.1-38).

The “Installing Intellect” dialog box is displayed (Figure 5.1-39).

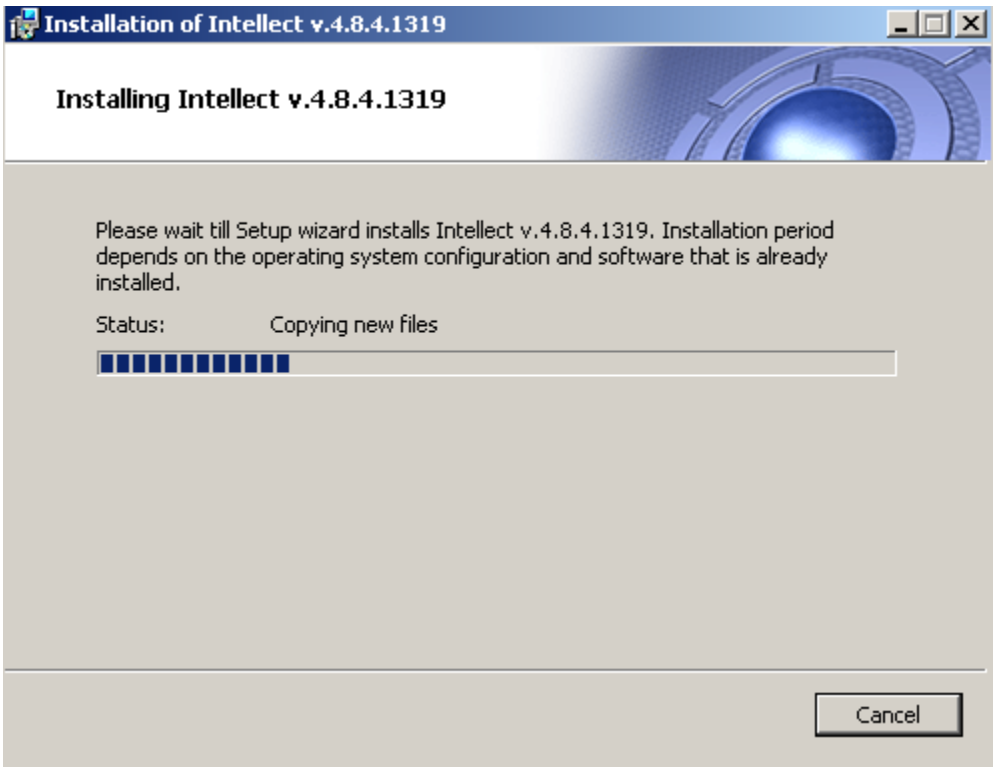


Figure 5.1-39 The "Installing Intellect" dialog box

Note. If the "SmartPocketPC" module installation was selected, the "SmartPocketPC" software module will be installed on the pocket PC.

The "Software Installation" dialog box is displayed (Figure 5.1-40).

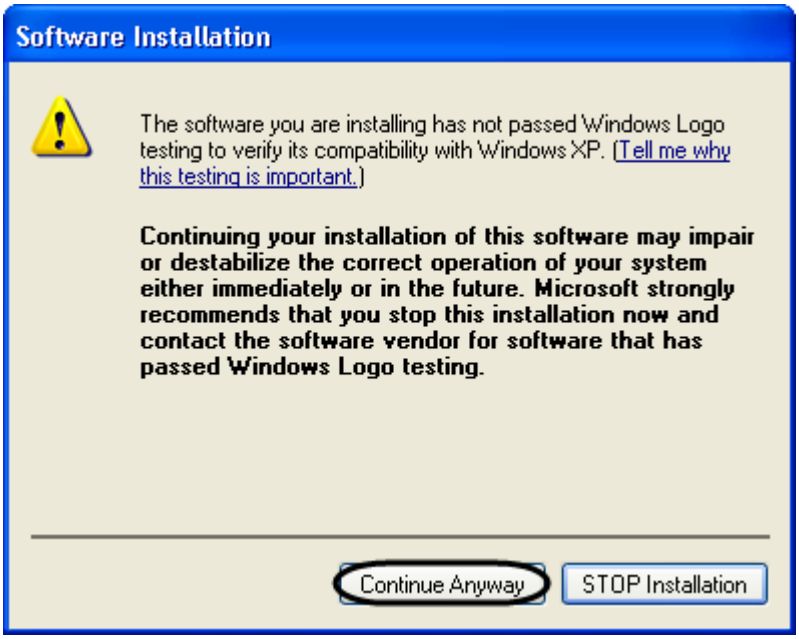


Figure 5.1-40 The "Software Installation" dialog box

20.To continue the installation, click the "Continue Anyway" button (Figure 5.1-40).

The "Installation Complete" dialog box is displayed (Figure 5.1-41).

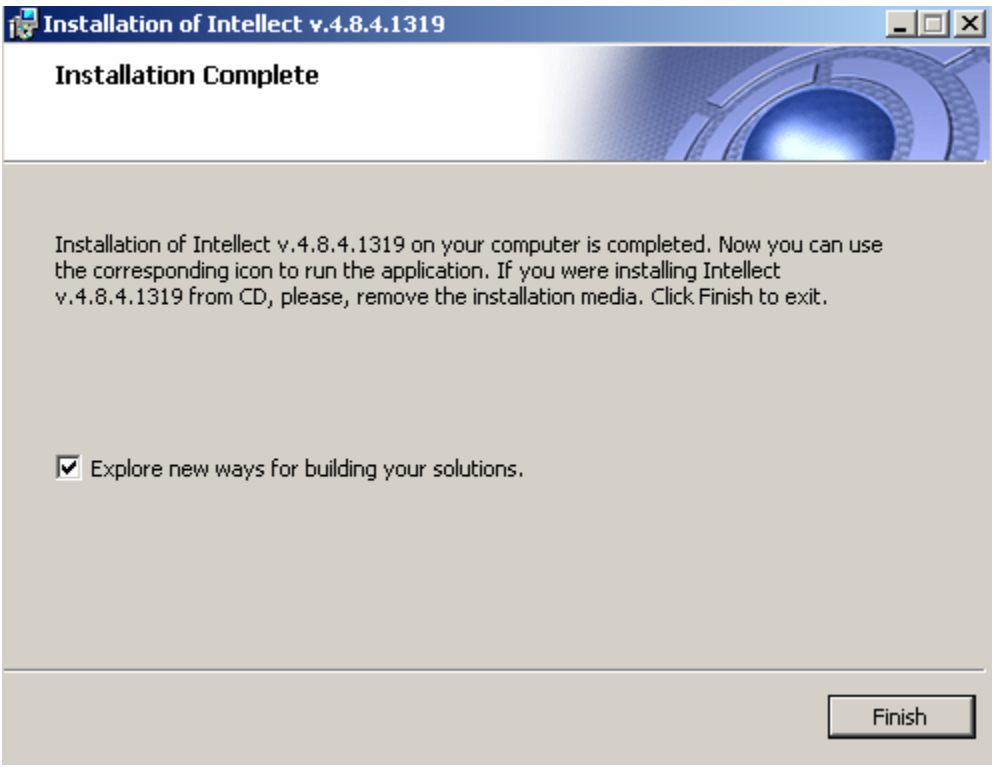


Figure 5.1-41 The “Installation complete” dialog box

21. Set the “Explore new ways for building your solutions” checkbox, to view thw document containing information about new features of the installed Intellect (Figure 5.1-41).
22. Click the “Finish” button (Figure 5.1-41).

Note. Then the Axxon Driver Pack will be installed.

Then the Installation wizard dialog box is displayed, containg the information on the mode (installed or not) of Intellect components (Figure 5.1-42).

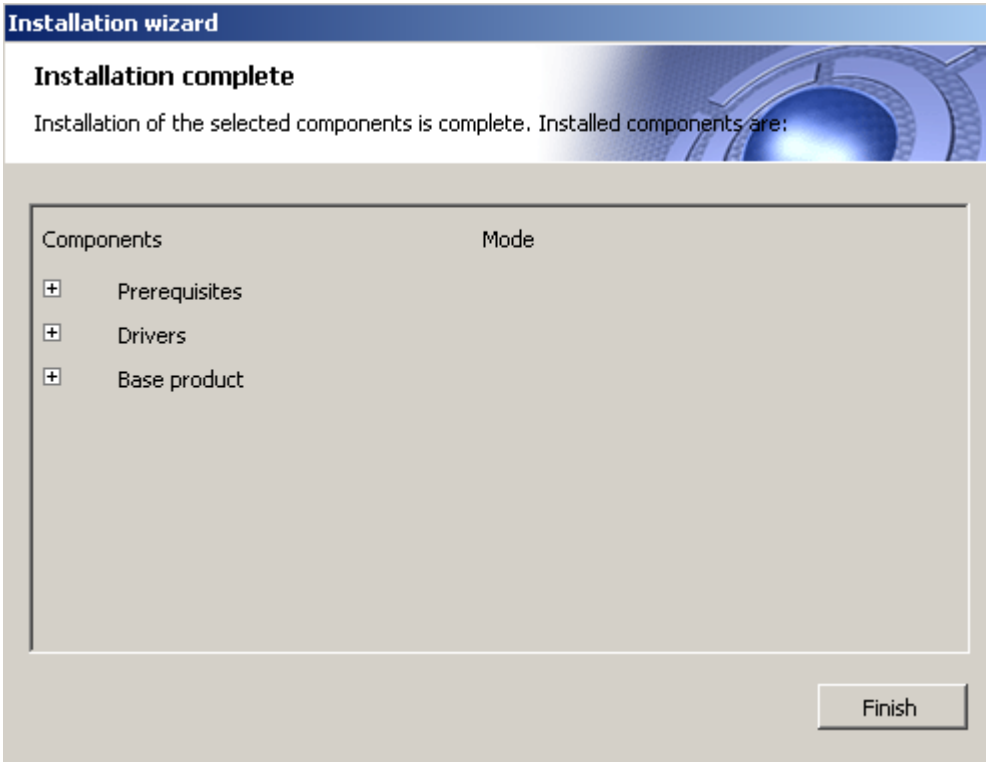


Figure 5.1-42 The “Installation complete” dialog box

23.Click the “Finish” button (Figure 5.1-42).

The Intellect with the “Workplace for monitoring” type of installation is now installed.

5.1.5 Updating INTELLECT™ software

If you install INTELLECT™ software on computer where an earlier version is used, then installation will be in the updating mode.

To update INTELLECT™ software, do the following:

1. Insert INTELLECT installation disk in the CD-ROM drive, its contents will be displayed in a dialog box (Figure 5.1-43).

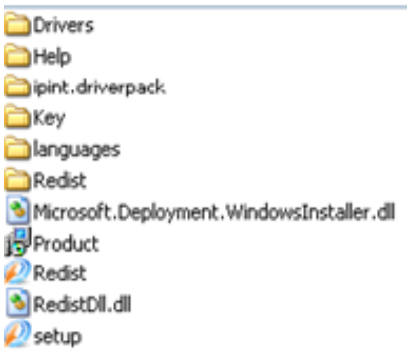


Figure 5.1-43 Contents of installation CD

2. Run the setup.exe file to start the INTELLECT™ software installation procedure.

As a result the dialog box of choosing language is displayed (Figure 5.1-44).

3. Choose the language of INTELLECT™ software installation and click “Install”.

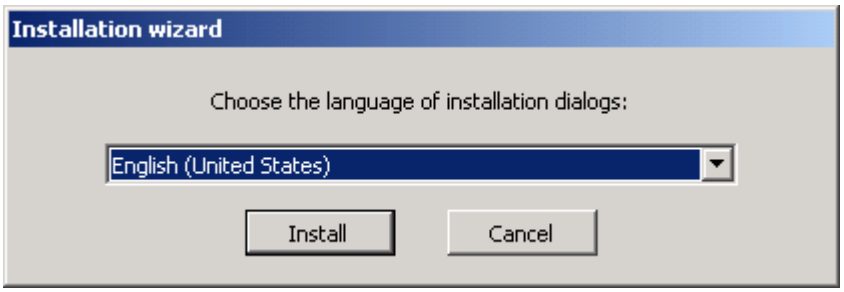


Figure 5.1-44 The dialog box of choosing language

As a result the “Type of installation” dialog box is displayed (Figure 5.1-45).

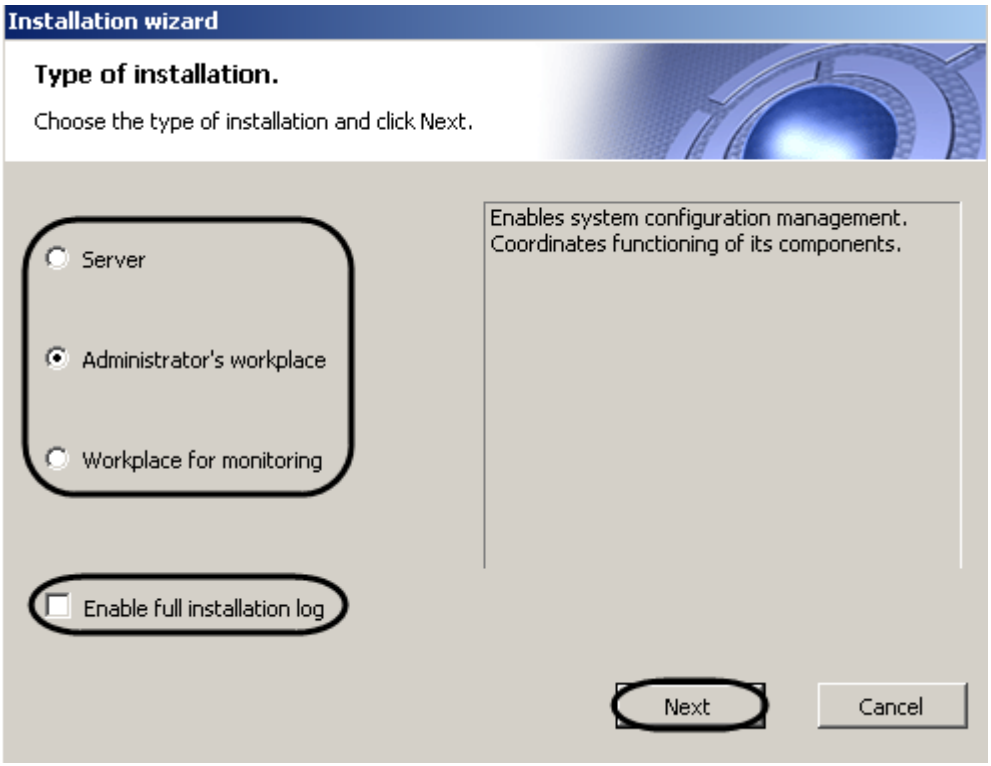


Figure 5.1-45 The “Type of installation” dialog box

4. Choose the type of installation needed (Figure 5.1-45).
5. To log all installation events, set the “Enable full installation log” checkbox (Figure 5.1-45).

Note. While installing and uninstalling the software events are logged to Intellect.log and Intellect uninstall.log correspondingly. To collect log-files, the “Support.exe” tool is to be used (see “The utility for collecting configuration data on servers and RWS for the Technical Support” section).

6. Click the “Next” button (Figure 5.1-45).

The “Selecting components for installation” dialog box is displayed (Figure 5.1-46).

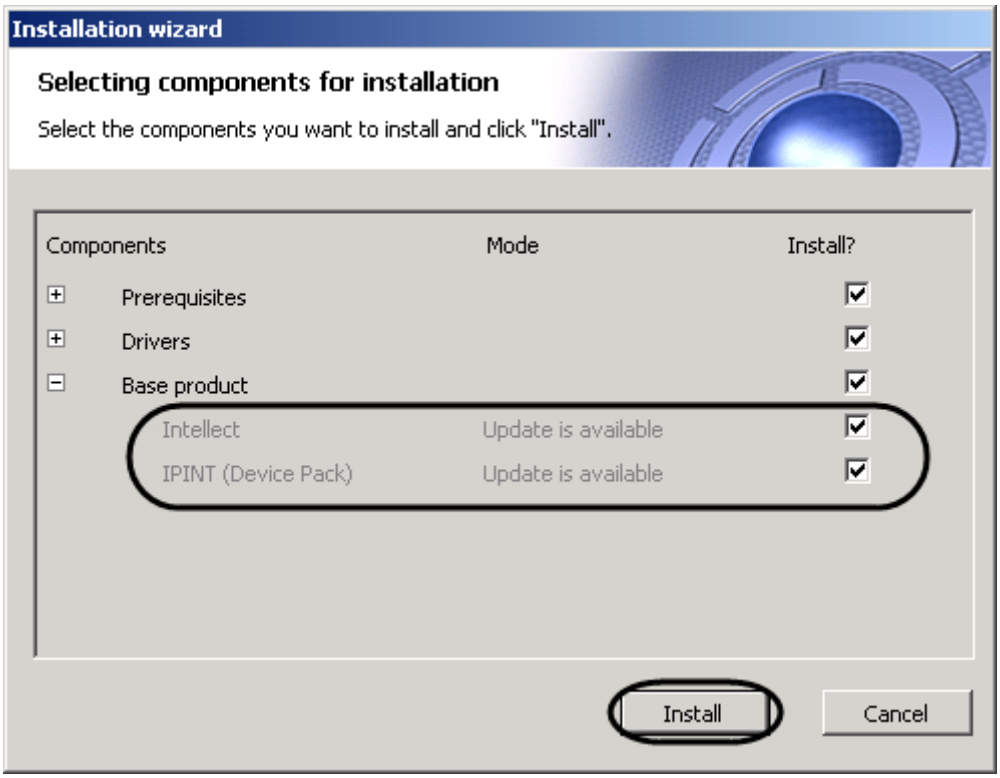


Figure 5.1-46 The "Selecting components for installation" dialog box

7. Set the checkboxes next to the components that are to be installed (Figure 5.1-46).

Note. All offered components are recommended to be installed.

8. Click the "Install" button (Figure 5.1-46).

The selected prerequisites and drivers will be installed.

When prerequisites and drivers are installed, the dialog box of INTELLECT update is displayed (Figure 5.1-47).

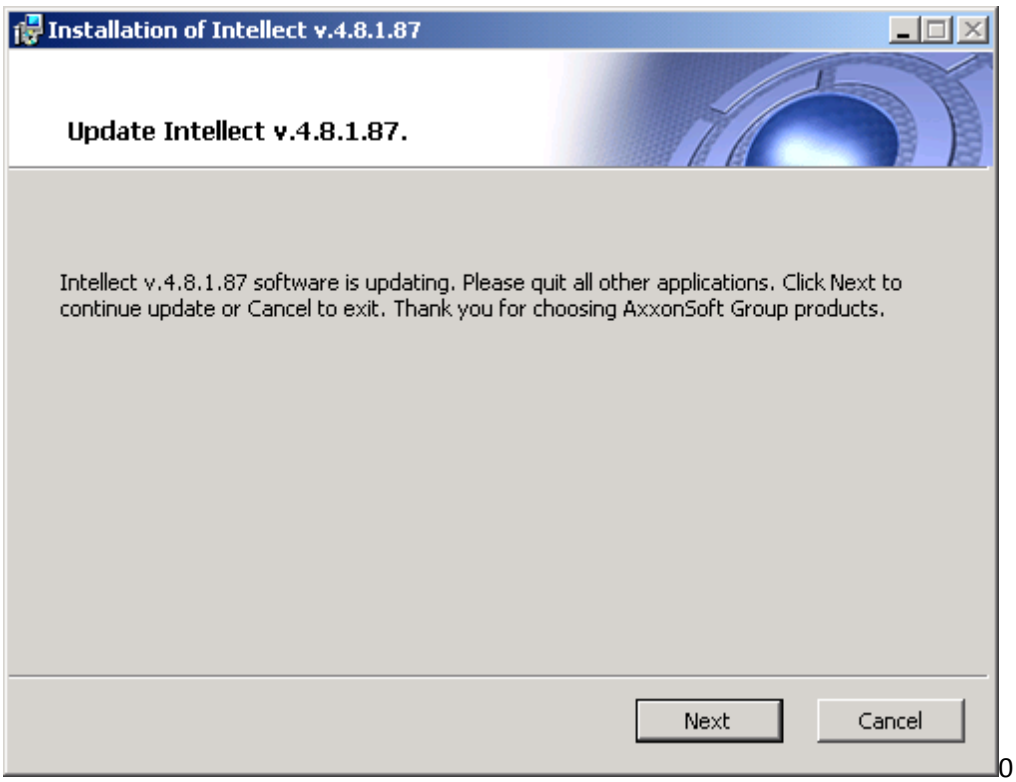


Figure 5.1-47 The dialog box of INTELLECT update

9. Click the “Next” button (Figure 5.1-47).

The dialog box of the type of update is displayed (Figure 5.1-48).

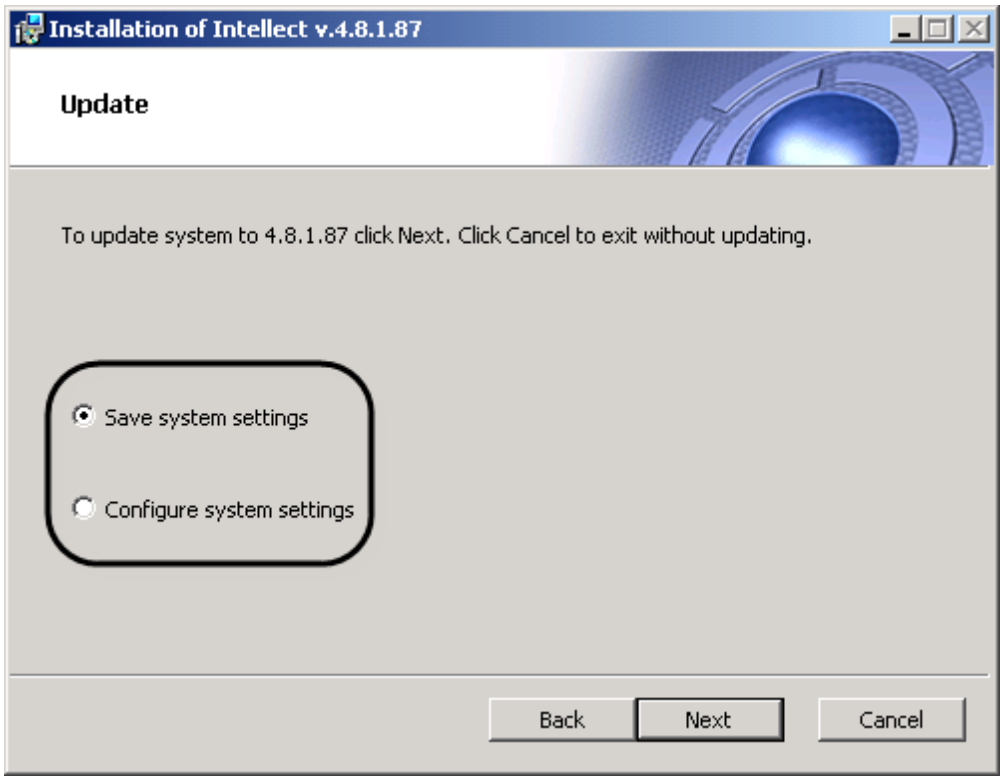


Figure 5.1-48 The dialog box of the type of update

10. Select one of the offered types of update (Figure 5.1-48). The types of update are described in Table 5.1-2.

Table 5.1-2 The types of update

The types of update	Description
Save system settings	Use of settings chosen for installation of an earlier version
Configure system settings	Switch to step-by-step system configuration. Step-by-step configuration is described in “Installation of INTELLECT™ software as a Server” section.

11. Click the “Next” button (Figure 5.1-48).

When the system is configured, installation of INTELLECT™ software starts (Figure 5.1-49).

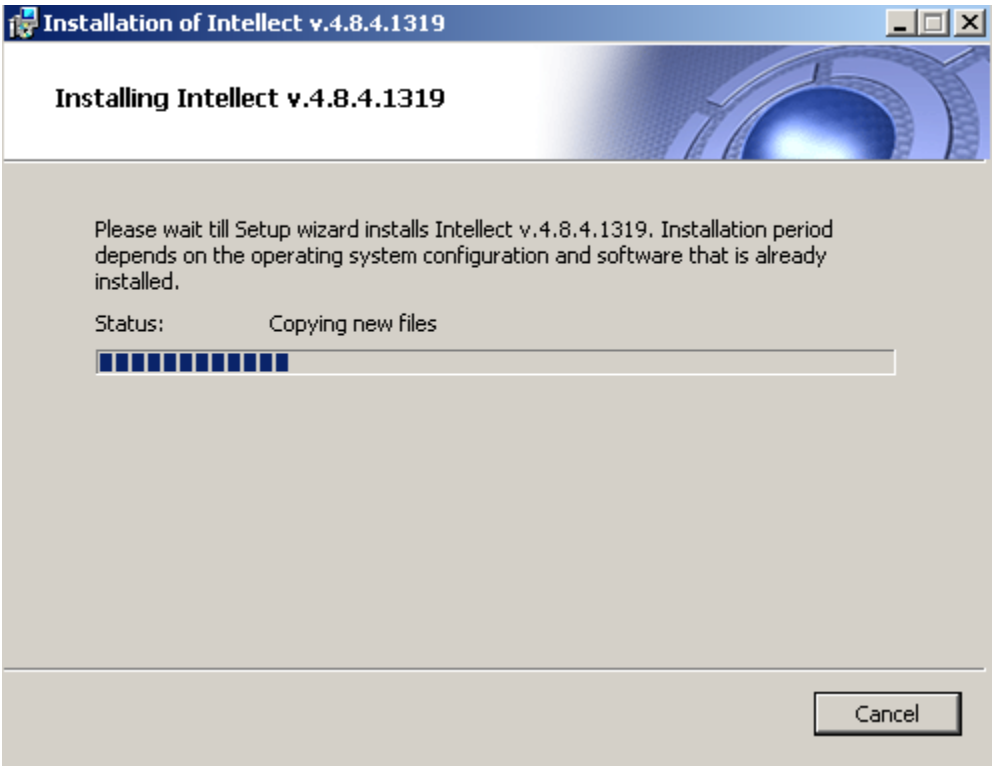


Figure 5.1-49 The dialog box of Intellect installation

The “Software Installation” dialog box is displayed (Figure 5.1-50).

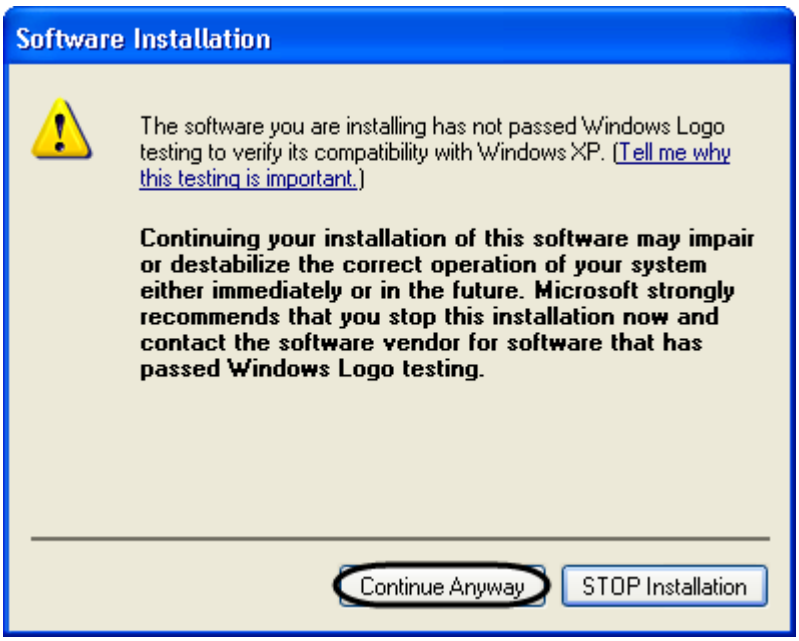


Figure 5.1-50 Software Installation dialog box

12. To continue installation, click the “Continue Anyway” button (Figure 5.1-50)

As a result the “Update Complete” dialog box is displayed (Figure 5.1-51).

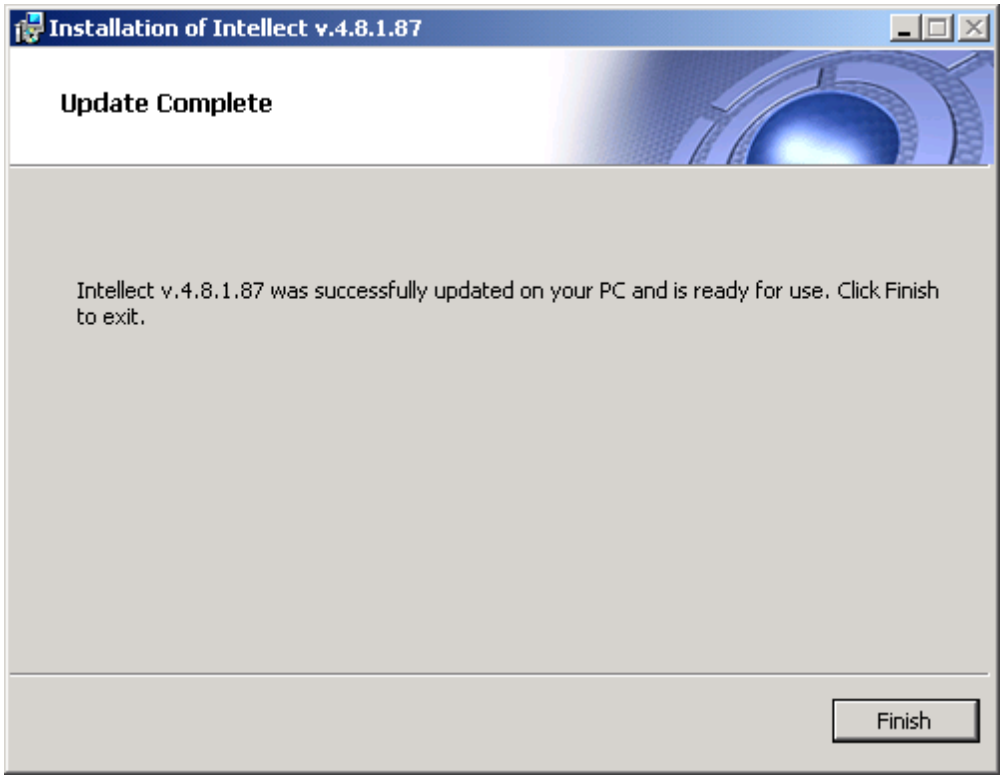


Figure 5.1-51 The “Update Complete” dialog box

13. Click the “Finish” button (Figure 5.1-51).

Note. Then the Axxon Driver Pack will be installed.

The “Installation complete” dialog box is displayed. It contains the information about INTELLECT components mode (installed or not) (Figure 5.1-52).

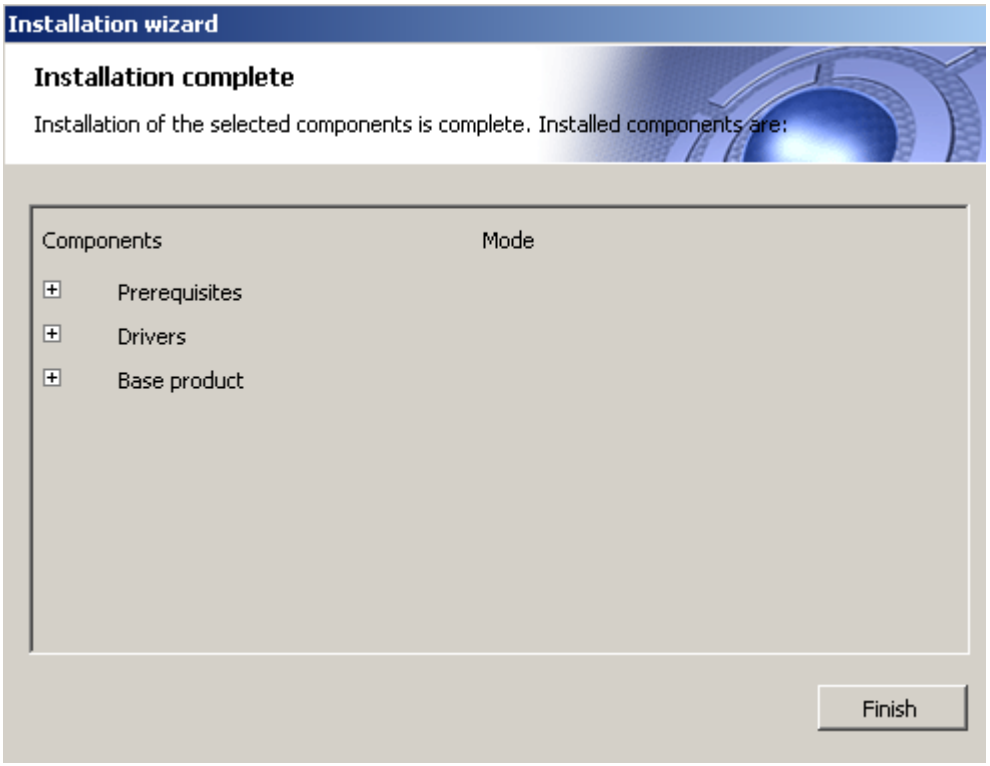


Figure 5.1-52 Installation complete

14. Click the “Finish” button (Figure 5.1-52).

The dialog box offering to restart the computer is displayed (Figure 5.1-53).

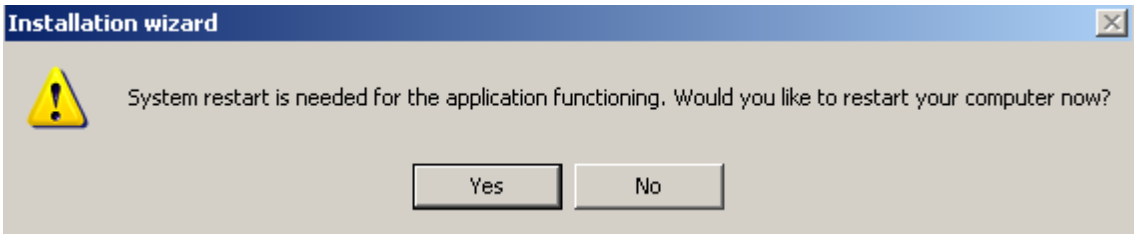


Figure 5.1-53 The dialog box of system restart

Note. It is recommended to select the option of closing the program with computer restart.

INTELLECT software is now updated.

5.1.6 Using the Product.msi and Redist.exe for INTELLECT™ software installation

Besides running Setup.exe file for the the INTELLECT™ software installation, Product.msi and Redist.exe files can be used:

1. Product.msi is designed for INTELLECT™ software installation with step-by-step configuration of main parameters such as type of installation, installation directrory etc.

Note. Product.msi is worth being used when all drivers, prerequisits and other components necessary for proper operation of INTELLECT™ being installed.

2. Redist.exe enables selection and installation of necessary components for INTELLECT™ operation (for example drivers, prerequisits and the very product).

The use of these files allows reducing installation time of INTELLECT™ software due to less steps during installation.

5.2 Repairing INTELLECT™ software

The repair mode is used to re-install all INTELLECT™ software components.

To launch repair mode, restart INTELLECT™ software installation from the installation CD, without deleting the previous version of the program.

Note. To ensure that INTELLECT™ software is installed correctly all applications should be closed before the installation startup.

To repair INTELLECT™ software, do the following:

1. Insert the INTELLECT installation disk in the CD-ROM drive and display its contents in a separate window of your PC (Figure 5.2-1).

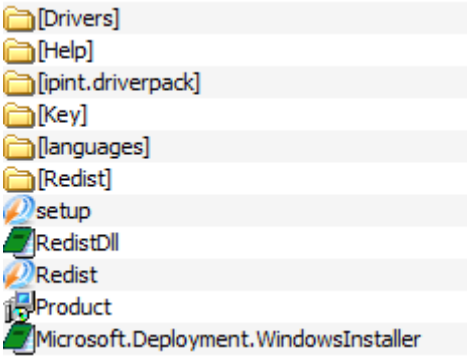


Figure 5.2-1 Contents of INTELLECT installation CD

2. Run setup.exe file, designed for running the Intellect PC install program.

As a result the “Select Action” dialog box is displayed (Figure 5.2-2).

Note. The following files may be run for repairing the Intellect PC instead of Setup.exe:

- *Product.msi – to repair the Intellect PC;*
- *Redist.exe – to install additional components.*

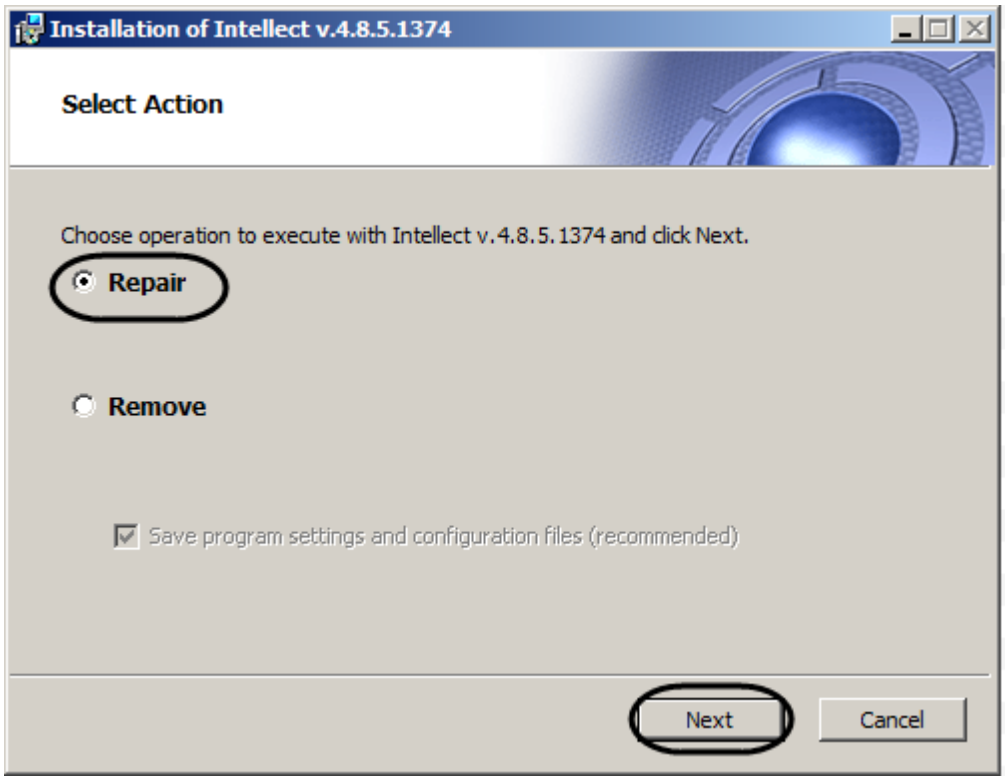


Figure 5.2-2. Re-installation type dialog box

3. To select INTELLECT™ software components repair mode, select Repair installation type and click Next (Figure 5.2-2).

The “Repairing Intellect” dialog box is displayed (Figure 5.2-3).

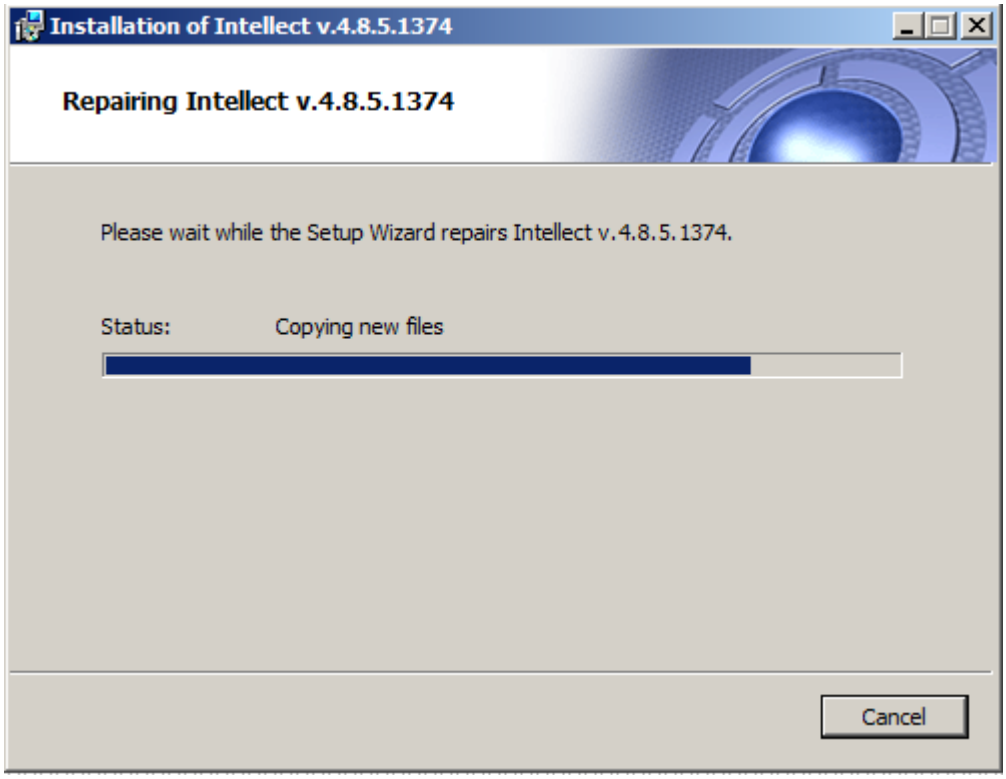


Figure 5.2-3. Dialog box displaying file copying in progress

The “Software Installation” dialog box is displayed (Figure 5.2-4).

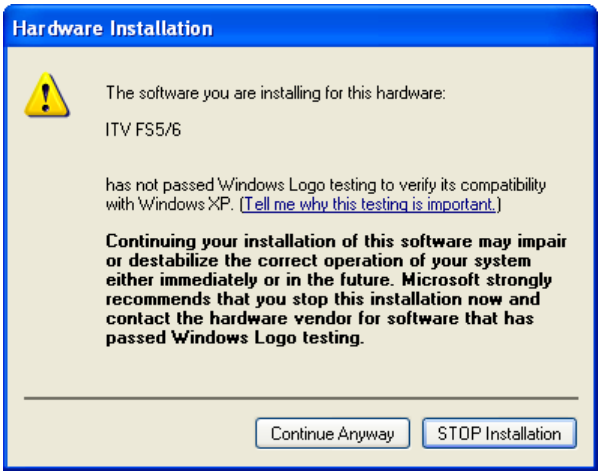


Figure 5.2-4. Driver installation dialog box

4. To continue INTELLECT™ software installation, click “Continue Anyway”.

As soon as all files are copied, the “Repair Complete” dialog box is displayed (Figure 5.2-5).

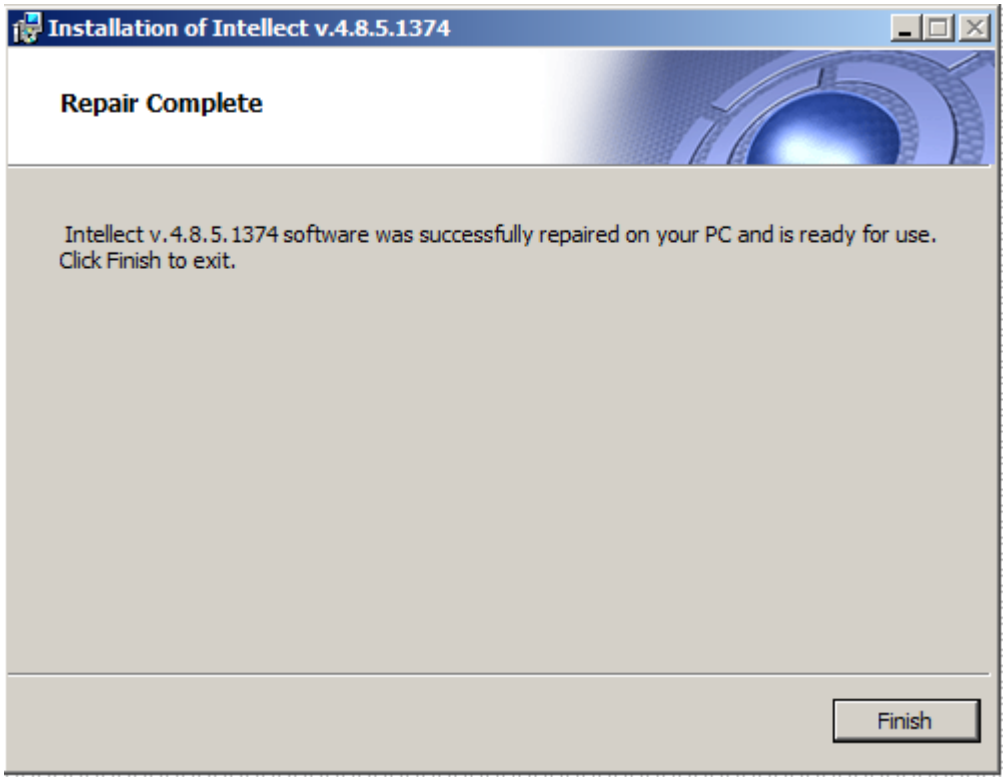


Figure 5.2-5. Re-installation finish dialog box

5. Click the “Finish” button (Figure 5.2-5).

INTELLECT™ software is now repaired.

5.3 Removing INTELLECT™ software

INTELLECT™ software installation program works in a deletion mode. This mode is required when all the components of the INTELLECT™ software should be deleted.

Note. Before starting the deletion process of the Intellect software all the other applets should be closed on the computer.

The Intellect™ software removal process can be launched using one of the following ways:

1. Using the Start menu;
2. With the help of OS Windows panel «Add or remove programs»;
3. With the help of installation CD.

5.3.1 Removing INTELLECT™ software from the Start menu

To remove the Intellect PC from the Start menu do the following:

1. In the command prompt select the following: Start ⇒ Programs ⇒ Intellect and then Uninstall in the drop down list, as shown in Figure 5.3-1.

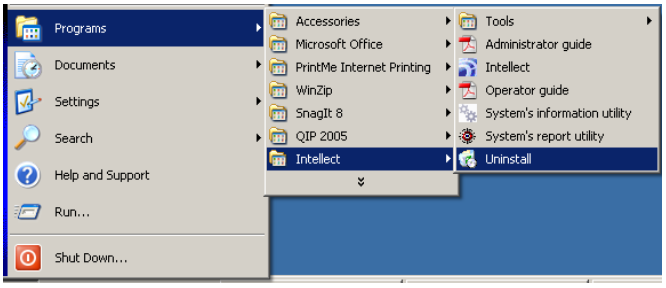


Figure 5.3-1. Launching the INTELLECT™ software uninstall process with the Start menu

As a result the "Select Action" dialog box is displayed (Figure 5.3-2).

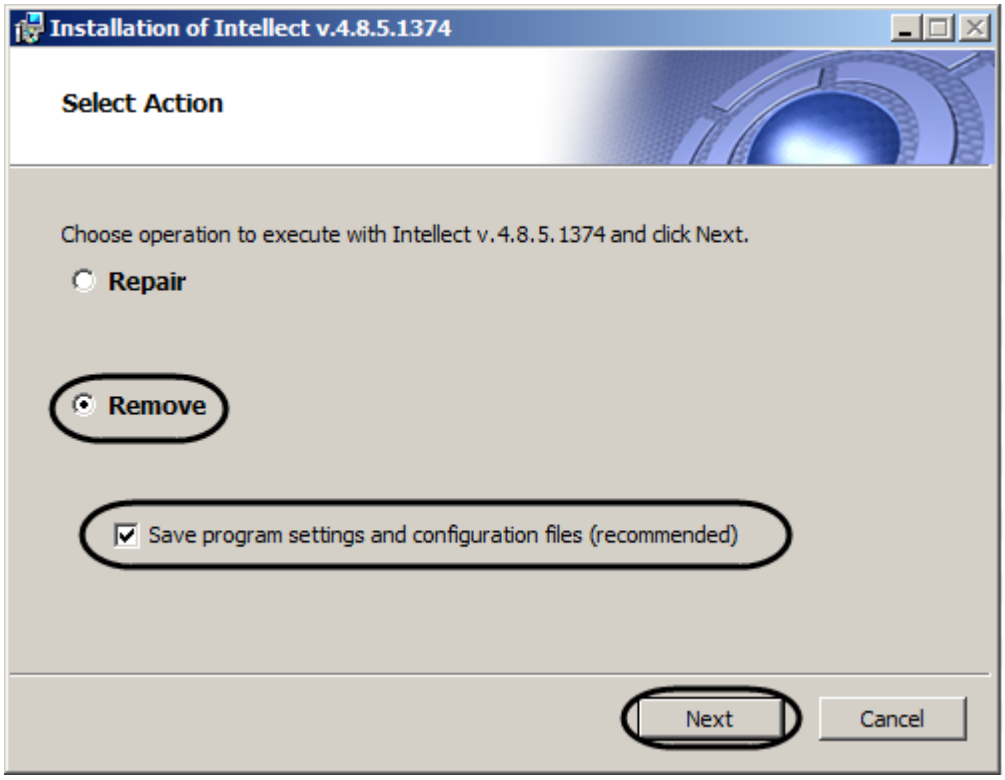


Figure 5.3-2 Remove type dialog box

2. Select “Remove” installation type (Figure 5.3-2).

3. If INTELLECT™ software settings are to be saved in the database, set the “Save program settings and configuration files (recommended)” checkbox (Figure 5.3-2).

Note. If the “sync.xml” file was changed, then after removing with saving of the configuration it will not be deleted, but the next time you install INTELLECTTM software it will be overwritten.

4. Click the “Next” button (Figure 5.3-2).

Note. Click “Cancel” to interrupt INTELLECTTM software removing.

Dialog window, displaying the deletion process of INTELLECT™ software will be displayed (Figure 5.3-3).

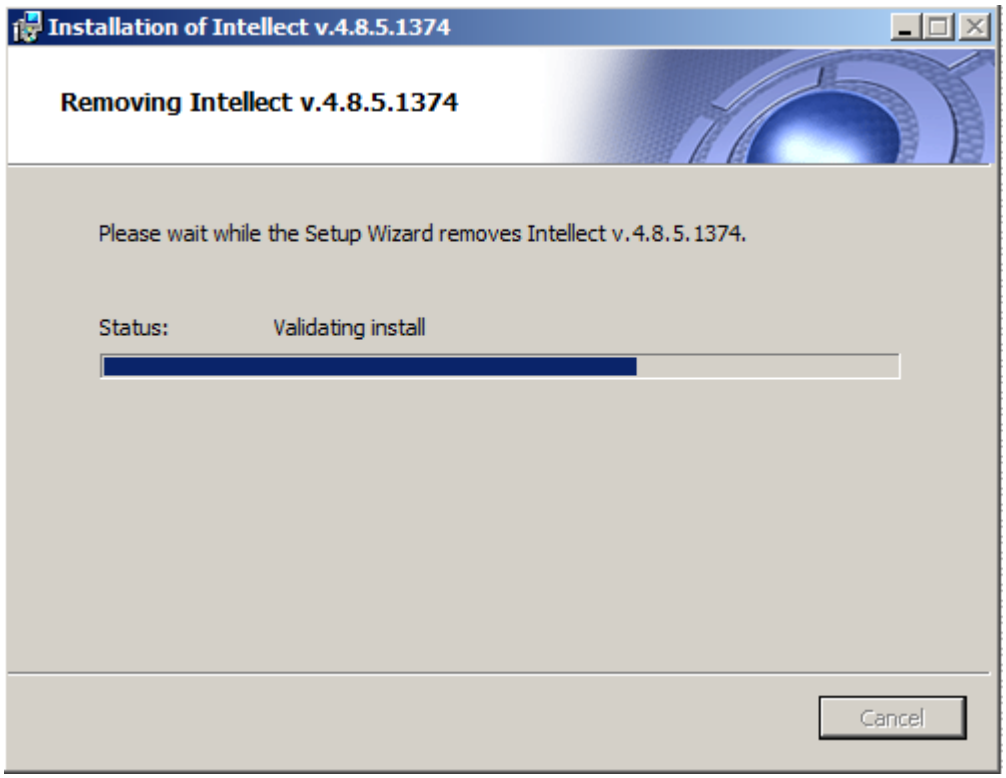


Figure 5.3-3 Intellect software deletion process

After deleting the files, message, informing about the deletion of INTELLECT™ software will be displayed (Figure 5.3-4).

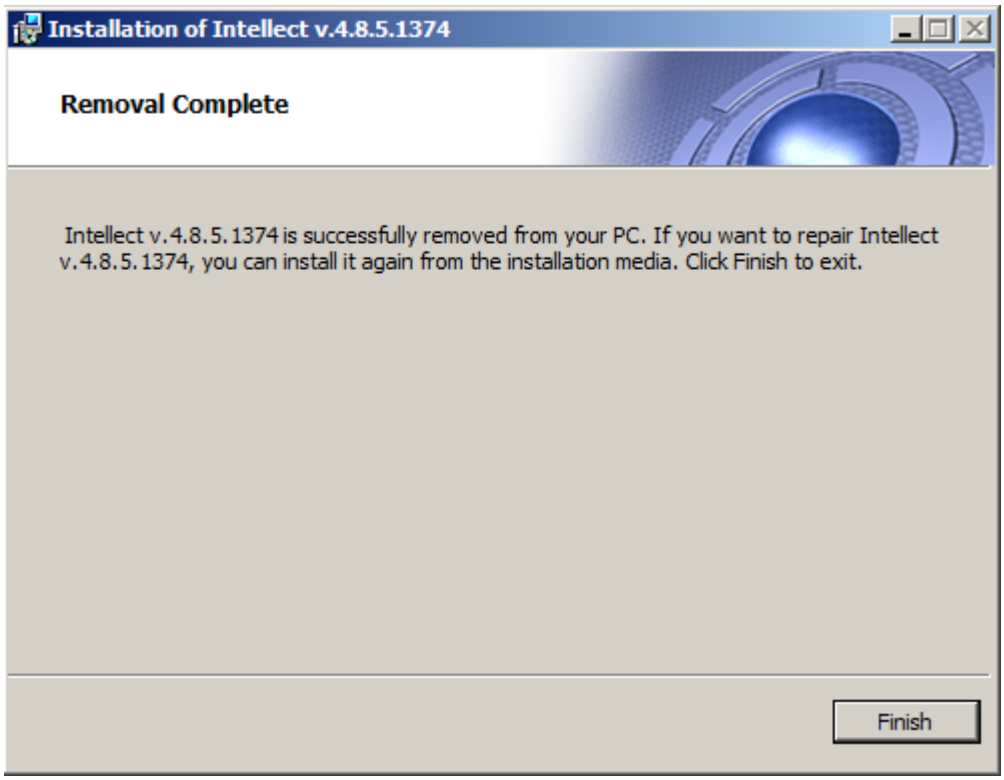


Figure 5.3-4 Intellect software deletion process

5. Click the “Finish” button.

*Note. For complete deletion of INTELLECT™ software files delete the installation catalogue and all the created Video folders for storing the audio and video recordings manually. Video (*Figure 5.3-5*).*

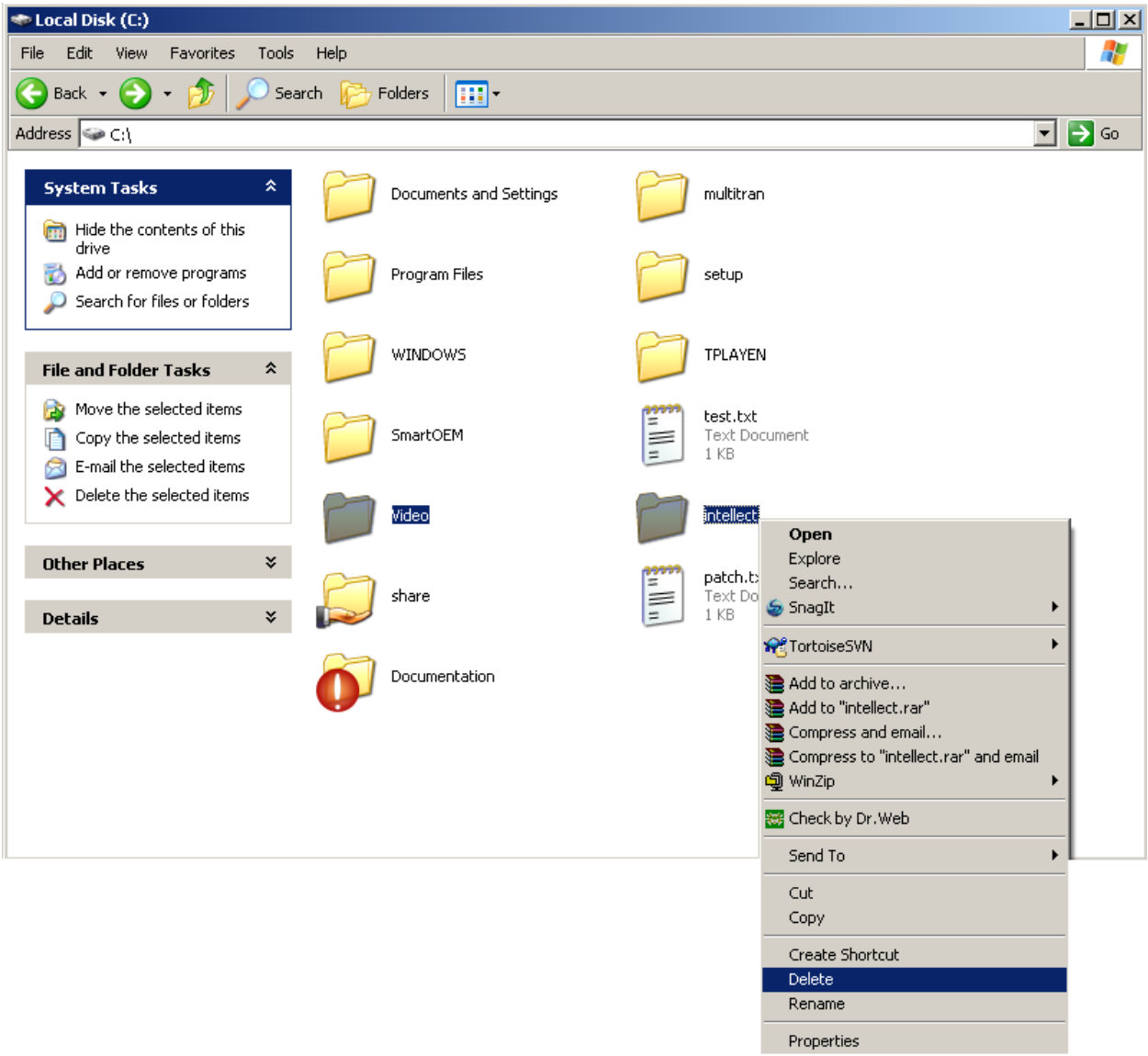


Figure 5.3-5 Deleting the catalogue and video recordings

Note A. Please take into consideration, that the name of the INTELLECT™ software installation folder may differ from the default name (C:\Intellect).

Note B. In certain cases, Windows OS should be restarted before the INTELLECT™ software installation folder is deleted (for instance, Folders/Intellect).

Note C. We do not recommend deleting the INTELLECT™ software installation folder, if you need to re-install INTELLECT™ software. The folder contains:

1. *folders with video records and frames of video records exported during INTELLECT™ software operation;*
2. *log files containing the information about INTELLECT™ software module operations;*
3. *backup copies of these files.*

At this stage the deletion process of Intellect software from the Start menu is over.

5.3.2 Removing INTELLECT™ software from the OS Windows panel Add or Remove programs

To uninstall Intellect™ system using Add or Remove Programs facility, follow the next steps:

1. Open the Control Panel window, selecting in the command prompt: Start ⇒Settings ⇒Control Panel (Figure 5.3-6).

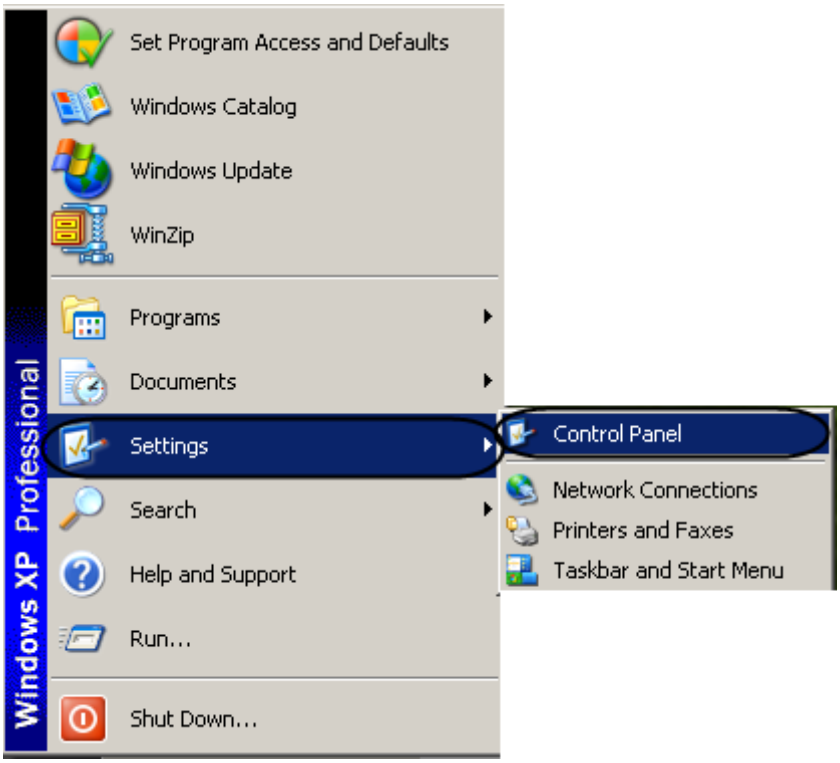


Figure 5.3-6. Opening the Control Panel window

2. Control panel dialog window will be displayed (Figure 5.3-7).

3. Select Add or Remove Programs facility in the Control Panel window.

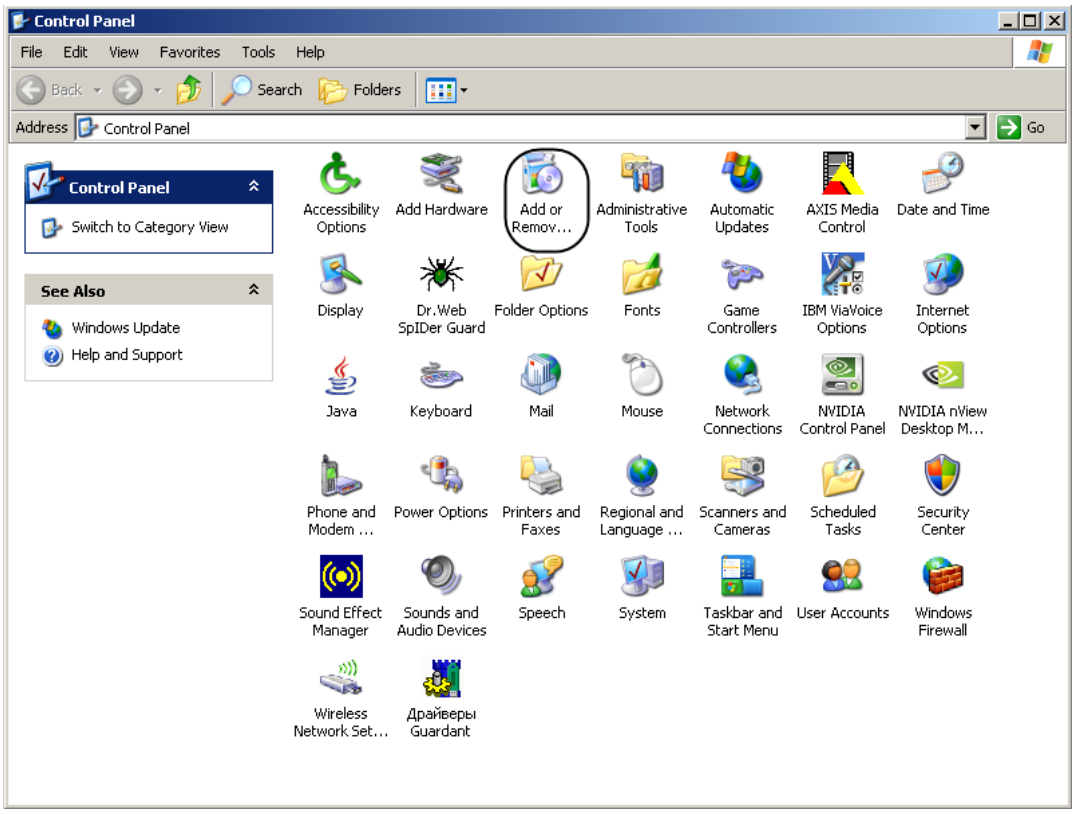


Figure 5.3-7. Control panel

Find the Intellect v.4.7.6 in the Add and Remove Programs window (Figure 5.3-8).

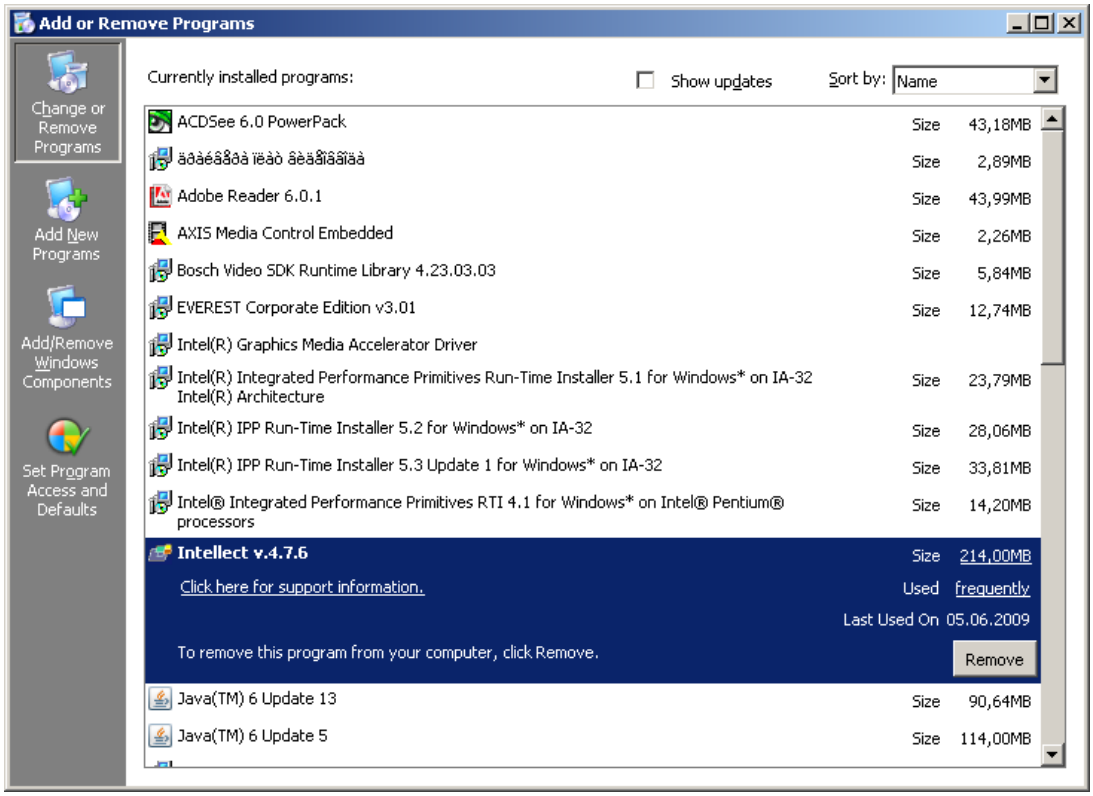


Figure 5.3-8. Add or Remove Programs

4. Click the “Remove” button next to the name of Intellect program.

As a result the “Select Action” dialog box is displayed (Figure 5.3-2).

5. Follow steps 2-5 of the instruction in section Removing INTELLECT™ software from the Start menu.

At this stage the deletion process of Intellect software with the help of OS Windows Add or Remove program panel is over.

5.3.3 Removing INTELLECT™ software with the help of installation CD

Installation program Intellect works in a deletion mode. This mode is required when all the components of the Intellect software should be deleted.

Run the installation CD with Intellects software manually without removing the previous version to run installation program in a deletion mode.

Note. Before starting the deletion process of the Intellect software all the other applets should be closed on the computer.

To delete Intellect software do the following:

1. Insert the INTELLECT installation disk in the CD-ROM drive and display its contents in a separate window of your PC (Figure 5.3-9).

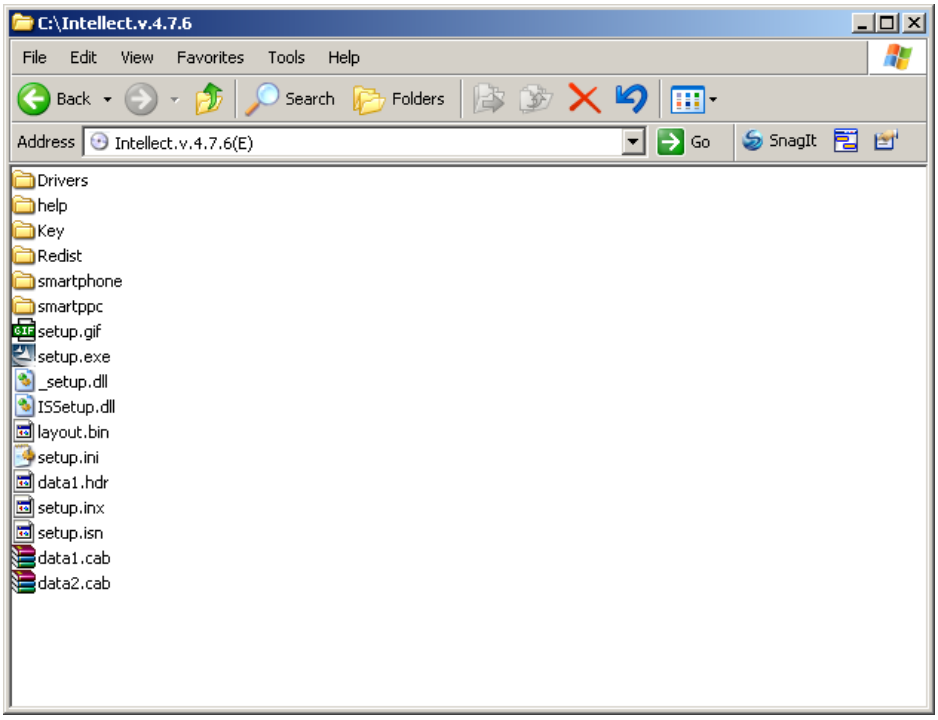


Figure 5.3-9 Interface window displaying INTELLECT installation software

2. Launch the file Setup.exe (Figure 5.4.3-2)

As a result the “Select Action” dialog box is displayed (Figure 5.3-2).

3. Follow steps 2-5 of the instruction in section Removing INTELLECT™ software from the Start menu.

At this stage the deletion process of Intellect software with the help of installation CD is over.

5.3.4 Removing INTELLECT™ software installed as a Service

To remove Intellect software , installed as a Service, do the following:

1. Insert the INTELLECT installation CD in the CD-ROM drive and display its contents in a separate window of your PC (Figure 5.3-10).

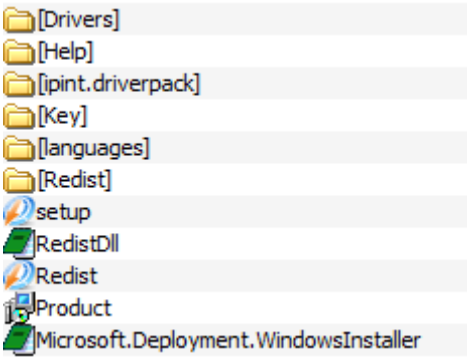


Figure 5.3-10 Contents of INTELLECT installation CD

2. Run setup.exe (Figure 5.3-10).

As a result the “Select Action” dialog box is displayed (Figure 5.3-2).

When Intellect works it will be automatically logged off (Figure 5.3-11).

Figure 5.3-11 System’s shutdown

3. Follow steps 2-5 of the instruction in section Removing INTELLECT™ software from the Start menu

At this stage the deletion process of Intellect software, installed as a Service, with the help of installation CD is over.

5.4 Installing INTELLECT™ software in a hidden mode

There is possibility to run the Intellect PC in a hidden mode (without user interface).

Note. While installation program operation it may be required to restart the system. The installation will be continued automatically after the system is restart.

The redist.exe process finish in Windows task manager indicates that the program has been installed.

This installation type is performed by setting setup.exe install file parameters in the OS Windows command prompt. The install file parameters are given in Table 5.4-1.

Table 5.4-1 The install file parameters in the command prompt

The install file parameter in the command prompt	Description
/?	Calling the Help window
/help	Calling the Help window
/x	The Intellect removal with saving the configuration
/x/removeall	The Intellect removal without saving the configuration
/uninstall	The Intellect removal with saving the configuration
/r	The Intellect repair
/repair	The Intellect repair
/qn	The Intellect installation
/quiet	The Intellect installation
/norestart	Disabling the auto restart of the system while it is being installed
/LANG=”ru”	Russian language selection of the installation program
/LANG=”en”	English language selection of the installation program
/INSTALLTYPE="Client"	Selecting the “Monitoring workstation” installation type
/INSTALLTYPE="Server"	Selecting the “Server” installation type
/INSTALLTYPE="Admin"	Selecting the “Admin workstation” installation type
/ADD="[]"	A list of components necessary for installation. Is used if a component that is not installed by default is to be installed. Possible values are given in Table 5.4-2.
/REMOVE="[]"	A list of components that are not to be installed. Possible values are given in Table 5.4-2.
/CMD="[commands]"	Values of functions for basic installation program. Where commands mean [Function] =\"[Value]\" or [Function] ='[Value]'. Available functions of installation program are given in Table 5.4-3.

Note. In the help window of installation program there are two examples identical in functional which differ by type of parameter's entering /CMD (Table 5.4-1, parameter's value /CMD).

Table 5.4-2 Possible parameter values /ADD and /REMOVE

Architecture x86	Architecture x64
BaseIntellect	BaseIntellect
IPDriverPack	IPDriverPack
Acrobat	Acrobat
ActiveSync_x86	ActiveSync_amd64
dotnetfx35_x86	dotnetfx35_x86
IPP53_x86	IPP53_x86
JRE_x86	JRE_ amd64
MFC_8_x86	MFC_8_x86
MsXml Redist2005_x86	MsXml Redist2005_x86
SQLServer2008_x86	SQLServer2008_ amd64
WindowsInstaller_x86	WindowsInstaller_ amd64
WindowsPowerShell20_x86	WindowsPowerShell20_x amd64
Guardant_x86	Guardant_ amd64
Dotnet40	Dotnet40

Table 5.4-3 Installation program features

Installation program features	Description
CREATE_QUICKLAUNCH_SHORTCUT='1'	Create quick launch shortcut (is used on default)
CREATE_QUICKLAUNCH_SHORTCUT='0'	Do not create quick launch shortcut
CREATE_DESKTOP_SHORTCUT='1'	Create shortcut on the desktop (is used on default)
CREATE_DESKTOP_SHORTCUT='0'	Do not create shortcut on the desktop
ADDLOCAL='[]'	A list of components for installation. Available values : 1) Utils – the utilities, included in the Intellect PC< are installed 2) AxxonSoft VideoDrivers – drivers by AxxonSof company are installed; 3) Wav – voice notification files are installed. All the components are installed without ADDLOCAL='[]'

	command. Example. ADDLOCAL='Wav' –the Intellect PC and voice notification files are installed.
REMOVE='[]'	A list of components that are not required to be installed. Available values: 1) Utils – the utilities, included in the Intellect PC are not installed; 2) AxxonSoft VideoDrivers – drivers by AxxonSoft company are not installed; 3) Wav – voice notification files are not installed. All the components are installed without REMOVE='[]' command. Example. REMOVE ='Utils' – Intellect PC, divers and voice notification files are installed. The utilities are not installed.
Installation types functions «Server» and «Administrator workstation»:	
INSTALL_AS_SERVICE='1'	Installation as a service
PATHTOKEYFILE='[%SourceDir%\Key]'	Stating the path to the key file
LANGUAGE='[en]'	Select language of the Intellect PC
SQL_AUTHTYPE='Windows'	User authentication method selection « Windows accounts»
SQL_AUTHTYPE='Sql'	User authentication method selection « SQL authentication »
SQL_USERNAME='[sa]'	Setting the user name by method «SQL authentication»
SQL_PASSWORD='[]'	Setting the password by method «SQL authentication»
General functions:	
DB_INTELLECT_NAME='[intellect]'	Stating the main database. Is not actual when SQL_AUTHTYPE='Windows'
DB_TITLES_NAME='[titles]'	Stating the titles database. Is not actual when SQL_AUTHTYPE='Windows'
SQL_INSTANCE='[(local)\SQLEXPRESS]'	Stating the database server. Is not actual when SQL_AUTHTYPE='Windows'

Example of running the Intellect PC installation program in a hidden mode:

setup.exe /quiet /LANG="ru" /INSTALLTYPE="Admin" /REMOVE="Acrobat Guardant_x86" /CMD="CREATE_QUICKLAUNCH_SHORTCUT=\"0\" INSTALL_AS_SERVICE=\"1\" LANGUAGE=\"de\" SQL_AUTHTYPE=\"Sql\" SQL_USERNAME=\"username\" SQL_PASSWORD=\"pass\" SQL_INSTANCE=\"(local)\SQLEXPRESS\" DB_INTELLECT_NAME=\"intellectNew\"

DB_TITLES_NAME=\"titlesNew\" INSTALLDIR=\"%ProgramFiles%\IntellectNew\" REMOVE=\"Wav,Utils\""

In result the installation file setup.exe will be run with following parameters:

1. Installation program will install the Intellect PC in a hidden mode (/quiet);
2. Installation program language– Russian(/LANG="ru");
3. Installation type – «Administrator workstation» (/INSTALLTYPE="Admin");
4. The following components are not installed: Adobe Acrobat, Guardant drivers. (/REMOVE="Acrobat Guardant_x86");
5. Installation is performed with following features (/CMD=):
   - 5.1 Without creating the quick launch shortcut (="CREATE_QUICKLAUNCH_SHORTCUT=\"0\");
   - 5.2 The Intellect PC is installed as a service (INSTALL_AS_SERVICE=\"1\");
   - 5.3 Language of installed Intellect PC is German (LANGUAGE=\"de\");
   - 5.4 Authentication method – «SQL authentication » (SQL_AUTHTYPE=\"Sql\");
   - 5.5 Login – username (SQL_USERNAME=\"username\");
   - 5.6 Password – pass (SQL_PASSWORD=\"pass\");
   - 5.7 Database server – (local)\SQLEXPRESS (SQL_INSTANCE=\"(local)\SQLEXPRESS\");
   - 5.8 Main database– intellectNew (DB_INTELLECT_NAME=\"intellectNew\");
   - 5.9 Titles database – titlesNew (DB_TITLES_NAME=\"titlesNew\");
   - 5.10 Installation path - %ProgramFiles%\IntellectNew (INSTALLDIR=\"%ProgramFiles%\IntellectNew\");
   - 5.11 Utilities and voice notification files are not installed (REMOVE=\"Wav,Utils\").

5.5 Remote installation, removal and update of Intellect software

Remote installation, removal and update of Intellect software are performed using the wmic.exe utility of the command prompt. This utility is a part of Windows OS. Enter «wmic» without quotations in the Windows command prompt to run the utility.

Detailed information about this utility is presented in the http://msdn.microsoft.com reference web-site. At the time of writing this documentation the utility description is located on http://msdn.microsoft.com/ru-ru/library/aa394531.aspx.

Note. The wmic.exe utility works incorrectly with VMWare virtual computers. The utility working with other virtual computers is not guaranteed.

The method of installation, removal and update described in this section is applicable for computers in the domain and for installation on computers outside the domain with some modifications.

If the target computers are out of the domain, then first copy the Intellect distributive to local disks of these computers.

For this use the following script of the command prompt:

xcopy %Path_to_folder_with_distributive% %Network_folder_on_target_PC% /e

Where:

%Path_to_folder_with_distributive% - path to the folder with distributives on the local computer.

%Network_folder_on_target_PC% - path to the folder on computer where the software installation is supposed. Access for writing is to be granted for it.

Attribute /e – causes the copying of all catalogues and their contents, including empty catalogues.

Detailed information about working with the xcopy utility is presented on the Microsoft reference web-site. At the time of writing this documentation the utility description is located on http://technet.microsoft.com/en-gb/library/bb491035.aspx.

The method of installation described in this section allows installing and updating only basic product without prerequisites, drivers and other additional components.

5.5.1 Remote installation of Intellect software

To install the Intellect software on the remote computer, do the following command using the wmic.exe utility:

/NODE:"Computer_name" /USER:"User_name" /PASSWORD:"Password" productcallinstalltrue, "%installer parameters%", "%Path_to_folder_with_distributive%\Product.msi"

Where:

/NODE –the target computer name on which the Intellect software is to be installed.

Note. Instead of NODE list the text file in which names of target computers are listed in column can figure.

/USER and /PASSWORD – login and password of user who has the corresponding rights for the Intellect software installation on the remote computer.

%installer parameters% – installer options. To get the list of the options and detailed information about them run the setup.exe file from the *Intellect* distributive from the command prompt with /? parameter in the «Intellect software installation program in invisible mode» section.

Example of the line with installer parameters:

REBOOT=ReallySuppress LANGUAGE='ru' TRANSFORMS="%Path_to_folder_with_distributive%\Setup\ru\ru.mst"

Where

REBOOT=ReallySuppress – cancel computer reboot when installation finished,

LANGUAGE='ru' – select the language of product,

TRANSFORMS="% Path_to_folder_with_distributive %\Setup\ru\ru.mst" – specify path to the language mst-patch of installer (specify the installer language).

"% Path_to_folder_with_distributive %\Product.msi" – path to the Product.msi installer file which is to be run:

1. If installation is carried out in the domain, then % Path_to_folder_with_distributive %\ is the UNC path to the network folder to which the access for reading and executing have all domain computers.

2. If installation is carried out in the computers out of the domain, then this path is a local path to the folder in which the distributive was copied.

5.5.2 Remote update of Intellect software

For remote update of the Intellect software up to a newer version, install the new version as described in “Remote installation of Intellect software” section and specify the path to Product.msi for a newer version. In this case the old version will be automatically removed with configuration saving and the newer version will be installed.

5.5.3 Remote removal of Intellect software

For remote removal of the Intellect software, do the following command in the wmic.exe utility:

/NODE:"Computer_name" /USER:"User_name" /PASSWORD:"Password" product where name="Product_name" call uninstall

Where Product_name – name under which the Intellect software installed. In Russian version it is usually «Интеллект v.Build_number», in English version – «Intellect v.Build_number».

These names can be found in the catalogue in the HKEY_LOCAL_ MACHINE\Software \Microsoft \Windows \ CurrentVersion \ Uninstall section.

5.6 Configuring Cluster Service for Intellect

Cluster is a group of independent computers operating together as a whole system providing clients with a general set of services. Cluster enables expanding both accessibility of services and scalability and controllability of their OS.

To set up a cluster fot INTELLECT™, stick to the following rules:

1. INTELLECT™ is to be installed on all the computers forming the cluster;

2. INTELLECT™ configuration (paths to the installed INTELLECT™ software and video archive disks) is to be identical on all computers;

3. All computers, forming the cluster, are to be in one network domain;

4. All computers are to run one OS Windows Server.

Note. Nets organization and setting up order are given in the Windows Server reference manual (see http://technet.microsoft.com/en-us/library/bb625087.aspx).

6 Configuring system startup and shutdown

6.1 Configuration of Intellect™ software startup

6.1.1 Possible options for Intellect™ software startup

Intellect™ software is launched in one of the following ways:

1. Manual launch;
2. launch from Windows OS Start menu;
3. launch from Windows OS command prompt;
4. automatic launch;
5. launch from Startup of the Windows OS;
6. launch with the PC switched on, without starting Windows OS;

Manual launch of Intellect™ software does not require additional settings. Automatic launch of Intellect™ software using one of the above methods, requires certain additional Windows OS settings. Windows OS settings are given in the corresponding sections of this chapter.

If the video surveillance system uses pre-defined rights and authorizations for the users, Intellect™ software launch starts with user authorization. Depending on the Intellect™ system settings, the following user authorization options are available:

1. By entering the login and password. In this case, when the system is launched, the user will be able to access only those functions of Intellect™ system, which comply with his rights and authorities.
2. Without entering any login and password. In this case Intellect™ system makes available only those functions, which comply with the rights and authorities of the default user.

By default, Intellect™ system authorizes a user through a password. To launch Intellect™ software without a password, an Operator should identify a user, whose rights and authorities will be used to launch the Intellect™ system. Procedures for identification of the default user are described in the Rights and Authorities Administration chapter.

Note. If the Intellect software is installed as a service, and the user rights and privileges are not set, password authorization is required upon entering the Intellect. Otherwise the Intellect modules and services will not be launched.

6.1.2 Configuring Intellect™ system automatic startup from Windows OS Startup

Intellect™ software can be launched automatically from the Startup function, as soon as Windows OS services and shell start downloading.

To configure the Intellect™ system launch from the Startup function, the Intellect™ system icon should be placed in the Startup group of the Start menu (Figure 6.1-1).

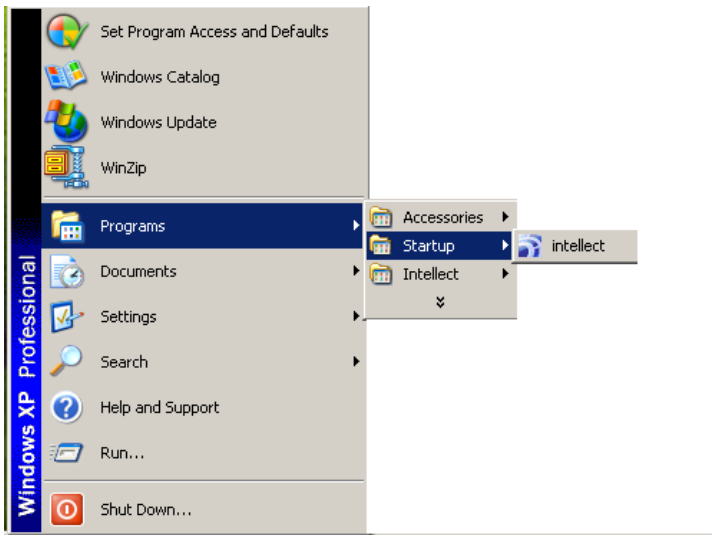


Figure 6.1-1. Example of displaying the Intellect™ software launch file icon in the Startup group of the Start menu

6.1.3 Configuring Intellect™ system automatic startup bypassing standard Windows OS

Automatic start of Intellect™ system, instead of starting the standard Windows OS shell is used in cases, when access to the basic PCs of the video surveillance system need to be restricted: to prevent start of various applications, file copying and deletion, operations with Windows OS and other non-standard PC operations.

Attention! Currently it is impossible to start Intellect™ system bypassing standard Windows OS in 64-bit OS because of architecture restrictions.

In cases where Startup is set for launching instead of Windows OS, the Intellect™ system will start downloading after Windows OS, instead of Explorer. This makes start of various applications installed in a PC, and operations with the program dialog boxes, inaccessible for a user.

Note. Disable user account control (UAC) in the system settings for Intellect™ system automatic startup bypassing standard Windows OS Vista/2008/7.

To set up Intellect™ software automatic startup bypassing the standard Windows OS (Explorer), the following parameters of the Windows OS catalog are to be modified:

Catalog section: HKEY_LOCAL_ MACHINE\SOFTWARE\Microsoft\ WindowsNT\CurrentVersion\.

Folder: Winlogon.

Parameter: Shell.

Default parameter: Explorer.exe.

Required parameter: entire path to the Intellect™ software startup file.

For instance, to set up Intellect™ system automatic start for configuration of the Server, the “Shell” parameter is to be identified as: “C:\ Program Files\Intellect\intellect.exe”.

To set up Intellect™ system automatic start for configuration of the Remote Monitoring Workstation, the “Shell” parameter is to be identified as: “C:\Program Files\Intellect\slave.exe”.

If the rules of safety of distributed network, a part of which the configured PC is, require that the PC be authorized in the domain, Windows OS may be configured to start without requesting the name (login) and password of the user, who is registered in the domain of the distributed network. This procedure requires assigning a name (login) and a password of the user, which will be used for the PC authorization in the domain by default. To set up Windows OS start without user name (login) and password request, change the following parameters of the Windows OS catalog:

Catalog section: HKEY_LOCAL_ MACHINE\SOFTWARE\Microsoft\ WindowsNT\CurrentVersion\.

Folder: Winlogon.

Parameter 1: AutoAdminLogon.

Default parameter 1: 0.

Required parameter 1: 1.

Parameter 2: DefaultUserName.

Default parameter 2: one of the registered user names (logins).

Required parameter 2: user name (login) for authorization in the domain.

Parameter 3: DefaultPassword.

Default parameter 3: parameter does not exist (is to be created).

Required parameter 3: user name for authorization in the domain.

Catalog parameters are edited either using the Tweaki.exe utility (recommended), or manually. Setup of Intellect™ system automatic startup with the Tweaki.exe utility is shown in Attachment No. 2. Basic information required for manual system catalog editing is outlined in the corresponding attachment.

6.2 Configuring Intellect™ system shutdown

The Intellect™ system is always closed manually. If the video surveillance system uses pre-defined rights and authorizations for the users, Intellect™ software should be closed by entering a user password.

Intellect™ system may be closed using the following options:

1. using an authorized user login and password
2. using an administrator password.
3. using an administrator password entered in the displayed administrator password request window.

Intellect™ system closure is configured at the stage of administration of user rights and authorizations, and is described in the corresponding sections of the Guide.

7 Working with the “System settings” dialog box

7.1 General information about the “System settings” dialog box

The Intellect™ system is configured using the System settings dialog box.

The System settings dialog box is designed to configure and set up the digital components of the video surveillance system.

The System settings dialog box helps to solve the following key objectives:

a. creation and configuration of the system objects corresponding to the function modules (groups) of the Intellect™ system;

b. configuration of video surveillance and audio monitoring functions;

c. user interface configuration;

d. administration of user rights and authorizations.

The interface of the System settings dialog box is described in Attachment No. 1.

7.2 Startup and shutdown of the “System settings” dialog box

7.2.1 Startup of the “System settings” dialog box

To start up the System settings dialog box follow the next steps:

a. Display the main control panel on the monitor. For this purpose, drag the mouse cursor to the upper left corner of the monitor (Figure 7.2-1).

Figure 7.2-1. Main Control Panel

b. Click Run (Figure 7.2-2, 1) and then select System settings in the appearing dropdown menu (Figure 7.2-2, 2).

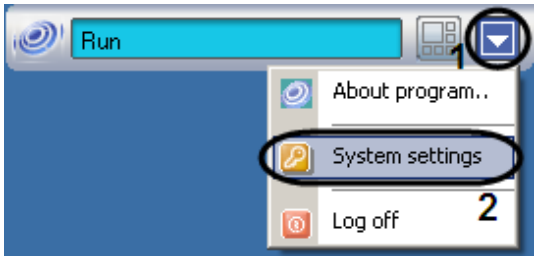


Figure 7.2-2. System settings dialog box startup

Now you have the System settings dialog box displayed on the monitor (Figure 7.2-3).

Figure 7.2-3. System settings dialog box

Note. The interface of the INTELLECT™ Main Control Panel is given in Attachment No. 1.

Note! While changing the screen resolution it is necessary to restart the Intellect PC for dialog windows correct displaying.

7.2.2 Shutdown of the "System settings" dialog box

To exit the System settings dialog box, select Run in the Main Control Panel (Figure 7.2-4, 1) and then System settings in the appearing dropdown menu, which will already be checked (Figure 7.2-4, 2).

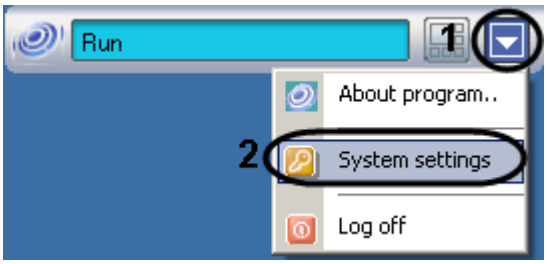


Figure 7.2-4. Selecting the System settings from the menu again

The System settings dialog box will be closed after repeated selection of the System settings in the menu.

7.3 Setting procedure for system objects

Configuration of Intellect™ system objects generally includes the following stages:

1. Select an object. To select an object, do the following:

   b. open the objects tree tab (Figure 7.3-1);

Figure 7.3-1 Selecting an objects tree tab

   c. select an object in the objects tree (Figure 7.3-2).

Figure 7.3-2 Selecting an object in the objects tree

2. Create an object. To create an object, do the following:

   a. open the objects tree (Figure 7.3-3);

Figure 7.3-3 Selecting an objects tree tab

b. select a parent object in the objects tree, which should be used as a basis for the creation of a daughter object (Figure 7.3-4);

Figure 7.3-4 Selecting an object

c. display the context menu by clicking the right mouse button and select Create object (Figure 7.3-5);

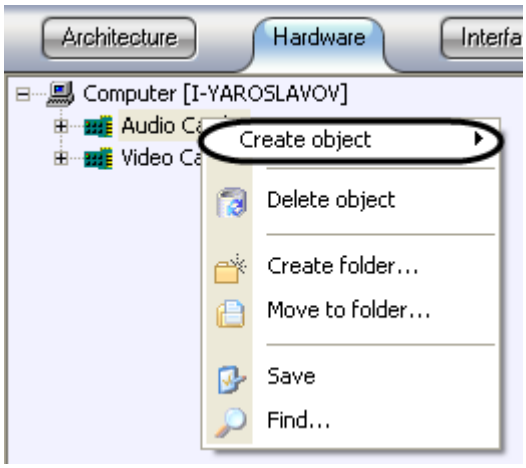


Figure 7.3-5 Selecting Create object in the Main functions menu

d. select the type of a new object using the corresponding second level menu (Figure 7.3-6);

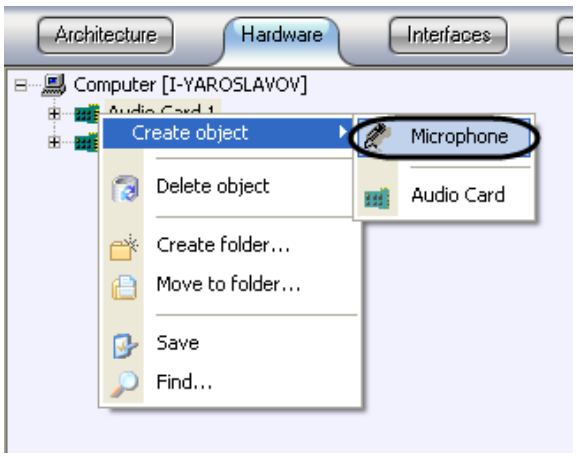


Figure 7.3-6 Selecting Microphone as a new object to create

As a result of the above operations, the object settings panel will display an identification panel for the Microphone, a new object (Figure 7.3-7).

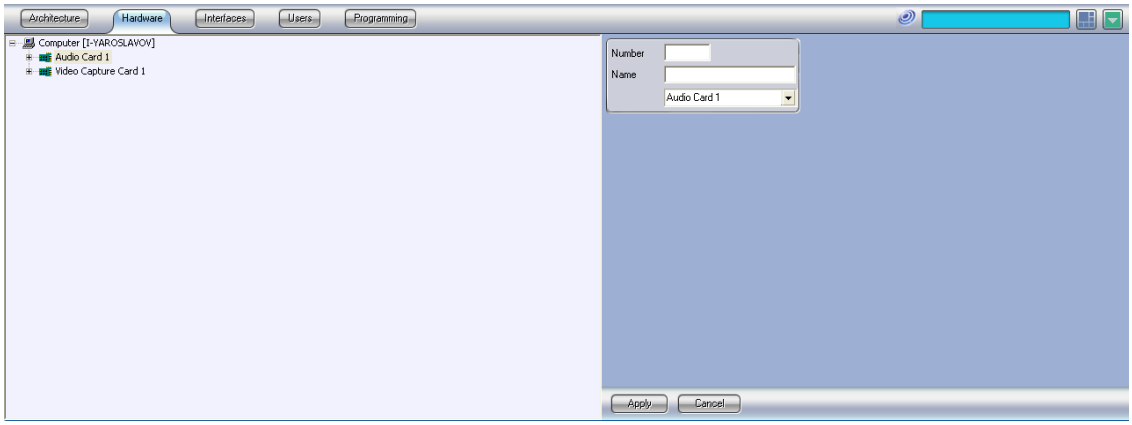


Figure 7.3-7 An identification panel

e. specify a unique identification number in the Number field (Figure 7.3-8, 1) and the name of a new object, Microphone, in the field Name (Figure 7.3-8, 2).

Figure 7.3-8 Specifying identification data for the Microphone object

f. click the Apply button to complete the object creation process (Figure 7.3-9);

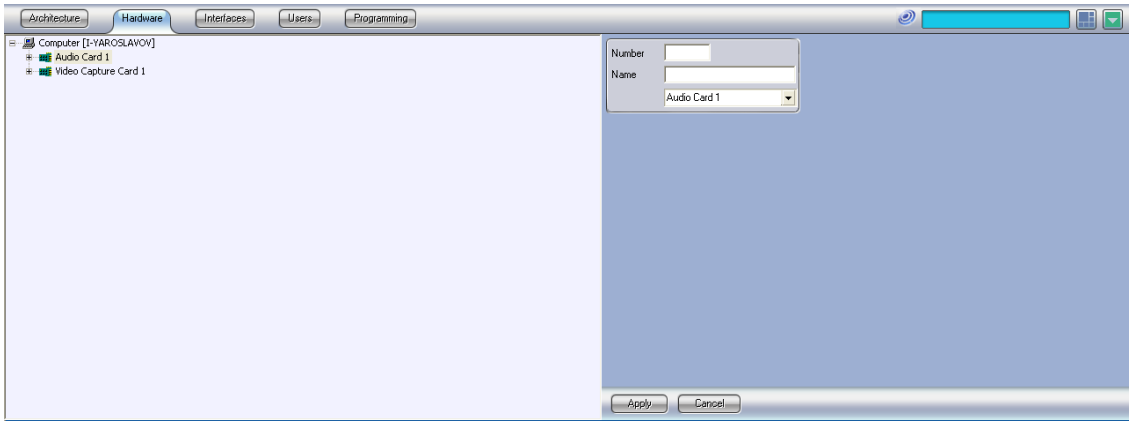


Figure 7.3-9 The Apply button

As a result, a new daughter object will be created based on the selected parent system object (Figure 7.3-10).

Figure 7.3-10 Result of object creation

3. Editing. Editing means any modification of the object settings, i.e., changes in the object parameter values. The tools panel of the system object is the key configuration instrument of the object setup.

To edit an object, do the following:

a. select a system object the parameters of which are to be modified (Figure 7.3-11, 1);

b. modify the object parameters using the tools panel of the object (Figure 7.3-11, 2);

c. click the “Apply” button to save all changes (Figure 7.3-11, 3).

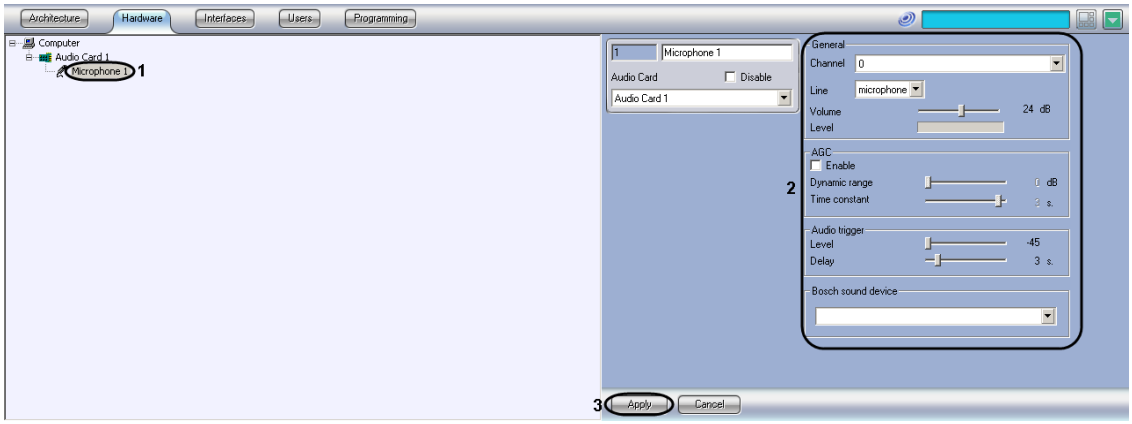


Figure 7.3-11 Object editing steps

4. Deleting. To delete an object, do the following:

a. select an object for deletion (Figure 7.3-12, 1) and right-click to display the context menu on the monitor (Figure 7.3-12, 2);

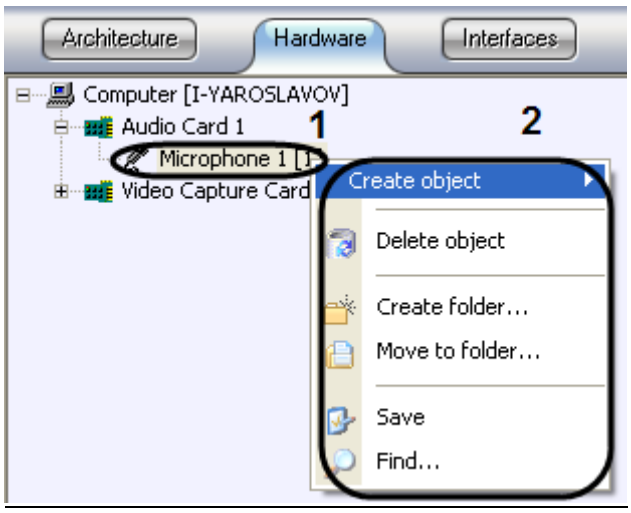


Figure 7.3-12 Selecting an object to delete

b. select the “Delete object” item in the menu (Figure 7.3-13);

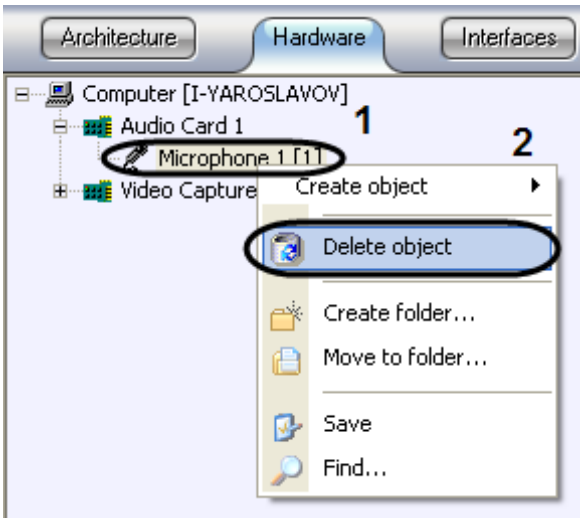


Figure 7.3-13 Selecting the “Delete object” item in the menu

Now a dialog box requesting confirmation of the object deletion will appear on the monitor.

c. Click the “OK” button (Figure 7.3-14).

Figure 7.3-14 Confirmation for the object deletion

Figure 7.3-15 shows the result of an object deletion (objects tree contents after the object has been deleted). The Microphone object, which has been deleted is no longer displayed in the objects tree.

Figure 7.3-15 Deleting object

5. Changing the parent object. When changing the parent object you can move created object in the objects tree of INTELLECT™ without losing settings.

To change the parent object, do the following:

a. Select the system object the position of which is to be changed in the objects tree (Figure 7.3-16).

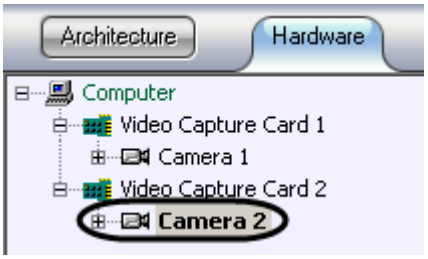


Figure 7.3-16 Selecting an object to be moved

b. Select a new parent object in the drop-down list on the settings panel of the object (Figure 7.3-17). The name of the drop-down list is the same as the type of the parent object.

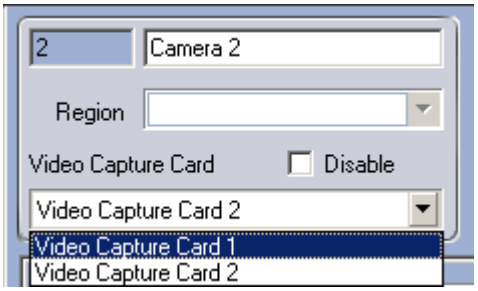


Figure 7.3-17 Selecting a new parent object

Note 1. If the object is moved to another computer, INTELLECT™ is to be restarted on both computers – on one the object is moved to and on another the object is moved from.

As a result the object is displayed in the objects tree of the selected parent object (Figure 7.3-18).

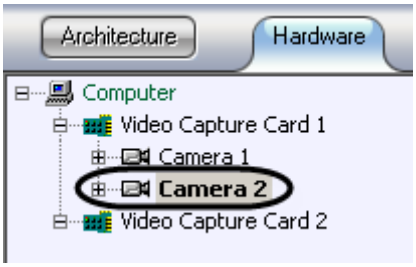


Figure 7.3-18 The result of changing the parent object

8 INTELLECT™ software configuration and setup

8.1 Setting up servers and remote workstations

8.1.1 Server settings

8.1.1.1 *Server hardware and software platform*

The video surveillance system based on INTELLECT™ software uses Servers to receive and process video signals from analog and IP surveillance cameras. The Server hardware and software platform generally contains:

1. A personal computer that meets the requirements of INTELLECT™ software.
2. Embedded video capture cards or Guardant dongle that enables receiving video from IP devices only.
3. INTELLECT™ software with the "Server" configuration (see "Installation of INTELLECT™ software as a Server" section).
4. The license key with rights to use video capture cards or IP devices along with INTELLECT™ software.
5. MS SQL server software for INTELLECT™ system database control.

Attention! The same set of program modules specified in the intellect.sec activation key is to be set for proper operation of the system on all Servers (see "Program modules" section).

Attention! Proper operation of INTELLECT™ is possible only if the user has OS Windows administrator rights.

8.1.1.2 *Server settings*

The main task of the Server is receiving and processing of video signals. It provides several options: audio signal receiving and processing, PTZ control, security services, user's auto functions (macros), etc. Server setup sequence depends on its hardware configuration and the options to be realized.

To configure the Server, follow the steps:

1. Sync the Server database with other Servers and Remote Admin Workstation databases (for example, via the centralized database of the administering Server, see "INTELLECT™ software database management" section).
2. Start the INTELLECT™ program on the Server.
3. With remote Server setup (e.g., from the administering Server), register the "Computer" object, which corresponds to the Server, and set the interaction parameters with the Servers, Remote Admin Workstations, Remote Monitoring Workstations of the distributed video surveillance system (see "Configuring the INTELLECT™software system with distributed architecture of the digital video surveillance system" section). While local setting up the Server the relevant "Computer" object is created automatically in the "Hardware" tab during the first startup.
4. Configure the Server video subsystem (see "Configuring video subsystem" section).

5. Configure the Server audio subsystem if there are microphones (see “Configuring audio subsystem” section).

6. If there are sensors and relays, create and configure the relevant objects (see “Installing and gonfiguring security system components guide”.

7. Configure backup video archiving on the Server, if necessary (see “Configuring backup archiving” section).

8. Configure the hardware performance tester and restart service, enable and configure the notification services (see “Notification services” and “Configuring the System restart service” sections).

9. If auto options are to be used, create the macros and time zones (see “Creating and using macros” and “Creating and using time zones” sections).

10. If the Server is to be used as the Operator’s workstation, configure the user interface: video surveillance monitor, audio player, map etc. (see “Configuring the user interface” section).

11. Assign the users rights to work with Server system objects (see “Rights administration” section).

12. Set up logging of events registered for the Server system objects (see “Configuring the Event Viewer”).

8.1.2 Configuring a Remote Admin Workstation

8.1.2.1 *Remote Admin Workstation hardware and program platform*

The video surveillance system based on INTELLECT™ software uses Remote Admin Workstations for remote administering of INTELLECT™ software installed on Servers and other Remote Admin Workstations of the distributed video surveillance system, as well as the specialized platforms: videogate, remote archive server, remote web server etc. The Remote Admin Workstation can perform several of these functions or one of them.

Note. Audio and video from IP devices can be processed at Remote Admin Workstations.

Remote Admin Workstation hardware and software platform contains:

1. Personal computer that meets the requirements of INTELLECT™ software.

2. Guardant dongle.

3. INTELLECT™ software with the “Remote Admin Workstation” configuration (see “Installation of INTELLECT™ software as an Administrator’s workplace” section).
4. License activation key.

5. MS SQL server software to control the Intellect™ database.

8.1.2.2 *Remote Admin Workstation configuration*

In a simple case a Remote Admin Workstation may be used for remote administering only.

To configure a Remote Admin Workstation, follow the steps:

1. Sync the Remote Admin Workstation database with other Servers and Remote Admin Workstation databases (for example, via the centralized database of the administering Server, see “INTELLECT™ software database management” section).

2. Start the INTELLECT™ program on Remote Admin Workstation.

3. With remote setup (e.g., from the administering Server), register the “Computer” object, which corresponds to the Remote Admin Workstation, and set the interaction parameters with the Servers, Remote Admin Workstations, Remote Monitoring Workstations of the distributed video surveillance system (see “Configuring the INTELLECT™software system with distributed architecture of the digital video surveillance system” section). While local setting up the Remote Admin Workstation the relevant “Computer” object is created automatically in the “Hardware” tab during the first startup.

4. Configure the hardware performance tester and restart service (see “Configuring the System restart service” section).

5. If auto options are to be used, create the macros and time zones, enable and configure the notification services (see “Creating and using macros”, “Creating and using time zones” and “Notification services” sections).

6. If the Remote Admin Workstation is to be used as the Operator’s workstation, configure the user interface: video surveillance monitor, audio player, map etc. (see “Configuring the user interface” section).

7. Assign the users rights to work with Remote Admin Workstation system objects (see “Rights administration” section).

8. Set up logging of events registered for the Remote Admin Workstation system objects (see “Configuring the Event Viewer”).

8.1.2.3 *Videogate configuration*

Videogates are used in large-scale distributed video surveillance systems for video signal routing among the Servers, Remote Admin Workstations and Remote Monitoring Workstations that are in different subnets.

To configure the gateway, do the following:

1. Sync the videogate database with the databases of other Servers and Remote Admin Workstations (for example, via the centralized database of the administering Server, see “INTELLECT™ software database management” section).

2. Start the INTELLECT™ program on the videogate.

3. With remote setup of the videogate (e.g., from the administering Server), register the “Computer” object, corresponding to the Remote Admin Workstation, and set the parameters of interaction with Servers, Remote Admin Workstations and Remote Monitoring Workstations of the distributed video surveillance system (see “Configuring the INTELLECT™software system with distributed architecture of the digital video surveillance

system” section). While local setup of the videogate the relevant “Computer” object is created automatically in the “Hardware” tab during the first startup.

4. Enable and configure the “Videogate” module (see “Configuring the Videogate module” section).

5. Configure the hardware performance tester and the restart service (see “Configuring the System restart service” section).

6. If auto options are to be used, create the macros and time zones, enable and configure the notification services (see “Creating and using macros”, “Creating and using time zones” and “Notification services” sections).

7. Assign the rights to users in order to work with the “Videogate” system objects (see “Rights administration” section).

8. Set up logging of events registered for the “Videogate” system objects (see “Configuring the Event Viewer”).

8.1.2.4 *Configuring remote archive server*

INTELLECT™ software has a backup archiving option for video records from the video surveillance Servers. As the archiving process requires great computer resources, archiving is not to be performed on the Servers directly. It is strongly recommended to choose the individual Remote Admin Workstation as the archiving Server.

To configure the archiving server, do the following:

1. Sync the archive server database with the databases of other Servers and Remote Admin Workstations (for example, via the centralized database of the administering Server, see “INTELLECT™ software database management” section).

2. Start the INTELLECT™ program on the archive server.

3. With remote setup of the archive server (e.g., from the administering Server), register the “Computer” object, corresponding to the archive server, and set the parameters of interaction with the Servers, Remote Admin Workstations and Remote Monitoring Workstations of the distributed video surveillance system (see “Configuring the INTELLECT™software system with distributed architecture of the digital video surveillance system” section). While local setup of the archive server the relevant “Computer” object is created automatically in the “Hardware” tab during the first startup.

4. Enable and configure the “Active archiving” module (see “Configuring backup archiving” section).

5. Configure the hardware performance tester and the restart service (see “Configuring the System restart service” section).

6. If auto options are to be used, create the macros and time zones, enable and configure the notification services (see “Creating and using macros”, “Creating and using time zones” and “Notification services” sections).

7. Assign the rights to users in order to work with the “Videogate” system objects (see “Rights administration” section).

8. Set up logging of events registered for the “Videogate” system objects (see “Configuring the Event Viewer”).

8.1.2.5 *Configuring remote Web-server*

The video surveillance system based on INTELLECT™ software uses the remote web-server to transmit video signals and to receive Operator’s commands via the Internet. It is recommended for large-scale systems with a distributed structure to use the remote web server on the individual Remote Admin Workstation instead of a local one on one of Servers.

Note. The remote web-server should be allocated in the individual subnet and on the outer IP address (for its operation as an Internet HTTP server). Therefore the web server should be set to receive video signals via the videogate. The videogate can be the remote one (remote computer with installed and configured “Videogate” module) or the local one (“Videogate” module is installed and configured on the same computer with the web-server).

To configure the remote web server, follow the steps:

1. Sync the web-server database with other Servers and Remote Admin Workstation databases (for example, via the centralized database of the administering Server, see “INTELLECT™ software database management” section).

2. Start the INTELLECT™ program on the web-server.

3. With web-server remote setup (e.g., from the administering Server), register the “Computer” object, which corresponds to the web-server, and set the interaction parameters with the Servers, Remote Admin Workstations, Remote Monitoring Workstations of the distributed video surveillance system (see “Configuring the INTELLECT™software system with distributed architecture of the digital video surveillance system” section). While local setting up the web-server the relevant “Computer” object is created automatically in the “Hardware” tab during the first startup.

4. Enable and configure the “Web-server” module (see “Configuring the Web-server module” section).

5. If no remote videogate is used, then enable nad configure the “Videogate” module (see “Configuring the Videogate module” section).

6. Configure the hardware performance tester and restart service (see “Configuring the System restart service” section).

7. If auto options are to be used, create the macros and time zones, enable and configure the notification services (see “Creating and using macros”, “Creating and using time zones” and “Notification services” sections).

8. Assign the users rights to work with the Web-server system objects (see “Rights administration” section).

9. Set up logging of events registered for the Web-server system objects (see “Configuring the Event Viewer”).

8.1.3 OS settings for correct operation of Remote Admin Workstation or Server

The user who does not belong to the “Administrators” group can work with Intellect software correctly if the following requirements are fulfilled:

1. UAC (Users account control) is disabled for Windows 7 OS.

   UAC can be disabled on the Control panel by Administrator of computer.

2. User is to have the free access to the ITV thread in the registry HKEY_LOCAL_MACHINE\Software\ITV section for 32-bit system (HKEY_LOCAL_MACHINE \Software\Wow6432Node\ITV for 64-bit system).

3. User is to have the free access to the folder in which the Intellect software is installed.

4. User is to have the free access to the VIDEO and AUDIO folders on all logical disks in the system.

5. If the HKEY_LOCAL_MACHINE\Software\ITV\Intellect\BackupFolder key is in the registry (HKEY_LOCAL_MACHINE \Software\Wow6432Node\ITV\Intellect\BackupFolder for 64-bits system), the free access to the BackupFolder folder is to be granted to user.

6. The free access to the following folders is needed if there is no the BackupFolder key:

   a) C:\ProgramData\ - for Windows 7 OS;
   b) C:\ Documents and Settings\All Users\Application Data\ - for Windows XP OS.

7. The user is to have SeCreateGlobalPrivilege rights. Open the “Local security policy” tool (Control panel -> Administration), select “Local policies” -> “Assign User rights” -> “Global objects creation” and add the existing user to the folder.

8.1.4 Configuring Remote Monitoring Workstations (RMW)

8.1.4.1 *Remote Monitoring Workstation hardware and program platform*

Remote Monitoring Workstations are used as Operator’s workstations and provide remote video surveillance and audio monitoring: video and audio monitoring, sensor status control, cameras and PTZ units control and so on.

At a Remote Monitoring Workstation administering options (one cannot create, delete and configure objects in the system as well as register users and administer their rights) as well as local database (database on the remote computer with installed INTELLECT™ system is in use) are inaccessible.

The Remote Monitoring Workstation hardware and program platform generally contains:

1. A personal computer, that meets the requirements of INTELLECT™ software.

2. The Intellect™ software with the “Workplace for monitoring” configuration (see “Installation of INTELLECT™ software to the Workplace for monitoring” section).

8.1.4.2 *Configuring Remote Monitoring Workstation*

The basic function of the remote Monitoring Workstation is receiving video and audio signals from video surveillance system Servers, video and audio monitoring, cameras, microphones and PTZ units control via various components of the Operator interface (video surveillance monitor, audio player, map, PTZ window etc.).

To configure the Remote Monitoring Workstation, follow the steps:

1. Register the "Computer" object, which corresponds to the Remote Monitoring Workstation, and set the interaction parameters with the Servers, Remote Admin Workstations, Remote Monitoring Workstations of the distributed video surveillance system on the administering server (see "Configuring the INTELLECT™software system with distributed architecture of the digital video surveillance system" section).

2. Configure the User interface by creating screen(s) and setting up the Remote Monitoring Workstation access to them. The screen(s) should contain the user interface components: video surveillance monitor, audio player, map etc. (see "Configuring the user interface" section).

8.1.4.3 *OS settings for correct operation of Remote Monitoring Workstation*

Fulfill the following conditions to work correctly with INTELLECT™ software which is installed as Remote Monitoring Workstation by the user who does not belong to the "Administrators" group:

1. User is to have the free access to the ITV thread in the registry HKEY_LOCAL_MACHINE\Software\ITV section for 32-bit system (HKEY_LOCAL_MACHINE \Software\Wow6432Node\ITV for 64-bit system).

2. User is to have the free access to the folder in which INTELLECT™ software is installed.

8.2 Configuring the INTELLECT™software system with distributed architecture of the digital video surveillance system

8.2.1 General principles of designing the digital video surveillance system with distributed architecture

The digital video surveillance system generally contains:

1. Servers - hardware and program platforms used to receive and process video and audio signals from analog and IP surveillance cameras.

2. Remote Admin Workstations - hardware and program platforms used for remote administering of the video surveillance system and as the specialized platforms for: video gateway, remote archive server, remote web server etc.

3. Remote Monitoring Workstation - hardware and program platforms used as Operator's workstations to realize remote video surveillance and audio monitoring:

Servers, Remote Admin Workstations and Remote Monitoring Workstations are integrated into the video surveillance system, fitting the system set of functions, safety requirements, specific features of the guarded location etc. The video surveillance system may include several subnets, that interact via selected (node) servers and Remote Admin Workstations. The distributed architecture of the

video surveillance system provides synchro data exchange (events, commands, setting parameters, etc) among its components.

8.2.2 Configuring the distributed system

To configure the distributed video surveillance system, follow the steps:

1. Design the surveillance system structure project, if it has not been developed before.
2. Set up database synchronization for all servers and Remote Admin Workstations in compliance with the system structure project.
3. Register the servers, Remote Admin Workstations and Remote Monitoring Workstations from the same subnet on the administering server of this subnet (or at node Remote Admin Workstations and servers, that optionally realize the administering server function, if there are any subnets). If any selected subnets are present in the system, register the servers and Remote Admin Workstations that provide interaction of subnets.
4. Set up interaction of servers, Remote Admin Workstation and Remote Monitoring Workstations in compliance with the system structure project.

8.2.3 Selecting the structure of the distributed system

While designing the distributed video surveillance system structure you should take into account:

1. The number of servers, Remote Admin Workstations and Remote Monitoring Workstations to be installed on the guarded location.
2. The distances between video surveillance system components and their comminication channels capacity. For example, servers are divided by long stretches of land, and the Remote Admin Workstation and Remote Monitoring Workstation are within the same room – the central surveillance station. Given the engineering constraints, servers will have the low capacity channels, and the Remote Admin Workstation and Remote Monitoring Workstation will have high capacity channels. Then Remote Admin Workstation and Remote Monitoring Workstation will interact with the servers via the gateway only.
3. The system security requirements, for example, to prevent unauthorized administering, subnets with servers and Remote Admin Workstations and subnets with Remote Monitoring Workstations, are separated. Subnets interact via the gateway only.

An example of organization of the distributed video surveillance system is shown in Figure 8.2-1.

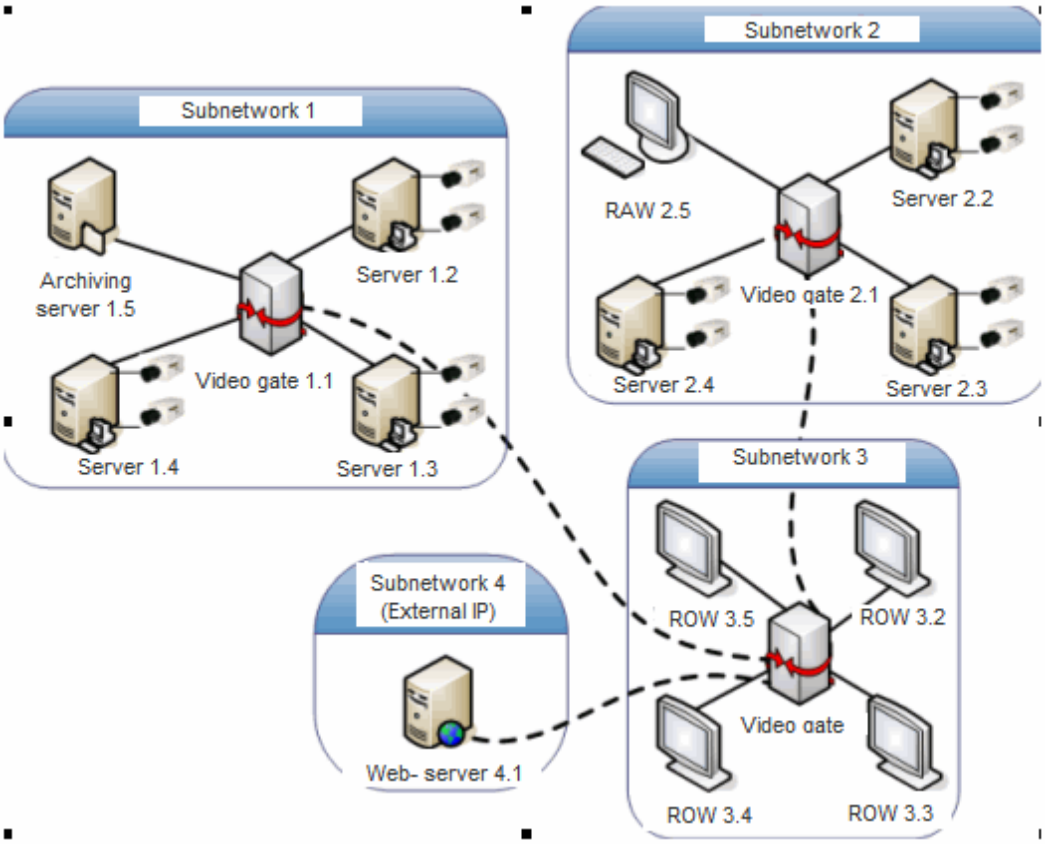


Figure 8.2-1. Example of a distributed video surveillance system

8.2.4 Synchronizing the databases of servers and remote workstations

INTELLECT™ software servers and Remote Admin Workstations configuration parameters are stored in the distributed database. Each server and Remote Admin Workstation store local copies of the distributed database. Local database copies should be synced to provide distributed operation of INTELLECT™ software and data replication (synchro alteration of local database copies).

Synchronizing of servers and Remote Admin Workstations should comply with the video surveillance system project design (see the previous Section).

In the simplest case, database synchronization is performed for all servers and Remote Admin Workstations with the database of the administering server (Figure 8.2-2).

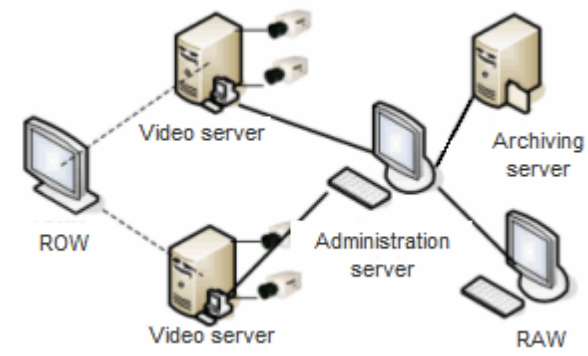


Figure 8.2-2. The simplest database synchronization

Note. The Remote Monitoring Workstation has no database; therefore the administering server database should not be synced with it.

If any selected subnets are present in the system, the servers and Remote Admin Workstation databases should be synced with the node server or Remote Admin Workstation database (see, for example, Figure 8.2-3).

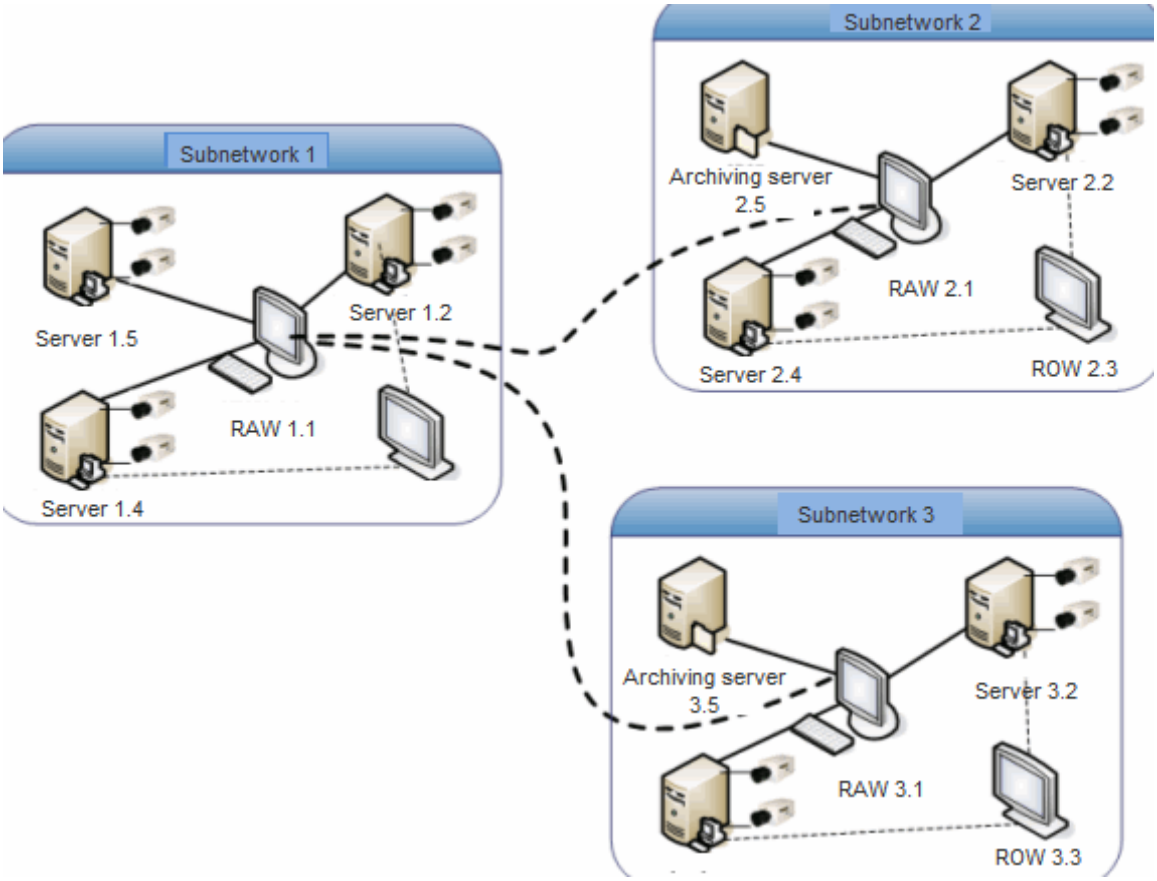


Figure 8.2-3. Example of a distributed video surveillance system with selected subnets

For example, to set up database synchronization for the servers of the distributed system shown in Figure 8.2-3, you need:

1. to sync the databases of 1.2, 1.4, 1.5 servers with 1.1 Remote Admin Workstation database;
2. to sync the databases of 2.2, 2.4 servers and 2.5 archiving server with 2.1 Remote Admin Workstation database;
3. to sync databases of 3.2, 3.4 servers and 3.5 archiving server with 3.1 Remote Admin Workstation database;
4. to sync databases of 3.1 and 2.1 and Remote Admin Workstations with 1.1 Remote Admin Workstation database;

For detailed instructions on database synchronization setup see “Database administering”.

8.2.5 Registration of servers and remote workstations on the administering server

Administering the servers and Remote Admin Workstations is usually performed from one selected Workstation – the administering server. It is recommended to have one administering server for any single selected video surveillance subnet (e.g. for security reasons).

All servers, Remote Admin Workstations and Remote Monitoring Workstations should be registered on the administering server.

To register the servers and remote Workstations on the administering server, follow the procedure:

1. Make sure that the synchronization of all servers and Remote Admin Workstations databases with the administering server database is set properly (see the previous section).

2. Check the servers, Remote Admin Workstations and Remote Monitoring Workstations connections to the subnet.

3. Launch the INTELLECT™ program on the administration server.

4. Register the “Computer” system object on the administering server for each server. Remote Admin Workstation or Remote Monitoring Workstation. For that follow the steps:

   a. Go to the «Hardware” tab in the “System Settings” dialog box (Figure 8.2-4).

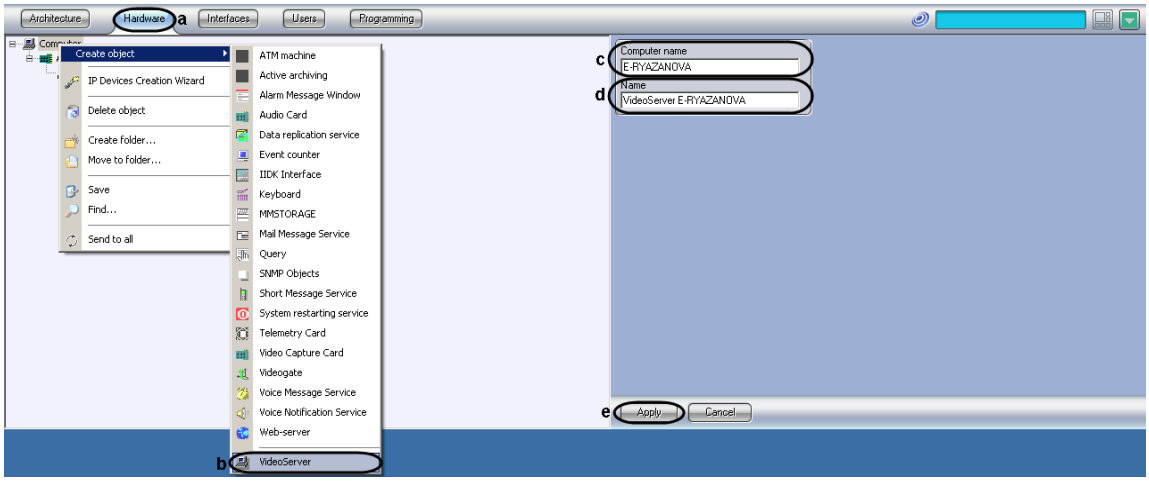


Figure 8.2-4. Server, Remote Admin Workstation or Remote Monitoring Workstation registration

   b. Create a “Computer” object on the base of the “Computer” object.

   c. Enter the network name of the server, Remote Admin Workstation or Remote Monitoring Workstation in the “Computer name” field.

   d. Enter the name, used for the computer by the INTELLECT™ software, in the “Name” field.

   e. Click the “Apply” button.

5. Repeat the 4th step for each server, Remote Admin Workstation and Remote Monitoring Workstation of the distributed video surveillance system (or its subnet).

6. Start the INTELLECT™ program on all operator and administration workstations and servers.

7. If communication exists between the administering server and the server, Remote Admin Workstation or Remote Monitoring Workstation, the “Computer” object will be assigned the «» icon on the objects tree.

8. If no connection exists between the administering server and the server, Remote Admin Workstation or Remote Monitoring Workstation, the “Computer” object will be assigned the «×» icon on the objects tree. The most probable causes of diskonnection are INTELLECT™ software failure on the server, Remote Admin Workstation or Remote Monitoring Workstation; network diskonnection, faulty database synchronization, wrong network name. Detect and remove the cause of diskonnection before continuing to configure the system, then try to connect the administering server to the server, Remote Admin Workstation or Remote Monitoring Workstation again.

To connect to the the server, Remote Admin Workstation or Remote Monitoring Workstation from the remote administering server without restarting INTELLECT™ software, right click the relevant “Computer” object to display the context menu and select “Reconnect” (Figure 8.2-5).

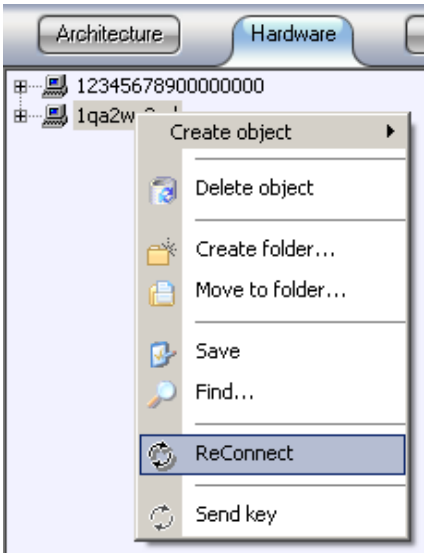


Figure 8.2-5. Forced Server, Remote Admin Workstation or Remote Monitoring Workstation connection

Registration of servers, Remote Admin Workstations and Remote Monitoring Workstations on the administering server is completed.

8.2.6 Configuring the interaction of distributed system components

To provide distributed system operation, Servers, Remote Admin Workstations and Remote Monitoring Workstations interaction are to be configured. Servers, Remote Admin Workstations and Remote Monitoring Workstations interaction means database replication (for Servers and Remote Admin Workstations only) and event exchange. For each Server, Remote Admin Workstation and Remote Monitoring Workstation lists are to be composed of interacting and non-interacting Servers, Remote Admin Workstations and Remote Monitoring Workstations.

Configuration of the surveillance system interaction is performed from the administering server or, in the presence of dedicated subnets, from the node server or Remote Admin Workstation.

To configure the interaction between the distributed system components, do the following:

1. Go to the “Architecture” tab in the “System settings” dialog box (Figure 8.2-6).

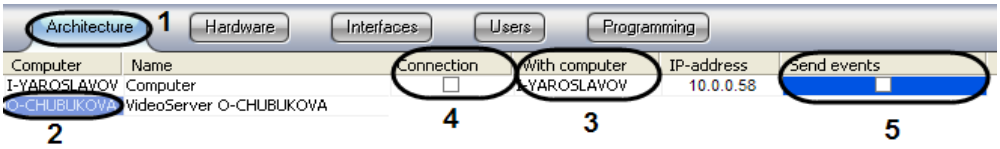


Figure 8.2-6 Configuring the distributed system components interaction

2. The “Computer” column displays the list of names of Servers, Remote Admin Workstations and Remote Monitoring Workstations registered in the “Hardware” tab. In the “Computer” column left click the name of the Server, Remote Admin Workstation or Remote Monitoring Workstation to change its interaction settings. Text in the selected cell becomes gray.

3. The “With computer” column displays the list of those Servers, Remote Admin Workstations and Remote Monitoring Workstations, with which the selected Server, Remote Admin Workstation or Remote Monitoring Workstation is able to interact.

4. If the box next the “Connection” column and the row, corresponding to the Server, Remote Admin Workstation or Remote Monitoring Workstation is checked, then the data on system configuration of the selected Server, Remote Admin Workstation or Remote Monitoring Workstation with any Server, Remote Admin Workstation or Remote Monitoring Workstation is exchanged. To forbid exchange of configuration data with the selected Server, Remote Admin Workstation or Remote Monitoring Workstation, set the checkbox in the “Connection” column unchecked.

Note. Server or Remote Admin Workstation always exchange configuration parameters with Remote Monitoring Workstation, even if the “Connection” checkbox is unchecked for this Remote Monitoring Workstation.

5. If the box next to the “Send events” column and the row, corresponding to the Server or Remote Admin Workstation is checked, then events are exchanged between selected Server or Remote Admin Workstation and any Server or Remote Admin Workstation. To forbid event exchange with the selected Server, Remote Admin Workstation or Remote Monitoring Workstation, set the checkbox in the “Send event” column unchecked.

Note1. Server or Remote Admin Workstation always exchange configuration parameters with Remote Monitoring Workstation, even if the “Send events” checkbox is unchecked for this Remote Monitoring Workstation.

Note2. In order to set all checkboxes in the “Connection” or “Send events” columns, highlight a box in the required column and click Ctrl+A. To set all the checkboxes unchecked, highlight a box and click Shift+A.

6. If modems are used for connecting the distributed system components, then fill in the “Connection”, “User” and “Password” fields in the “Hardware” tab of the “Computer” object according to the Windows modem configuration used.

7. Repeat steps 2-5 for each twain of Servers, Remote Admin Workstations and Remote Monitoring Workstations, to disable their interaction.

Interaction of the distributed video surveillance system components is now configured.

Let's consider setup of a Server and Remote Admin Workstation connection via video gate as an example. A diagram of interaction of relevant components is shown in Figure 8.2-7.

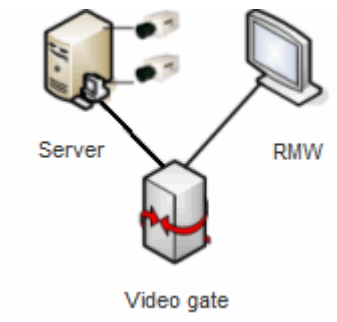
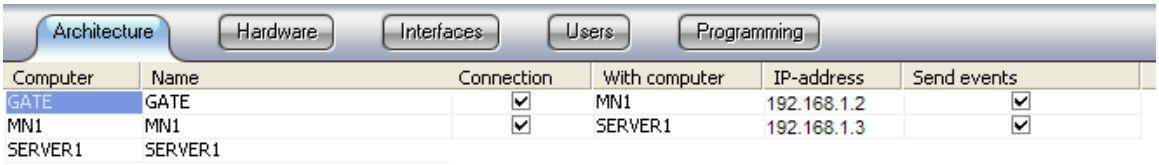


Figure 8.2-7 Server and Remote Admin Workstation connection via video gate

According to the diagram, shown in Fig. 163, interaction must be disabled between the server (SERVER1) and Remote Monitoring Workstation (MN1). As a result, the "Architecture" tab is to display the settings:

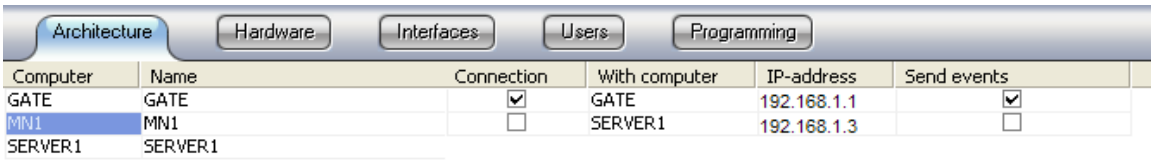
1. For the video gate (GATE), interaction is to be set with the Server (SERVER1) and with the Remote Monitoring Workstation (MN1) (Figure 8.2-8).



Computer	Name	Connection	With computer	IP-address	Send events
GATE	GATE	☑	MN1	192.168.1.2	☑
MN1	MN1	☑	SERVER1	192.168.1.3	☑
SERVER1	SERVER1				

Figure 8.2-8 Interaction settings for the video gate (GATE), the server (SERVER1) and Remote Monitoring Workstation (MN1).

2. For Remote Monitoring Workstation (MN1), interaction is to be set up with the video gate (GATE), and interaction with the server (SERVER1) is to be disabled (Figure 8.2-9).



Computer	Name	Connection	With computer	IP-address	Send events
GATE	GATE	☑	GATE	192.168.1.1	☑
MN1	MN1	☐	SERVER1	192.168.1.3	☐
SERVER1	SERVER1				

Figure 8.2-9 Interaction settings for the Remote Monitoring Workstation (MN1), the video gate (GATE) and the server (SERVER1)

3. For the server (SERVER1), interaction is to be set up with the video gate (GATE), and interaction with the Remote Monitoring Workstation (MN1) is to be disabled (Figure 8.2-10).

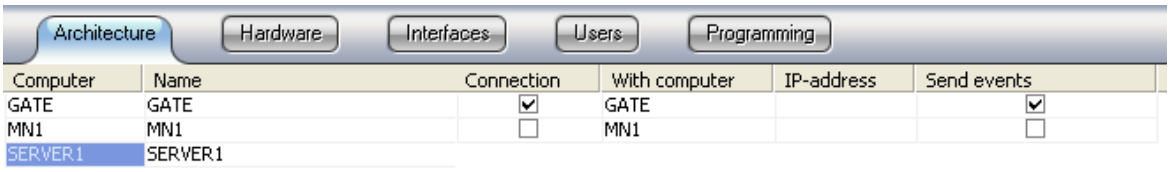


Figure 8.2-10 Interaction settings for the server (SERVER1), the video gate (GATE) and Remote Monitoring Workstation (MN1)

The Remote Monitoring Workstation (MN1) "Computer" object in the "Hardware" tab in the "System settings" dialog box on the server (SERVER1) will have the « ⊗ » icon with its name in gray. This indicates that administering of the given object is forbidden.

8.2.7 Operation of distributed architecture in the failover mode

Distributed architecture can operate in the failover mode. If the connection with one of distributed system Servers fails, then this mode enables transfering the configuration created under the Server to a Standby Server. A Standby Server temporarily becomes a Video server and records archive in accordance with the settings of the "Computer" object that corresponds to a Standby Server (see "Selecting the disks for video archive storage" section). When the connection is restored, the configuration is restored on the main Server.

If the "main Server + standby Server" flowchart (Figure 8.2-11) is in use, it is possible to configure both main and standby Servers for recording on the same network resource or several resources (see "Using network disks" section). In this case the archive is always available no matter what Server operates with cameras.

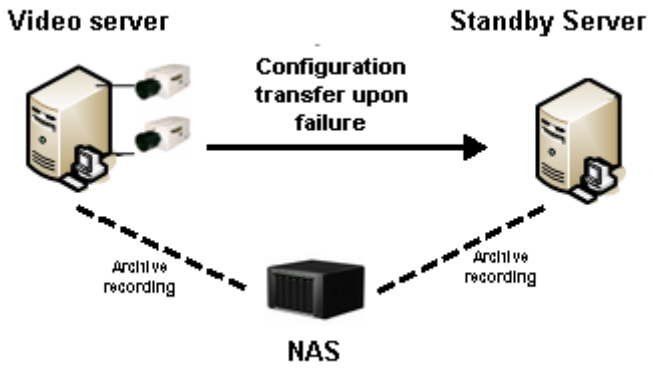


Figure 8.2-11 The "main Server + standby Server" flowchart

If the "N main Servers + standby server" flowchart (Figure 8.2-12, Figure 8.2-13) is in use, it is impossible to create a unified archive. In this case main Servers perform recording on different logical drives (sections, partitions), local or network. If these drives for archive recording are specified on a standby Server, then archives from different main Servers will mix. The "AxxonPlayer.exe" utility can be used to access the archive created by a standby Server on NAS (see "Viewing video using the AxxonPlayer.exe utility" section).

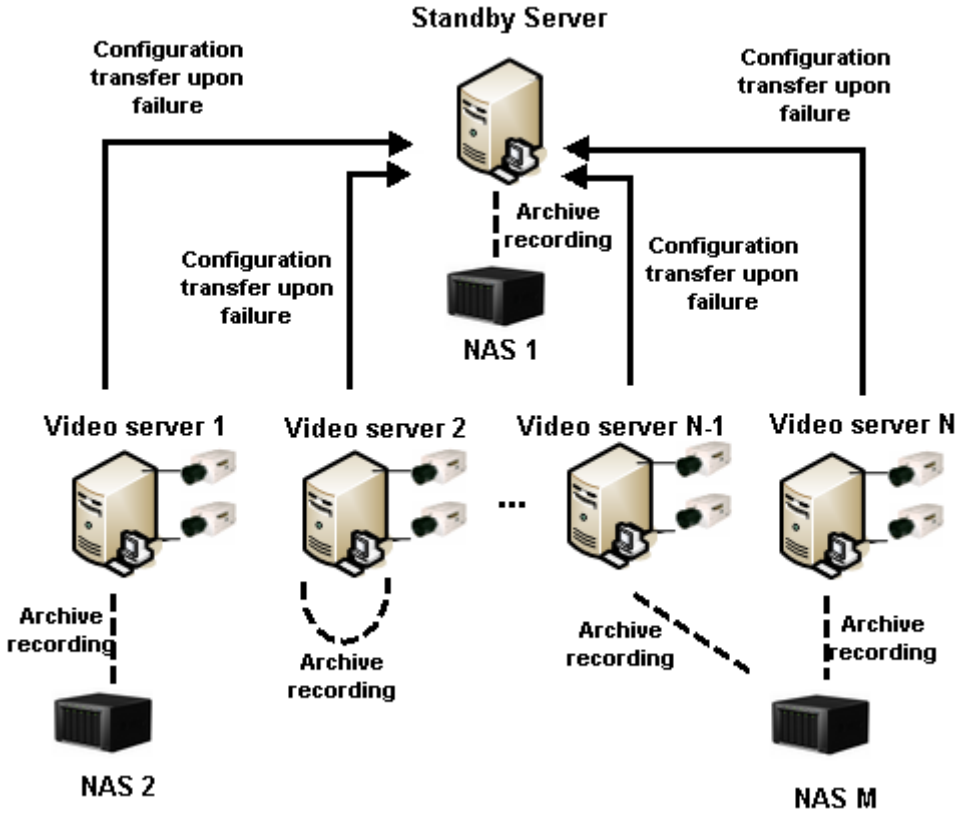


Figure 8.2-12 The "N main Servers + standby server" flowchart

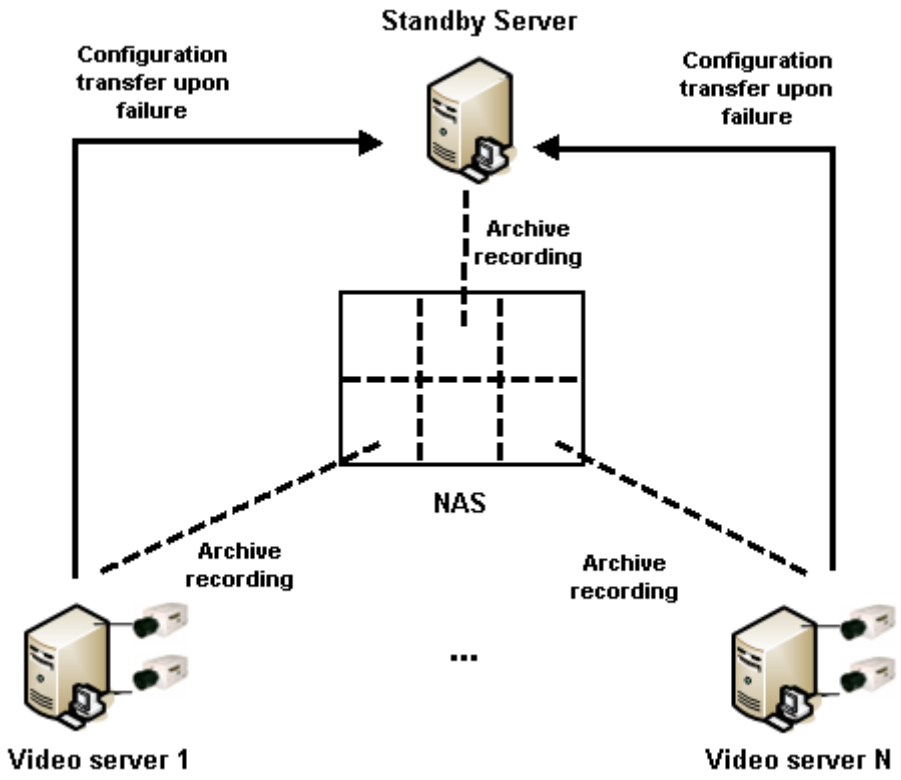


Figure 8.2-13 The "N main Servers + standby server" flowchart when archive is recorded to one NAS

If configuration from several main Servers is transferred to one standby Server, then provide enough processor resources, RAM and LAN on a standby Server in case when all main Servers become disabled.

Note. When you log off INTELLECT™, configuration is not transferred from main Server to a standby server.

To configure the failover mode, configure a standby Server as follows:

1. Create the “Failover” object under the “Computer” object corresponding to the standby Server in the “Hardware” tab of the “System settings” dialog box (Figure 8.2-14).

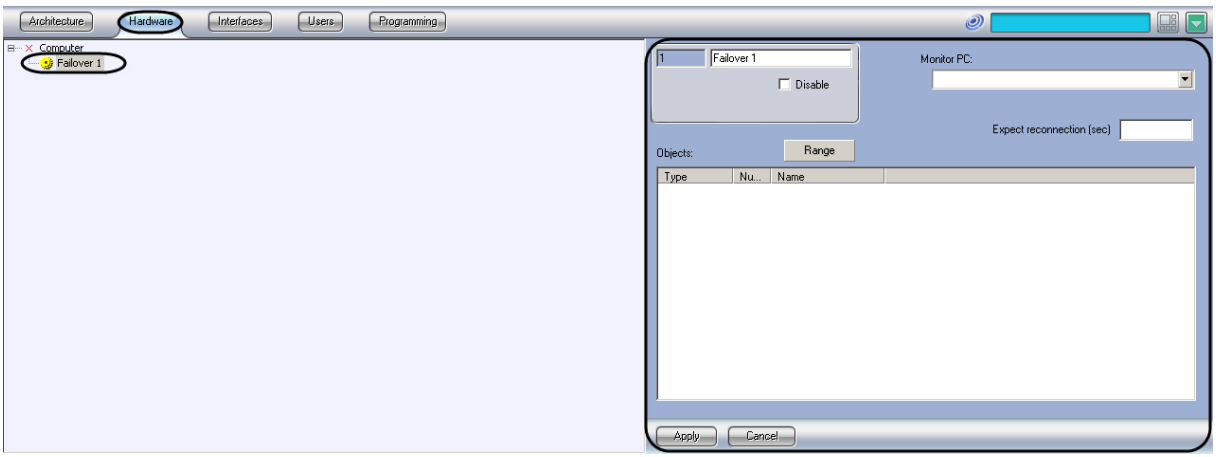


Figure 8.2-14 The “Failover” object

2. Go to the settings panel for the “Failover” object (Figure 8.2-15).

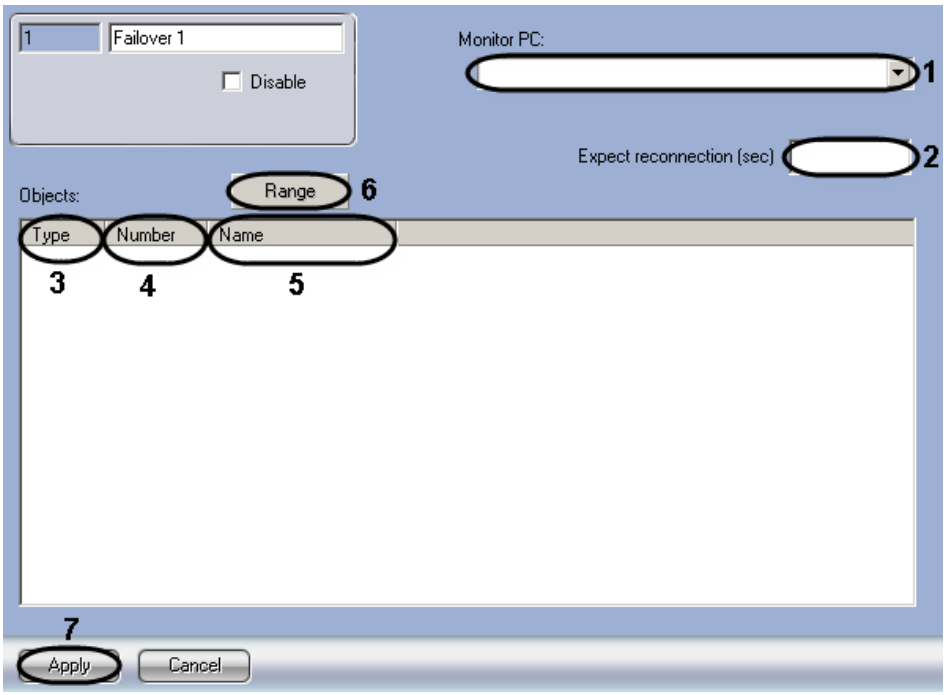


Figure 8.2-15 Configuring the failover mode

3. in the “Monitor PC” dropdown list, select the name of the “Computer” object that is to be under control (Figure 8.2-15, 1).

4. In the “Expect reconnection (sec)” field, specify the time period (in seconds) at the end of which configuration is transferred to a standby Server when the Server connection fails (Figure 8.2-15, 2).
5. In the “Objects” table, specify the list of configuration objects (that are to be transferred to a standby Server if connection fails) of the main Server:

5.1 Manually one by one:

5.1.1 In the “Type” dropdown list, select the object type (Figure 8.2-15, 3).

5.1.2 In the “Number” dropdown list, select the object ID (Figure 8.2-15, 4).

5.1.3 The “Name” field is automatically filled in with the name of a corresponding object (Figure 8.2-15, 5).

5.1.4 Repeat steps 5.1.1-5.1.3 for all objects (that are to be transferred to a standby Server if connection fails) in the objects tree of a Server under control.

Note. To add a new line in the table, click the downwards arrow on the keyboard.

5.1.5 Click the “Apply” button (Figure 8.2-15, 7).

5.2 As a group:

5.2.1 Click the “Range” button (Figure 8.2-15, 6). The “Range” box is displayed.

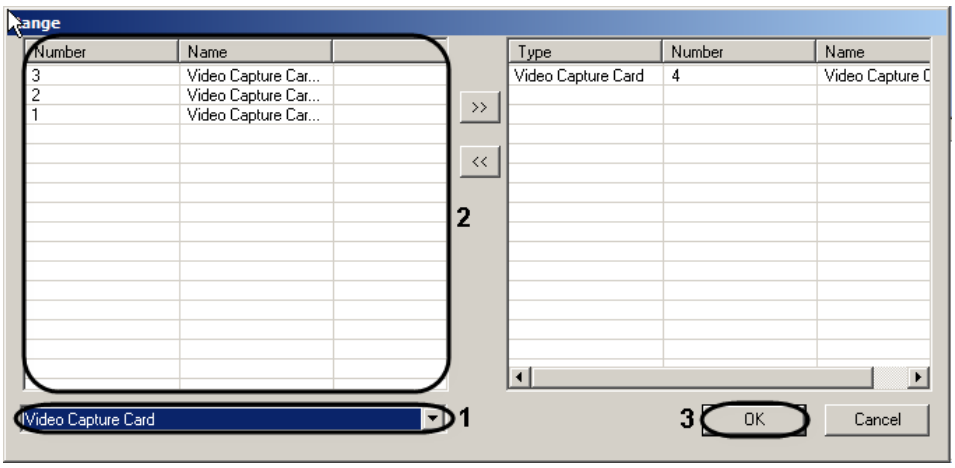


Figure 8.2-16 Complex object selection

5.2.2 In the dropdown list, select the object type (Figure 8.2-16, 1).

5.2.3 In the table, mark the required objects of this type (Figure 8.2-16, 2). To mark several objects, hold the “Ctrl” key on the keyboard.

5.2.4 Click the >> button to transfer selected objects to the list of the objects under control. The list is on the right of the “Range” box.

Note. The << button is used to transfer the object back from the list of objects under control to the list of available objects.

5.2.5 Repeat steps 5.2.2-5.2.4 for all required objects.

5.2.6 Click the “OK” button (Figure 8.2-16, 3).

5.2.7 Click the “Apply” button (Figure 8.2-15, 7).

6. Repeat steps 1-5 for all main Servers under control of a configured standby Server in the distributed system.

The failover mode is now configured.

8.2.8 Configuring time synchronization in the distributed system

If Server is to synchronize its time with Servers connected to it when INTELLECT™ is started, do one of the following:

1. Set the “Synchronize time” checkbox on the settings panel of the “Computer” object corresponding to the Server that is the source of time synchronization (see “Settings panel of the Computer object” section).
2. Set the “Time synchronization” checkbox in the tweaki.exe utility on the Server that is the source of time synchronization (see “The settings panel for the Intellect section” section).
3. Create the SyncTime parameter with “1” value in the HKEY_LOCAL_MACHINE \Software\AxxonSoft\INTELLECT for 32-bit system (HKEY_LOCAL_MACHINE \Software\Wow6432Node\ AxxonSoft \INTELLECT for 64-bit system) registry on the Server that is the source of time synchronization.

Time is automatically synchronized at midnight every 24 hours or when INTELLECT™ is started on the Server that is the source of time synchronization. Synchronization can also be started by SYNC_TIME command of the SLAVE system object (details are in *INTELLECT™ software package. Programming Guide*).

You can run a macro if time is to be synchronized when connecting the Servers that are time receivers. The details are in the “Creating and using macros” section.

The example of macro that synchronizes time of all Servers in the distributed system when connecting to Computer 2 if Computer 1 is configured as the source of time synchronization (Figure 8.2-17).

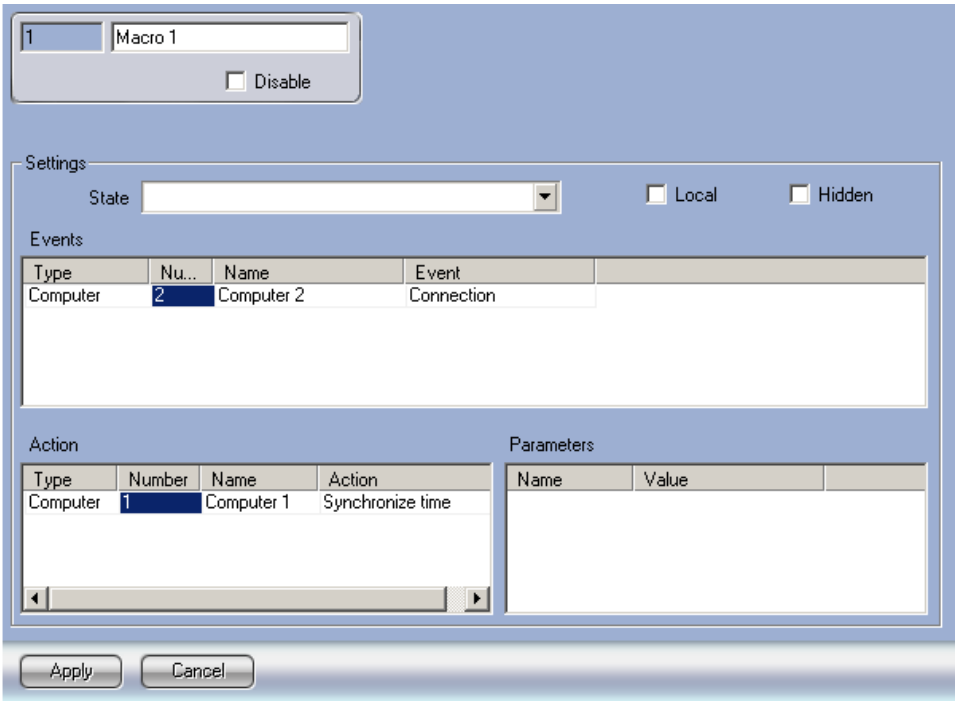


Figure 8.2-17 Macro to synchronize time in the distributed system while Server connection

8.2.9 Features of distributed system operation using NAT

If the distributed system is built on the basis of a network in which Servers are behind NAT, then VPN technology is to be in use for the operation of such system.
When you configure NAT the ports that are used by started INTELLECT™ modules are to be opened — see “The list of TCP ports used in INTELLECT™” section. Moreover the ports that are used by MS SQL Server for database synchronization are to be opened.

Note. By default MS SQL Server uses 1433 TCP port and 1434 UDP port.

If an ONVIF IP-camera is behind NAT, then proper operation of this camera is not guaranteed. This limitation is due to the special features of the ONVIF protocol.

8.3 INTELLECT™ software database management

8.3.1 INTELLECT™ software database functions

INTELLECT™ software database provides:

1. Data storage:

a. data on registered system objects and their settings;

b. departments and user accounts and rights;

c. on registered system events;

d. on changes in servers and Remote Admin Workstations configuration;

e. on changes in registered system object specifications and their settings;

f. data on network names and IP-addresses of distributed system servers, Remote Admin Workstations, Remote Monitoring Workstations and their interaction parameters;

2. Data replication from different servers and Remote Admin Workstations.

The main and the single default database of the INTELLECT™ software is the “Configuration” database. The “Configuration” database is used to realize all the above-listed functions.

INTELLECT™ software can be configured to store the registered system events not in the default “Configuration” database, but in the “Events log” database.

8.3.2 Guidelines on INTELLECT ™ system database use

To provide effective and steady performance of the INTELLECT ™ system, take into account the recommendations on database use below:

1. Store the “Configuration” database on the MS SQL server. If MS Access is used to store the database, it is strongly recommended to install the MS SQL server and to convert the database from MS Access to MS SQL format.

2. Servers and Remote Admin Workstation databases should be synced with the administering server database.

3. If long-term centralized storage is necessary for registered system events, then it is recommended to apply INTELLECT™ software configuration at servers and Remote Admin Workstations in order to store events that are not in the “Configuration” database, but in the “Events log” database.

8.3.3 Converting the database from MS Access to MS SQL format

Intellect™ software version 4.8.2 is default configured to operate with the database MS SQL server format. MS Access format databases have been used in previous Intellect™ software versions. If the system needs configuration parameters, stored in MS Access format after INTELLECT™ software has been updated to version 4.8.2, it is strongly recommended to convert the database into MS SQL server format.

To convert the database from MS Access to MS SQL server format, follow the steps:

1. Set up MS SQL server software, if it has not been set up before.

2. Make sure that the MS SQL server software is.

3. Run the idb.exe utility in the root of the INTELLECT™ software installation directory (for example, C:\Program Files\Intellect). The idb.exe utility dialog box is displayed (Figure 8.3-1).

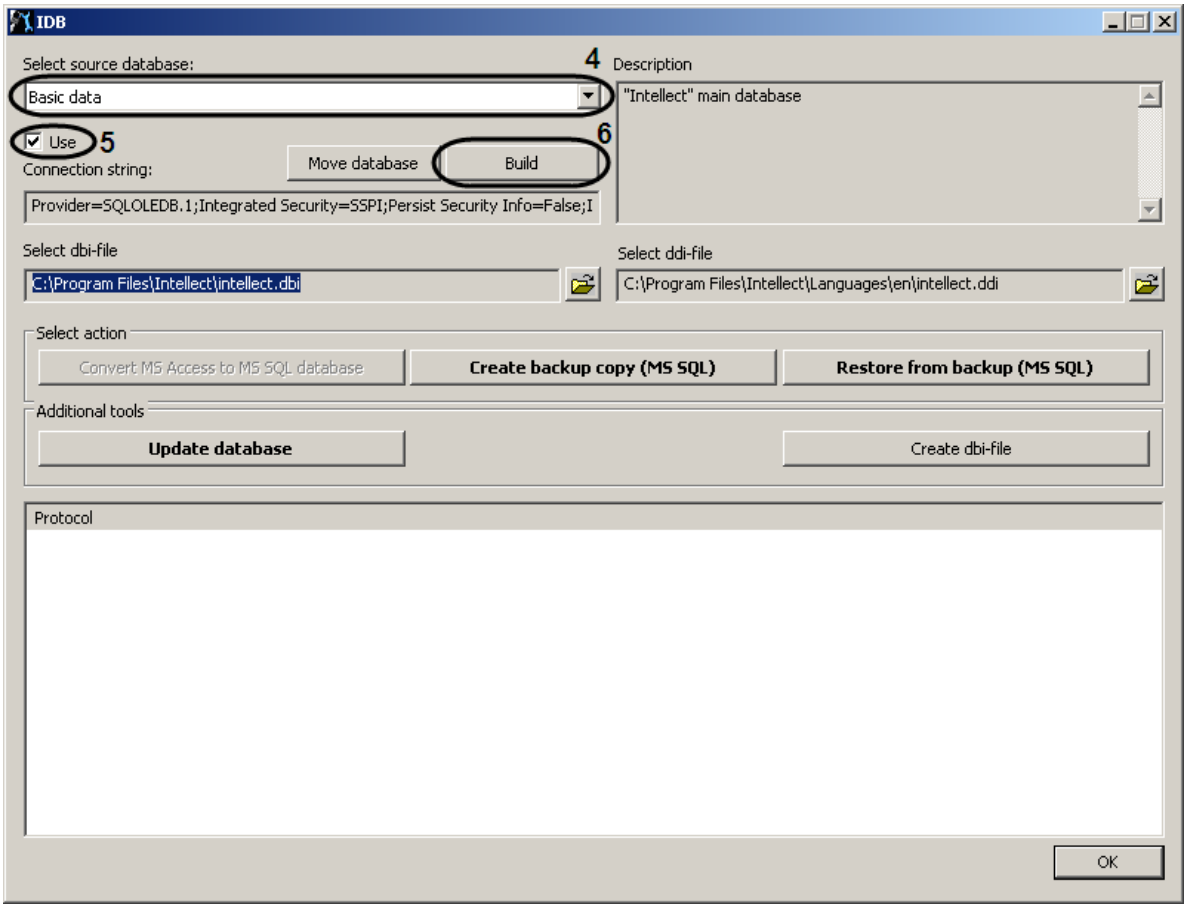


Figure 8.3-1. The idb.exe utility dialog box

4. Choose the Basic data item from the Select data source list.

5. Check the Use checkbox, if not checked before.

6. Click Build.

7. The Data link properties dialog box is displayed. Go to the “Provider” tab in the “Data link properties” dialog box (Figure 8.3-2).

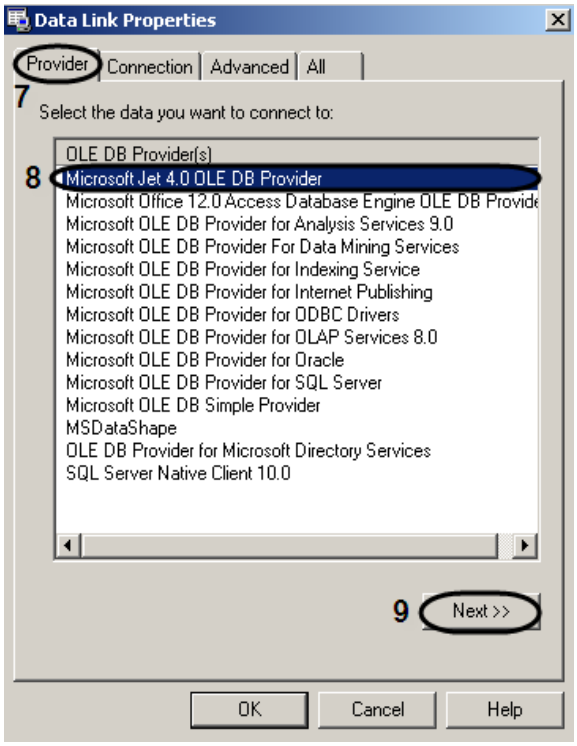


Figure 8.3-2. The “Data link properties” dialog box. The “Provider” tab

8. Select Microsoft Jet 4.0 OLE DB Provider from the OLE DB Providers list.

9. Click Next.

10. As soon as Next is clicked, the dialog box automatically takes you to Connection tab (Figure 8.3-3).

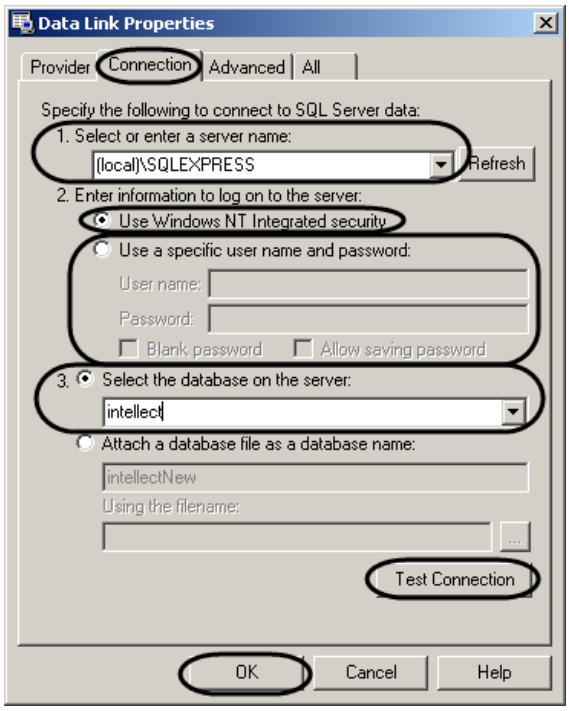


Figure 8.3-3. The "Data link properties" dialog box. The "Connection" tab

11. Type the complete path to the database file in the "1. Select or enter a database name" or select the necessary file from the file opening dialog box, which is displayed by the "…" button.

12. Enter the user name (login) for database access in the User field. If database access is not protected, leave the field empty.

13. If access to the database is protected, remove the default Blank password check and enter the database access password into the Password field.

14. Click Test Connection.

15. If MS SQL server connection was completed, the Test connection succeeded message is displayed (Figure 8.3-4).

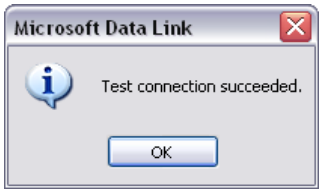


Figure 8.3-4. Database connection completion message

Click OK to close the window.

16. If the MS SQL server name and/or authentication parameters of MS SQL server connection were entered incorrectly, the relevant error message will pop up (Figure 8.3-5).

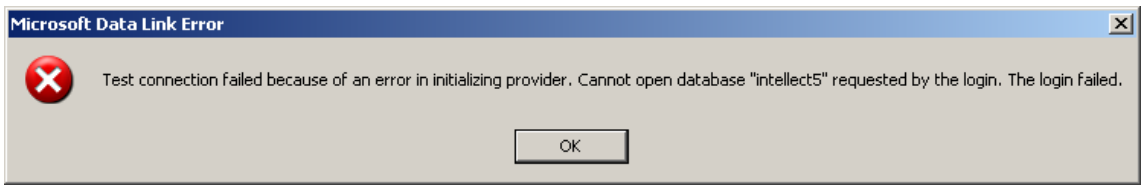


Figure 8.3-5. Example of the disabled SQL server connection message

Click OK to close the window. Then enter the correct password and try the MS SQL server connection again.

17. Click OK in the Data link properties dialog box. The window closes.

18. Update the database structure. To do that click the Convert MS Access to MS SQL button in the idb.exe utility dialog box.

19. The Select MS SQL server message appears (Figure 8.3-6).

Figure 8.3-6. The "Select MS SQL server" message

Click OK to close the window.

20. The Data link properties dialog box is displayed. In the "1.Select or enter a server name" select from the list or type the name of the MS SQL server, which will be used to convert the database (Figure 8.3-7).

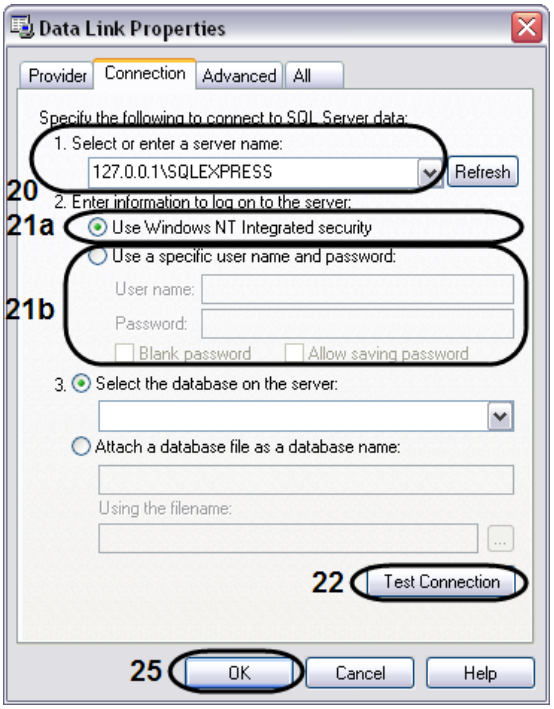


Figure 8.3-7. MS SQL server choice

21. The “Enter information to log on to the server” box is checked to enter the type and authentication parameters of MS SQL server connection. MS SQL server authentication is performed through the user account, authorized in Windows OS, or the user name (login) and password, that protect the MS SQL server connection.

The method and parameters of authentication at the MS SQL server are set during MS SQL server installation.

Different settings need to be entered, with different authentication techniques for MS SQL server connection:

a. If MS SQL server authentication is performed through the user account in Windows OS, switch to the “Windows NT account” box and check it.

Note. If converting is performed via remote SQL server, it is necessary to log in computer with MS SQL server the user’s current account from computer that performs the conversion.

b. If MS SQL server authentication is performed through the user login and password, follow the sequence:

- switch to to the “Next user name and password” position.
- in the “User” field: enter the user name (login) to connect MS SQL server.
- if access to the MS SQL server is password protected, remove the default “Blank password” check and enter the database access password into the “Password” field.

22. Click Test Connection.

23. If MS SQL server connection was completed, the “Test connection succeeded” message is displayed (Figure 8.3-8).

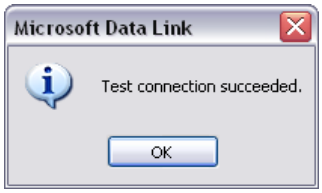


Figure 8.3-8. Database connection completion message

Click OK to close the window.

24. If the MS SQL server name and/or authentication parameters of the MS SQL server connection were misentered, the relevant message will appear (Figure 8.3-9).

Figure 8.3-9. Example of the disabled SQL server connection message

Click OK to close the window. Then enter the correct password and try MS SQL server connection again.

25. Click OK in the Data link properties dialog box.

26. The Enter database name message will appear (Figure 8.3-10).

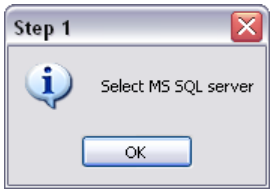


Figure 8.3-10. The "Enter database name" message

Enter the name to be used for database storage on the MS SQL server in the top field. It is default recommended to use "INTELLECT" as the database name.

Note. If the MS SQL server has a database with the same name, as has been entered in the "Enter the database name" field, it will be overwritten.

Confirm the entry of the database name by clicking OK and close the window.

27. Then the database conversion process starts from MS Access to the MS SQL server format, and the relevant steps appear in the "Protocol" table in the idb.exe utility dialog box (Figure 8.3-11).

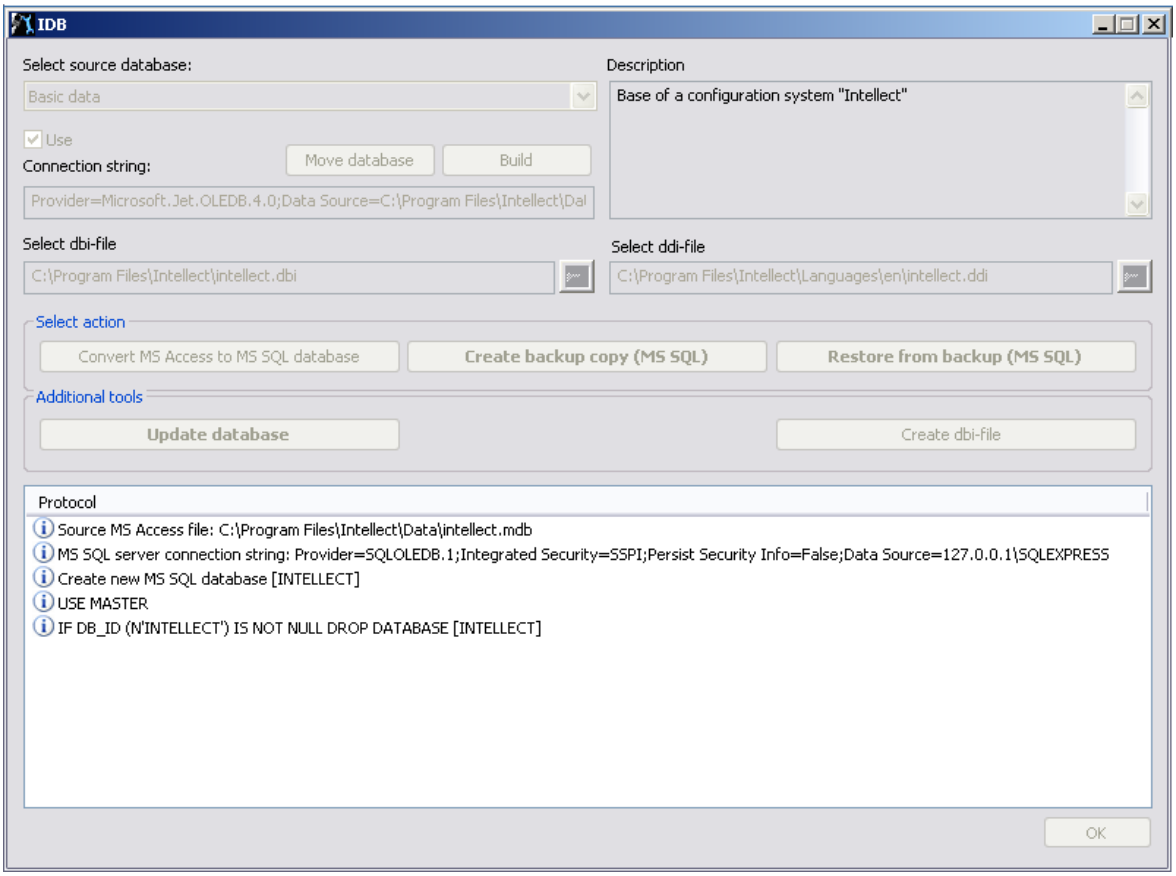


Figure 8.3-11. Displaying the messages on the database conversion progress

28. After the database conversion process is completed the request message appears: “Reset current connection to MS SQL?” «{0>.<}64{>(Figure 8.3-12).

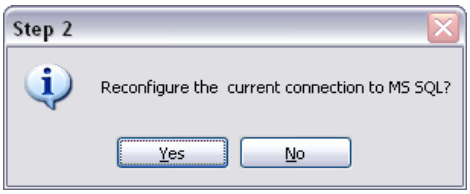


Figure 8.3-12. The “Reconfigure the current connection to MS SQL?” message

Click the “Yes” button, if you want to set up INTELLECT™ software to operate with a MS SQL server format database, converted from MS Access format. Otherwise click “No”.

When the conversion process is successfully completed, the “Completed!” step appears in the “Protocol” table in the idb.exe utility window.

29. Click OK in the bottom right corner of the idb.exe utility window.

Converting the database from MS Access to MS SQL format is completed.

8.3.4 INTELLECT™ software database connection

When INTELLECT™ software is installed, it is configured to operate with the “INTELLECT” MS SQL server database.

Note 1. If the current database is stored in MS Access format, it needs to be converted to MS SQL format before INTELLECT™ software connection setup.

Note 2. If Turkish Windows OS language pack and English localization of INTELLECT™ are in use, then connected database is to have the "Latin1_General_100_CI_AS" value of the "Collation" parameter.

To connect the INTELLECT™ software "Configuration" database, do the following:

1. Make sure that MS SQL Server software operates.
2. Run the idb.exe utility in the root of the INTELLECT™ software installation directory (for example, C:\Program Files\Intellect). The idb.exe utility dialog box is displayed (Figure 8.3-13).

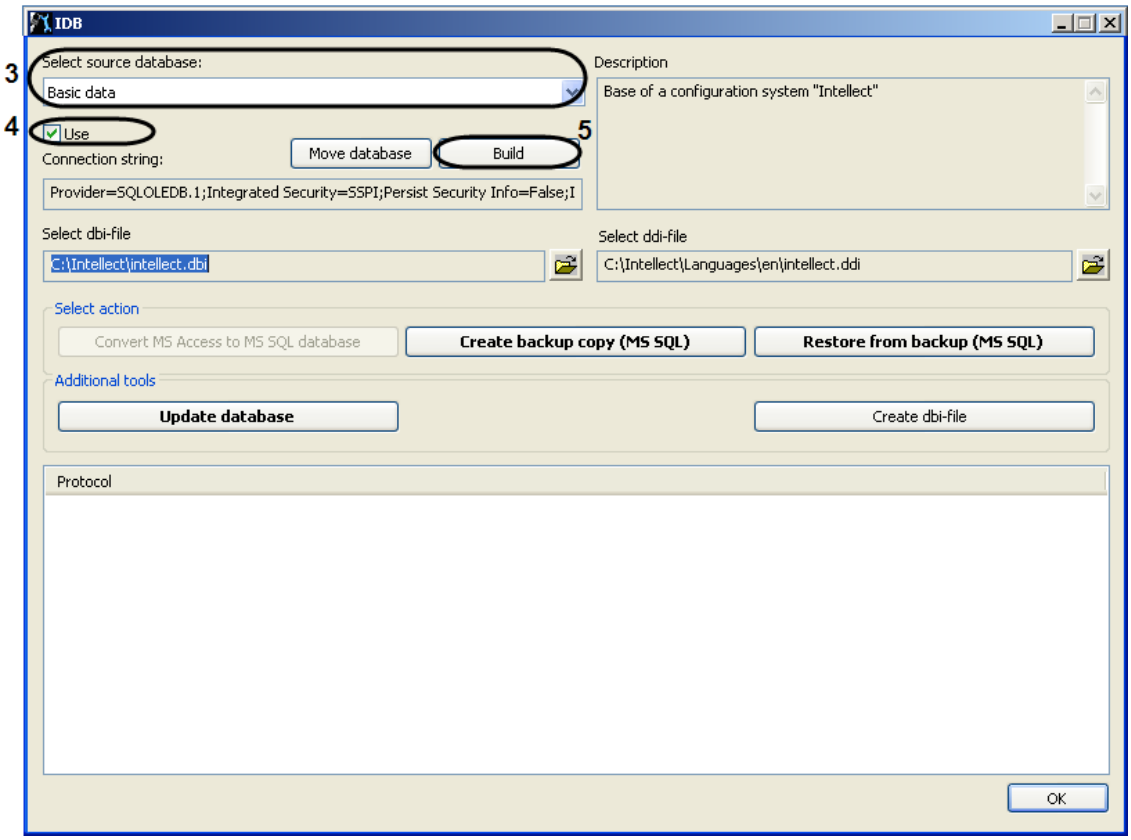


Figure 8.3-13. The idb.exe utility dialog box

3. Choose the "Basic data" item in the "Select source database" list.
4. Set the "Use" checkbox, if not set before.
5. Click the "Build" button.
6. The "Data Link Properties" dialog box is displayed. Go to the "Provider" tab in the "Data Link Properties" dialog box (Figure 8.3-14).

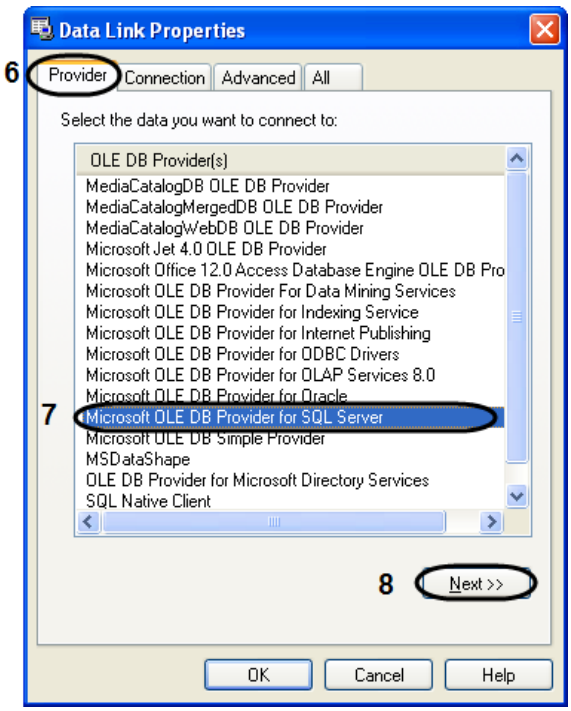


Figure 8.3-14 The "Data Link Properties" dialog box. The "Provider" tab

7. Select "Microsoft OLE DB Provider for SQL Server" in the "OLE DB Provider(s)" list.

8. Click the "Next" button.

9. As soon as the "Next" button is clicked, go to the "Connection" tab is automatically performed (Figure 8.3-15).

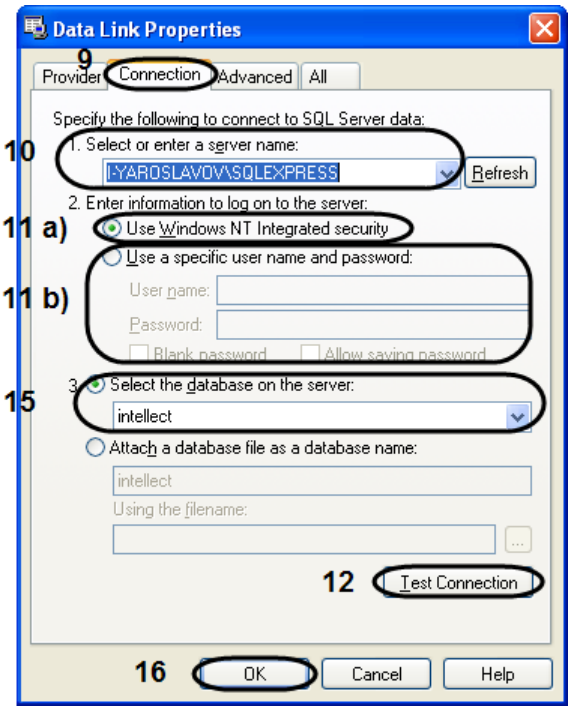


Figure 8.3-15 The "Data Link Properties" dialog box. The "Connection" tab

10. In the “1.Select or enter a server name” line select in the list or type-in the name of MS SQL server which is used to store the database to be connected (Figure 8.3-15).

Note. In case of dynamic host configuration protocol (DHCP) use for the local database, set «127.0.0.1» IP address (without using computer names and “local” value) in the “1.Select or enter a server name”. Set «127.0.0.1» value when the static IP address is use. Otherwise there is diskonnection of INTELLECT™ software with its local database when network cable is diskonnected.

If INTELLECT™ is connected to remote database configuration at IP address (e.g., 192.168.0.68\SQLEXPRESS), you cannot change and save INTELLECT™ software settings when there is a network connection break.

11. The “2.Enter information to log on to the server” group is used to specify the type and authentication parameters of the MS SQL server connection. MS SQL server authentication is performed through the user account, authorized in Windows OS, or by user name (login) and password that protect the MS SQL server connection.

The method and parameters of authentication at the MS SQL server are set during MS SQL server installation.

Different parameters are to be specified with different authentication techniques for MS SQL server connection:

11.1 If MS SQL server authentication is performed through the user Windows OS account, switch to the “Use Windows NT Integrated security” position.

Note. If converting is performed via the remote SQL server, the computer with MS SQL server installed must show the current user account. And the user is logged on under this account at the computer that performs the database connection.

11.2 If MS SQL server authentication is performed through the user login and password, do the following:

- Switch to the “Use a specific user name and password”;
- Specify the user name (login) to connect to the MS SQL server in the “User name” field.
- If access to the MS SQL server is protected with a password, set the “Blank password” checkbox unchecked and specify the database access password in the “Password” field.

12. Click the “Test Connection” button.

13. If MS SQL server is successfully connected, then the “Test connection succeeded” message is displayed (Figure 8.3-16).

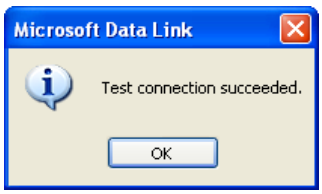


Figure 8.3-16 Database connection completion message

Click the “OK” to close the box.

14. If the MS SQL server name and/or authentication parameters of the MS SQL server connection were erroneous, the error message will appear (Figure 8.3-17).

Figure 8.3-17 Example of the disabled SQL server connection message

Click the “OK” button to close the box. Then specify the correct password and try the MS SQL server connection again.

15. Select the name of the database to be connected in the “Select the database on the server” list.

16. Click the “OK” button in the “Data Link Properties” dialog box. The box closes.

17. It is strongly recommended to update the database structure after this. For this click the “Update database” button in the idb.exe utility dialog box (Figure 8.3-18).

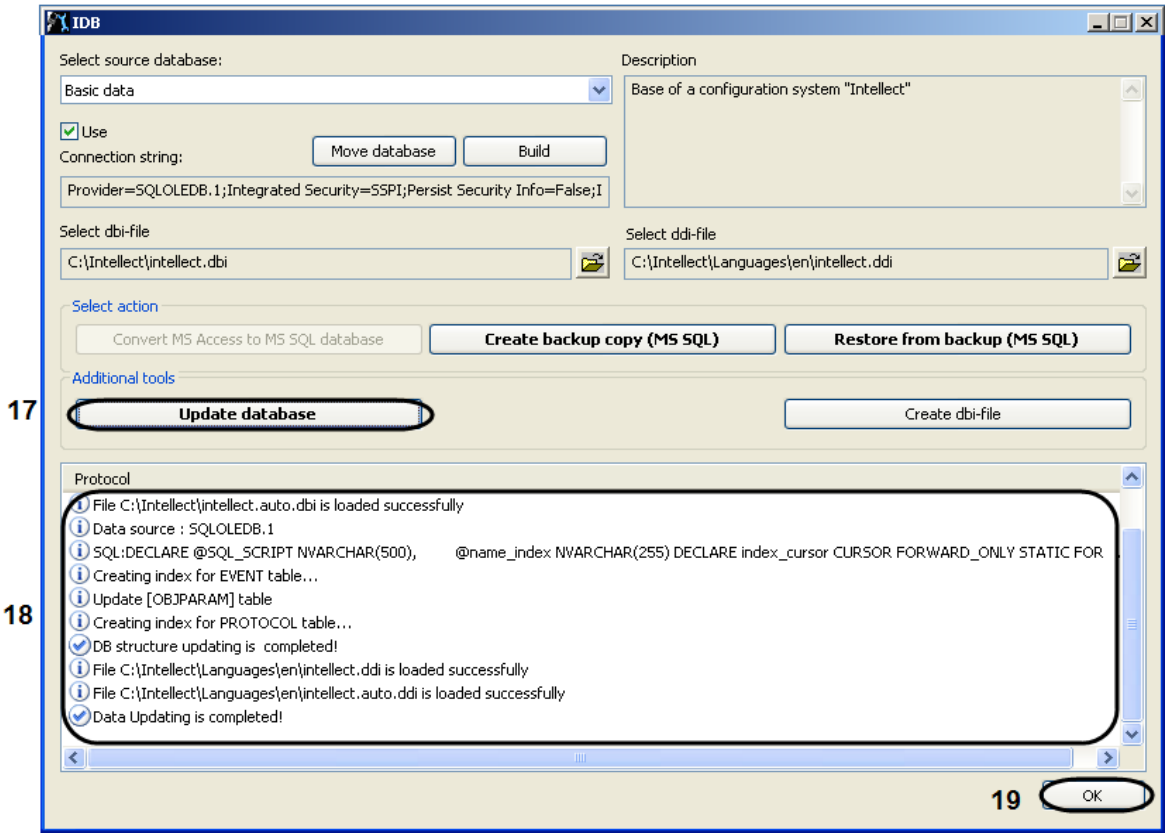


Figure 8.3-18 Database structure update

18. As a result the database structure update process starts, and the corresponding messages appear in the “Protocol” table.

When the conversion process is successfully completed, the “Data Updating is completed!” message appears in the “Protocol” table of the idb.exe utility.

19. Click the “OK” in the bottom right corner of the idb.exe utility.

INTELLECT™ software database is now connected.

8.3.5 Viewing INTELLECT™ software database

To view the database stored on MS SQL server, do the following:

1. Start SQL Server Management Studio utility. Click ‘Start’ => ‘All Programs’ => ‘Microsoft SQL Server 2008 R2’ => ‘SQL Server Management Studio’.
2. Specify parameters of connection to MS SQL server in the “Connect to Server” box (Figure 8.3-19).

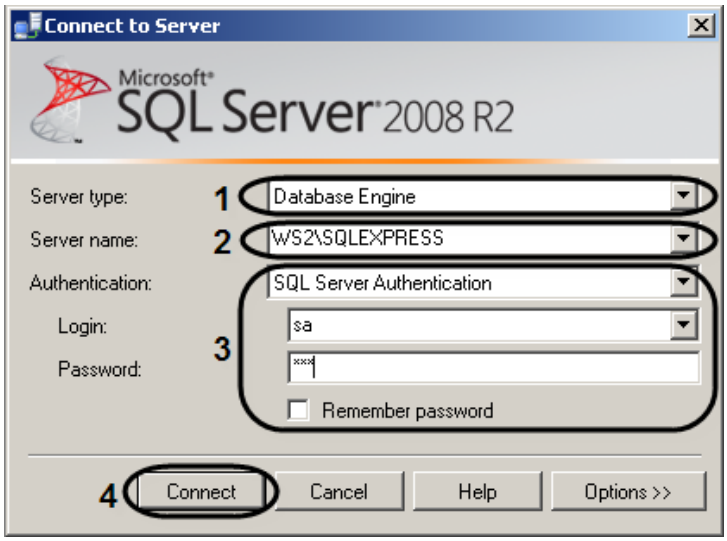


Figure 8.3-19 Connection to MS SQL server

2.1. Select the "Database Engine" type in the "Server type" list (Figure 8.3-19, 1).
2.2. Select the name of MS SQL server to wich it is necessary to connect in the "Server name" list (Figure 8.3-19, 2).
2.3. Select authentication type used for connecton to MS SQL server in the "Authentication" list (Figure 8.3-19, 3).

Note 1.The type of authentication that was selected while creating MS SQL server is specified.

Note 2. If "SQL Server Authentication" type is used, then select the user in the "Login" list and type-in the required password in the "Password" field (Figure 8.3-19, 3).

3. Click "Connect" to connect to MS SQL server. If the connection is successful, then the "Object Explorer" box is displayed (Figure 8.3-20).

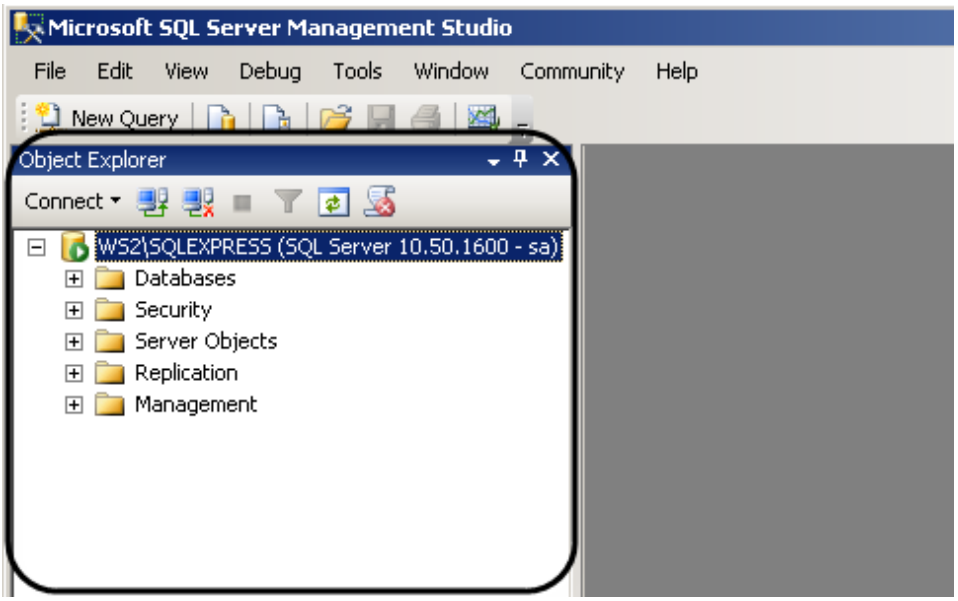


Figure 8.3-20 The "Object Explorer" box

4. open the embedded list of the "Databases" catalogue in the "Object Explorer" box and go to the required database (Figure 8.3-21).

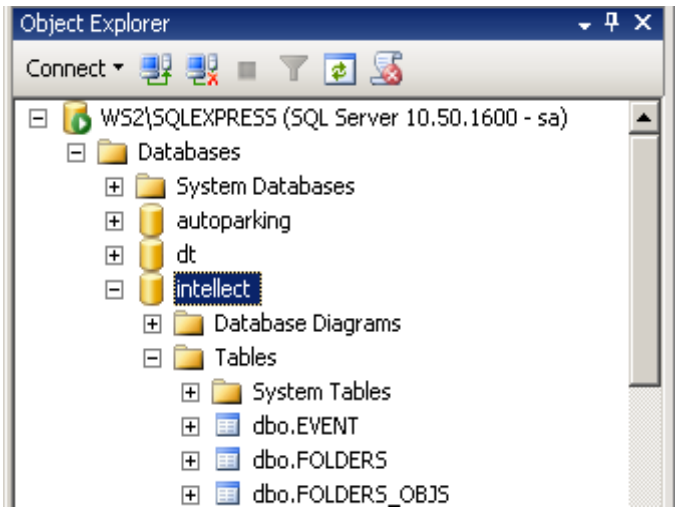


Figure 8.3-21 Selecting the database

5. Select the table for viewing in the "Tables" catalogue.
6. Select "Select Top 1000 Rows" item in the context menu of the table (Figure 8.3-22).

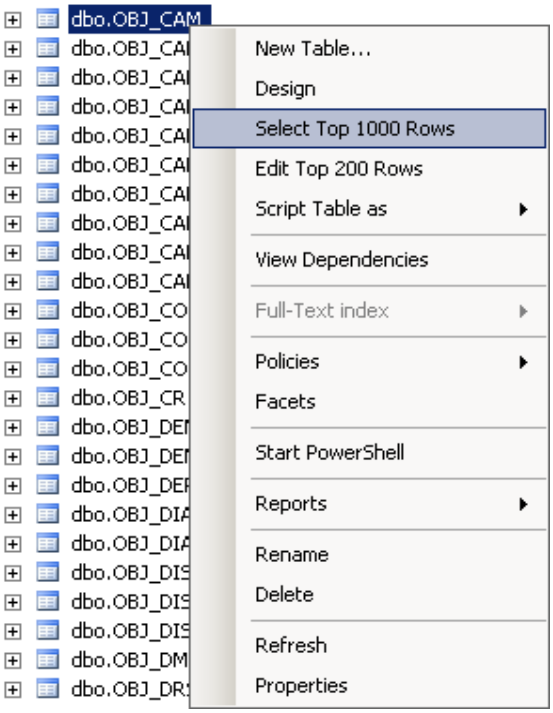


Figure 8.3-22 Context menu of the table

As a result the box with SQL Query on top of it and the table data selected by the query will be displayed (Figure 8.3-23).

Note 1. Using "Select Top 1000 Rows" command one can query the latest rows stored into the table. Not more than 1000 rows respond to a query.

Note 2.One can change the quantity of rows and set of fields requested in the table by editing SQL Query. To start modified SQL Query click Execute *on the toolbar.*

SQLQuery4.sql -...llect (sa (60))* | SQLQuery3.sql ...aster (sa (59))

```
/****** Script for SelectTopNRows command from SSMS  ******/
SELECT TOP 1000 [activity]
      ,[alarm_rec]
      ,[arch_days]
      ,[audio_id]
      ,[audio_type]
      ,[blinding]
      ,[bosch_ptz_protocol]
      ,[bright]
      ,[color]
      ,[compression]
      ,[compressor]
      ,[config_id]
      ,[contrast]
      ,[decoder]
      ,[decompressor]
      ,[flags]
      ,[fps]
```

Results | Messages

	activity	alarm_rec	arch_days	audio_id	audio_type	blinding	bosch_ptz_protocol	bright	color	compression	compressor	config_id	contrast
1	NULL	1	NULL			NULL		5	0	2			5
2	NULL	0	NULL			NULL		5	0	2			5
3	NULL	1	NULL			NULL		5	0	2			5
4	NULL	0	NULL			NULL		5	0	2			5
5	NULL	1	NULL			NULL		5	0	2			5
6	NULL	1	NULL			NULL		5	0	2			5
7	NULL	1	NULL			NULL		5	0	2			5
8	NULL	0	NULL			NULL		7	0	2			5

Query executed successfully. | WS2\SQLEXPRESS (10.50 RTM) | sa (59) | master | 00:00:00 | 8 rows

Figure 8.3-23 Query result

If one need to create his own query, then select “Script Table as” => “SELECT To” => “New Query Editor Window” (Figure 8.3-24) in the context menu and type-in SQL Query in the box.

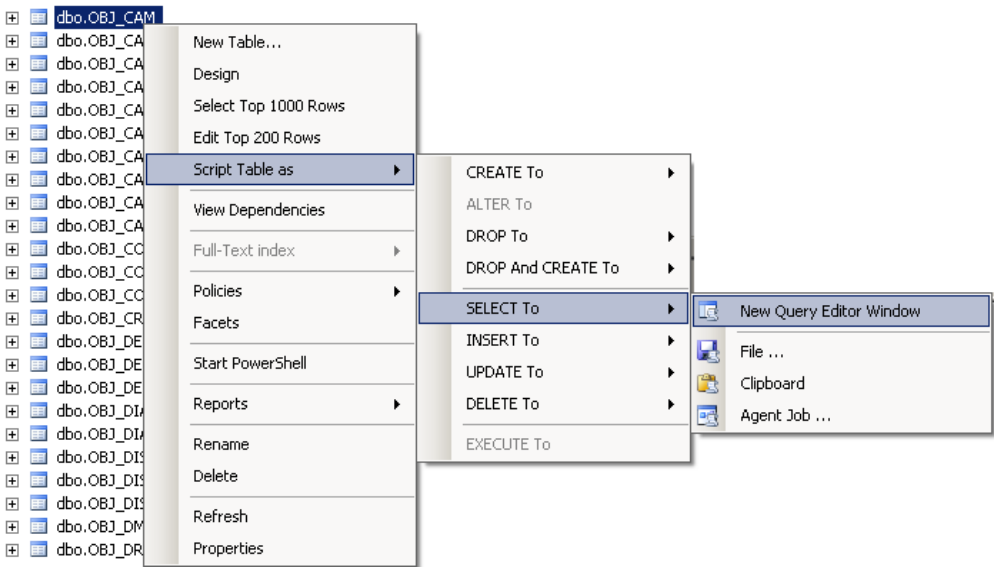


Figure 8.3-24 Creating the own query

Note. To execute the query click Execute *on the toolbar.*

Example. Select all video cameras created on the basis of video capture card 2 (Figure 8.3-25).

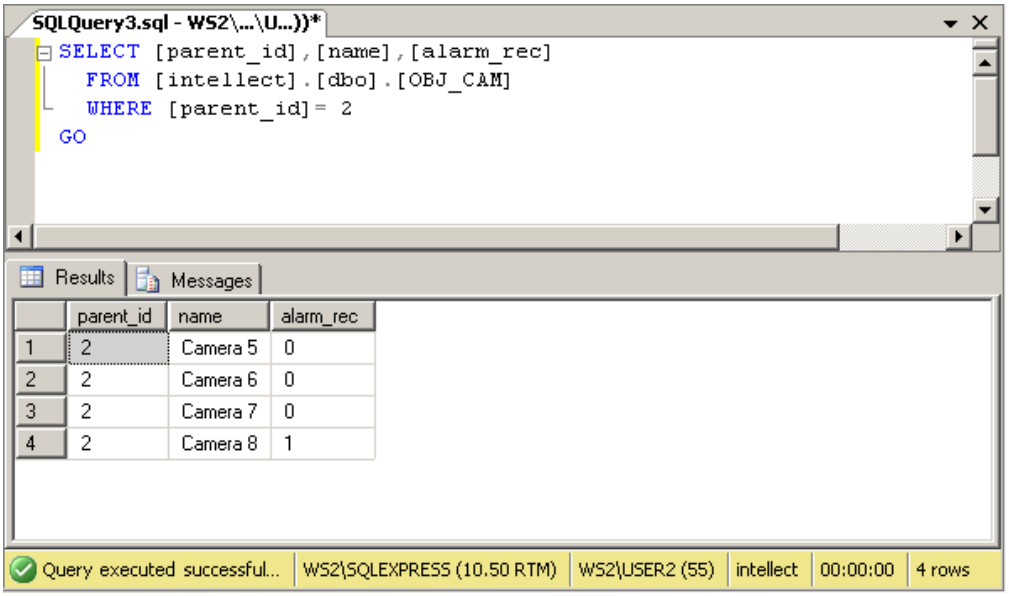


Figure 8.3-25 Query result

Viewing INTELLECT™ software database is now completed.

Note. To view databases of other formats, the "SQL Server Management Studio" utility can also be used. For this install the package of ODBC drivers and OLE DB provider that can be found at http://www.microsoft.com. To connect to database Server, use sp_addlinkedserver stored procedure. Its description and examples of use are at http://msdn.microsoft.com.

8.3.6 Moving Intellect configuration database from MS SQL Server 2005 to MS SQL Server 2008 R2

To move configuration database from MS SQL Server 2005 to MS SQL Server 2008 R2 after INTELLECT™ update do the following:

1. Run the idb.exe utility from the Intellect installation directory (e.g., C:\Program Files\Intellect). The dialog box of the idb.exe utility is displayed (Figure 8.3-26).
2. To create backup copy of Intellect configuration database click **Create backup copy (MS SQL)** (Figure 8.3-26, 1). In opened window select the folder where the configuration backup copy is to be created.

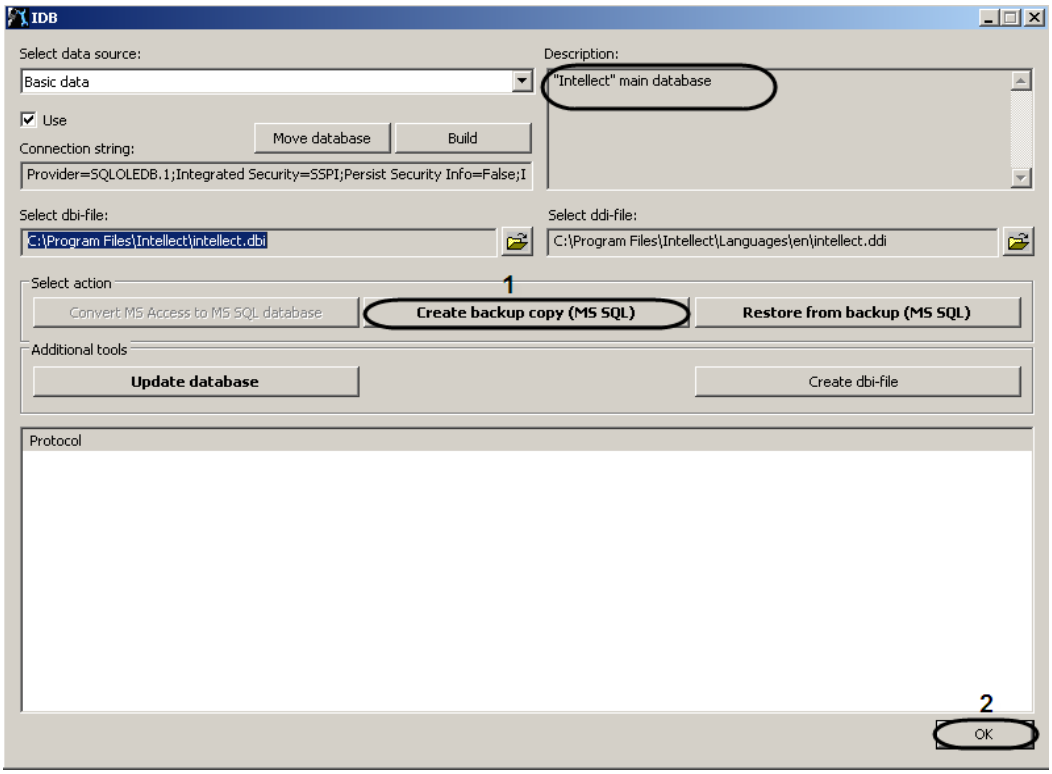


Figure 8.3-26 Creating configuration backup copy

Note. Configuration backup copy is a file with bak. extension.

3. If the configuration backup copy is created without any errors (see the protocol of the idb.exe utility), then click **OK** (Figure 8.3-26, 2). If there are some errors, then repeat 2 step or use MS SQL Server 2005 tools for creating database backup copies.
4. Remove MS SQL Server 2005 from computer.
5. Install MS SQL Server 2008 R2 (see *Appendix 5. «Microsoft SQL Server 2008 Express R2»* section).
6. Create an empty database.
   6.1. Run the SQL Server Management Studio utility. Click Start => All Programs => Microsoft SQL Server 2008 R2 => SQL Server Management Studio.
   6.2. Select **New Database** in the context menu of the **Databases** directory (Figure 8.3-27).

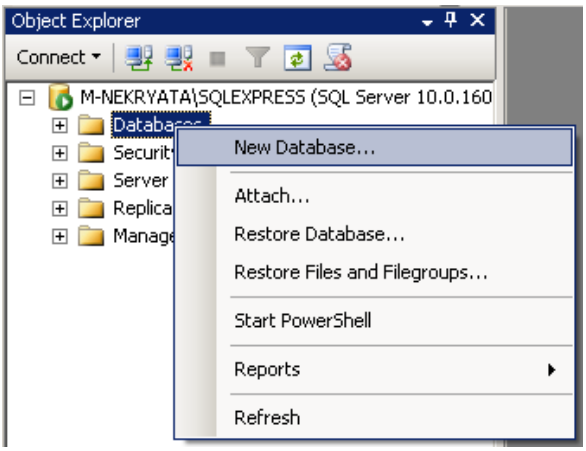


Figure 8.3-27 Context menu of the Databases directory

As the result the **New Database** window opens (Figure 8.3-28).

6.3. Type in a name of a new database in the **Database name** field (Figure 8.3-28, 1).

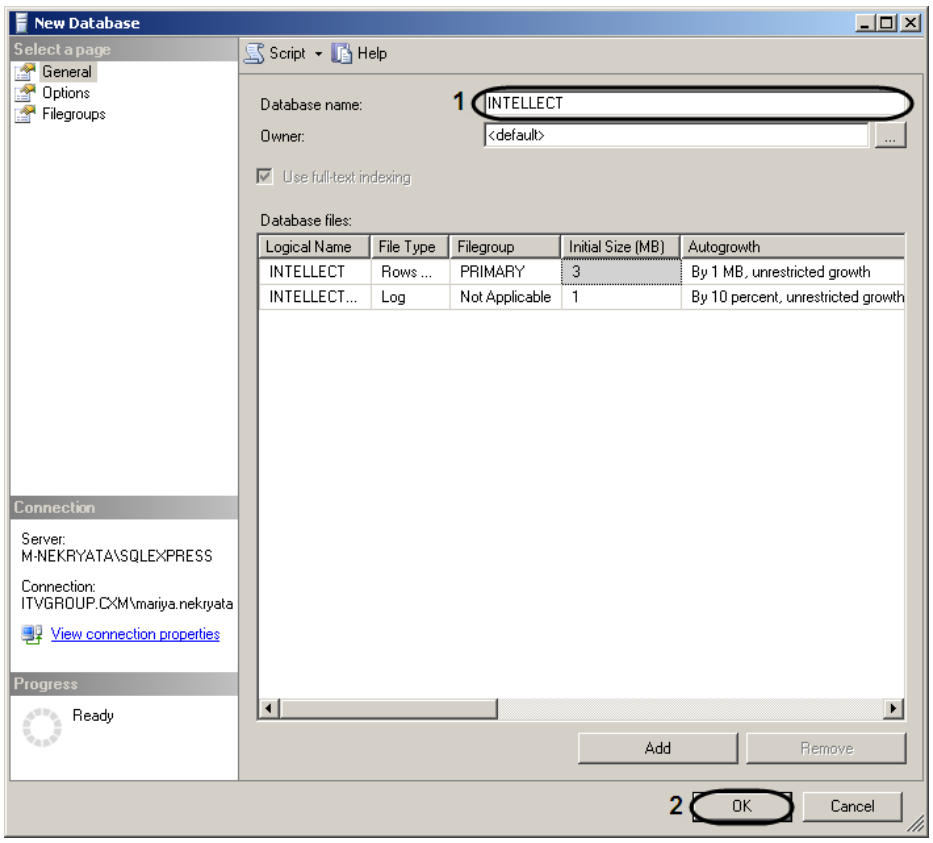


Figure 8.3-28 Creating a database in SQL Server Management Studio

6.4. Click **OK** (Figure 8.3-28, 2).

7. Connect created database to Intellect using the idb.exe utility (see 1-16 steps in *INTELLECT™ software database connection* section).
8. To restore Intellect configuration database click **Restore from backup (MS SQL)** (Figure 8.3-29, 1). Select configuration backup copy in opened window.

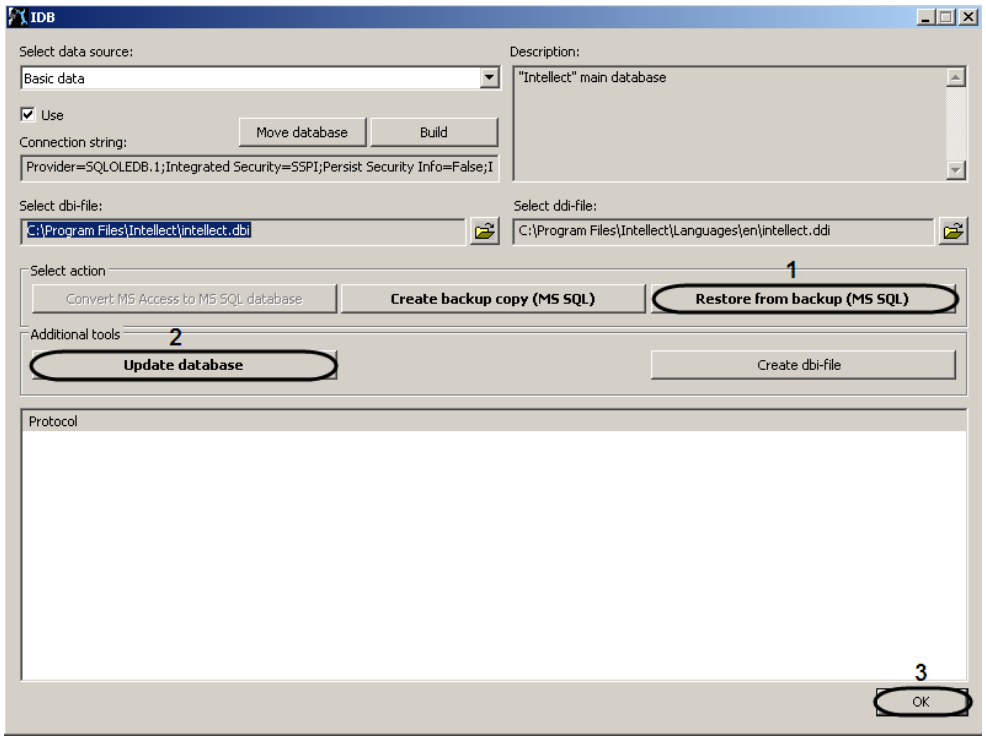


Figure 8.3-29 Restoring from backup

9. To update database click **Update database** (Figure 8.3-29, 2).
10. Click the “OK” button to shut down the idb.exe utility (Figure 8.3-29, 3).

Moving Intellect configuration database from MS SQL Server 2005 to MS SQL Server 2008 R2 is completed.

8.3.7 Database synchronization setup

When INTELLECT™ software is applied by a large-scale system with distributed architecture, servers and Remote Admin Workstations databases should be synced. Database synchronization allows to store data both centrally (on a single server or Remote Admin Workstation) and in a distributed manner (data replication from different servers and Remote Admin Workstation databases of the video surveillance system). Database synchronization provides parallel operation with servers and Remote Admin Workstations databases and their automatic updating after they have been modified.

INTELLECT™ software databases on servers and Remote Admin Workstations are not synced by default. Usually INTELLECT™ software is configured to sync all databases with a single centralized administering server database.

Note. If one or more databases are stored in MS Access format, they need to be converted to MS SQL format before the synchronization setup.

To sync the INTELLECT™ software “Configuration” database with the administering server database (or any other one), follow the procedure:

1. Make sure that MS SQL Server software is.

2. Start the idb.exe utility from the root of the INTELLECT™ software installation directory (for example, C:\Program Files\Intellect). The idb.exe utility dialog box will be displayed (Figure 8.3-30).

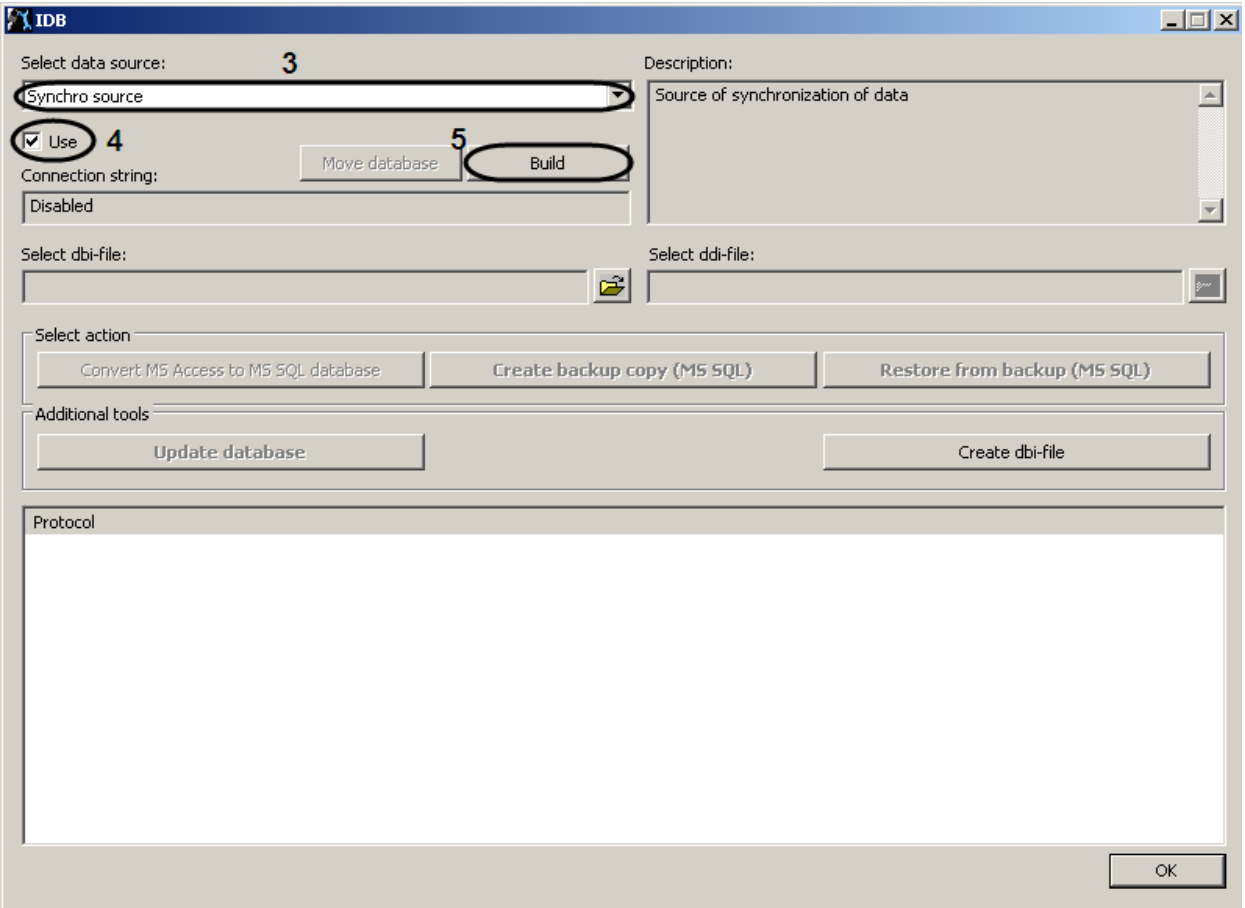


Figure 8.3-30. The idb.exe utility dialog box

3. Select the **Synchro source** item from the **Select source database** list.

4. Set the **Use** checkbox.

5. Click **Build**.

6. The **Data link properties** dialog box is displayed. Go to the **Provider** tab in the **Data link properties** dialog box (Figure 8.3-31).

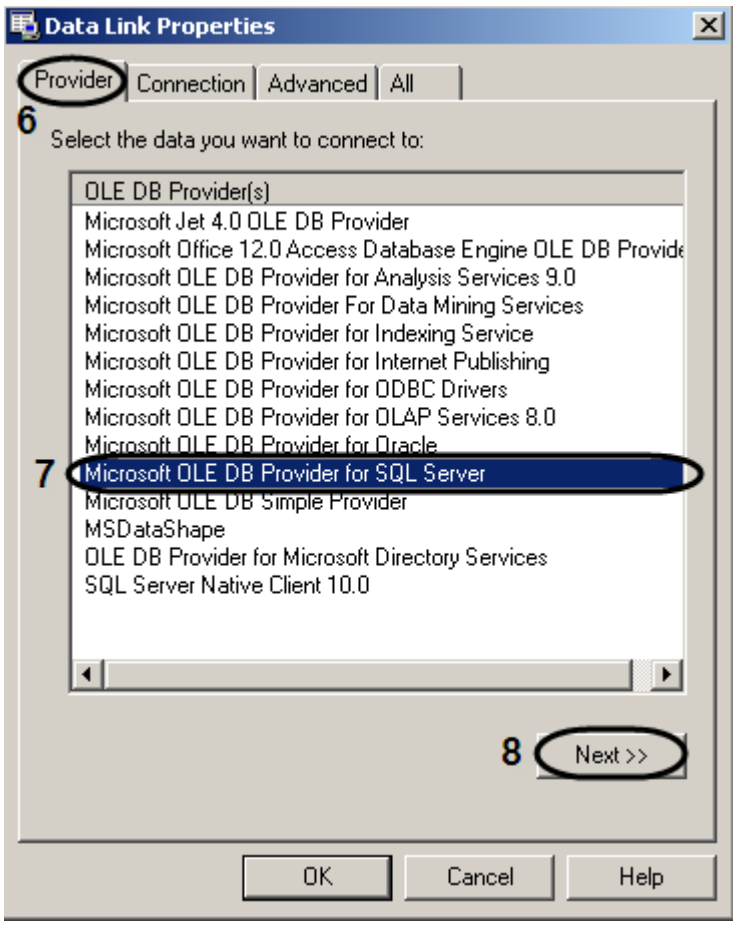


Figure 8.3-31. The Data link properties dialog box. The Provider tab

7. Select **Microsoft OLE DB Provider for SQL Server** from the **OLE DB Provider(s)** list.

8. Click **Next**.

9. As soon as the **Next** button is clicked, there is automatic going to the **Connection** tab (Figure 8.3-32).

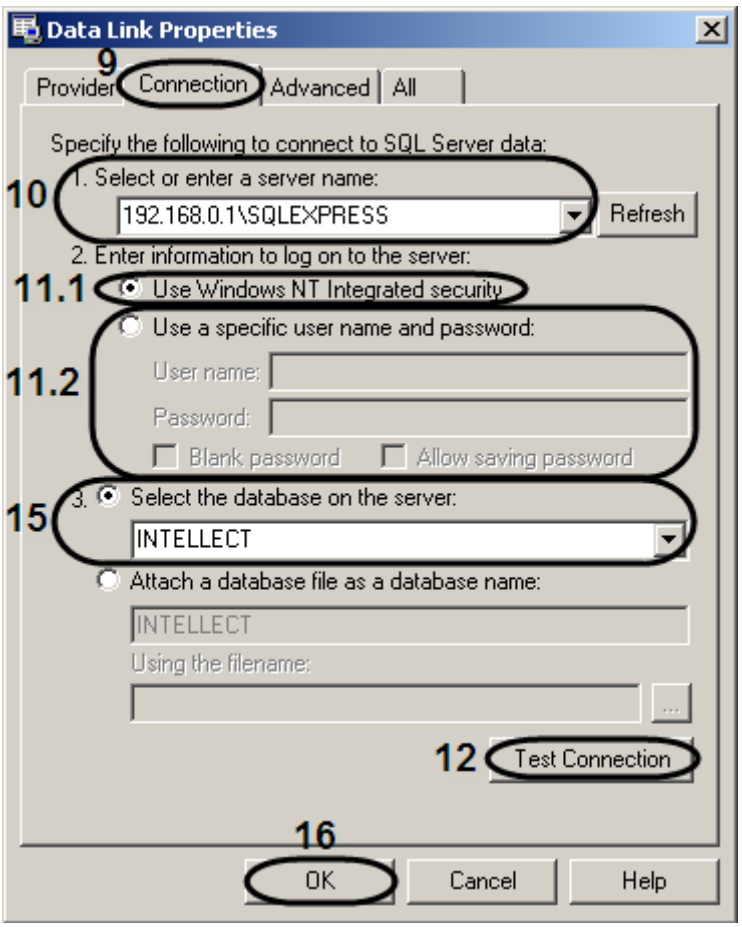


Figure 8.3-32. The "Data link properties" dialog box. The "Connection" tab

10. In the **1.Select or enter a server name** select from the list or input manually the address of MS SQL server containing the database that is to be used as a source to sync with the current database (Figure 8.3-32).
11. The **2.Enter information to log on to the server** group is used to enter the type and authentication parameters of the MS SQL server connection. MS SQL server authentication is performed through the user account, authorized in the Windows OS, or by user name (login) and password that protect the MS SQL server connection.

The method and parameters of authentication at the MS SQL server are set during MS SQL server installation.

Different parameters need to be entered, with different authentication techniques for MS SQL server connection:

11.1 If MS SQL server authentication is performed through a user's Windows OS account, switch to to the **Use Windows NT Integrated security** position. The user's current account on the computer, from which the synchronization is performed, should be logged into the computer with MS SQL server and the database to be synced with.

11.2 If MS SQL server authentication is performed through user login and password, follow the sequence:

- switch to the **Use a specific user name and password** position;

- in the **User name** field: enter the user name (login) to connect to the MS SQL server.
- if access to the MS SQL server is password protected, remove the default **Blank password** checkbox and enter the database access password into the **Password** field.

12. Click **Test Connection**.
13. If the MS SQL server was successfully connected, the “Test connection succeeded” message is displayed (Figure 8.3-33).

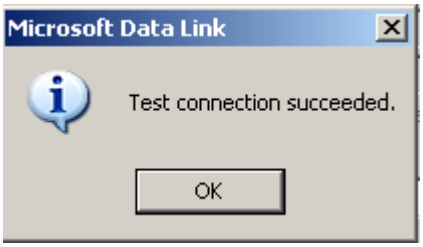


Figure 8.3-33. Database connection established message

Click **OK** to close the window.

14. If the MS SQL server name and/or authentication parameters of MS SQL server connection were entered inaccurately, the error message will appear (Figure 8.3-34).

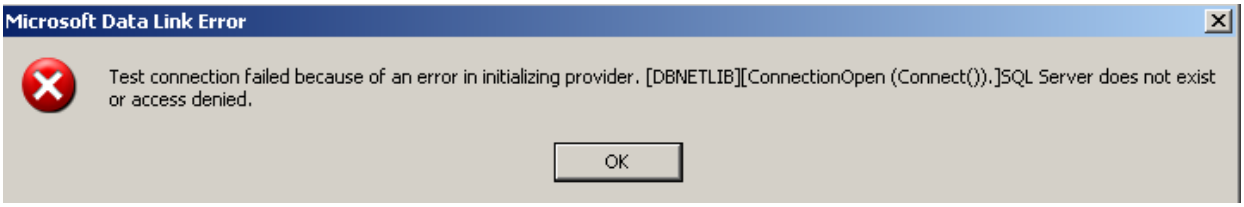


Figure 8.3-34. Example of the disabled SQL server connection message

Click **OK** to close the window. Then enter the correct password and try MS SQL server connection again.

15. From the **Select the database on the server** list choose the name of the database to be synced with the current base.
16. Click **OK** in the **Data link properties** dialog box. The window will close.
17. Click **OK** in the right bottom corner of the idb.exe utility box.

Database synchronization setup is completed.

8.4 Configuring video subsystem

8.4.1 General information on configuring video subsystem

8.4.1.1 *Video subsystem components description*

In the video surveillance systems based on INTELLECT™ software by video subsystem you mean the set of software modules and hardware devices used to receive, transmit, digitize, process, record and display video signals from video surveillance system cameras on monitor screens.

Video subsystem hardware includes:

1. video capture cards;
2. analog video camera (cameras);
3. IP devices.

Video subsystem software includes:

1. components for configuring the video capture cards.
2. components for digitized video signal compression and decompression.
3. components for digitized video signal recording.
4. components for digitized video signal transmission to Remote workstations.
5. components for displaying video signal on the monitor.

8.4.1.2 *Configuring video capture cards*

Video capture cards are configured in the course of INTELLECT™ software administering. Video capture cards are configured by video signal digitization and processing settings, which comply with:

1. signal format (PAL or NTSC);
2. frame rate;
3. frame resolution;
4. brightness;
5. contrast;
6. color depth;
7. color rendition format.

Each camera has its individual video signal processing and digitization settings (except for the signal format, which is set for all cameras, and is attached to the same ADC).

Moreover, configuring the video grabber involves setting up a proper switching of the video input channels.

8.4.1.3 *Configuring IP-devices*

IP-devices are configured via the web server or any other software, supplied together with the device, and via INTELLECT™ software.

Video signal compression and processing settings (format, frame rate, frame resolution, brightness, contrast, color depth, color rendition format) are performed via the web server or any other software, supplied together with the device.

The INTELLECT™ software system receives the image, processes it with detectors, records the video signals from IP-devices and transfers it to the Remote Monitoring Workstation.

Be sure before using an IP-device that processing and digitization settings of IP-devices (especially codecs), set via the web server, are supported by INTELLECT™ software. For actual information on IP-device compatibility, see the "Integration" section on the site of AxxonSoft company: http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.

8.4.1.4 *Video signal compression and decompression*

Video signal compression is digital video processing aimed at reducing video stream size. Compression is performed according to a specific software algorithm.

INTELLECT™ software uses a specific MotionWavelet algorithm to compress video signals received from video capture cards. This algorithm allows reducing video stream size by tens of times (from 5 to 30, subject to video signal features and compression rate). To compress video signals from IP-devices, standard (MPEG4) or manufacturer designed algorithms are in use.

With compression, video stream size decreases at the cost of its quality. That is why INTELLECT™ software compresses the video signal in two modes only: in disk recording mode and in transmission to the Remote Workplace mode. The video signal is not compressed before displaying on a video server monitor.

Before displaying the compressed video signal it is decompressed. Decompression is automatically performed while displaying video signals (both real-time and archive footage playback) at Remote Workstations and video recordings playback on the videoserver.

If video resolution on the Monitor is less than resolution of compressed video, then INTELLECT™ partly decompresses video (it allows reducing load of CPU that decompresses video). Network load is not reduced. Partial decompression is supported by MPEG4, MJPEG, MXPEG, Motion Wavelet and H264svc codecs. Partial decompression is not supported by H263, H264avc and Mpeg2 codecs. Fps reduction only is supported by H264svc-t codec.

Description of decompressors is shown in the Table 8.4-1.

Table 8.4-1 Decompressors used in INTELLECT™ software

Decompressor	Description
FfmpegAllInOneDecoder	A module with a set of Ffmpeg library decoders (with an open source code). It allows converting multimedia data compressed by MPEG2, MPEG4 and Motion JPEG codecs
FFmpegH264Decoder	A decompressor of the Ffmpeg library used for converting a video signal in the H.264 format

Decompressor	Description
H264DecodeBalancer	A module used for CUDA-enabled graphics cards. It automatically switches (depending on video signal parameters) between CUDA and decoders of the IPP library
H263IppDecoder H264InterlacedIppDecoder H264IppDecoder MPEG2IppDecoder MJPEGIpp MPEG4IppDecoder	Decompressors included into the Intel Integrated Performance Primitives (Intel IPP) library. A compression format is specified in the decompressor name
H264SvcEx	A decompressor for converting video signals in the H264Svc format received from Stretch devices into the H264Avc format
MxPEG Mobotix	A decompressor for converting video signals received from Mobotix devices
Motion Wavelet 1, Motion Wavelet 2	A decompressor for wavelet-converting video signals
BOSCH	A decompressor for converting video signals received from BOSCH devices
Hikvision Decoder	A decompressor for converting video signals received from Hikvision devices
StreamLabs	A decompressor for converting video signals received from StreamLabs (Wavelet and MotionWavelet) devices
VWV	A decompressor for converting video signals received from VisioWave cameras

Note. When decompressors included into the Intel IPP library are in use, there can be video distortions for some resolutions. In these cases resolutions divisible by 16 are recommended to be used (e.g, 1280x720 or 1360x768) or another decompressor is to be selected.

Compression and decompression algorithms are set on the settings panel of a “Camera” object using the “Compressor” and “Decompressor” list correspondingly (see the “Settings panel of the Camera ” section), and with the help of the advanced setup tool (see the “The settings panel for the Video subsystem section” section). The decompression algorithm set in the camera settings is used only when a video signal is displayed on a video surveillance monitor.

If the compressor/decompressor (default value) is not selected on the settings panel of a “Camera” object or the incorrect one is selected, then INTELLECT ™ software automatically selects the first compressor/decompressor in alphabetical order.

Note. When WS7 and WS17 video capture cards are in use, the “Decompression” field is to be left blank otherwise use Motion Wavelet decompressor. If another decompressor is selected, then INTELLECT™ operation is not guaranteed.

Attention! If for some reasons the automatic decompressor selection is not right, then you are to select a decompressor manually.

8.4.1.5 *How to record digitized video signals*

Video signals archiving provides post-event analysis of evidence footage.

The archive is located on the local disks of the videoserver. Having reached the end of the archive disk volume, the archive is overwritten.

Before archiving on the videoserver, the video signal is compressed. It is compressed to reduce the size of the video recordings.

INTELLECT™ software is capable of auto recording, initiated by cameras (Main detectors) and detectors alarm detection or by Operator command.

Pre-event, post-event, and Hot (higher frame rate) recording can be performed to make post-event analysis of evidence footage more effective.

8.4.1.6 *Digital video signal transmission to Remote Workplaces*

INTELLECT™ software provides video surveillance from Remote Workstations based on:

1. A PC (IBM PC–based) personal computer, connected to the videoserver via local TCP/IP net;
2. An IBM PC, connected to the videoserver via the “web server” module by HTTP protocol;
3. PocketPC, connected to the videoserver via the «SmartPocket» module;
4. SmartPhone, connected to the videoserver via the «SmartPhone» module.

Both real-time and archive video signals may be transmitted to Remote Workstations. Prior to being transmitted to a Remote Workplace, video signals are compressed.

8.4.1.7 *Video signal display*

Video signals are displayed using the “Video Surveillance Monitor” interface object. The Video monitor is especially used to display video signals, received from cameras, and to play back the video recordings.

The video monitor has several options: detectors, PTZ units and microphones control, image processing and exporting.

Different video monitors are used with different video signal transmission modes:

1. Video server surveillance Monitor.
2. Video surveillance Monitor of the Remote Workstation, connected to the videoserver via the TCP/IP net, identical to the videoserver surveillance Monitor.
3. Video monitor of the “web server”, depicted in web browsers on Remote Workstations, connected to the videoserver via the “web server” module by HTTP protocol.
4. “SmartPocket” module video monitor, displayed on the PocketPC screen, connected to the videoserver via the “SmartPocket” module.
5. “SmartPhone” module video monitor, displayed on the SmartPhone screen, connected to the videoserver via the “SmartPhone” module.

The above video surveillance monitors have different components and functions. Any video monitor can be set up to display real-time video and play back archive footage.

8.4.2 Registrating video capture cards and cameras in INTELLECT™ software

To configure video subsystem in INTELLECT™ software, create the “Video capture card” objects on the base of which the “Camera” objects are created (see INTELLECT™ software package. Installing and configuring security system components guide).

8.4.3 Configuring the video signals processing mode while using video capture cards and analog video cameras

8.4.3.1 *Video signals digitization and processing settings*

8.4.3.1.1 Setting up format (PAL or NTSC) for the input analog video signal

Different digitization and processing algorithms are used with different input video signal formats. The input signal format is individually set for ADC of every video capture card. Any single ADC processes and digitizes single format signals only: either PAL or NTSC.

In INTELLECT™ all ADCs of video capture cards by default are set to digitize video signal in PAL format.

Note 1. While using Stretch VRC6004, VRC 6008, VRC 6416, VRC 7008L and VRC 6404HD video capture cards, the input video signal (PAL or NTSC) is selected automatically depending on cameras, connected to the card. Changing the parameter does not affect the card workability.

Note 2. While using FX116 and FX416 video capture cards, restart INTELLECT™ software after changing the format of video input. Otherwise the initial settings will be active.

To set the ADC of a video capture card to digitize and process video signal in NTSC format, do the following:

1. Go to the “Hardware” tab in the “System Settings” dialog box (Figure 8.4-1, 1).
2. In the objects tree of the “Hardware” tab, select the “Video Capture Card” object, created before (Figure 8.4-1, 2).The settings panel for the selected object is displayed on the right of the “Hardware” tab (Figure 8.4-1).

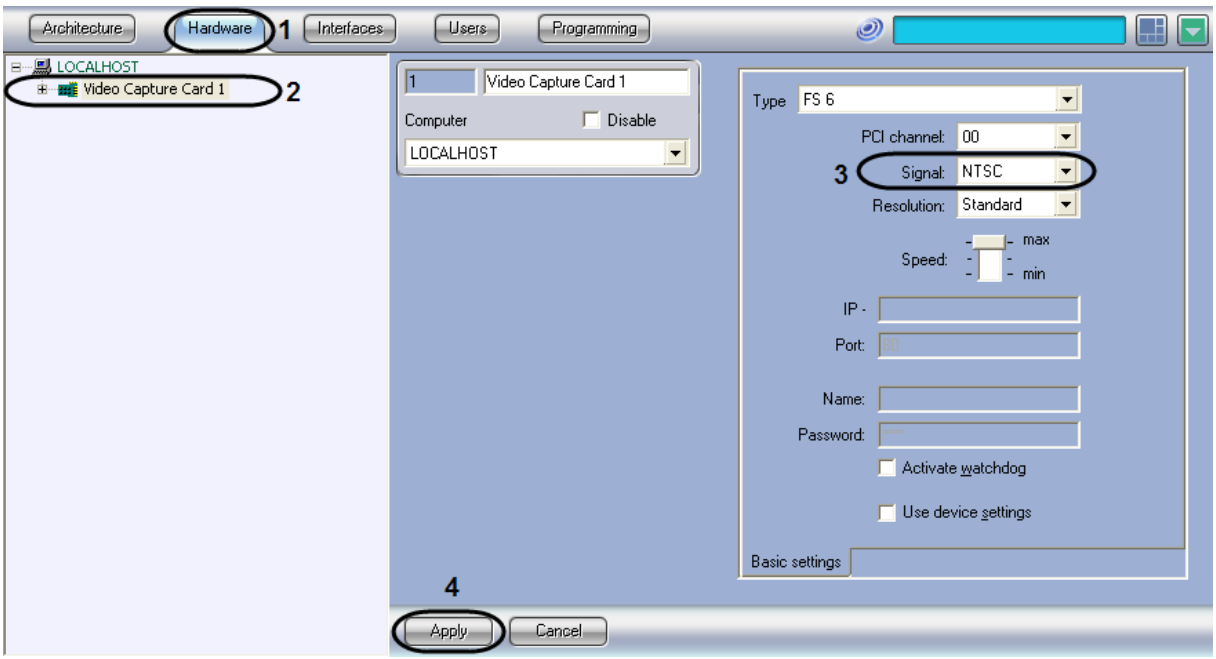


Figure 8.4-1 Selecting NTSC format

3. In the “Signal” drop-down list, select the “NTSC” value (Figure 8.4-1, 3).

4. Click the “Apply” button (Figure 8.4-1, 4).

The input video signal format is now selected.

8.4.3.1.2 Setting up frame resolution

There are three options of frame resolution in INTELLECT™ software: “Standard”, “High” and “Full”.

The actual resolution of the digital video signal depends on the input analog video signal format. A table for the settings and actual resolution in different formats is given below (Table 8.4-2).

Table 8.4-2 Correspondence between frame resolution and video signal format

Resolution	PAL	NTSC
Standard	352 x 288 pixels	352 x 240 pixels
High	704 x 288 pixels	640 x 240 pixels
Full	704 x 576 pixels	640 x 480 pixels

Resolution of digital video signal is set for each camera individually.

“Standard” resolution is a default one for video signal digitization on all cameras.

To change the selected camera resolution, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-2, 1).

2. In the objects tree of the “Hardware” tab, select the “Video Capture Card” object, created before (Figure 8.4-2, 2).The settings panel for the selected object is displayed on the right of the “Hardware” tab.

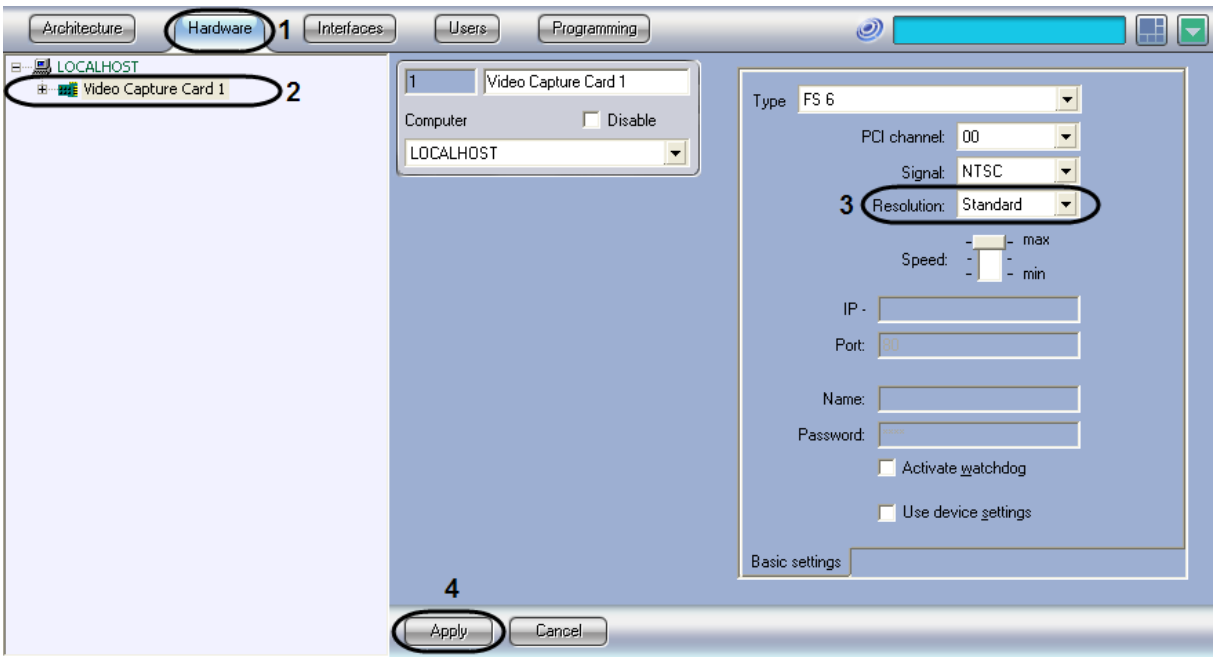


Figure 8.4-2 Resolution settings

3. In the “Resolution” drop-down list, select the desired resolution (Figure 8.4-2, 3).

4. Click the “Apply” button (Figure 8.4-2, 4).

Video signal resolution is now set.

Note. Changing video signal resolution, take account of:

1. *In the multiplex mode (when the ADC of a video capture card digitizes signals from several cameras), with the “Full” resolution setting for at least one camera, the total frame rate of video signal digitized by this ADC will decrease by 1.3 times.*

2. *Resolution increasing leads to an increase of the frame size and, consequently, builds up the video stream, recorded onto the hard drive and transmitted in the network.*

8.4.3.1.3 Frame rate settings

8.4.3.1.3.1 Video capture card resources

By default the resources of video capture cards are uniformly distributed between cameras video signals of which are digitized and processed by this ADC. The frame rate of the digitized video signal is limited by the ADC resources for video signal processing and digitization.

Video capture cards may be configured, so as to give to one or more cameras additional ADC resources, and thus to increase the frame rate of video signals from these cameras. At the same time the frame rate of video signals from other cameras is decreased.

INTELLECT™ software and video capture cards sharing allows reallocating video capture card resources to the cameras:

Option 1. Reallocation of cameras between ADCs of a video capture card.

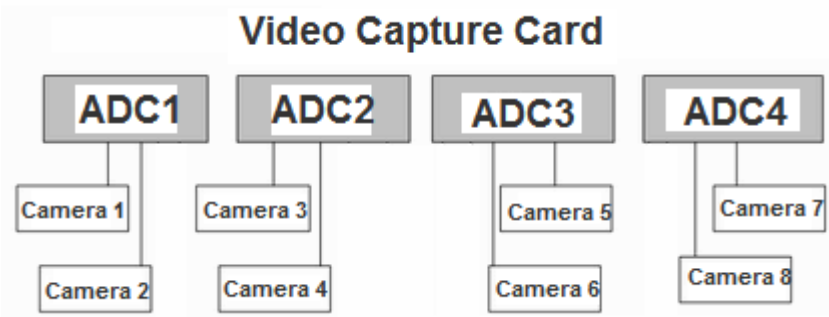
ADC resources are generally characterized by the maximum total frame rate of video signals. By default ADC resources are uniformly distributed between cameras to the assigned cameras. So, the more camera video signals are digitized and processed by the ADC, the lower the frame rate of the single video signal is.

Reallocation of cameras between ADCs allows increasing the frame rate for some cameras by means of others.

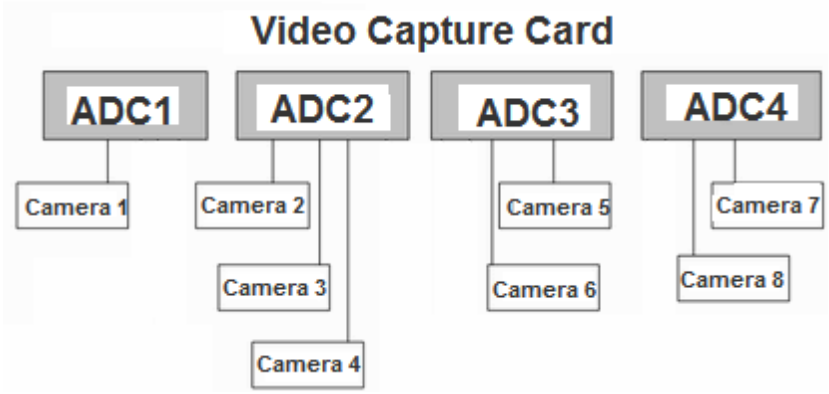
If all allowable cameras are connected to a video capture card, then only uniform distribution on ADC is possible. In this case every ADC of a video capture card digitizes and processes video signal from an equal number of cameras. So, the maximum frame rate is the same for all video signals (except for video signals of different formats and different resolutions).

If the number of cameras connected to a video capture card is less than their maximum number, then it is possible to reallocate them between ADCs of a video capture card. For this, those cameras, which frame rate is to be increased, are allocated separately to one ADC, or allocated in number that is less than the maximum allowable one. Cameras allocated to a given ADC and not subject to strict frame rate requirements, are reallocated to other ADCs.

An example of allocating cameras to ADCs is shown in Figure 8.4-3.



A. Uniform camera allocation between ADCs



B. reallocating the cameras between ADCs to allocate extra resources to Camera1

Figure 8.4-3. An example of reallocating cameras to ADCs

Option 2. Reallocation of resources of one ADC between cameras video signal of which are to be processed and digitized by one ADC.

By default the ADC resources are uniformly distributed between cameras video signals of which are digitized and processed by this ADC.

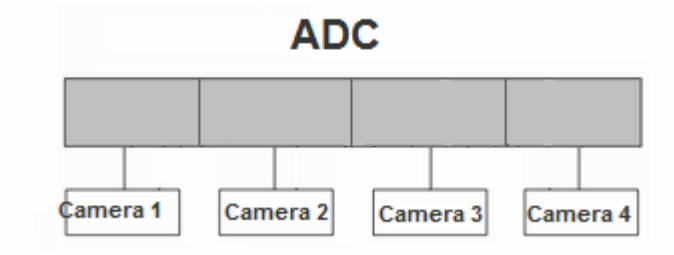
Reallocation of cameras between ADCs allows increasing the frame rate for some cameras by means of others. Reallocation of resources of one ADC to the cameras is much less effective than camera reallocation between the ADC. Therefore this is to be done only if camera reallocation to the ADC is impossible or if it does not help.

With reallocation of resources from 1 ADC to the cameras, one of the cameras gets extra ADC resources for its video signal processing and digitization. Extra ADC resources are formed by removing them from other cameras video signals of which whose are processed by the ADC.

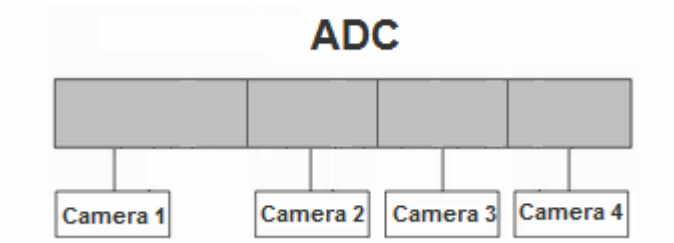
So, for a single ADC, when the frame rate of a certain camera increases, the frame rates of other cameras decrease.

To perform this operation, a selected camera is to have priority in the process queue.

An example of reallocation of resources of one ADC between cameras is shown in Figure 8.4-4.



A. Uniform camera allocation between ADCs



B. reallocating the cameras between ADCs to allocate extra resources to Camera1

Figure 8.4-4. An example of reallocating resources of one ADC between cameras

8.4.3.1.3.2 Operation modes of the video capture cards' ADC

ADC operation mode is defined by the number of processed and digitized video signals. There are two modes:

1. "Live video".
2. Multiplexing.

In the "Live video" mode all resources of an ADC are used to process the single video signal. The mode provides digital video stream with a maximum frame rate of 25 fps in PAL format and 30 fps in NTSC format.

If the ADC processes two or more video signals, its resources are used in the multiplexing mode. Then the ADC resources are uniformly allocated between the cameras, and part of its resources support the multiplexing process. So, in the multiplex mode the total frame rate of video signals, digitized by a single ADC, is much lower than in the “Live video” mode.

The maximum permissible total frame rate in the multiplexing mode depends on the frame resolution.

For ADC that digitizes all video signals with standard (352 x 288 pixels in PAL format, 352 x 240 pixels in NTSC format) and/or high (704 x 288 pixels in PAL format, 640 x 240 pixels in NTSC format) frame resolution, the total frame rate is 16 fps in PAL format and 20 fps in NTSC format.

When ADC digitizes at least one of the video signals with full resolution (704 x 576 pixels in PAL format, 640 x 480 pixels in NTSC format), the maximum permissible total frame rate is reduced to 12 fps in PAL format and 15 fps in NTSC format.

8.4.3.1.3.3 Frame rate setup procedure

Default settings for the digitized video signals frame rate are 2 fps in PAL format and 2.5 fps in NTSC format.

While settings it is possible to increase or to reduce the frame rate.

To set up the frame rate, do the following:

1. Switch off the “Camera” objects, which are assigned to the idle video channels. This allows allocating the resources between working cameras only and thus increasing the frame rate.
2. Change frame scaling.
3. Reallocate cameras on ADC of the video capture card.
4. Reallocate resources of one ADC between cameras (priority process queues).

In most cases 1 and 2 steps are sufficient to set the frame rate. 3 and 4 steps are necessary only with high frame rate requirements to one or more cameras.

8.4.3.1.3.4 Configuring video subsystem with disabled video channels

By default resources of video capture cards’ ADC are allocated uniformly between all video channels whether there is any signal passing through it or not. So, even if a video channel has no signal, the resources of ADC are allocated to it.

Several “Camera” objects are disabled in turn.

To prevent allocation of ADC resources, the “Camera” objects are to be disabled in INTELLECT™, assigned to the disabled video channels.

To disable the “Camera” objects in INTELLECT™ system, do the following:

1. Define the numbers of the idle video capture channels (taking into account BNC plug numbering).
2. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-5, 1).

3. Select the “Camera” object, created before, with the same channel number as the BNC plug (idle channel) (Figure 8.4-5, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

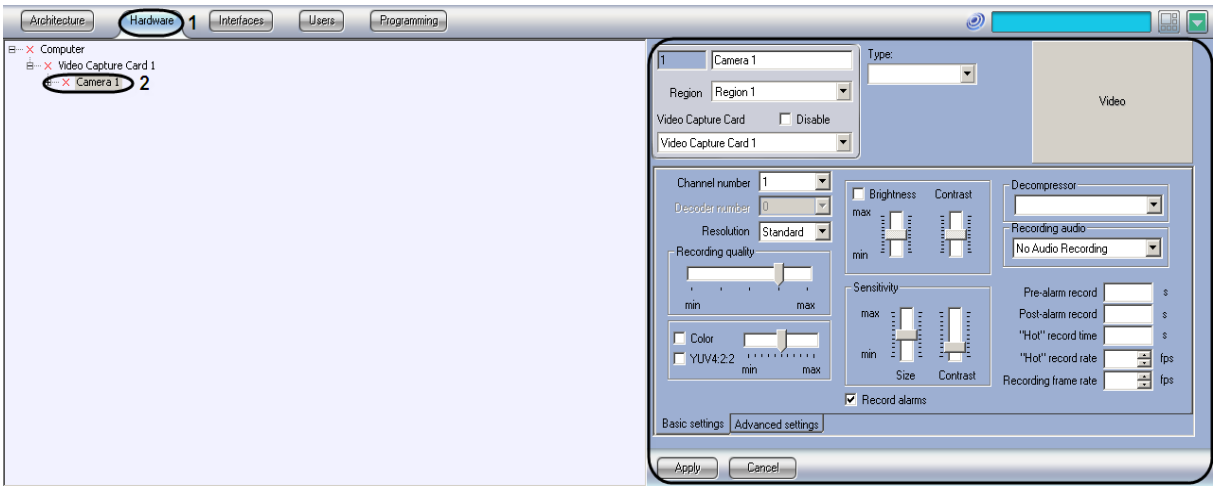


Figure 8.4-5 Switch to the settings panel for the “Camera” object

4. Make sure that no signal is displayed in the video field (Figure 8.4-6, 1).

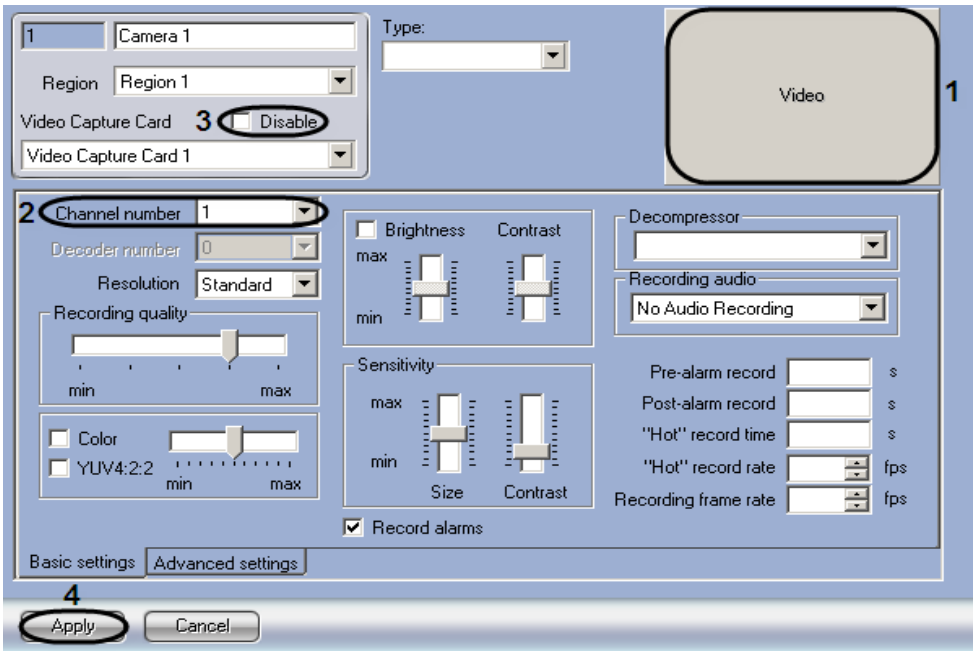


Figure 8.4-6 Disabling the “Camera” object

5. The signal displayed in the video field indicates that the “Camera” object is matched to another video channel.The video channel number is specified in the “Channel number” drop-down list in the “Basic settings” tab (Figure 8.4-6, 2). Match the “Camera” object with the channel number, which corresponds to the BNC plug number and the “Camera” object number, or scan for a “Camera” object, matched with the desired channel number.

6. Set the “Disabled” checkbox (Figure 8.4-6, 3).

7. Click the “Apply” button (Figure 8.4-6, 4).

The disabled “Camera” object is indicated with a cross mark (Figure 8.4-7).

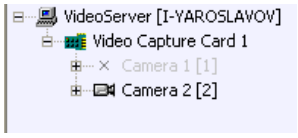


Figure 8.4-7. Disabled “Camera” object in the objects tree

Video subsystem with disabled video channels is now configured.

8.4.3.1.3.5 Actual frame rate

It is recommended to define the actual frame rate of video signal digitization and then to set up the frame rate for video signals from video surveillance system cameras.

Frame rate setup is to be done only if video signal frame rates from one or more cameras do not meet the requirements.

Actual frame rates are defined for each camera individually.

To define the actual frame rate for a selected camera, do the following:

1. Configure the video surveillance monitor (see “Video signal display settings” section);
2. Enable the debug mode in Intellect™ software using the tweaki.exe utility (see “Tweaki.exe utility for advanced setup of the Intellect software system” section).

In Intellect™ software, actual frame rates of digitized video signals in the debug mode are displayed on the Monitor. To define the frame rate of video signal from a selected camera, do the following:

1. Display the selected camera box on the Monitor.
2. Activate the selected camera box by left clicking on it.
3. The actual frame rate of the selected window video signal is displayed in the information window in the top right corner of the Monitor (Figure 8.4-8).

Figure 8.4-8. Defining actual frame rate

Note. For Stretch video cards of standard compression (h264) the frame rate that is displayed on Monitor in Intellect™ software can be less than the frame rate that is indicated by the video card manufacturer. This is due to the fact that while displaying the frame rate of video signal digitization on Monitor in Intellect™ software "blank frames" that are distributed by the video card, are not taken into account. «Blanck frames» do not contain the information about the image and are created by the video capture card when there are no changes in the video stream and a new video frame is the same as the previous one (for example, there is no motion in the frame).

8.4.3.1.3.6 Changing frame scaling

By default INTELLECT™ software digitizes video signals with the frame rate lower than maximum allowed one. This is caused by the following:

1. Video signal processing and digitization with a high frame rate is a resource-intensive process. When the video signal frame rate increases, configuration requirements increase for the computer used as a Server.

2. Video signal is transmitted to the Remote Workplaces with the same frame rate as it was digitized. So, network capacity requirements increase together with the frame rate increase.

By default the total frame rate of video signals, which are digitized and processed by the same ADC, is 2 times lower than the maximum allowed one. This ratio is provided by frame scaling, which allows every second frame to be processed by the program.

Settings allow reducing (total frame rate increases) or increasing (total frame rate decreases) the scaling.

Frame scaling is changed separately and independently for every ADC.

To change scaling of ADC video signals, do the following:

1. Go to the "Hardware" tab in the "System settings" dialog box (Figure 8.4-9, 1).

2. Select the relevant “Video Capture Card” object, created before, in the “Hardware” tab in the objects tree (Figure 8.4-9, 2). The settings panel for the selected object is displayed in the right part of the “Hardware” tab.

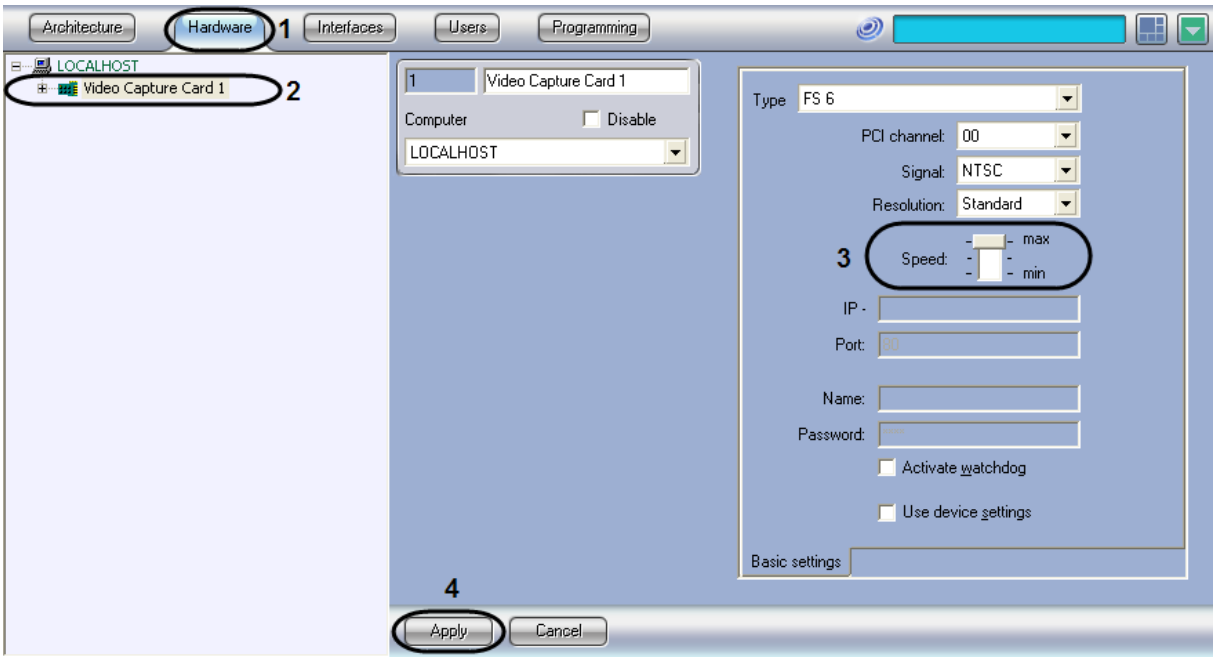


Figure 8.4-9 Changing the frame scaling

3. If it is necessary to increase the total frame rate up to the maximum allowed value, move the “Speed” slider to the “Max” position (Figure 8.4-9, 3).

4. If it is necessary to reduce the total frame rate to the minimum allowed value, move the “Rate” slider to the “Min” position. The minimum total frame rate of video signals, digitized and processed by selected ADC, is 3 times lower than the maximum allowed one.

5. If it is necessary to return the default scaling settings, move the “Speed” slider to the middle position. The default total frame rate is 2 times lower than the maximum allowed one.

6. Click the “Apply” button (Figure 8.4-9, 4).

7. Close the “System settings” dialog box and restart INTELLECT™ software.

Note. Without restart, changes in video signal scaling may be applied incorrectly.

8.4.3.1.3.7 Allocation of video capture card’s resources

By default all cameras are uniformly allocated to ADC of video capture card. Thus ADC resources are uniformly distributed to the cameras, attached to the video capture card, and all cameras have the same frame rate.

If the number of cameras connected to a video capture card is less than their maximum allowed number, it is possible to reallocate them between different ADCs of the video capture card. Reassigning of cameras allows increasing the frame rate for some cameras by means of a decrease in the frame rate of others.

Before reassigning the cameras to ADCs of the video capture card, disable the “Camera” objects corresponding to disabled cameras (see “Configuring video subsystem with disabled video channels” section).

Note. Video inputs numeration of FX4 and FX8 video capture cards does not correspond to the numeration of PCI channels in Intelect. It is impossible to allocate video inputs to chips one after another (i.e. the first corresponds to 1 and 2 chips, the second upper input corresponds to 3 and 4 etc.) because OS determines it.

To increase the frame rate of the video signal from one or more cameras, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-10, 1).
2. Select the “Camera” object, created before, corresponding to the camera, which frame rate is to be increased, in the objects tree in the “Hardware” tab (Figure 8.4-10, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

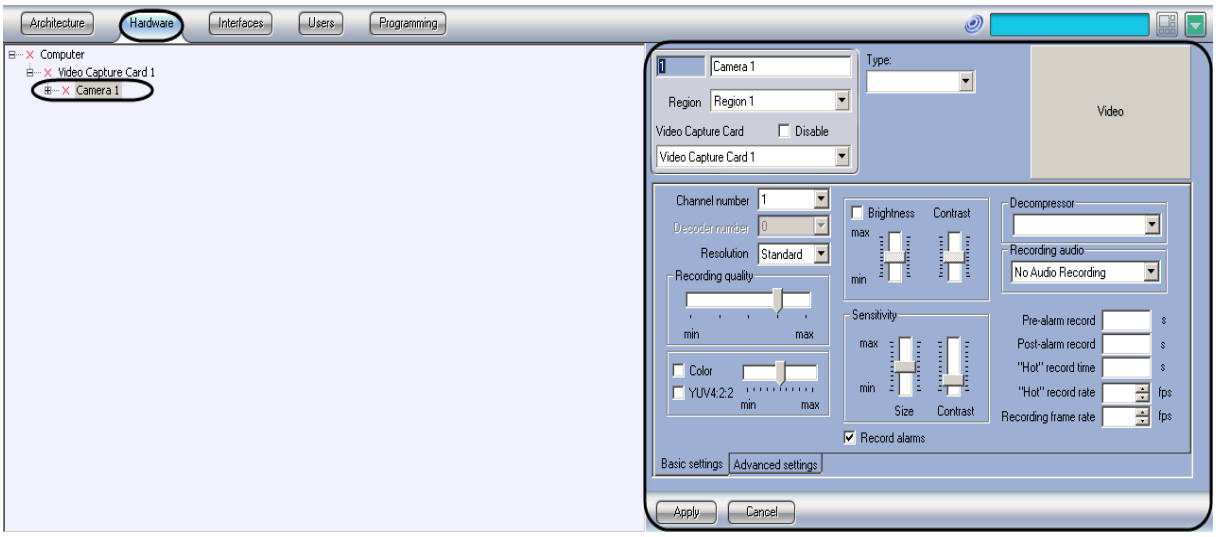


Figure 8.4-10 Allocation of video capture card’s resources

3. To increase the frame rate of a camera up to the “Real time” rate (25 fps in PAL format and 30 fps in NTSC format), reallocate other cameras serviced by the same ADC as with the camera above , to other ADCs.

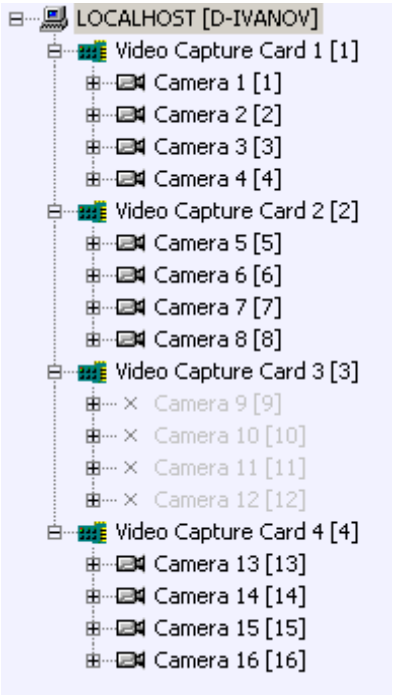
For this move “Camera” objects to parent branches of other “Video capture card” objects. The parent “Video capture card” object for a “Camera” object is set by selecting the number of the parent object in the “Video Capture Card” list of settings panel for the “Camera” object. As a result the “Camera” object moves to a subdirectory of the selected “Video capture card” object.

Example 1. Configuring video signal digitization with the “Real time” frame rate.

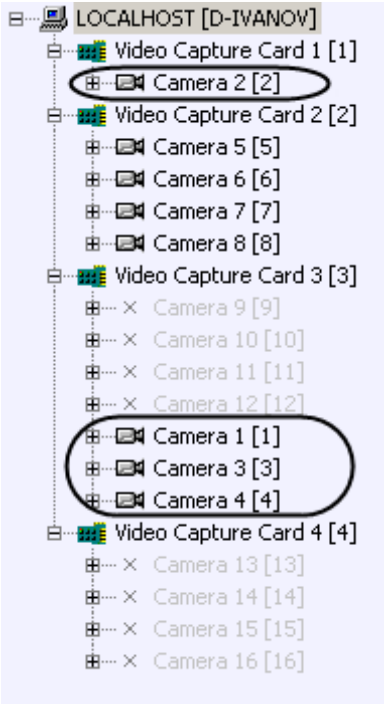
Task. Video signal on Camera2 is to be digitized with the “Real time” frame rate.

Initial data. The card has 4 ADCs. They are matched to 4 “Video capture card” objects in the objects tree. The video capture card may have up to 16 cameras connected to it. 8 cameras are actually connected to the video capture card. The objects matched to the remaining 8 cameras are disabled. Each of two ADCs, matched to the “Video capture card 1” and “Video capture card 2” objects, is

configured to digitize the signals from 4 cameras. The ADCs matched to the “Video capture card 3” and “Video capture card 4” objects are not configured to digitize signals from any cameras. An example of the objects tree is given in Figure 8.4-11, A.



A. Initial data



B. Result

Figure 8.4-11. Example of configuring video digitization on Camera 2 with the “Real time” frame rate

Solution. Do the following:

1. Select the “Camera 1” object in the objects tree. The settings panel for the selected object is displayed.
2. Select “Video Capture Card 3” in the “Video Capture Card” list.
3. Click the “Apply” button.
4. The “Camera 1” object moves to the subdirectory of the “Video Capture Card 3” object (see Fig. Figure 8.4-11, B).
5. Repeat (1) – (4) steps for the “Camera 3” and “Camera 4” objects.
6. Select the “Video Capture Card 1” object in the objects tree.
7. Make sure that the “Speed” slider is in the “max” position.

If the “Speed” slider is in the “max” position, then setup is completed.

If the “Speed” slider is in another position, move it to the “max” position and do (8) - (10) steps.

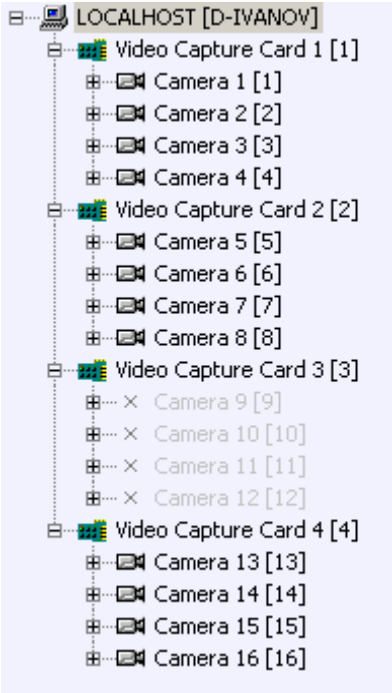
8. Click the “Apply” button.
9. Close the “System settings” dialog box and restart INTELLECT™ software.
10. The frame rate of the selected camera increases up to the “Real time” rate (for information on testing the frame rate change, see the “Actual frame rate” section).
11. If the number of connected cameras prevents the configuration of video signal digitization from one of the cameras with the “Real time” rate (for example, when 15 of 16 allowed cameras are connected), or if the frame rate on several cameras is to be increased simultaneously to the rate, lower than the “Real time” one, then the cameras, the frame rate of which is to be increased, are allocated between ADCs and they do not exceed the maximum allowable number. The frame rate is increased by as many times, as the number of cameras on ADC is reduced.

Video capture card’s resources are now allocated.

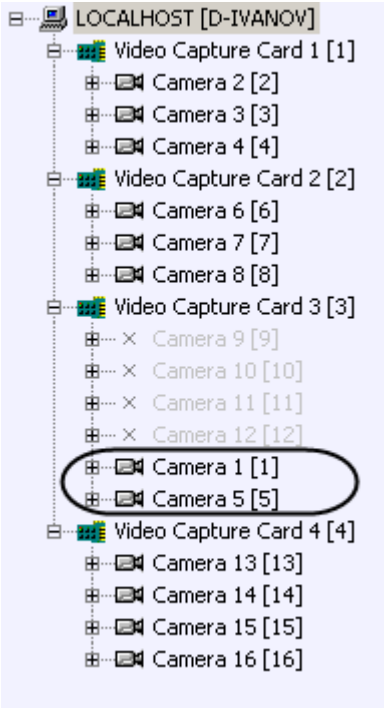
Example 2. Configuring video signal digitization from 2 cameras with increased frame rate

Task. Video signal on Camera1 and Camera5 is to be digitized with increased frame rate.

Initial data. The card has 4 ADCs. They are matched to 4 “Video Capture Cards” objects in the objects tree. The video capture card may have up to 16 cameras connected to it. 12 cameras are actually connected to the video capture card. The objects matched to the remaining 4 cameras are disabled. Each of 3 ADCs, matched to the “Video Capture Card 1”, “Video Capture Card 2” and “Video Capture Card 4” objects, is configured to digitize the signals from 4 cameras. The ADC, matched to the “Video Capture Card 3” object, is not configured to digitize the signals from any camera. An example of the objects tree is given in Figure 8.4-12, A.



A. Initial data



B. Result

Figure 8.4-12. Example of configuring video digitization on Camera1 and Camera5 with increased frame rate

Solution. Do the following:

1. Select the “Camera 1” object in the objects tree. The settings panel for the selected object is displayed.

2. Select “Video Capture Card 3” in the “Video Capture Card” list.

3. Click the “Apply” button.
4. The “Camera 1” object moves to a subdirectory of the “Video Capture Card 3” object (Figure 8.4-12, B).
5. Repeat (1) – (4) steps for the “Camera 5” object.
6. The frame rate on Camera1 and Camera5 increases twofold (for information on testing the frame rate change see the “Actual frame rate” section).

12. Click the “Apply” button.

Video capture card’s resources are now allocated.

Note. Ways of resources allocation (given in examples) are not used for FS15\FS115\FX4\FX8 video capture cards, because for these cards numbers of PCI channels (specified in settings of the «Video capture card» objects) are connected with physical inputs (BNC connectors).

8.4.3.1.3.8 Video signal processing priorities

The ADC resources are uniformly distributed to the assigned cameras by default.

ADC resources reallocation allows increasing the frame rate for a camera by means of other cameras. Reallocation of resources from 1 ADC between the cameras is much less effective than camera reallocation on the ADC. Therefore it should only be done if camera reallocation on the ADC is impossible or if it does not help.

With reallocation of resources from 1 ADC between the cameras, one of the cameras is allocated with additional ADC resources for its video signal processing and digitization. Additional ADC resources are formed by removing them from other cameras, video signals of which are processed by the ADC.

A camera is allocated with additional ADC resources via the priority process queue.

INTELLECT™ software provides 1/2 and 1/3 process queues.

When a camera has a 1/2 process queue, its video signal is processed in every second frame. So, the digitization frame rate on this camera is the half of total frame rate of the considered ADC.

When a camera has a 1/3 process queue, its video signal is processed in every third frame. So, the digitization frame rate on this camera is one third of total frame rate of the considered ADC.

Example 1. The ADC is configured to digitize video signal from 4 cameras.

If all the cameras have a common queue, the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 3, Camera 4, Camera 1, Camera 2, Camera 3…

Let us suppose that Camera 1 has 1/2 queue, and the rest of the cameras are in the common queue. Then the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 1, Camera 3, Camera 1, Camera 4, Camera 1…

So, the frame rate on Camera 1 is increased by 2 times and becomes the half of total frame rate of the considered ADC. The frame rate of each of the remaining cameras becomes 1.5 times less and makes up 1/6 of total frame rate of the considered ADC.

Example 2. The ADC is configured to digitize the video signal from 3 cameras.

If all the cameras have a common queue, the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 3, Camera 1, Camera 2, Camera 3…

Let us suppose that Camera 1 has a 1/2 queue, and the rest of the cameras are in the common queue. Then the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 1, Camera 3, Camera 1, Camera 2…

So, the frame rate of Camera 1 is increased by 1,5 times and becomes the half of total frame rate of the considered ADC. The frame rate of each of the remaining cameras becomes 1.33 times less and makes up 1/4 of total frame rate of the considered ADC.

Example 3. The ADC is configured to digitize video signal from 4 cameras.

If all the cameras have a common queue, the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 3, Camera 4, Camera 1, Camera 2, Camera 3…

Let us suppose that Camera 1 has 1/3 queue, and the rest of the cameras are in the common queue. Then the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 3, Camera 1, Camera 4, Camera 2, Camera 1…

So, the frame rate of Camera 1 is increased by 1.33 times and becomes one third of total frame rate of the considered ADC. The frame rate of each of the remaining cameras becomes 1.125 times less and makes up 2/9 of total frame rate of the considered ADC.

Example 4. The ADC is configured to digitize video signal from 4 cameras.

If all the cameras have a common queue, the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 3, Camera 4, Camera 1, Camera 2, Camera 3…

Let us suppose that Camera 1 and Camera 2 have 1/2 queue, and the rest of the cameras are in the common queue. Then the ADC digitizes video signals in the following sequence:

Camera 1, Camera 2, Camera 3, Camera 1, Camera 2, Camera 4, Camera 1…

So, the frame rate of Camera 1 is increased by 1.33 times and becomes equal one third of total frame rate of the considered ADC. The frame rate of each of the remaining cameras becomes 1.5 times less and makes up 1/6 of total frame rate of the considered ADC.

Note1. If Camera 1 and Camera 2 have 1/3 queue and Camera 3 and Camera 4 are in the common queue, then allocation of the ADC's resources is as it is showed in the Example4.

Note2. It has no sense to enqueue one of two cameras, with 1/2 priority allocated to the same ADC, because this camera video signal will be processed as if it were in the common queue.

Note3. It has no sense to enqueue one of three cameras with 1/3 priority allocated to the same ADC, because this camera video signal will be processed as if it were in the common queue.

Reallocation of resources of 1 ADC between the cameras is possible in two modes:

1. in the processing mode, i.e. with video signal digitization and processing before it is displayed;

2. in the recording mode, i.e. with video signal digitization and processing before it is recorded into the Server archive. When cameras are switched to the recording mode, video signals are displayed with the rate, corresponding to the given ADC resources allocation.

8.4.3.1.3.9 Setting video processing priority

While processing video before displaying it, ADC resources are reallocated between the cameras by queueing one of the cameras with 1/2 or 1/3 priority.

This setting is relevant only for the following video capture cards: FS5, FS6, FS8 and FS16.

To change the order of processing video from the selected camera, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-13, 1).

2. Select the “Camera” object, created before, corresponding to the camera, ADC video processing queue of which is to be changed, in the “Hardware” tab in the objects tree (Figure 8.4-13, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.
3. Go to the “Advanced settings” tab on the settings panel of the “Camera” object (Figure 8.4-13, 3).

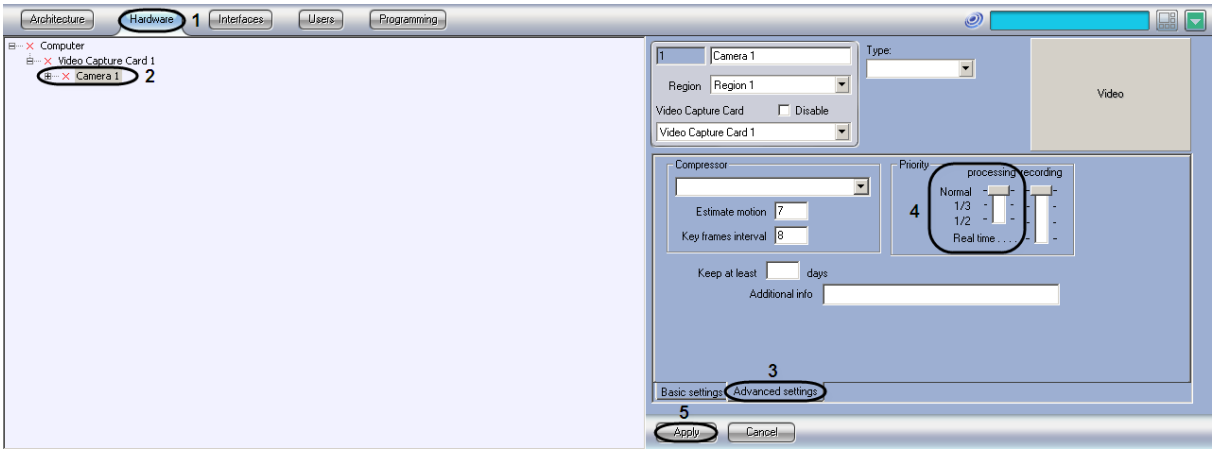


Figure 8.4-13. Changing video processing queue on the selected camera in the processing mode

4. If it is necessary to queue the camera with 1/2 priority for ADC video processing, move the “Processing” slider in the “Priority” group to the “1/2” position (Figure 8.4-13, 4).

5. If it is necessary to queue the camera with 1/3 priority for ADC video processing, move the “Processing” slider in the “Priority” group to the “1/3” position.

6. If it is necessary to return the camera into the normal queue for ADC video processing (set by default), move the “Processing” slider in the “Priority” group to the “Normal” position.

7. Click the “Apply” button (Figure 8.4-13, 5).

Video processing priority is now set.

8.4.3.1.3.10 Setting video recording priority

While processesing the video signal before recording it to the video server archive, ADC resources are reallocated between the cameras by queueing one of the cameras with 1/2, 1/3 or the “Real time” priority.

If the camera with “Real time” priority switches into the recording mode, it will be allocated with all ADC resources for its video processing. So, the frame rate on this camera becomes equal to the total frame rate of the considered ADC. No video from other cameras, allocated to a given ADC, is processed, displayed and recorded to the disk.

To change the processing queue of the video on the selected camera in the recording mode, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-14, 1).

2. Select the “Camera” object, created before, corresponding to the camera, ADC video processing queue of which is to be changed, in the objects tree of the “Hardware” tab (Figure 8.4-14, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Advanced settings” tab on the settings panel of the “Camera” object (Figure 8.4-14, 3).

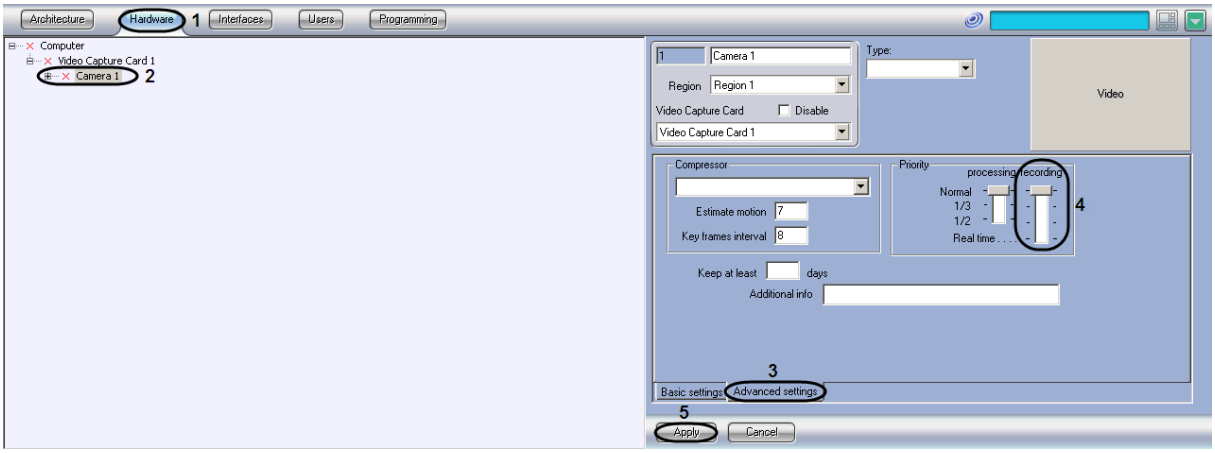


Figure 8.4-14. Changing video processing queue on the selected camera in the recording mode

4. If it is necessary to queue the camera with 1/2 priority for ADC video processing in the recording mode, move the “Recording” slider in the “Priority” group to the “1/2” position (Figure 8.4-14, 4).

5. If it is necessary to queue the camera with 1/3 priority for ADC video processing in the recording mode, move the “Recording” slider in the “Priority” group to the “1/3” position.

6. If it is necessary to queue the camera with the “Real time” priority for ADC video processing in the recording mode, move the “Recording” slider in the “Priority” group to the “Real time” position.

7. If it is necessary to return the camera into the normal queue for ADC video processing in the recording mode (set by default), move the “Recording” slider in the “Priority” group to the “Normal” position.

8. Click the “Apply” button (Figure 8.4-14, 5).

Video recording priority is now set.

8.4.3.1.4 Brightness, contrast, color depth and color rendition format settings

8.4.3.1.4.1 Brightness and contrast settings

INTELLECT™ software provides facilities for video brightness and contrast adjustment in different modes depending on the demands of the video characteristics.

Brightness can be adjusted in the following modes:

1. Auto brightness and contrast adjustment. In this mode INTELLECT™ software automatically applies the internal algorithm of video brightness and contrast adjustment. In this mode manual brightness and contrast adjustment is unavailable.

This mode is activated by default and it does not need any additional settings. This mode to adjust brightness and contrast is recommended for video with no special requirements to video characteristics.

2. Manual brightness and contrast adjustment. In this mode the administrator may change the “Brightness” and “Contrast” settings.
3. Manual brightness and contrast adjustment with auto optimization. In this mode the administrator manually presets the values of “Brightness” and “Contrast” parameters. After the preset is confirmed, INTELLECT™ software automatically launches the process of video image brightness and contrast optimization. This process involves step-by-step changing of video brightness and contrast.

Note1. The “ManualBrightnessControl” line parameter in the HKEY_LOCAL_MACHINE\SOFTWARE\AxxonSoft\INTELLECT\Video for 32-bit system (HKEY_LOCAL_MACHINE \Software\Wow6432Node\ AxxonSoft \INTELLECT\Video for 64-bit system) registry is used to enable automatic adjustment of IP-cameras’ brightness and contrast .If ManualBrightnessControl is equal to 1, then the manual brightness and contrast control of IP-cameras is enabled. If ManualBrightnessControl is equal to 0, then the mode of the manual brightness and contrast control of IP-cameras is set on the settings panel of the corresponding “Camera” object.

Note 2. ManualBrightness and ContrastControl of IP-cameras is disabled in Intellect 4.7.7 by default, for Intellect 4.8 it is enabled.

Brightness and contrast are changed separately and independently for every camera.

To adjust brightness and contrast, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-15, 1).

2. Select the “Camera” object, created before, corresponding to the camera, brightness and contrast of which is to be adjusted, in the “Hardware” tab in the objects tree (Figure 8.4-15, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-15, 3).

To adjust brightness and contrast, use the “Brightness” and “Contrast” sliders on the settings panel of the “Camera” object (Figure 8.4-15, 4).

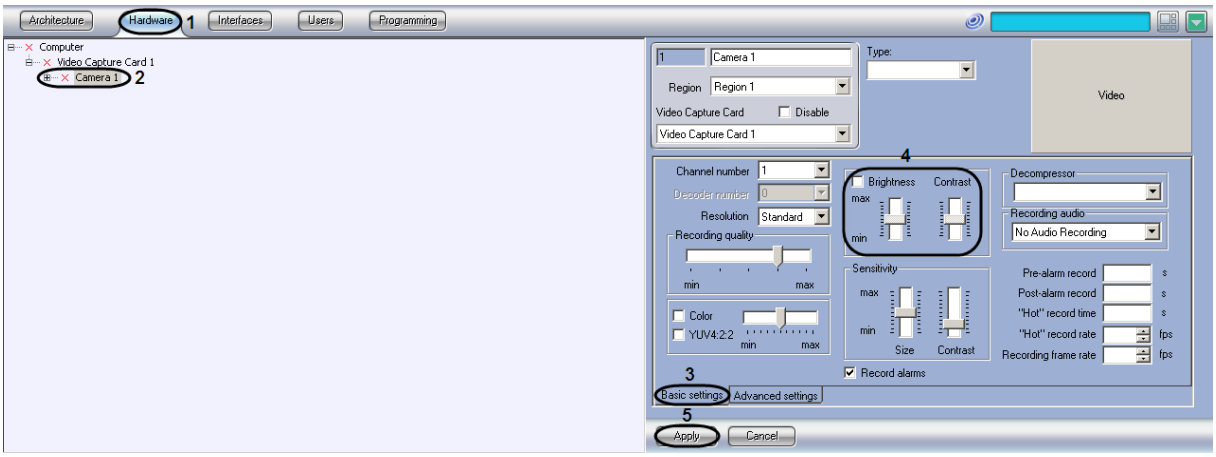


Figure 8.4-15. Brightness and contrast adjustment

4. Auto brightness and contrast adjustment mode is activated by default. Active brightness and contrast auto adjustment mode is indicated by the absence of the check in the “Brightness” and “Contrast” boxes (Figure 8.4-16). In this mode manual brightness and contrast adjustment is unavailable. So, the “Brightness” and “Contrast” sliders are deactivated.

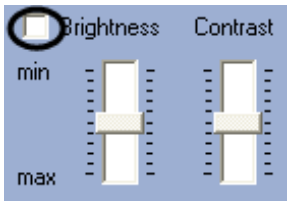


Figure 8.4-16 Activeted auto adjustment mode

The mode is activated by default. To return to this mode, uncheck the checkbox next to the “Brightness” and “Contrast” sliders.

5. To go to the manual brightness and contrast adjustment mode, check the checkbox next to the“Brightness” and “Contrast” sliders (Figure 8.4-17). In this mode brightness and contrast settings are changed by moving the corresponding sliders.

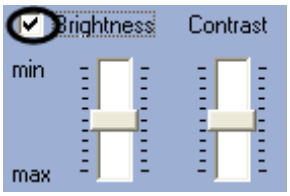


Figure 8.4-17 Activeted manual adjustment mode is activated

6. To go to the manual brightness and contrast adjustment with auto optimization mode, check the checkbox next to the “Brightness” and “Contrast” sliders (Figure 8.4-18).

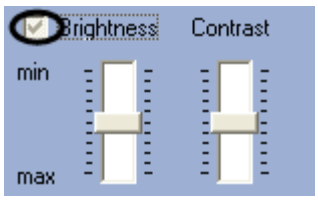


Figure 8.4-18 Activated manual adjustment mode with auto optimization activated

In this mode brightness and contrast settings are changed by moving the corresponding sliders. To launch the video brightness and contrast auto optimization, click the “Apply” button at the bottom of the “System settings” dialog box. The optimization sequence involves a step-by-step change of video brightness and contrast.

7. To activate the new brightness and contrast settings, click the “Apply” button (Figure 8.4-15, 5).

Note. The sight control of brightness and contrast settings is performed using the viewing field.

Brightness and contrast are now adjusted.

8.4.3.1.4.2 Color depth adjustment

Color depth (“Saturation” parameter in the HSL color spectrum model) defines the number of colors used to build an image, while digitizing it by the video capture card. Color depth in INTELLECT™ software corresponds to the “Color Depth” setting.

Color depth is set for each camera individually.

The color depth mean value is set by default.

While adjusting the color depth bear in mind that the image color depth is directly proportional to the frame size and thus to the video stream size. So, the digitized video stream with the greater color depth is bigger. The bigger the video stream, the bigger the HDD capacity to store it and the bigger the channel capacity to transmit it are required.

To change the image color depth, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-19, 1).

2. Select the “Camera” object, created before, corresponding to the camera to be adjusted, in the “Hardware” tab in the objects tree (Figure 8.4-19, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-19, 3)

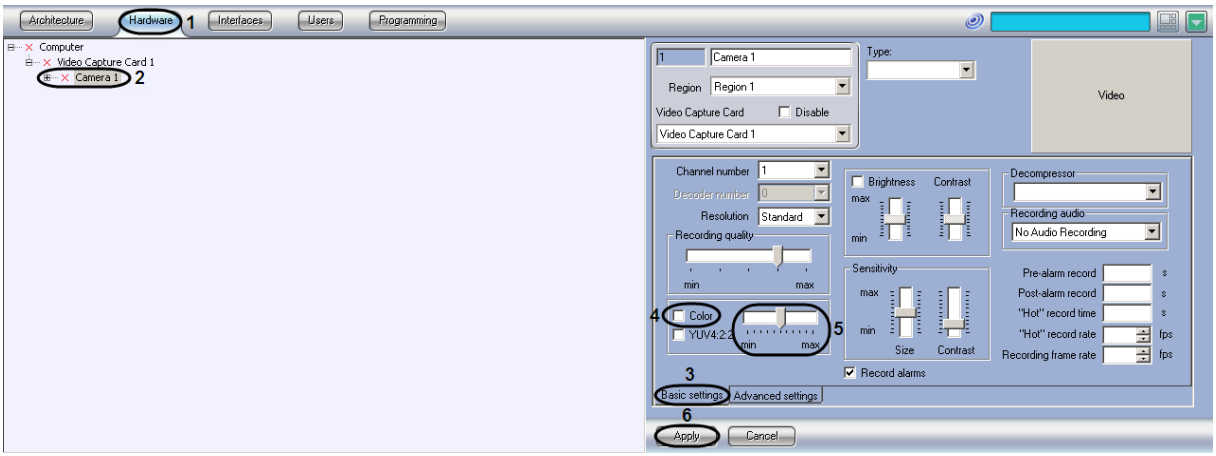


Figure 8.4-19. Color depth adjustment

4. To reduce the image color depth to the black-and-white palette, uncheck the “Color” checkbox.

5. To change the color depth in other cases, move the “Color” slider on the right of the “Color” checkbox into the required position (Figure 8.4-19, 5). The slider’s “Max” position corresponds to the maximum color depth of the image, and the “Min” position - to its minimum color depth (black-and-white image). The sight control of color depth settings is performed using the viewing field.

6. Click the “Apply” button (Figure 8.4-19, 6).

Color depth is now adjusted.

8.4.3.1.4.3 Selecting the color rendition format

Video image color rendition format fixes the number and the sequence of digitized video signal bits (or analog video signal frequencies), that contains its color depth data. So, the digitized video stream with the higher color depth is bigger. The bigger the video stream size, the bigger the HDD capacity to store it and the bigger the channel capacity to transmit it are required.

The TV systems use two formats of video color rendition: YUV 4:2:0 and YUV 4:2:2.

YUV 4:2:2 color rendition format is the standard format in TV systems. YUV 4:2:2 format provides high color depth and gives a large size of video stream. That is why video surveillance systems use to apply the YUV 4:2:0 format. In YUV 4:2:0 format, video signal color depth is slightly lower, than in YUV 4:2:2 format, and video stream size, digitized in YUV 4:2:0 format, is several times less than that in YUV 4:2:2 format.

INTELLECT™ software has digitization options in both formats: YUV 4:2:0 and YUV 4:2:2.

Video color rendition format is set for each camera individually.

Default encoding of video signals for all cameras is performed by the video capture card in YUV 4:2:0 color rendition format.

To configure the encoding of video signals in YUV 4:2:2 format, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-20, 1).

2. Select the “Camera” object, created before, corresponding to the camera to be adjusted, in the “Hardware” tab in the objects tree (Figure 8.4-20, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-20, 3)

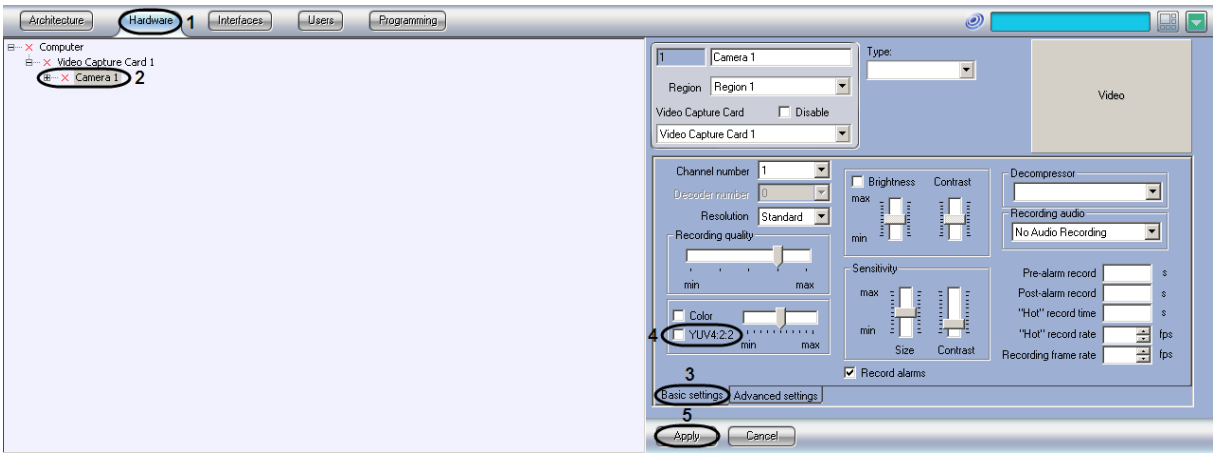


Figure 8.4-20 Selecting YUV 4:2:2 color rendition format

4. Set the “YUV 4:2:2” checkbox (Figure 8.4-20, 4). The sight control of color rendition settings is performed using the viewing field.

5. Click the “Apply” button (Figure 8.4-20, 5).

The color rendition format is now selected.

8.4.3.1.5 Configuring video compression

8.4.3.1.5.1 Compression rate settings

The image is compressed to reduce the size of video stream. Video is not compressed when it is displayed on the Monitor of the Server.

An increase in compression rate leads to video degradation. Intellect™ software compresses video right after its digitizing by the video capture card, prior to its recording and/or before transmitting it to the Remote Workstations.

Video compression rate is configured for each camera individually.

INTELLECT™ system uses the “Quality” setting for the compression rate parameter, which is reverse to the compression rate.

In most cases the default “Quality” setting is sufficient.

To change the video compression rate, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-21, 1).

2. Select the “Camera” object, created before, corresponding to the camera to be adjusted, in the objects tree of the “Hardware” tab (Figure 8.4-21, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-21, 3).

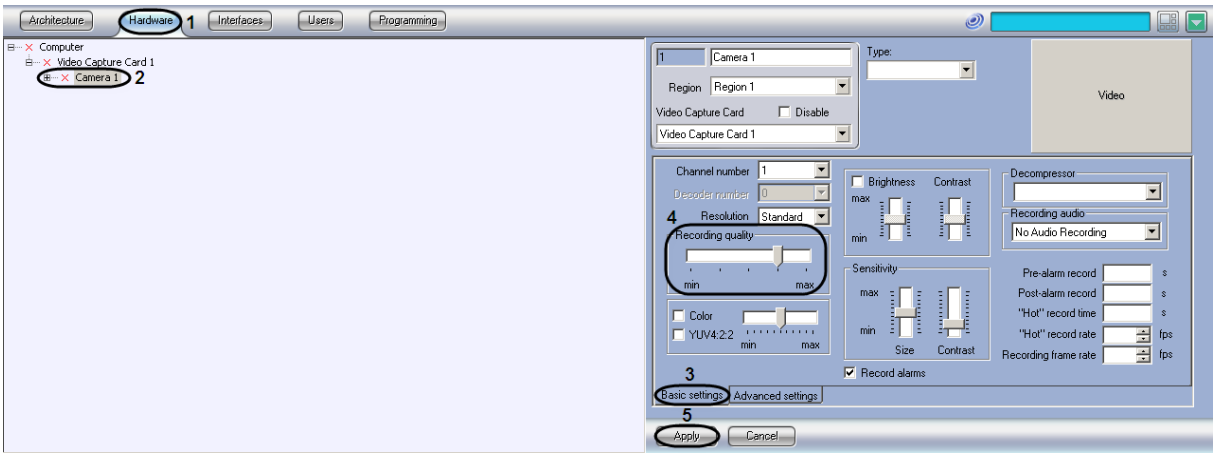


Figure 8.4-21 Configuring video compression

4. If it is necessary to improve the video quality, move the “Quality” slider to the “Max” (Figure 8.4-21, 4).

If it is necessary to reduce the size of video stream from the camera, move the “Quality” slider to the “Min”.

Note. Use the viewing field to estimate video enhancement or degradation.

5. Click the “Apply” button (Figure 8.4-21, 5).

8.4.3.1.5.2 Key frame rate settings

INTELLECT™ software uses Motion Wavelet algorithm for video processing and compression. Processed by this algorithm, the video is the sequence of key - and delta frames. A key frame is a full frame of an image. A delta frame (differential frame) is an image containing only pixel blocks which differ from the previous key frame.

Motion Wavelet algorithm guarantees consistency of a frame regardless of key frame rate. With an increase of motion intensity in a frame, the size of delta frame is also increased and the quality of video does not change. With very intense motion (more than 70% of frame is engaged) the setting of key frame rate is ignored and every frame is processed as a key frame.

The best value of frame rate is set by default in INTELLECT™ software: every 10th frame is processed as a key frame. If there are no special requirements to video size and quality, it is recommended to keep the default key frame rate.

To change the key frame rate, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-22, 1).

2. Select the “Camera” object, created before, corresponding to the camera to be adjusted, in the objects tree of the “Hardware” tab (Figure 8.4-22, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Advanced settings” tab on the settings panel of the “Camera” object (Figure 8.4-22, 3)

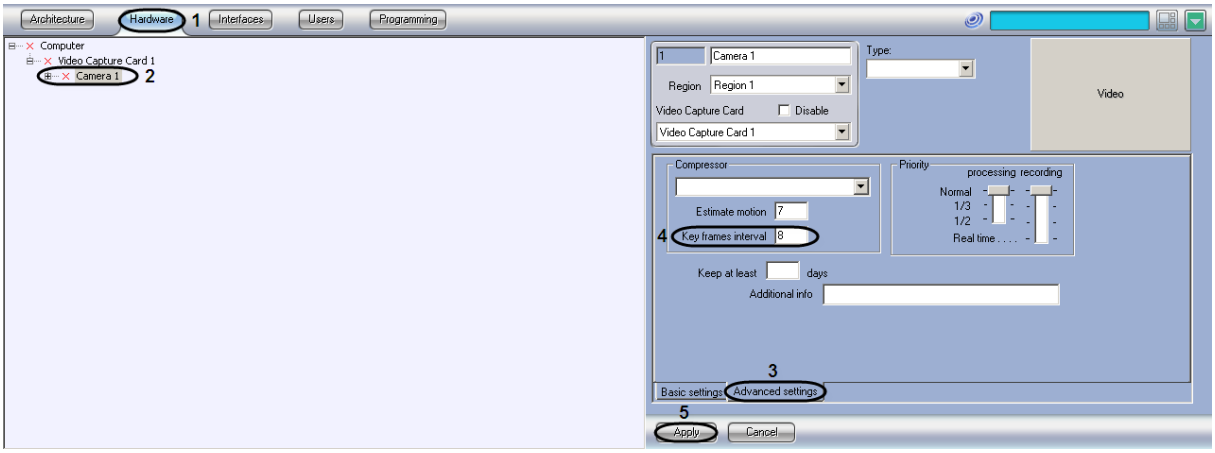


Figure 8.4-22 Key frame rate settings

4. Specify the required value of key frame rate in the “Key frames interval” field (Figure 8.4-22, 4).

5. Click the “Apply” button (Figure 8.4-22, 5).

Key frame rate is now configured.

8.4.3.1.5.3 Setting delta frame creation criterion

INTELLECT™ software uses Motion Wavelet algorithm for video processing and compression. Processed by this algorithm, the video is the sequence of key - and delta frames. A key frame is a full frame of an image. A delta frame (differential frame) is an image containing only pixel blocks which differ from the previous key frame. To compare the pixel blocks of a key frame to those of the frame next to the key frame, the average brightness of blocks is compared. If the difference in brightness exceeds a preset value, the block is considered to have fixed motion, and it becomes a part of a delta frame. Otherwise, the block is considered to have no motion, and it is not included into the delta frame.

Legitimate values of pixel block brightness lie within 0-225 range. The block becomes a part of the delta frame by default, if the difference between its average brightness in the current frame and in the previous key frame exceeds 7 units. If this value is increased, the size of the delta frame is decreased, and the video stream size is consequently decreased, as a delta frame now contains less pixel blocks. Note that the blocks with useful motion data now are more likely to be excluded from the processed video and consequently there is video degradation. So, by reducing the value of the parameter setting the criterion for blocks to be included into a delta frame, you may improve the image while building up its size.

The best value of the parameter, which sets the criterion for blocks to be included into a delta frame, is defined by the brightness gradient of the video background and the moving objects in a frame:

with a high gradient the parameter may be increased; with a low gradient the parameter value is to be decreased.

To change the value of the parameter, which sets the criterion for the block to be included into a delta frame, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-23, 1).

2. Select the “Camera” object, created before, corresponding to the camera to be adjusted, in the objects tree of the “Hardware” tab (Figure 8.4-23, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Advanced settings” tab on the settings panel of the “Camera” object (Figure 8.4-23, 3)

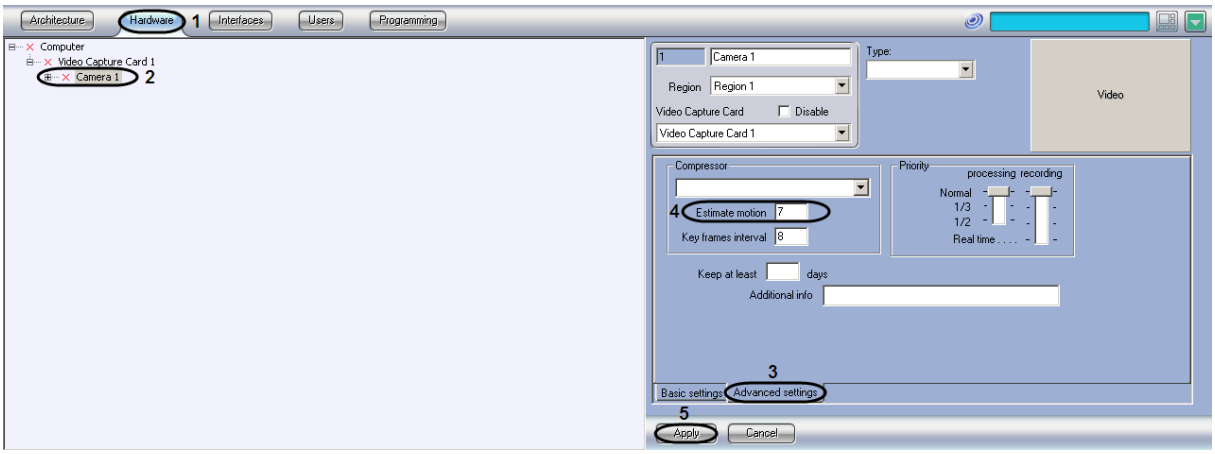


Figure 8.4-23 Setting delta frame generation criterion

4. Specify the value of the parameter, which sets the criterion for the block to be included into the delta frame, into the “Estimate motion” field (Figure 8.4-23, 4).

5. Click the “Apply” button (Figure 8.4-23, 5).

Delta frames generation criterion is now set.

8.4.3.2 *Additional information on camera*

Additional information on the camera is:

1. Displayed on the video surveillance monitor over the camera name.
2. Added to the name of export file from interface monitor (AVI, BMP/JPEG) and for frame printing (details about frame export and printing are in *Intellect software package. Operator Guide*).
3. Displayed in the “Event log” window in the “Additional info” column.

To set additional information, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-24, 1).

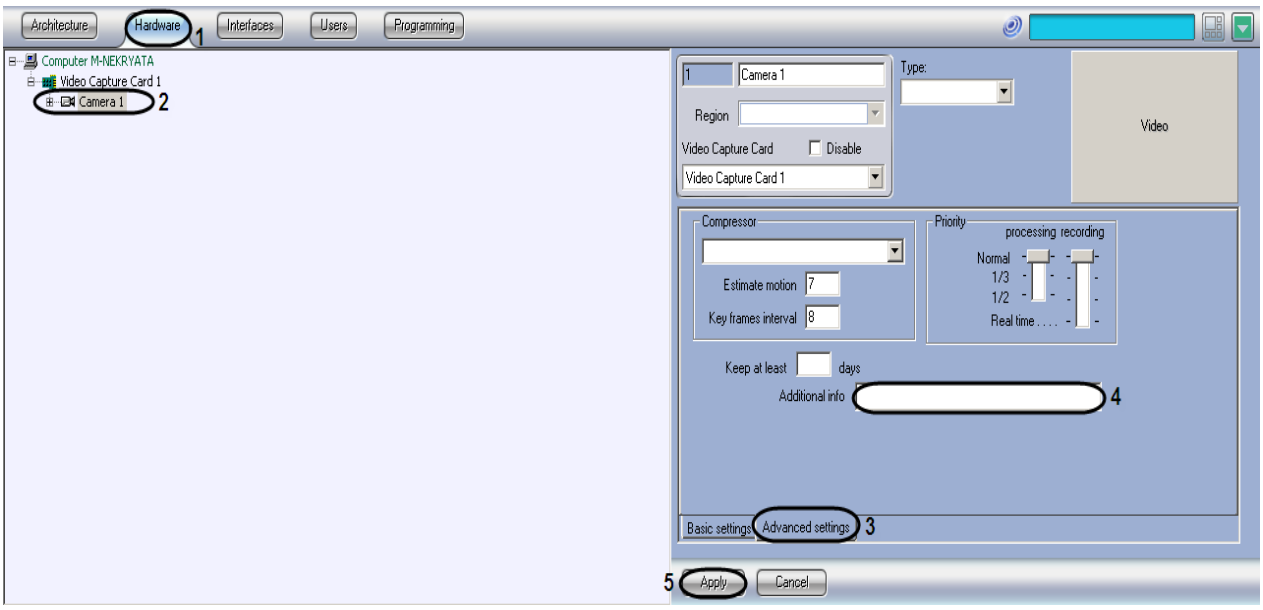


Figure 8.4-24 Additional information on camera

2. Select the “Camera” object, created before, corresponding to the camera to be adjusted, in the “Hardware” tab in the objects tree (Figure 8.4-24, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.
3. Go to the “Advanced settings” tab on the settings panel of the “Camera” object (Figure 8.4-24, 3).
4. Type in additional information (not more than 100 characters) in the “Additional info” field (Figure 8.4-24, 4).
5. To save the changes, click the “Apply” button (Figure 8.4-24, 5).

Additional information is now set.

8.4.4 Creating and configuring a virtual video capture card

One can work with a virtual video capture card in INTELLECT™ software package. This way assumes that INTELLECT™ operates in a test mode and consists of imitation of video stream feed to virtual video capture card by playing back ready-made video recording. The following video recordings are played back:

1. Video recordings of internal INTELLECT™ format;
2. AVI-files in formats for which DirectShow filters (codecs) are installed in Windows OS.

Note. If only Windows Media Player 11 (or its older versions) is installed on Windows OS to view video recordings, then it is to be updated to Windows Media Player 12 or DirectShow filters (codecs) of third-party vendors are to be in use.

To create and configure a virtual video capture card, do the following:

1. Set the “Use virtual grabber” checkbox (the “Video subsystem” section in Tweake.exe utility) (Figure 8.4-25), having shut down INTELLECT™ beforehand.

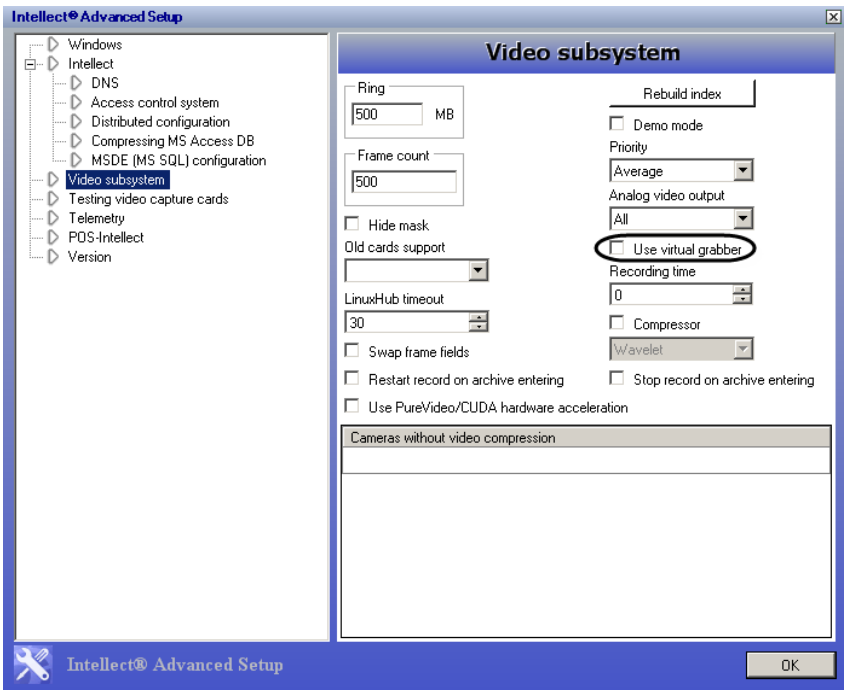


Figure 8.4-25 Video capture card presetting

2. Set the video capture card type (Figure 8.4-26).

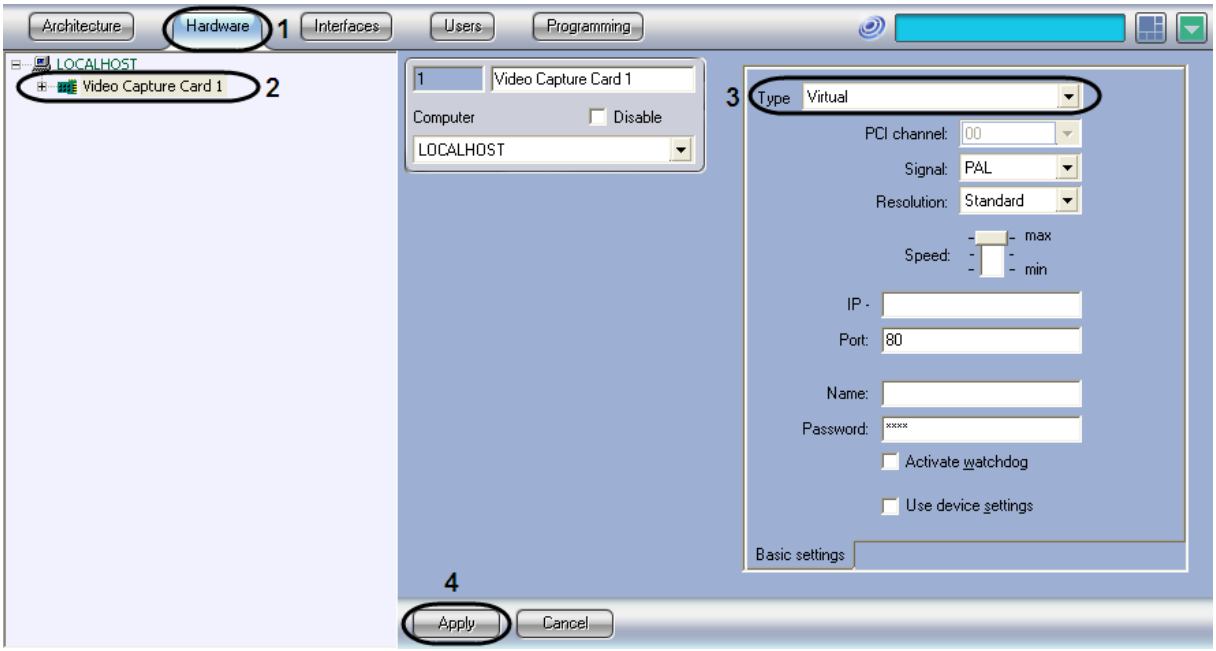


Figure 8.4-26 Configuring the "Video capture card" system object

3. Specify the storage for video recording that is to be used for video signal imitation in the "Basic settings" tab of the selected "Camera" object (Figure 8.4-27).

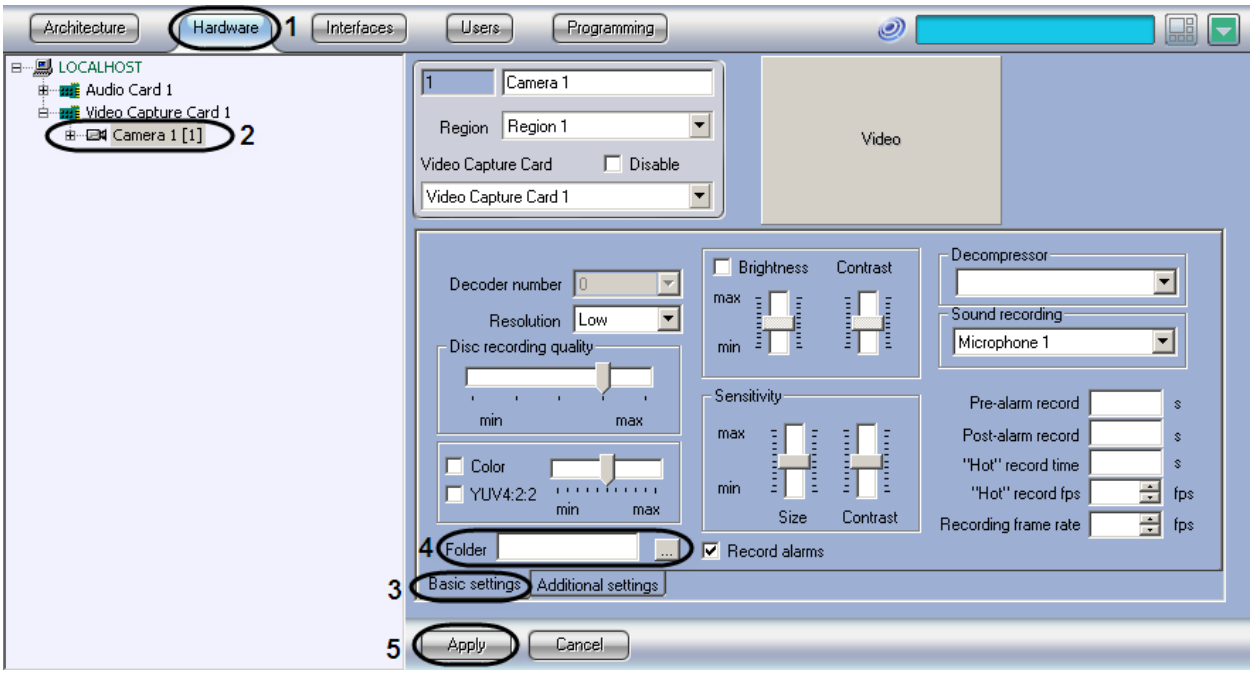


Figure 8.4-27 Configuring the "Camera" system object

As a result video recording file from the selected folder will be played back in a loop. In case if there are several files in the folder they will be displayed in the alphabetical order.

Attention! The selected folder must not contain video recordings of internal INTELLECT™ format and AVI-files at the same time.

8.4.5 Configuring video archiving

8.4.5.1 *General information*

Video archiving allows saving the footage according to the settings and analyse the fragments of interest for the user.

The archive is saved on the Server storage. Video is stored in the archive as one or more indexed files. To limit the size of the files, use the "Video Subsystem" tab in the Tweaki.exe utility.

The archive represents the storage for the video recordings that are made in INTELLECT™ software. Loop recording is used here. When the hardwares run out of the space allocated to archive storage, the rewriting of footprint starts. It is made on the principle of overwriting the earliest recordings (Figure 8.4-28).

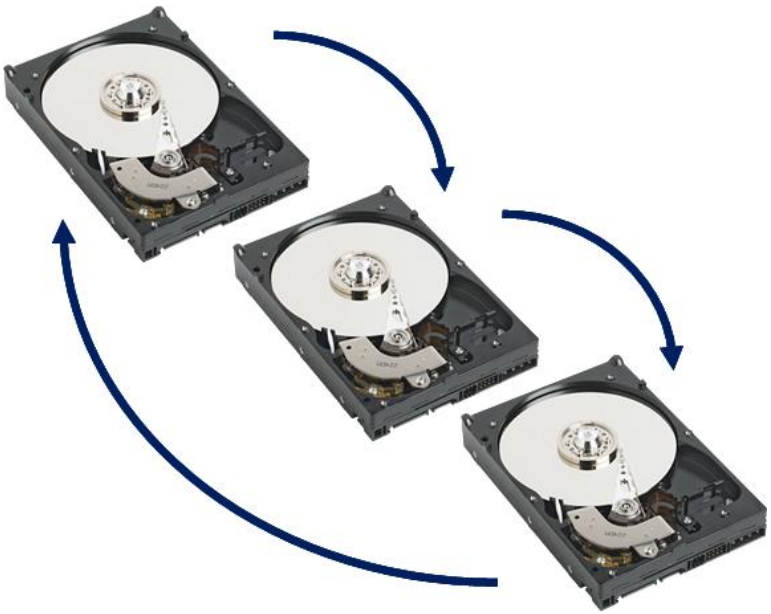


Figure 8.4-28 Loop recording

Video archive is stored in the VIDEO folder on the selected system disk. Child directories with titles in «DD-MM-YY HH» (Date, Hour) format are stored in the VIDEO folder. Archive files for the current hour are here. Video file extension indicates the number of video camera that is used for video archive (Figure 8.4-29). One can view the files with the help of the Video surveillance window or using the converter.exe utility (if you chose the required period).

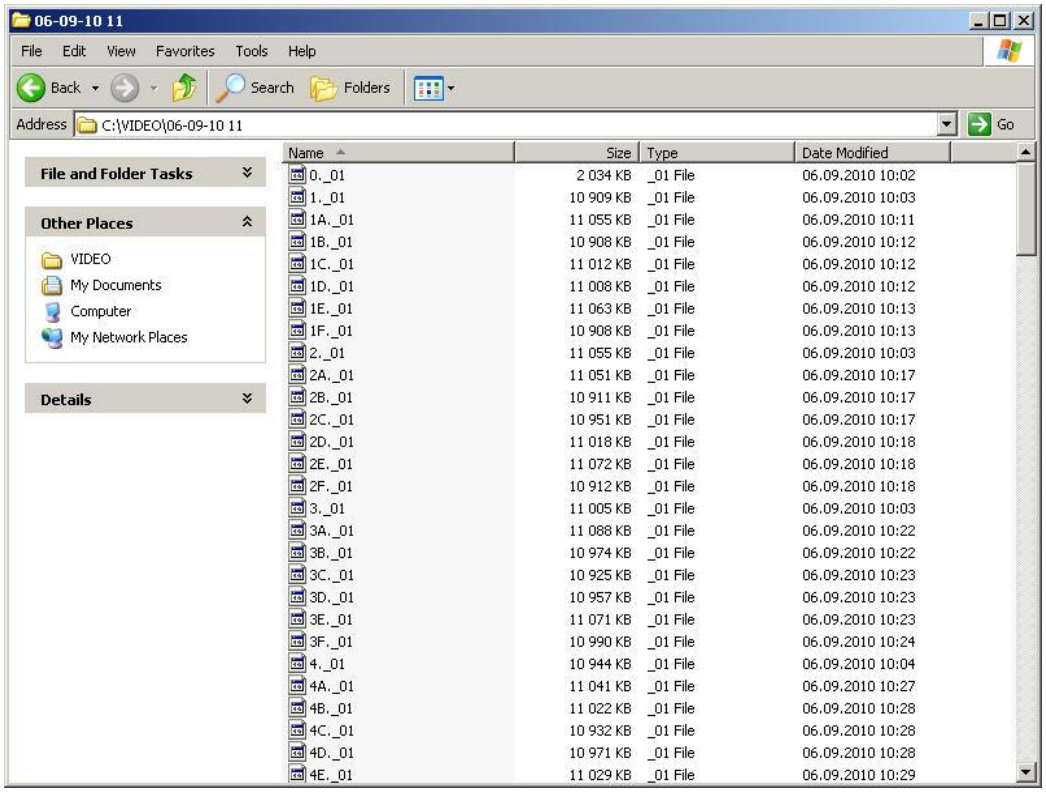


Figure 8.4-29 The VIDEO folder. The example of archive storage

Video signal recording may be initialized by one of three methods:

1. Forced recording by Operator command;
2. Automatic recording upon alarm registration;
3. Automatic recording upon a macro/script/program execution.

To make the analysis of the causes and effects of an alarm event more effective, INTELLECT™ software performs expanded schemes of video recording file. An example of a video recording expanded scheme is given in Figure 8.4-30.

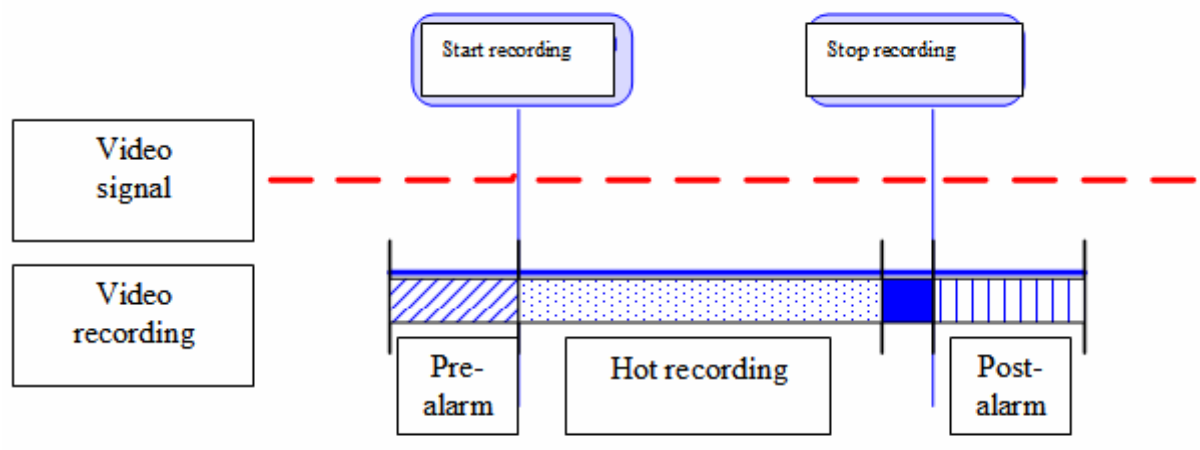


Figure 8.4-30. Expanded scheme of video recording

The scheme contains the following segments:

1. Pre-alarm event recorded before the recording start time on the camera alarm. Pre-alarm event recording option facilitates the analysis of event causes.

2. Post-alarm event recorded after the recording end time on camera alarm. Post-alarm event recording option facilitates the analysis of event consequences.

3. Hot recording – video recording segment with higher frame rate. Increasing frame rate on the "Hot recording" segment makes event analysis more effective. The "Hot recording" segment always starts from the recording start time on the alarm event registration. The "Hot recording" segment is finished at the recording end time (depending on the "Hot recording" settings and event duration).

Further use of video recording segments is restricted by INTELLECT™ software. The list of restrictions is given in Table 8.4-3.

Table 8.4-3 Restrictions on using other segments while recording video

Video recording initialization mode	Recording option		
	pre-alarm	hot recording	post-alarm
By Operator command	No	Yes	No
On alarm event	Yes	Yes	Yes
On macro/script	Yes	Yes	Yes

Note1. If the MPEG4 recording format is selected, a small fragment of the recording (about 0.5 seconds from the beginning) may be lost.

Note2. When WS216 video capture card (with h.264 compression) is in use, then video is stored to the archive only in the colour mode. Black-and-white mode is not supported.

8.4.5.2 *Video archiving procedure*

Configuration of video archiving consists of the following steps:

1. Selecting the disks for video archive storage.

2. Switching off/on the auto alarm recording mode.

3. Setting the video recording frame rate.

4. Configuring video in the “Hot recording” mode.

5. Configuring video in the “Pre-alarm” mode.

6. Configuring video in the “Post-alarm” mode.

7. Assigning the queue of video signal processing in the recording mode.

8.4.5.3 *Selecting the disks for video archive storage*

INTELLECT™ software performs video archiving to a storage device. When INTELLECT™ is installed, set the local disks to save the archive to in the “Hardware” tab of the “Computer” object.

Note. Use disks with the NTFS file system for storing the archive. If the FAT32 file system is in use, then there can be problems caused by this system, for instance — it has no logging.

To select the disks for the archive, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-31, 1).

2. Select the “Computer” object corresponding to the configured Server in the objects tree of the “Hardware” tab (Figure 8.4-31, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab. Each local disk available for archiving has the check of the same name in the “Disks for storing the archive” group (Figure 8.4-31, 3).

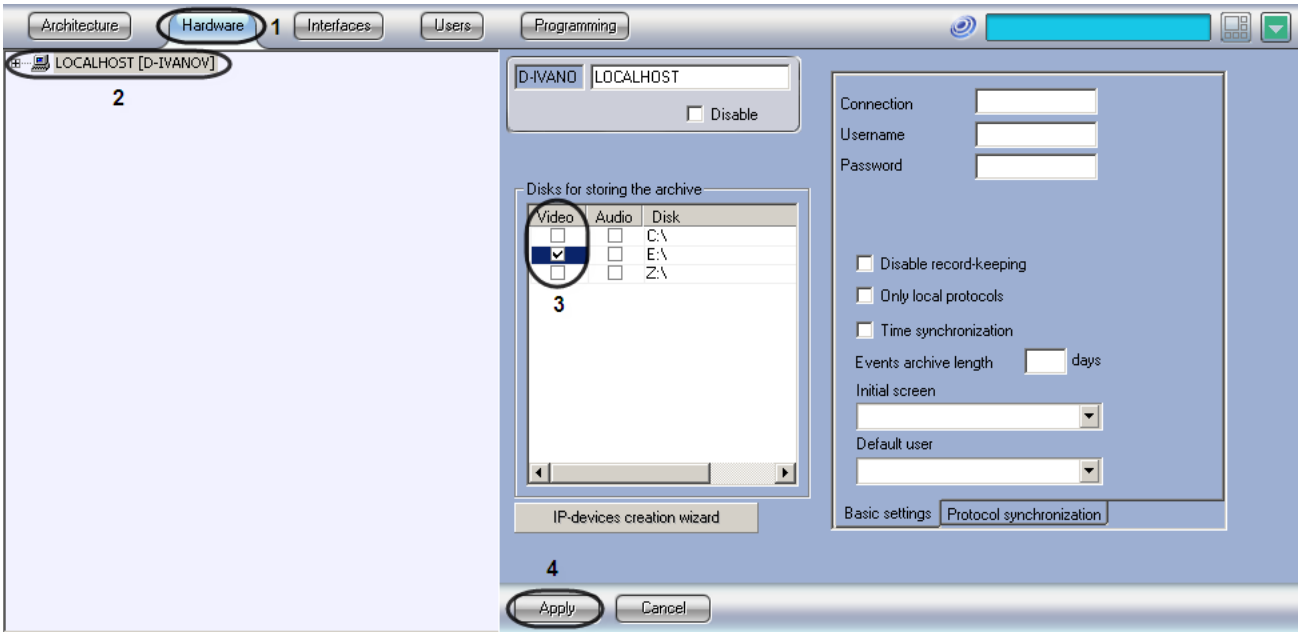


Figure 8.4-31 Selecting the disks for storing the video archive

3. Set the relevant check in the “Video” column next to the disk to be selected. Local, network and USB disks are available for storing (details on adding network disks are in “*Using network disks*” section).

Note. For the reverse effect set the checkboxes corresponding to the disk unchecked in the "Video" column (Figure 8.4-31).

4. Click the "Apply" button (Figure 8.4-31, 4).

The disks for video archive storage are now selected.

Note. If no disk for storing the video is selected, then there is no storing to the archive.

8.4.5.4 *Using network disks*

To use network disks as an archive, set UNC paths to them in INTELLECT™. Details of working with network disks in INTELLECT™ installed as a Service are given in "*Working with network disks of INTELLECT™ installed as a Service*" section.

Attention! For Windows Vista and Windows 7 OS with connected UAC it is necessary to connect network disks via command prompt with Administrator's rights. The way of connecting is described in "Connecting network disks in Windows Vista and Windows 7 OS" section.

Note 1. Access to network disks on computers with Windows Vista or Windows 7 OS can be forbidden when the user account control (UAC) is swiched on. To enable access create the EnableLinkedConnections key of the DWORD type with 1 value in the "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Syste"m registry. Details of working with registry keys are in "Working with Windows OS registry" section.

Note 2. When connection with net disk fails, video is not recorded (for 30-60 seconds) and displayed. This is due to filesystem features.

To add a network disk by specifying the UNC path, do the following:

1. Go to the last line in the disk list and click the down key (Figure 8.4-32).

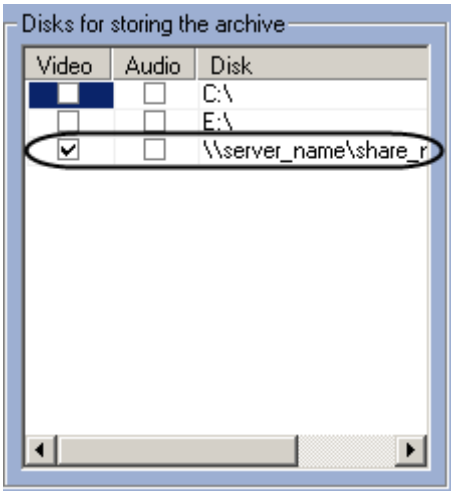


Figure 8.4-32 Specifying the UNC path to a network disk

2. Specify the path to a network disk in the appeared line in the "Disk" column (Figure 8.4-32). UNC path is set in **\\server_name\share_name** format where "server_name" is the name of file server and "share_name" is the network name of the general folder.

Note. If there are any problems with storing video/audio archive at network disks, then use the "net use" command of Windows command prompt:

net use \\server_name\share_name /delete

net use \\server_name\share_name /USER:user_name

Where "user_name" is a user that has rights to store to selected network disk. This is to be performed after every Windows OS restart.

Details about the "net use" command are in Microsoft official documentation (www.microsoft.com).

3. Set a checkbox for created disk in the "Video" column (Figure 8.4-32).
4. Click the "Apply" button.

A network disk by specifying the UNC path is now added.

8.4.5.5 *Disabling automatic recording upon alarm registration*

INTELLECT™ software supports automatic video recording upon alarm registration for each "Camera" object individually. By default, the auto recording option is enabled for all cameras in the "Hardware" tab.

The auto recording option is disabled for each camera individually, as well.

To disable the auto recording upon alarm option for a selected camera, do the following:

1. Go to the "Hardware" tab in the "System settings" dialog box (Figure 8.4-33, 1).
2. Select the "Camera" object corresponding to the required camera in the objects tree (Figure 8.4-33, 2). The settings panel for the selected object is displayed on the right of the "Hardware" tab.
3. Go to the "Basic settings" tab on the settings panel of the "Camera" object (Figure 8.4-33, 3).

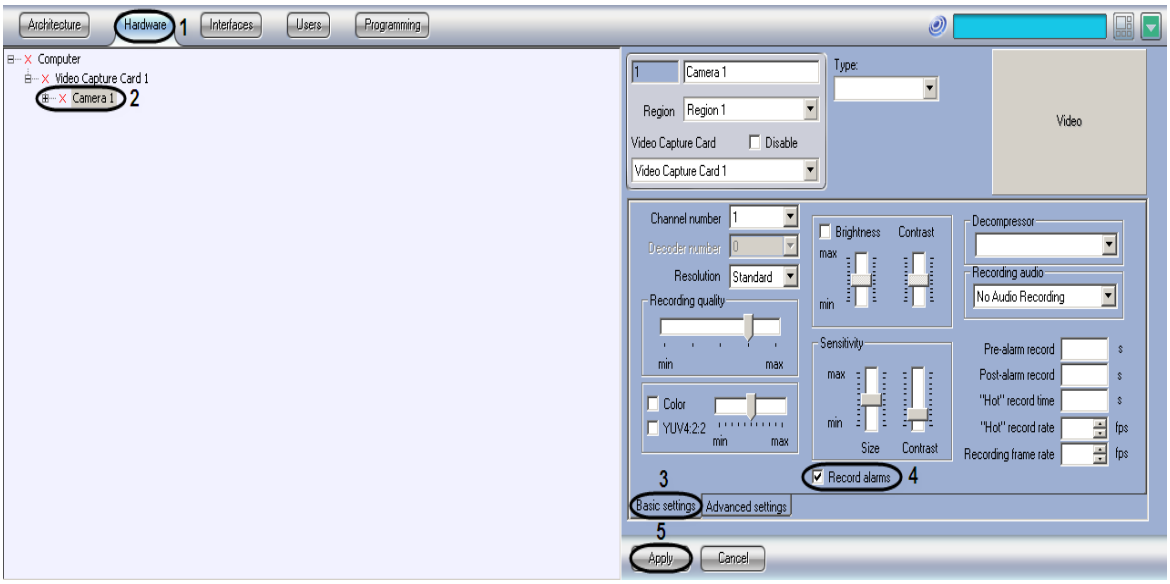


Figure 8.4-33 Disabling automatic recording upon alarm event registration

4. Set the “Record alarms” checkbox unchecked (Figure 8.4-33, 4).

5. Click the “Apply” button (Figure 8.4-33, 5).

Automatic recording upon alarm event registration is now disabled.

Note. To re-enable the auto recording, repeat the above steps and set the “Record alarms” checkbox.

8.4.5.6 *Configuring video frame rate*

By default, video is recorded to the archive with the same frame rate as the video capture card digitizes it. Thus, to reduce the archive size, the frame rate can be configured.

Note. The reduction of the video recording frame rate does not affect the displaying of the video on the Server monitor and its transmission to the Remote Workstations by the network.

To change the recording frame rate, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-34, 1).

2. Select the “Camera” object corresponding to the required camera in the objects tree (Figure 8.4-34, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-34, 3).

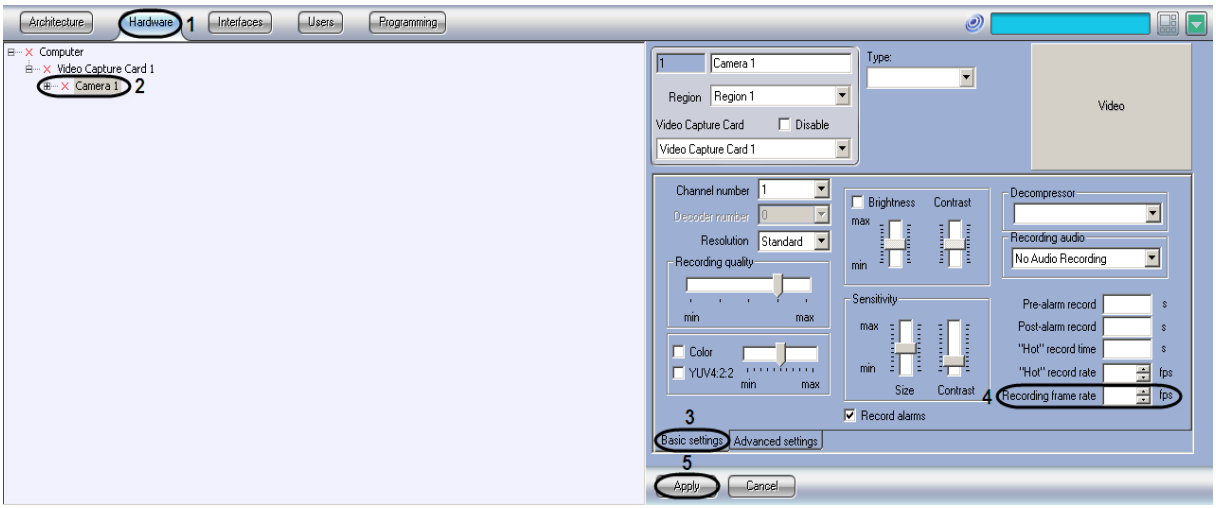


Figure 8.4-34 Reducing frame rate in the recording mode

4. Specify the recording frame rate value in the “Recording frame rate” field (Figure 8.4-34, 4). The value is not to exceed the digitization frame rate value. The value set for the “Recording frame rate” parameter allows calculating the interval (msec) in which a frame is to be captured to be stored in the archive. The calculation is made according to the formula:

$$\text{Interval} = 1000 / \text{Value in the “Recording frame rate” field}$$

Formula 8.4-1

Note. Setting the value of the “Recording frame rate” parameter, take account of video digitizing rate and frame rate (fps), otherwise actual recording speed can differ from the set one.

5. Click the “Apply” button (Figure 8.4-34, 5).

8.4.5.7 *Configuring video in the “Hot record” mode*

In the “Hot record” mode the video is recorded with a larger frame rate compared to the set value.

By default, this mode is disabled. To enable the “Hot record” mode, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-35, 1).

2. Select the “Camera” object corresponding to the required camera in the objects tree (Figure 8.4-35, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.

3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-35, 3).

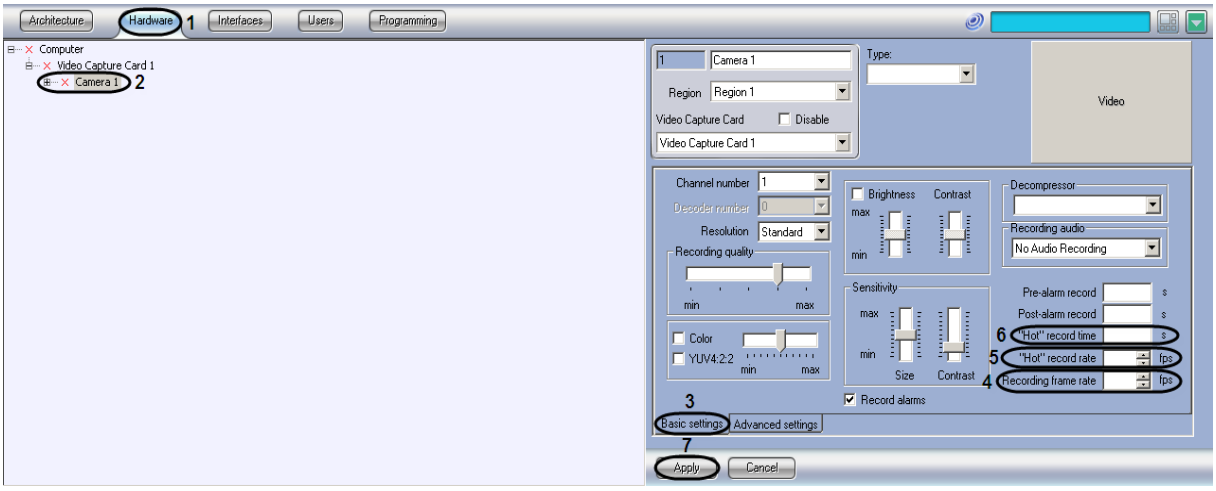


Figure 8.4-35. Configuring video in the “Hot record” mode

4. In the “Recording frame rate” field specify the frame rate of the video to be recorded (Figure 8.4-35, 4).

5. In the “Hot record rate” field specify the frame rate for the alarm “hot” recording (Figure 8.4-35, 5).

6. In the “Hot record time” field specify the interval in sec during which the video is being recorded at the rate that has been set in the “Hot record rate” field, from the moment of alarm registration (Figure 8.4-35, 6).

Note. If there is an end of alarm event while recording in the “hot record” mode, then recording to the archive will be with the same rate as “hot record” until the end of specifyied interval.

7. Click the “Apply” button (Figure 8.4-35, 7).

Note. It is not recommended to change the “Recording frame rate” and “Hot record rate” parameters for H.264 codec.

8.4.5.8 *Configuring video in the "Pre-alarm record" mode*

The "Pre-alarm record" mode is the record mode for recording pre-alarm events for a specified period before recording an alarm. Pre-alarm record is performed at the hot record rate. If the hot record rate is not specified, then at standard record rate.

By default the recording in this mode is disabled. To enable the pre-alarm recording, do the following:

1. Go to the "Hardware" tab in the "System settings" dialog box (Figure 8.4-36, 1).
2. Select the "Camera" object corresponding to the required camera in the objects tree (Figure 8.4-36, 2). The settings panel for the selected object is displayed on the right of the "Hardware" tab.
3. Go to the "Basic settings" tab on the settings panel of the "Camera" object (Figure 8.4-36, 3).

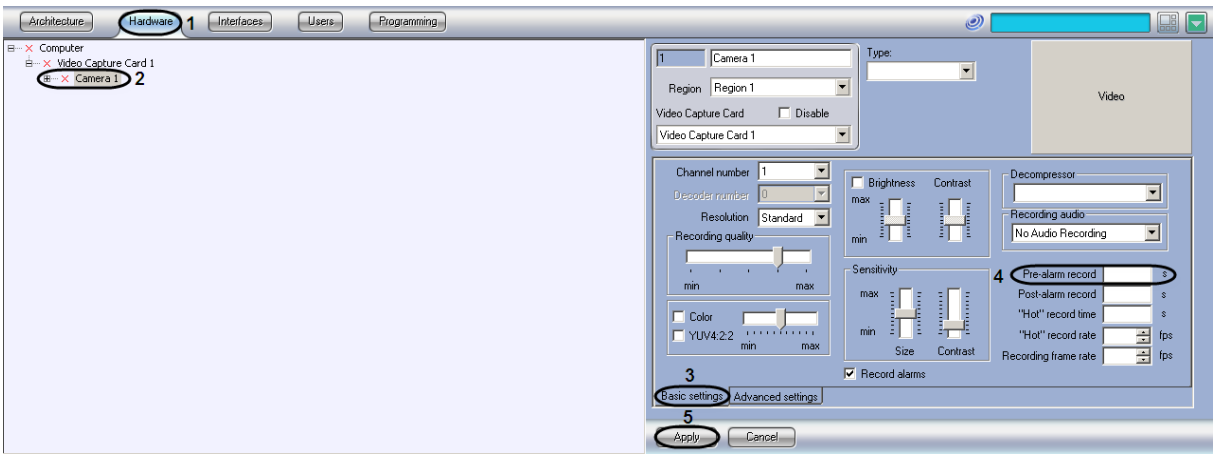


Figure 8.4-36 Configuring video in the "Pre-alarm record" mode

4. In the "Pre-alarm record" field specify the required interval (sec) of pre-alarm events recording (Figure 8.4-36, 4).
5. Click the "Apply" button (Figure 8.4-36, 5).

Information on pre-alarm recording options is given in Table 8.4-4.

Table 8.4-4 Pre-alarm recording

Camera state	Recording initiator	Recording
Armed	Macro	Without pre-alarm recording
Armed	Manually	Without pre-alarm recording
Armed	Alarm	With pre- alarm recording
Armed	Program	With pre-alarm recording
Disarmed	Macro	Without pre-alarm recording
Disarmed	Manually	Without pre-alarm recording

Disarmed	Alarm	-
Disarmed	Program	With pre-alarm recording

In INTELLECT™ one can make pre-alarm recording if camera is disarmed. One can do it with the help of DoReact("CAM","1","REC","rollback<1>") program; (see “INTELLECT™ software package: Programming guide(JScript)”).

8.4.5.9 *Configuring video in the “Post-alarm record” mode*

The “Post-alarm record” mode is the record mode for recording post-alarm events for a specified period after recording an alarm.

By default, post-alarm recording is disabled. To enable the post-alarm recording, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-37, 1).
2. Select the “Camera” object corresponding to the required camera in the objects tree (Figure 8.4-37, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.
3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-37, 3)

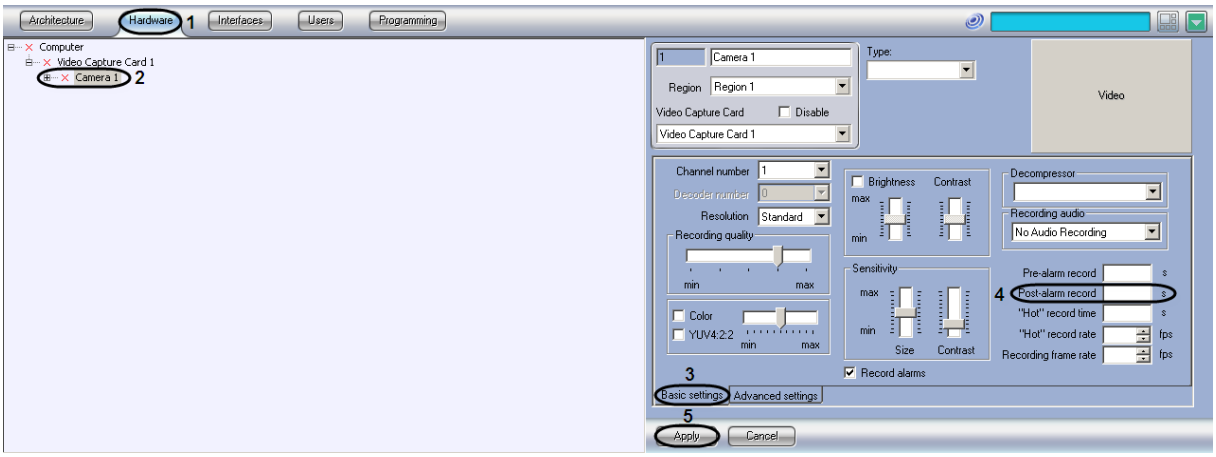


Figure 8.4-37. Configuring video in the “Post-alarm record” mode

4. In the “Post-alarm record” field specify the required interval (sec) of post-alarm events recording (Figure 8.4-37, 4).
5. Click the “Apply” button (Figure 8.4-37, 5).

8.4.5.10 *Configuring audio and video synchro recording*

INTELLECT™ software provides audio and video synchro recording option.

Audio signal recording beginss at the recording start time and ends at recording end time. In synchro record mode, audio files are stored with video files in the Server archive in the “VIDEO” folders on the Server archive local disks.

To use the synchro recording option, INTELLECT ™ software audio subsystem is to be properly configured. The audio subsystem configuration procedure in INTELLECT™ system is described in “Configuring audio subsystem” section.

If the audio subsystem is configured, do the following to configure synchro recording on the selected camera and microphone:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-38, 1).
2. Select the “Camera” object corresponding to the required camera in the objects tree (Figure 8.4-38, 2). The settings panel for the selected object is displayed on the right of the “Hardware” tab.
3. Go to the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-38, 3).

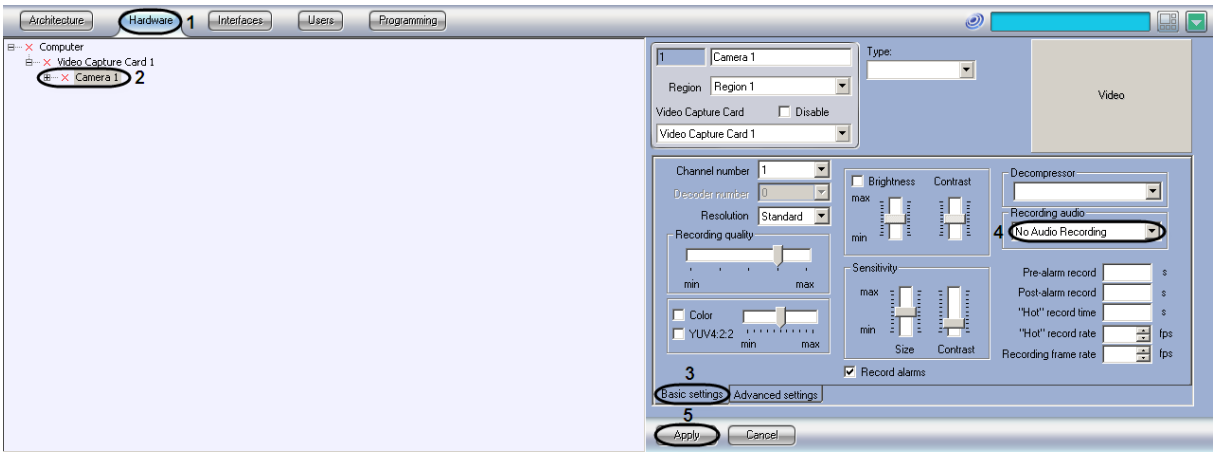


Figure 8.4-38 Configuring audio and video synchro recording

4. In the “Recording audio” list select the required microphone registration name (Figure 8.4-38, 4).
5. Click the “Apply” button (Figure 8.4-38, 5).

Camera and microphone are now configured for audio and video synchro recording.

8.4.6 Configuring video transmission to Remote Workstations

INTELLECT™ software supports transmitting the digital video signal from the Server to the Remote Workstations for remote video surveillance, archiving, routing via the video gate, transmitting via the Web-server by HTTP protocol (Internet), to a PocketPC or a SmartPhone. Both real-time and archive video signals may be transmitted to the Remote Workstations.

Real-time video signals are transmitted by Remote Workstation demand for displaying, archiving, routing via the video gate or transmitting via the Web-server by HTTP protocol (Internet), to a PocketPC or a SmartPhone. By default, transmitted video signals have the same parameters (resolution, color depth, frame rate etc.) as they have during digitizing and processing by the video capture card or IP-device.

Prior to transmitting to Remote Workstations, video signals are compressed. By default, video signals, transmitted to the TCP/IP place via local net, and archived video signals are compressed at

the same rate. For the setup procedure of video signal compression rate, see “Configuring video compression” section of this chapter.

Real-time video displaying may lag if the connection is unstable and/or transmitting rate via network connection is low. To eliminate or minimize this effect, use the following registry keys:

- AcsStdLimit – the registry key used for setting the upper frame sequence limit in MJPEG format. It possesses the values from 1 to 30.
- AcsMpegLimit – the registry key used for setting the upper frame sequence limit in H.264/MPEG4 format. It possesses the values from 1 to 30.

If sequence of frames transmitted to a Remote Workstation rises to the value specified in the registry key, then scaling is enabled.

Note. Keys are to be created in the “HKEY_LOCAL_MACHINE\SOFTWARE\ AXXONSOFT\INTELLECT\Video”for 32-bit system (HKEY_LOCAL_MACHINE \Software\Wow6432Node\ AXXONSOFT\INTELLECT\Video for 64-bit system) registry section.The process of key creation is described in “Working with Windows OS registry” section.

When video signals are transmitted to Remote Workstations for displaying, archiving and routing with video gate, it is possible to reduce their frame rate and to increase their compression rate.

When video signals are transmitted to Remote Workstations for displaying, their frame rate reduction and their compression rate increase are set on the settings panel of the “Monitor” object for each camera individually.

When video signals are transmitted to Remote Workstations for archiving, their frame rate reduction and compression rate increase are set on the settings panel of the “Active archive” object for each camera individually.

When video signals are transmitted to the video gate, their frame rate is reduced and compression rate is increased on the settings panel of the “Video gate” object for each camera individually.

When video signals are transmitted via a web-server by HTTP protocol to a Remote Workstation, a PocketPC or a SmartPhone, its compression rate is set on the settings panel of the “Web-server” object that corresponds to the “Web-server” module. For the setup procedure of the video signal compression rate, see the chapters on “Web-server”, “SmartPocketPC” and “SmartPhone” modules setup.

8.4.7 Video signal display settings

8.4.7.1 *General information*

With different video signal transmission modes, different video monitors are used:

1. Video server surveillance Monitor.

2. Video surveillance Monitor of the Remote Workstation, connected to the videoserver via TCP/IP net.

3. Video monitor of the “web-server”, displayed in web browsers on Remote Workstations, connected to the videoserver via the “web-server” module by HTTP protocol.

4. “SmartPocket” module video monitor, displayed on the PocketPC screen, connected to the videoserver via the “SmartPocket” module.

5. “SmartPhone” module video monitor, displayed on the SmartPhone screen, connected to the video server via the “SmartPhone” module.

Video surveillance monitors on the server and Remote Workstations, connected to the videoserver via TCP/IP local net, are identical. Video surveillance onitors on the videoserver and on Remote Workstations are set up with the “System Setup” dialog box and is described below.

To set up the video surveillance monitor of the “Web-server” module, Java-applet settings of its home page are changed (see the chapter ““Web-server” module settings”).

Video surveillance monitors of the “SmartPocket” and «SmartPhone» modules cannot be adjusted.

The video monitor is used to:

1. display video signals;

2. play back the archives;

3. change the sequence of displaying video signals (surveillance windows layout, selection of video signals to be displayed in the surveillance windows, windows slide show, etc.);

4. process the displayed signals (deinterlacing, zooming, image sharpening and changing contrast);

5. export and hardcopy selected frames, export video and audio records;

6. control detectors, including camera alarm detectors (main motion detectors);

7. control video recording;

8. control PTZ devices and microphones.

8.4.7.2 *Video monitor setup sequence*

To configure the “Monitor” object, do the following:

1. Select the screen and create the “Monitor” object for it.

2. Set the parameters of the “Monitor” interface box.

3. Select and configure cameras for displaying in the “Monitor” box.

4. Configure the camera displaying mode.

5. Select overlay type for video displaying.

6. Set the priority of PTZ device control.

8.4.7.3 *Creating the “Monitor” object*

To create the “Monitor” object, do the following:

1. Select the required “Screen” object in the “Interfaces” tab of the “System settings” dialog box (Figure 8.4-39).

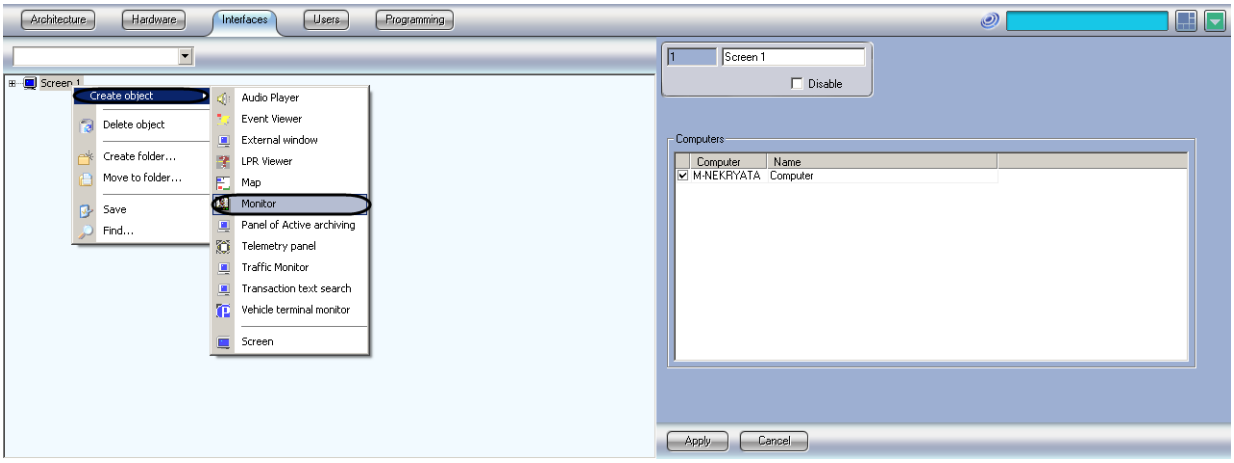


Figure 8.4-39. The “Monitor” object creation

2. Double-click the right mouse button upon the selected “Screen” object and select “Create object > Monitor” in the contextual window (Figure 8.4-39).

3. Set the number and name of the “Monitor” object and click the “Apply” button (Figure 8.4-40).

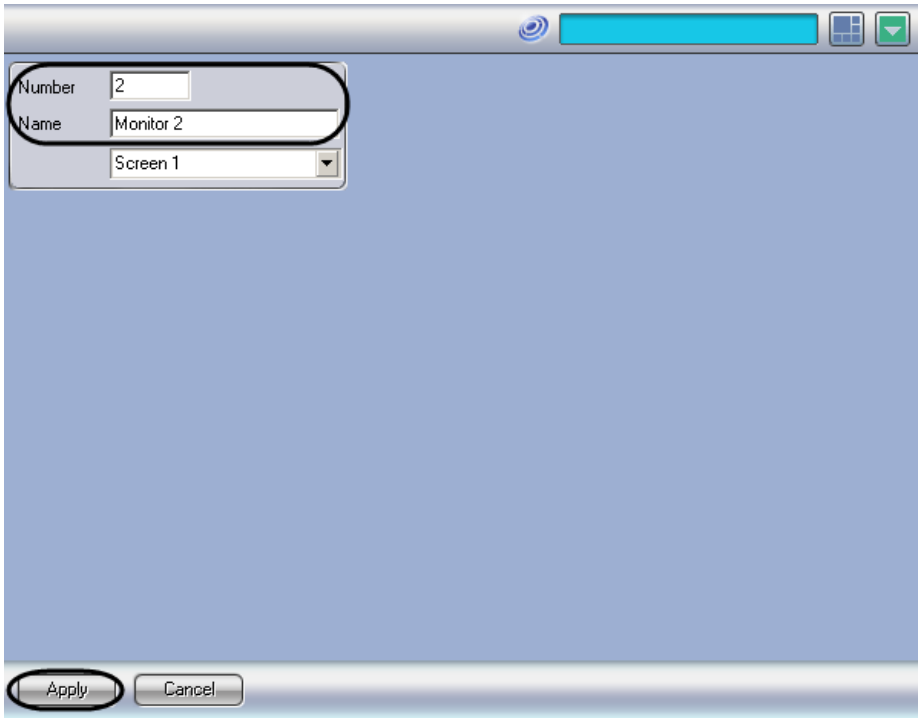


Figure 8.4-40. Setting the number and name of the “Monitor” object

Note. As a result the settings panel for the “Monitor” object will be displayed.

4. Repeat steps 1-3 for all required “Screen” and “Monitor” objects.

The “Monitor” object is now created.

8.4.7.4 *Selecting the parameters of the "Monitor" interface box*

It is possible to set the following parameters of the "Monitor" interface box:

- Window position.
- Window size.
- Toolbar (only in the "List" mode of camera's windows displaying - see "Configuring the display mode for camera" section).

To set the parameters of the "Monitor" interface box, do the following:

1. Go to the settings panel for the "Monitor" interface object (Figure 8.4-41).

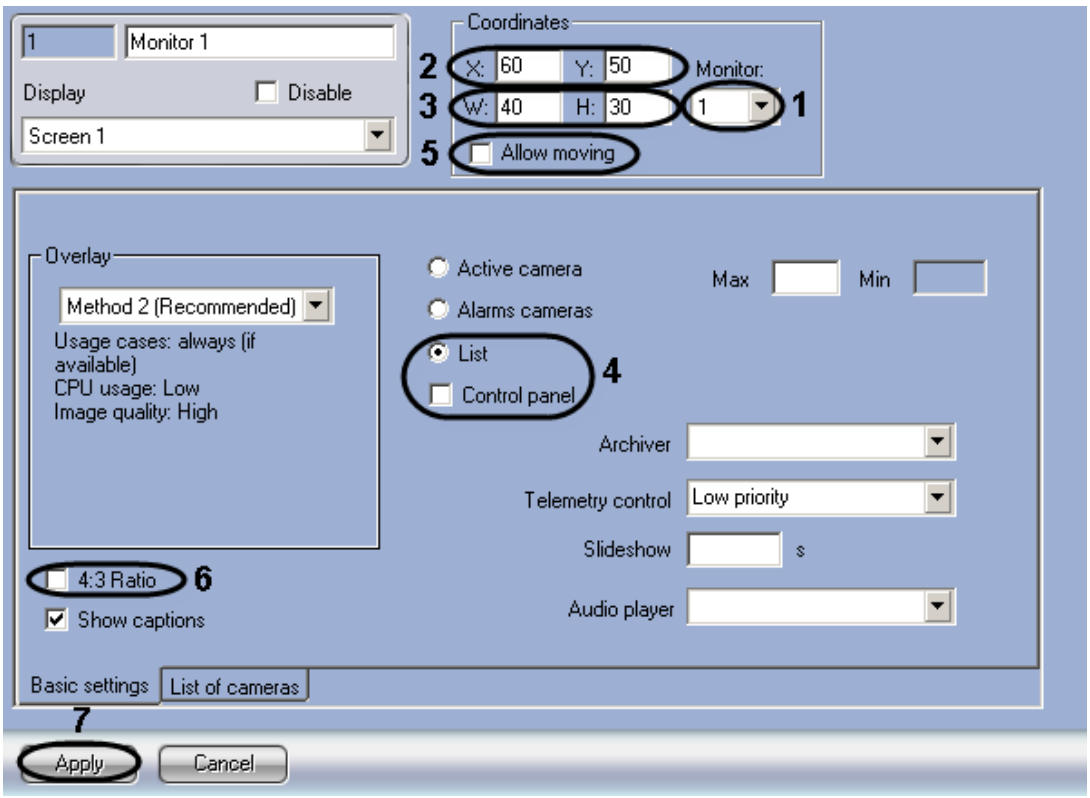


Figure 8.4-41 Setting the parameters of the "Monitor" interface box

2. In the "Monitor" drop-down list select the monitor number which coordinates are to be set further (Figure 8.4-41, 1).

3. Set coordinates of the left upper corner of the "Monitor" interface box: fields «X» (horizontal ident from the left edge of the image) and «Y» (vertical ident from the upper edge of the image) – Figure 8.4-41, 2. Coordinates are set in percentage relative to the screen size horizontally and vertically correspondingly.

4. Set the dimentions of the "Monitor" interface box: «W» (window's width) and «H» (window's height) fields – Figure 8.4-41, 3. Sizes are set in percentage relative to the screen size horizontally and vertically correspondingly.

5. To display a toolbar in the “Monitor” interface box the “List” group is to be switched in the “Basic settings” tab and the “Control panel” check box is to be set (Figure 8.4-41, 4).

Note. If the toolsbar is on, window’s height «H» is automatically equal to the window’s width «W».

6. If moving the “Monitor” interface box is to be enabled, set the “Allow moving” check box (Figure 8.4-41, 5).

Note. This setting is relevant only when the toolbar is in use.

7. If the ratio of width and height of the window is to be 4:3, set the “4:3 Ratio” checkbox (Figure 8.4-41, 6).

8. To save all the changes click the “Apply” button (Figure 8.4-41, 7).

The parameres of the “Monitor” interface box are now set.

8.4.7.5 *Selecting and configuring video cameras*

One can select and configure cameras for displaying in two ways:

1. Separately. The settings panel for the “Monitor” object is in use.

2. As a package. The “Add/Edit Camera Objects” dialog box is in use.

Note. Order of selecting video cameras as a package todisplay in the “Monitor” interface box is described in “Selecting and configuring video cameras as a package *” section.*

To select video cameras on the settings panel of the “Monitor” object, do the following:

1. Go to the “List of cameras” tab (Figure 8.4-42).

2. Select the number of the required camera in the drop-down list of the “Number” column (Figure 8.4-42, 1).

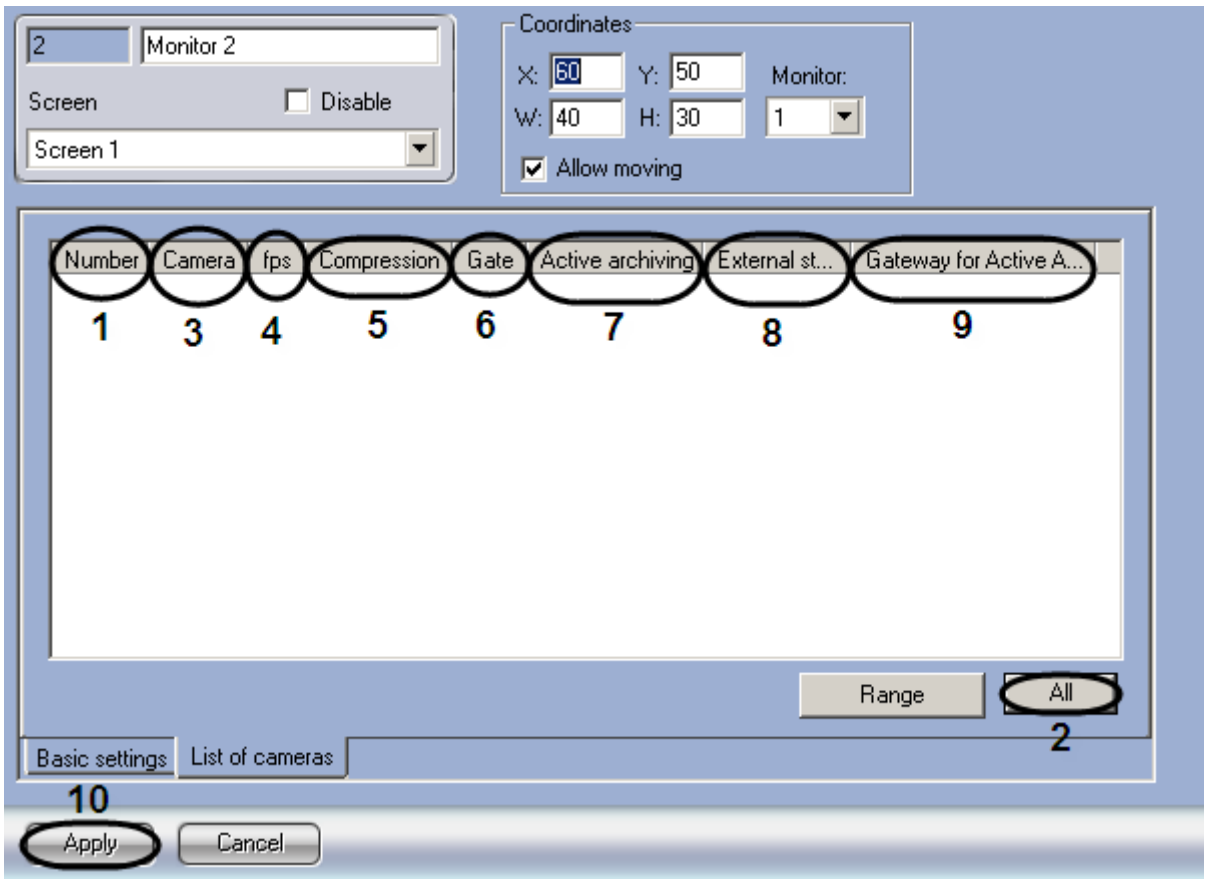


Figure 8.4-42 Selection of cameras

Note. To select all the cameras, registered in the system, click the "All" button (Figure 8.4-42, 2).

3. As a result the name of the selected camera is automatically displayed in the "Camera" column (Figure 8.4-42, 3).

4. If a video signal is to be thinned for its transmitting to the "Monitor" of the Client, then select the required frame rate of video signal in the drop-down list of the "fps" column (Figure 8.4-42, 4).

Attention! To set additional thinning and/or compression of video signals displayed on the "Monitor" of the Server is strongly inadvisable, as it leads to extra consumption of Server resources and worsening the image quality.

Note1. The selected "fps" value is to be less than the frame rate for video digitising by a video capture card. Otherwise the frame rate of video signal will be the same as the fps of digitising.

Note2. For correct thinning of a video stream compressed with the help of H.264 or MPEG4 codecs, the "fps" value is to be equal to keyframe rate specified in the device (IP-camera) or INTELLECT settings (see "Key frame rate settings" section).

Note3. Four streams for a chip are processed on FX4 video capture card. If the chip processes a stream without a signal (blue screen), then total fps is 10 (4 x 2,5fps) for one chip.

5. If video compression level is to be changed for transmitting to the "Monitor" of the Client, select the required level of video signal compression in the drop-down list of the

“Compression” column (Figure 8.4-42, 5). Compression level is increased from “0” (no compression) to “5” (maximum compression).

Note. If the compression level is set for the Client, a video signal on the Server is to be preliminary decompressed, that results in a great load increase on CPU of the Server.

6. If the “Monitor”is to receive a video archive from the selected camera via the “Gate” object, then select the name of this object in the drop-down list of the “Gate” column (Figure 8.4-42, 6).

7. If a video archive from the selected camera is to be transmitted to the “Monitor” from the “Active archiving” object, then select the name of this object in the drop-down list of the “Active archiving”column (Figure 8.4-42, 7).

8. If the selected video camera is used for video archive viewing from the external storage, then select the required “External storage” object in the “External storage” drop-down list (Figure 8.4-42, 8).

9. If the tansmission from the “Active archiving” object is performed via the “Gate” object, then select the name of this object in the drop-down list of the “Gateway for Active Archiver” column (Figure 8.4-42, 9).

10. Repeat steps 2-9 for all required video cameras.

11. To save all the changes click the “Apply” button (Figure 8.4-42, 10).

Video cameras on the settings panel of the “Monitor” object are now selected.

8.4.7.6 *Selecting and configuring video cameras as a package*

One can select and configure video camera parameters as a package to display them in the “Monitor” interface box.

To select video cameras as a package, do the following:

1. Go to the settings panel for the “Monitor” interface object.

2. Click the “Range” button in the “List of cameras” tab (Figure 8.4-43, 1).

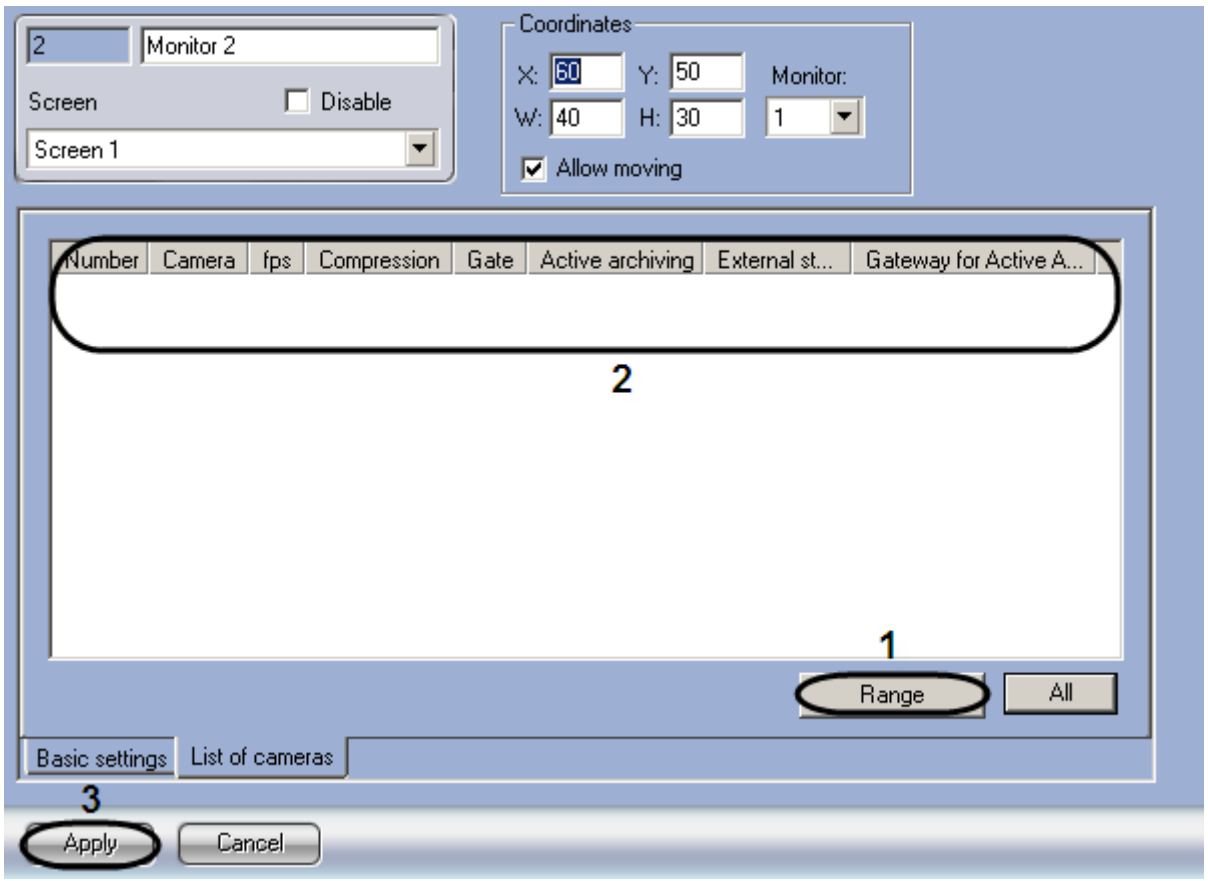


Figure 8.4-43 The "Range" button

3. As a result the "Add/Edit Camera Objects" dialog box is displayed (Figure 8.4-44).

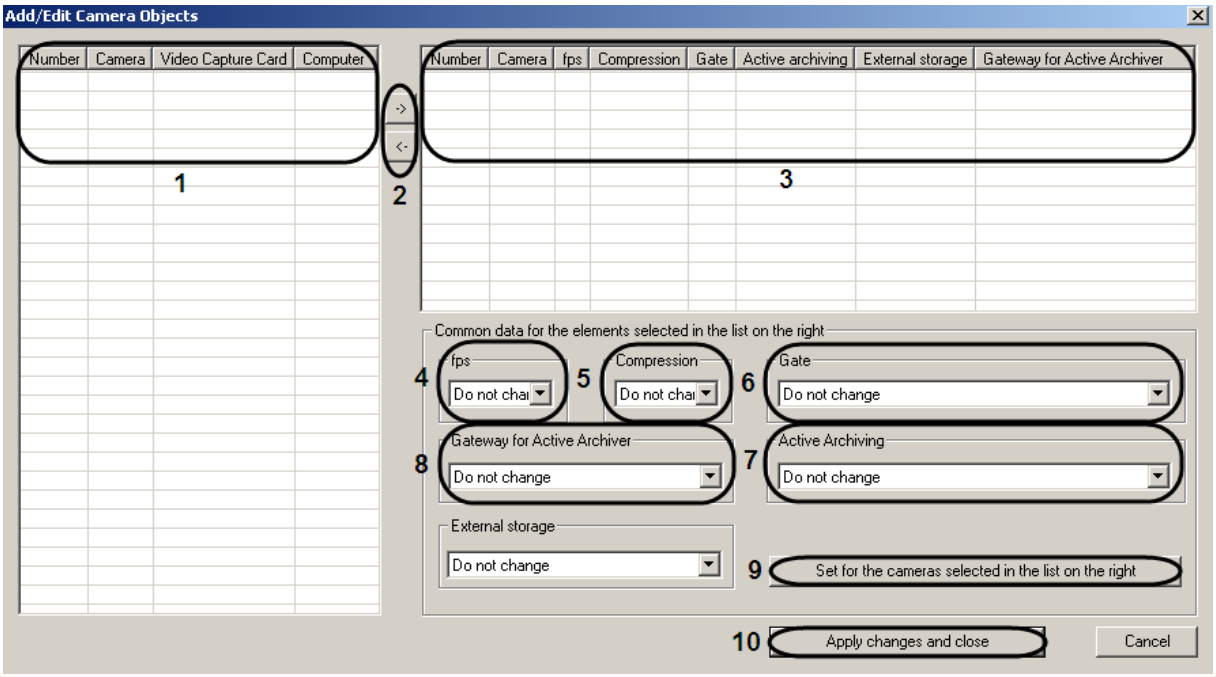


Figure 8.4-44 The "Add/Edit Camera Objects" dialog box

4. Select the required cameras in the left list of the "Add/Edit Camera Objects" box (Figure 8.4-44, 1).

5. Move the selected cameras to the right list by clicking the button (Figure 8.4-44, 2).

Note.The right list is the list of cameras selected for displaying in the "Monitor" interface box.

The button is used for inverse action, i.e. for moving the selected video cameras from the right list to the left one (Figure 8.4-44, 2).

6. As a result the selected cameras will be displayed in the list on the right of the the" Add/Edit Camera Objects" box (Figure 8.4-44, 3).

7. If it is necessary select the names of required cameras in the right list for complex editing of their parameters (Figure 8.4-44, 3).

Attention! The same parameters will be set for all selected cameras.

8. If a video signal is to be thinned for transmitting to the "Monitor" of the Client, then select the required frame rate of a video signal in the "fps" drop-down list (Figure 8.4-44, 4).

Attention! To set additional thinning and/or compression of video signals displayed on the "Monitor" of the Server is strongly inadvisable, as it leads to extra consumption of Server resources and worsening the image quality.

Note. The selected "fps" value is to be less than the frame rate for video digitising by a video capture card. Otherwise the frame rate of video signal will be the same as the fps of digitising.

The "fps", "Compression", "Gate", "Active archiving" and "Gateway for Active Archiver" settings are in the "Common data for the elements selected in the list on the right" group (Figure 8.4-44).

For correct thinning of a video stream compressed with the help of H.264 or MPEG4 codecs, the "fps" value is to be equal to keyframe rate specified in the device (IP-camera) or INTELLECT settings (see "Key frame rate settings" section).

9. If video compression level is to be changed for transmitting to the "Monitor" of the Client, select the required level of video signal compression in the drop-down list of the "Compression" column (Figure 8.4-44, 5). Compression level is increased from "0" (no compression) to "5" (maximum compression).

Note. If the compression level is set for the Client, a video signal on the Server is to be preliminary decompressed, that results in a great load increase on CPU of the Server.

10. If the "Monitor" is to receive a video archive from the selected cameras via the "Gate" object, then select the name of this object in the "Gate" drop-down list (Figure 8.4-44, 6).

11. If a video archive from the selected camera is to be transmitted to the "Monitor" from the "Active archiving" object, then select the name of this object in the "Active archiving" drop-down list (Figure 8.4-44, 7).

12. If the tansmission from the "Active archiving" object is performed via the "Gate" object, then select the name of this object in the "Gateway for Active Archiver" drop-down list (Figure 8.4-44, 8).

13. To save the set parameters, click the “Save for the cameras selected in the list on the right” button (Figure 8.4-44, 9).

14. As a result set parameters will be displayed in the list on the right of the “Add/Edit Camera Objects” box (Figure 8.4-44, 3).

15. Repeat steps 6-12 for complex editing of all required cameras.

16. To save all the canges and close the “Add/Edit Camera Objects” box, click the “Apply changes and close” button (Figure 8.4-44, 10).

17. Set camera settings will be displayed in the “List” table on the settings panel of the “Monitor” object (Figure 8.4-43, 2).

18. To save all the changes click the “Apply” button (Figure 8.4-43, 3).

Video cameras are now selected as a package.

8.4.7.7 *Configuring the display mode for camera boxes*

To display camera boxes (windows with video images) one of the following modes is in use:

1. The “Active camera” mode. Only active camera box is displayed in the “Monitor” interface box.

Note.To make camera box active click upon it with the left mouse button.

2. The “Alarms cameras” mode. The boxes of alarm cameras are displayed in the “Monitor” interface box.

3. The “List” mode. Camera boxes are displayed in the “Monitor” box according to the selected layout.

Functions available in the “List” mode:

- Control panel;
- Slideshow.

The control panel is displayed in the the “Monitor” interface box and enables the following operations:

- Select the number of dislayed cameras;
- Set and use the layouts of cameras;
- Control the slideshow.

Current date and time are also displayed on the control panel.

Slideshow is used for successive close-up displaying of camera boxes on the “Monitor”. Slideshow is performed with the help of the buttons on the toolbar of the “Monitor” in two ways:

1. Manually. Buttons of switching to the previous or next camera box are in use.

2. Automatically.Switching to the next camera box is performed automatically in a set period of time.

To set the display mode for camera boxes, do the following:

1. Go to the settings panel for the “Monitor” interface box (Figure 8.4-45).

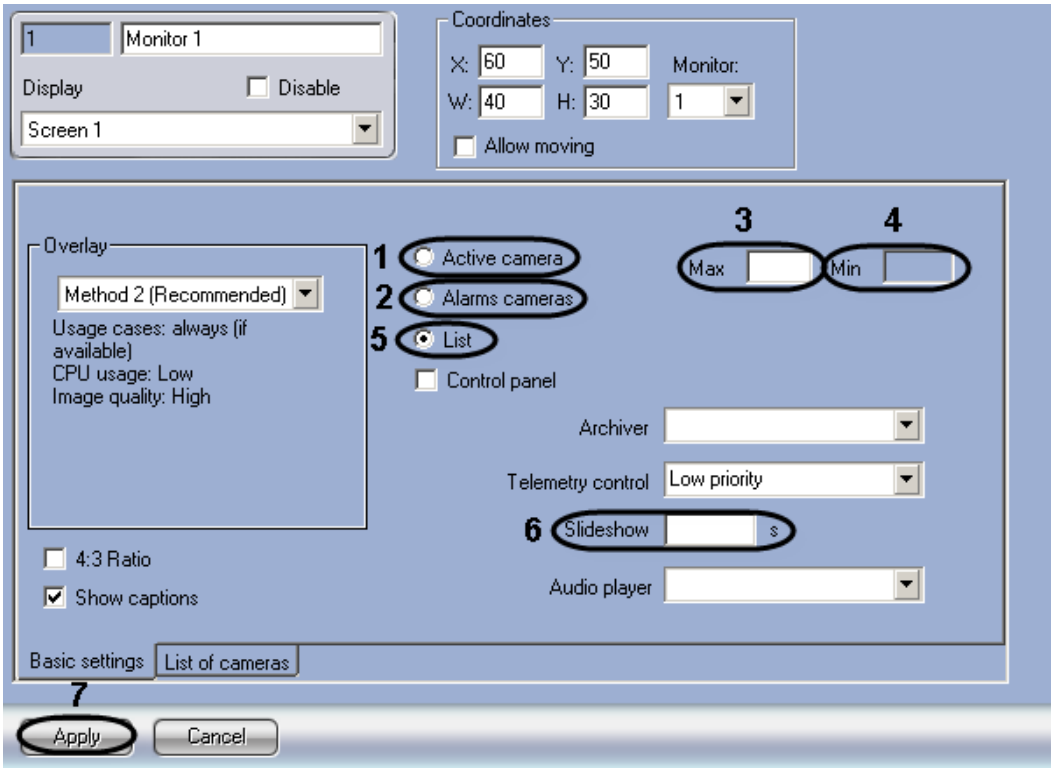


Figure 8.4-45 Setting the display mode for cameras

2. To activate the “Active camera” mode, set the “Active camera” switch in the “Basic settings” tab (Figure 8.4-45, 1).

3. To activate the “Alarms cameras” mode, set the “Alarms cameras” switch in the “Basic settings” tab (Figure 8.4-45, 2). As a result the “Min.” field is available.

4. In the “Max” field specify the required maximum number of cameras boxes which are to be displayed on the “Monitor” (Figure 8.4-45, 3). If the number of alarm cameras exceeds the maximum one, then displaying of camera boxes, alarms on which have been registered earlier, is stopped.

Note.

Example. The “Monitor” object is set for operation with maximum number of alarm cameras, equal to 5. Boxes of 4 alarm cameras are displayed in the “Monitor” box. Alarms on these cameras have been registered in the following sequence: Camera 1, Camera 2, Camera 3 and Camera4. When alarm has been registered on three more cameras, seven cameras are alarmed at the same time.This exceeds a maximum acceptable number, so the displaying of Camera 1 and Camera 2 boxes is stopped.

5. In the “Min” field specify the required minimum number of cameras images of which are to be displayed on the “Monitor” even on no-alarm (Figure 8.4-45, 4). If the number of alarm

cameras is less than a minimum one, then boxes of cameras alarm on which ended last of all are displayed on the “Monitor”.

Note.

Example. The “Monitor” object is set for operation with minimum number of alarm cameras, equal to 3. Boxes of 5 alarm cameras are displayed in the “Monitor” box. When alarm on 4 cameras is stopped in the consequence: Camera 1, Camera 2, Camera 3 and Camera 4, one camera is in the alarm mode. This is less than a minimum number, so Camera 3 and Camera 4 are also displayed on the “Monitor”.

On no- alarm if the default value (“0”) of the “Min” parameter is set, camera boxes are not displayed in the “Monitor” box.

6. To activate the “List” mode, set the “List” switch in the “Basic settings” tab (Figure 8.4-45, 5).
7. If necessary specify the required value (in seconds) of automatic slideshow for camera boxes in the “Slideshow” field (Figure 8.4-45, 6).

Note. This setting is relevant only if the toolbar is in use in the “List” mode.

8. To save all the changes click the “Apply” button (Figure 8.4-45, 7).

The display mode for camera boxes is now configured.

8.4.7.8 *Selecting the overlay mode*

Overlay is used for image processing using the “Direct X” video card and libraries, before it is displayed.

Overlay allows improving the image due to optimization of the pixel color settings. At the same time, the CPU’s load is reduced, as the video image is processed with the resources of the video capture card.

There are three overlay modes in INTELLECT™ software:

1. “Method1”.Video signals from cameras are processed as a single video stream.

2. “Method2 (Recommended)”. Video signals from cameras are processed independently from each other.

3. “None”. Video signals from cameras are not processed by a video capture card.

As a rule, the “Method2” is the optimal mode for overlay operation. This mode is supported by the most of video capture cards. If a video capture card doesn’t support the chosen overlay mode, then a video signal is displayed with a big slowing-down.

Note. For correct overlay operation in INTELLECT™ software, installed as a Server, set the “0” value for the “NoDesktop” text parameter in the “HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer” registry section. This parameter is for displaying icons on the user desktop.

To select an overlay mode, do the following:

1. Got to the settings panel for the “Monitor” interface object (Figure 8.4-46).

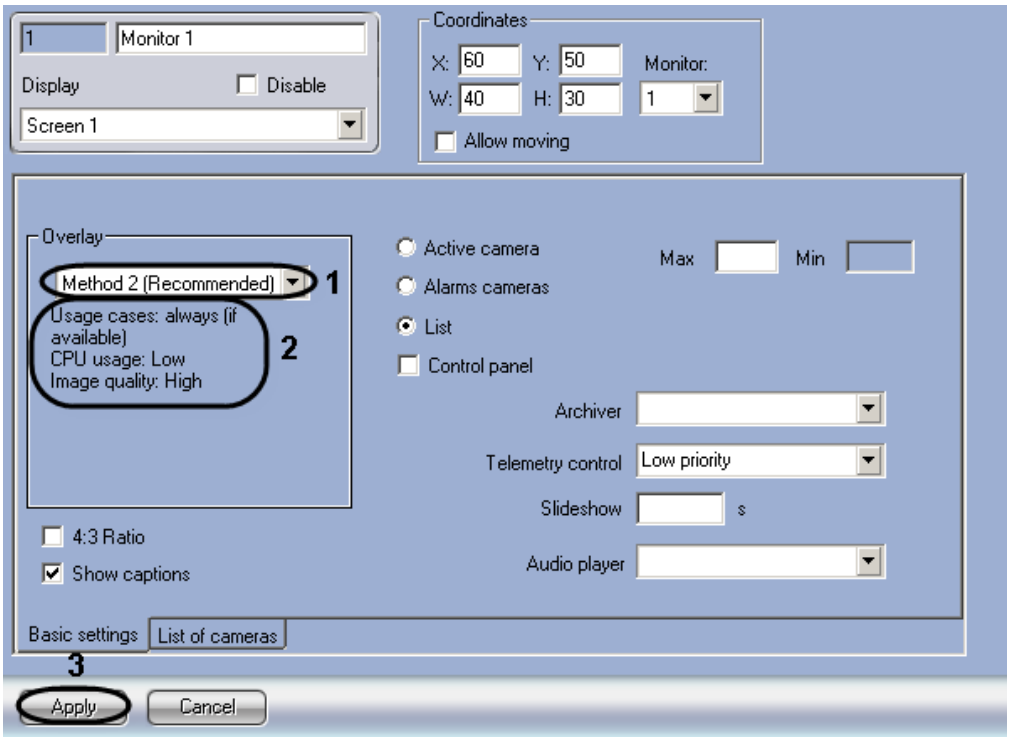


Figure 8.4-46 Selecting the overlay mode

2. Select the required overlay mode in the “Overlay” drop-down list in the “Basic settings” tab (Figure 8.4-46, 1).

Note. There is a description of the selected overlay mode in the field below the drop-down list (Figure 8.4-46, 2). If the “Method1” is selected, then the layout with simultaneous displaying of six camera boxes is unavailable.

3. To save all the changes, click the “Apply” button (Figure 8.4-46, 3).

The overlay mode is now selected.

8.4.7.9 *Setting the Telemetry control priority using the “Monitor” object*

INTELLECT™ software has an option of Telemetry control using the “Monitor” object. The control is performed with the help of a mouse or joystick.

By default, the Telemetry control option with the use of the “Monitor”object is disabled. To enable the Telemetry control option, the control priority is to be set for the “Monitor” object (see “INTELLECT Software Package. Installing and configuring security system components guide”).

To set Telemetry control priority using the “Monitor” object, do the following:

1. Go to the settings panel for the “Monitor” interface object (Figure 8.4-47).

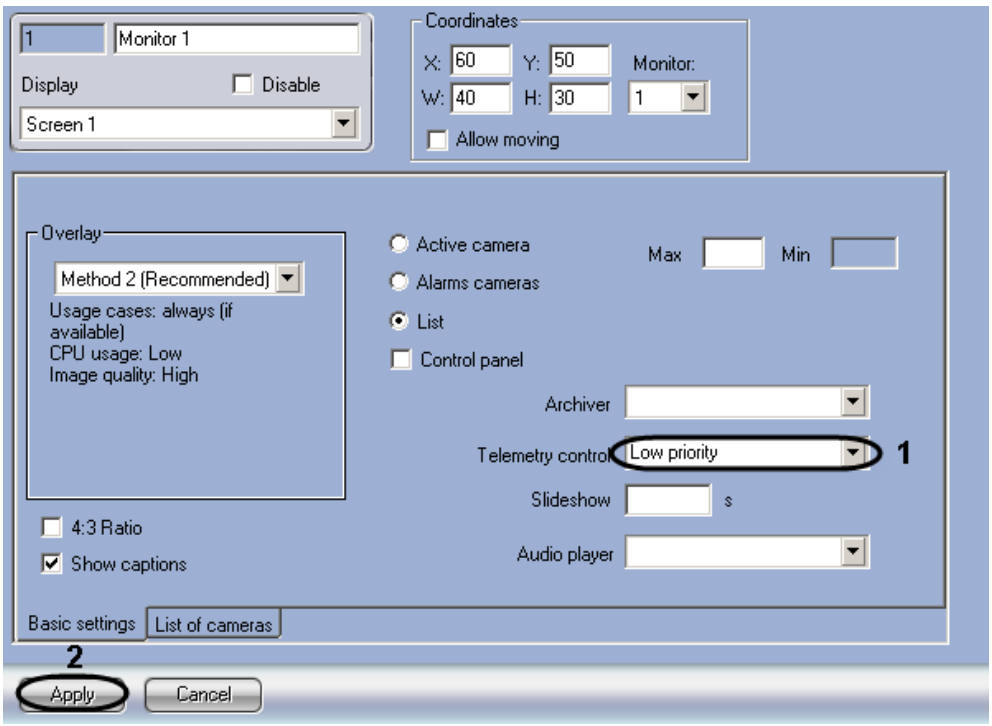


Figure 8.4-47 Setting the Telemetry control priority using the “Monitor” object

2. Select the required Telemetry control in the "Telemetry control” drop-down list in the “Basic settings” tab (Figure 8.4-47, 1).

Note. To disable Telemetry control option using the “Monitor” object, select the “Forbidden” value.

3. To save all the changes, click the “Apply” button (Figure 8.4-47, 2).

Telemetry control priority using the “Monitor” object is now set.

8.4.7.10 *Configuring the captions showing*

INTELLECT™ software has the option of showing captions for a list of cameras that are displayed in the “Monitor” interface box. This option is enabled by default.

To disable the option of captions showing, do the following:

1. Go to the settings panel for the “Monitor” interface object (Figure 8.4-48).

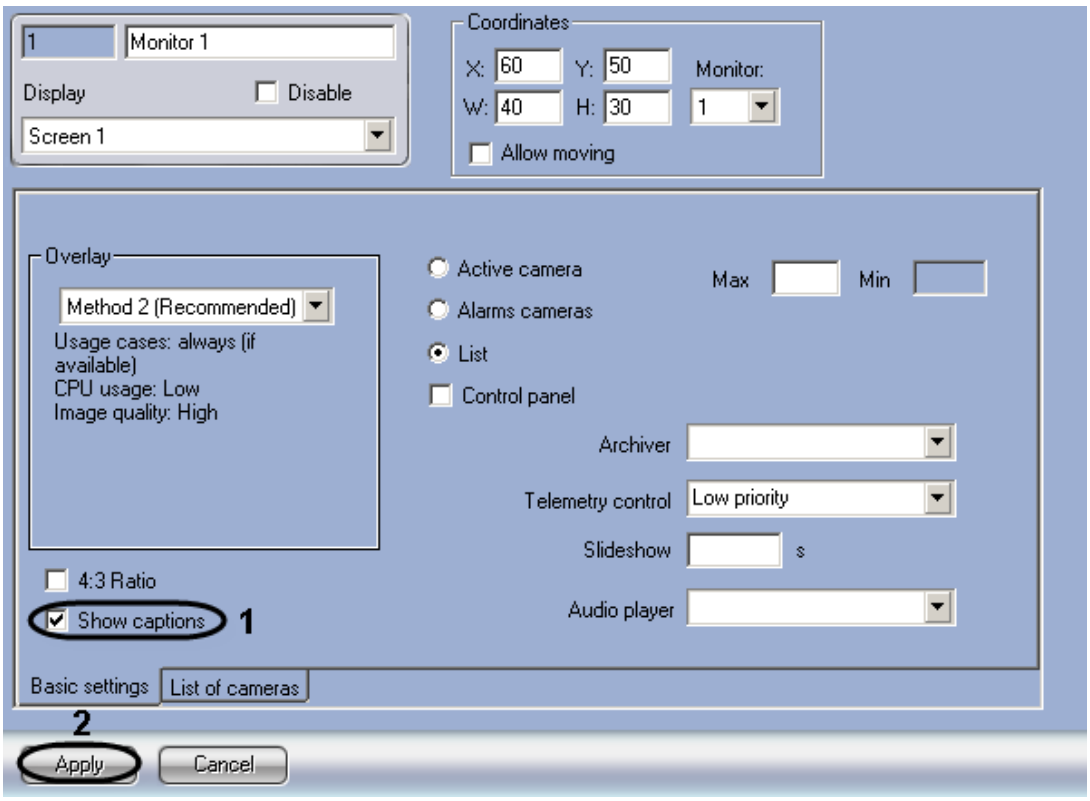


Figure 8.4-48 Configuring the titles showing

2. To disable the titles showing menu, uncheck the “Show captions” checkbox in the “Basic settings” tab (Figure 8.4-48, 1).
3. Click the “Apply” button to save the changes (Figure 8.4-48, 2).

The option of captions showing is disabled.

8.4.7.11 *Binding Audio player to the Monitor*

Audio player binding to the video surveillance monitor is for export of archive with sound. Bind the Audio player, configured to playback audio received from microphones bound to cameras on which the export is to be performed, to the video monitor.

Information on how ho create and configure the “Audio player” object is given in the “Configuring audio signals playback using the “Audio player” object” section.

To bind the Audio player to the video surveillance monitor, do the following:

1. Go to the settings panel for the “Monitor” object.

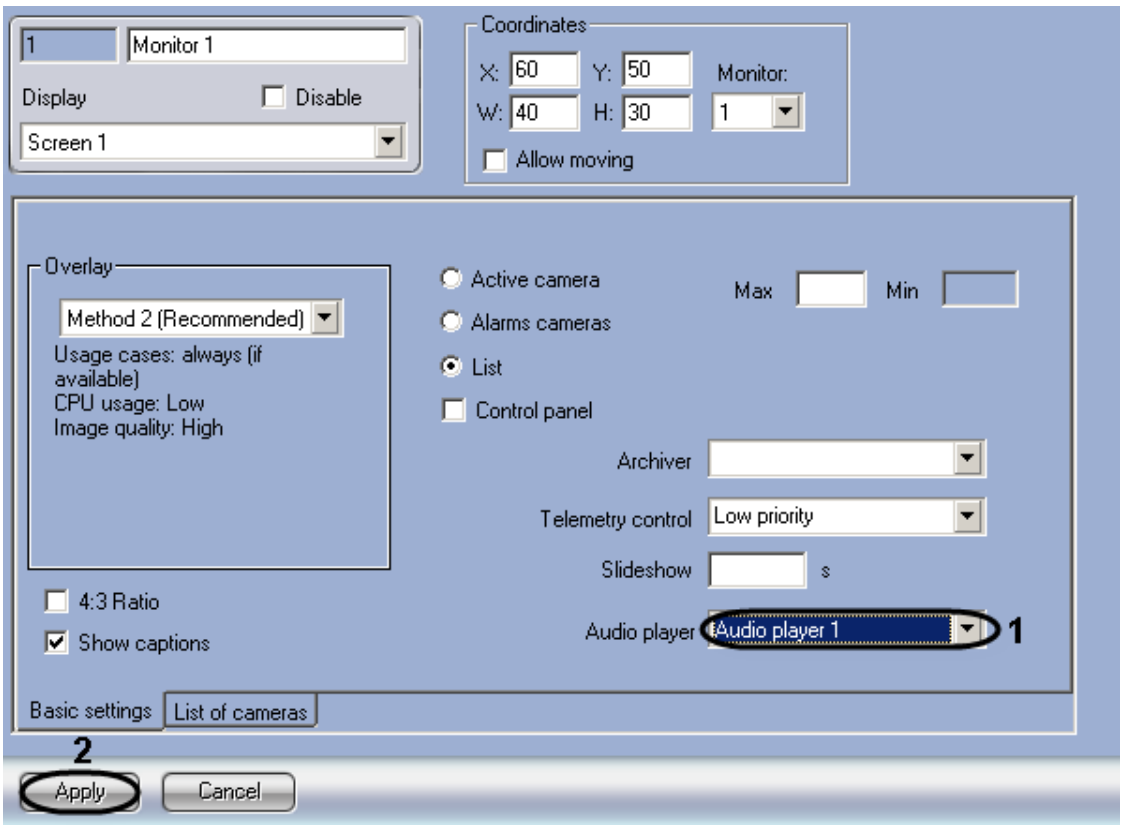


Figure 8.4-49 Binding Audio player to the video surveillance monitor

2. In the “Audio player” dropdown list, select the previously created “Audio player” object that is to be used for export of video with sound from the monitor interface (Figure 8.4-49, 1).

3. Click the “Apply” button (Figure 8.4-49, 2).

The Audio player is now bound to the Monitor.

8.4.8 Configuring object’s panoramic view by means of the “Scene” object

Panoramic view window is designed for creating and using the panoramic image, composed from several cameras’ view fields. Setting up the panoramic view window is performed by Scene object settings panel.

The Scene object setup is performed in the following way:

1. Select a screen and create the Scene object.
2. Set the parameters of the “Scene” interface box.
3. Select and setup cameras for displaying in the Scene window

Note. Working with Panoramic view window is described in detail in “INTELLECT™ software: Operator’s Guide”.

8.4.8.1 *Creating the “Scene” object*

To create the “Scene” object, do the following:

1. Select the required “Screen” object in the “Interfaces” tab of the “System settings” dialog box (Figure 8.4-50).

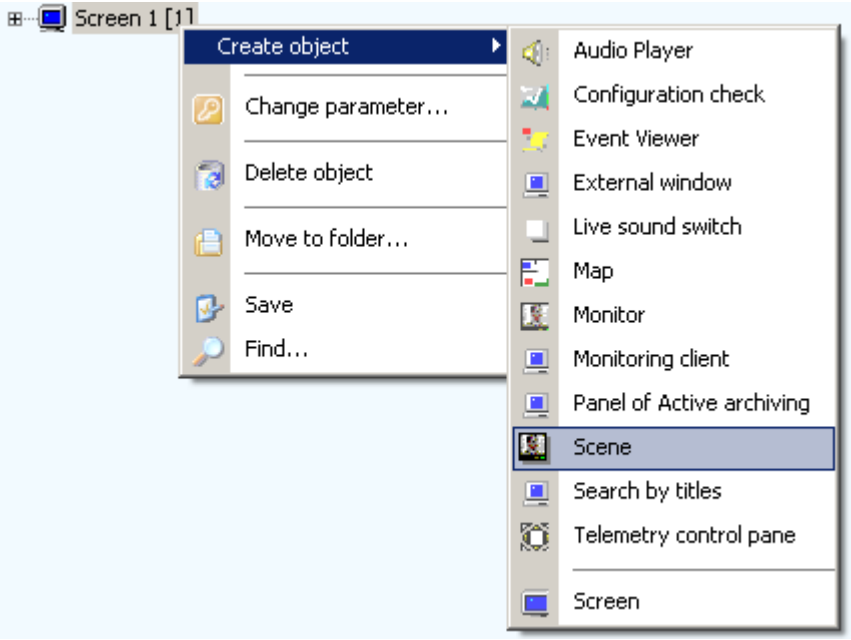


Figure 8.4-50 Creating the "Scene" object

2. Make a right mouse click upon the selected "Screen" object and select «Create object» ⇒ «Scene» in the appeared context menu (Figure 8.4-50).
3. Set the name and number of the "Scene" object in the appeared window and then click the "Apply" button.

Note. The settings panel for the "Scene" object will be displayed as a result.

4. Repeat steps 1-3 for all required "Screen" and "Scene" objects.

The "Scene" object is now created.

8.4.8.2 *Setting the parameters of the "Scene" interface box*

Setting the parameters of the "Scene" interface box is done in the following way:

1. Go to the settings panel for the "Scene" object (Figure 8.4-51).

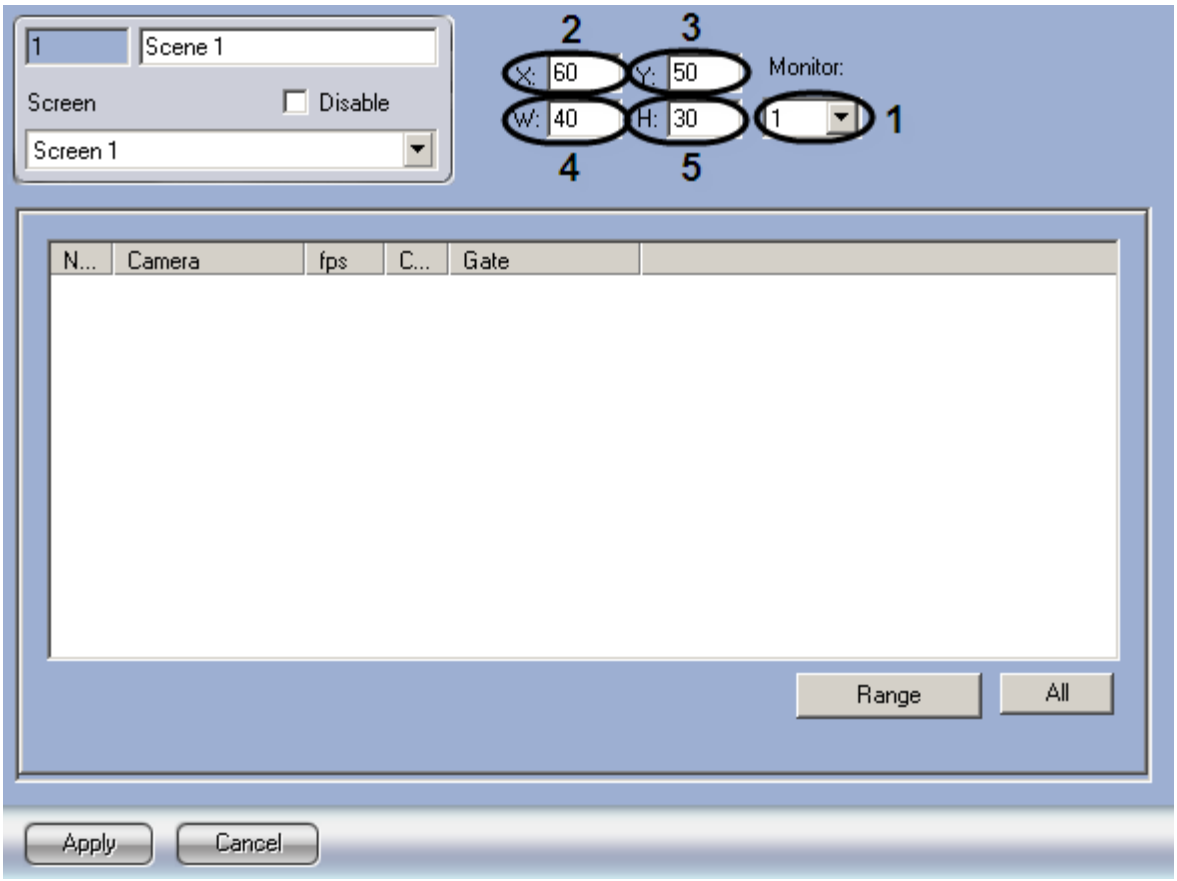


Figure 8.4-51 Setting the parameters of the "Scene" interface box

2. Select the number of physical monitor on which screen there will be displayed the panoramic view from the "Monitor" dropdown list (Figure 8.4-51, 1).
3. Set the coordinates of the left upper corner in the "Scene" interface box: fields "X" (horizontal shift from the left image border) and "Y" (vertical shift from the upper image border) – see Figure 8.4-51, 2-3. The coordinates are given in percentage according to vertical and horizontal screen size.
4. Set the sizes of the "Scene" interface box: fields "W" (window's width) and "H" (window's height) – Figure 8.4-51, 4-5. The sizes are given in percentage according to vertical and horizontal screen size.
5. Click the "Apply" button to save the changes.

Parameters of the "Scene" interface box are now set.

8.4.8.3 *Selecting and configuring cameras*

One can select and configure cameras for displaying in the interface box in two ways:

1. Separately. The settings panel of the "Scene" object is used.
2. In a complex way. The "Add/edit cameras" dialog box is used.

To select a camera on the settings panel of the "Scene" object, do the following:

1. Go to the settings panel of the "Scene" object (Figure 8.4-52).
2. Select the number of required camera from the "Number" dropdown list (Figure 8.4-52, 1).

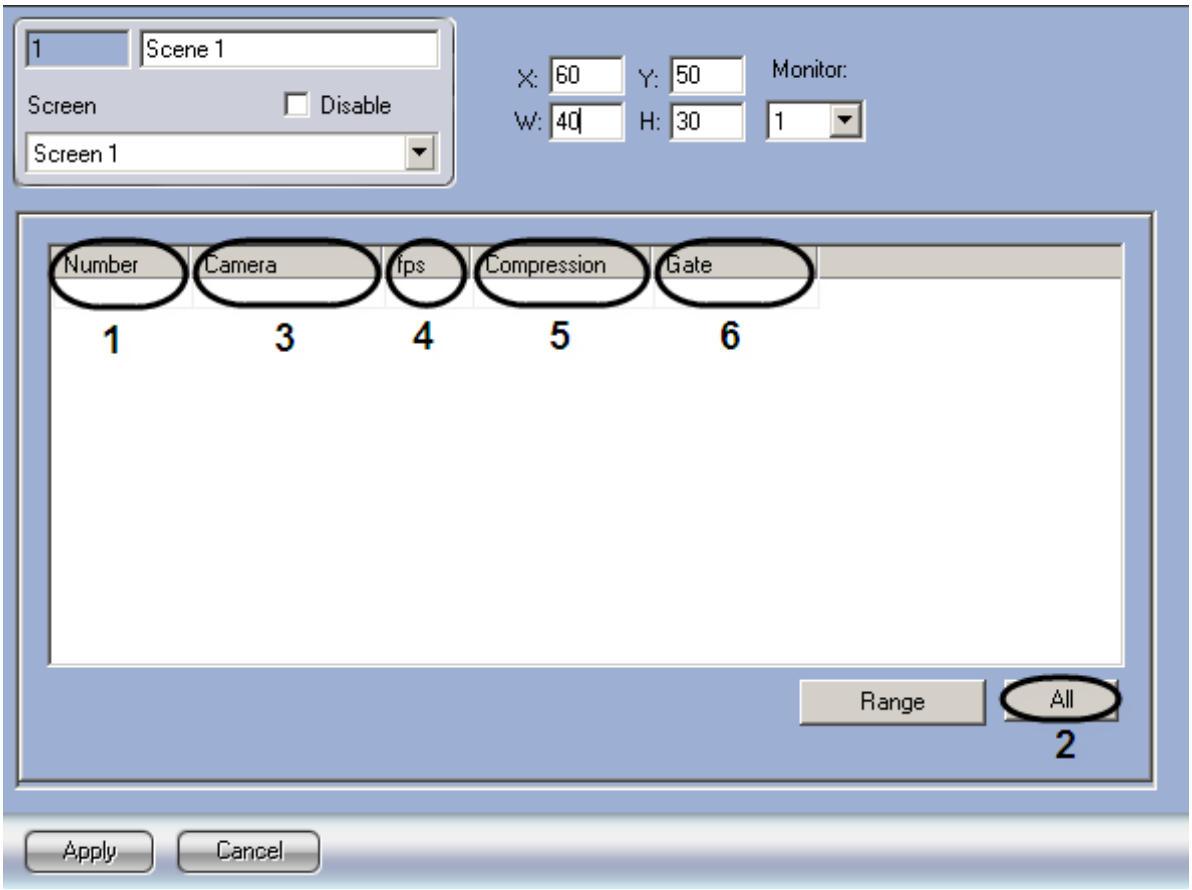


Figure 8.4-52 Cameras selection

Note. To select all the cameras, registered in the system, click the "All" button (Figure 8.4-52, 2).

3. The name of selected camera will automatically be displayed in the "Camera" column (Figure 8.4-52, 3)
4. If a signal is to be thinned, the required fps is to be selected from the fps dropdown list (Figure 8.4-52, 4).

Note. It's not recommended to change «fps» value while using H.264 codec

5. If a compression level of video signal is to be changed, the required compression level is to be selected from the "Compression" dropdown list (Figure 8.4-52, 5). The compression level increases from "0" (no compression) to "5" (maximum compression).
6. If the archive from the selected camera is to be received via the "Gate" object, then select the name of this object from the "Gate" dropdown list (Figure 8.4-52, 6)
7. Repeat steps 2-6 for all the required cameras.

Note. To add a new camera, go to the last line in the selected cameras list and click "↓".

8. Click the "Apply" button to save the changes.

Cameras selection on the settings panel of the "Scene" object is completed.

There is possibility to select and edit parameters of cameras for displaying in the "Scene" interface box in a complex way.

Complex cameras selection is performed in the following way:

1. Go to the settings panel for the “Scene” object and click the “Range” button (Figure 8.4-53, 1)

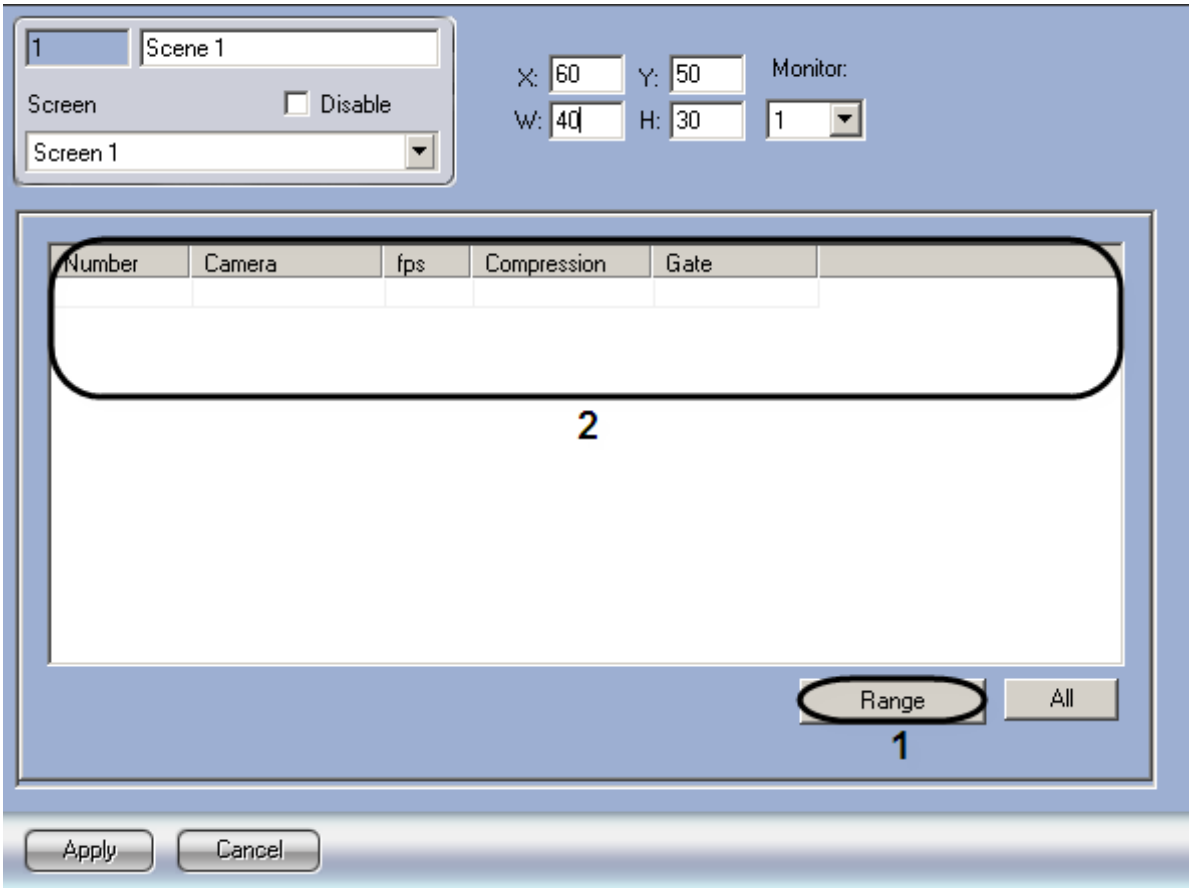


Figure 8.4-53 The “Range” button

2. The “Add/edit cameras” dialog box will open as a result.

Note. The “Add/edit cameras” dialog box is described in the “Selecting and configuring video cameras as a package” section.

3. Cameras settings, set in the “Add/edit cameras” dialog box will be displayed on the settings panel of the “Scene” object (Figure 8.4-53, 2).
4. Click the “Apply” button to save the changes.

Complex cameras selection is completed.

8.4.9 Enabling, configuring and disabling video detection tools

8.4.9.1 *General information*

Video detection tools provide automatic video image analysis to recognize events occurring within the observed scene. Event recognition capabilities depend on the type of detection tool.

In INTELLECT™ software several types of detection tools are available:

1. main motion detection tool;

2. motion detection tool;

3. focusing detection tool;
4. video signal stability detection tool;
5. background change detection tool;
6. camera blinding detection tool;
7. camera covering detection tool;
8. abandonded objects detection tool;
9. infrared detection tool.

By default, INTELLECT™ software uses solely the main motion detection tool, which detects the video surveillance camera alarms. The rest of detection tools are optionally activated in the course of INTELLECT™ software administration.

To configure detection tools, set up the program algorithms for them, enable auto recording on detection tool alarm option etc.

8.4.9.2 Requirements to video parameters while working with detection tools

The following requirements are to be met for proper video-analytics operation:

1. Camera requirements:
   - 1.1 Resolution not less than 320x240 pixels.
   - 1.2 Not less than 6 fps.
   - 1.3 Color: analytics works both with color and monochromatic images.
   - 1.4 It is not allowed to the image shift be more than 3% of the frame size due to camera vibration.
2. Light requirements:
   - 2.1 Medium light. The quality of analytics operation can be lower in case of low light (night) or over light (overexposure)
   - 2.2 No dramatic changes of light.
3. Scene and camera viewpoint requirements:
   - 3.1 Moving objects have to be visually separated from each other in the image.
   - 3.2 Background is mostly static and is not changed.
   - 3.3 Moving objects shielding by static objects (columns, trees, etc.) is minimal.
   - 3.4 Improper analytics operation is possible on the reflective surface and with sharp shadows of moving objects.
   - 3.5 Improper analytics operation is possible on extended single-colour objects.
4. Object images requirements:
   - 4.1 It is not allowed to the objects linear dimensions in the image be less than 2% of the frame size.
   - 4.2 Objects linear dimensions are not to exceed 25% of the frame size as recommended.
   - 4.3 Speed of objects movement on the image is not less than 1 pixel per second

8.4.9.3 *Enabling and configuring detection tools*

Generally the procedure of configuring detection tools includes the following steps (except for the main motion detection tool (camera alarm detection tool), configuration procedure of which is described in "*Configuring Main motion detection tool*" section):

1. Connecting detection tools. It is performed for each camera independently.
2. Setting detection tools parameters.
3. Testing video detection tool operation by using the video monitor.
4. If detection tool operates improperly, go back to step 2, change the settings and test it again.
5. If detection tool operates properly, the setup is completed.

8.4.9.4 *Connecting detection tools*

The list of video detection tools is created individually for each camera.

Initially only a Main motion detection tool is registered for each camera. No other detectors are registered by default.

To connect video detection tools (except the main motion detection tool), do the following:

1. Go to the "Hardware" tab in the "System settings" dialog box (Figure 8.4-54, 1).
2. Select the "Camera" object, corresponding to the camera to process video from which a detection tool is connected and configured, in the objects tree of the "Hardware" tab (Figure 8.4-54).
3. Create the "Detection zone" object on the base of the "Camera" object. The settings panel for the "Detection zone" object appears on the right of the "Hardware" tab (Figure 8.4-54, 2).

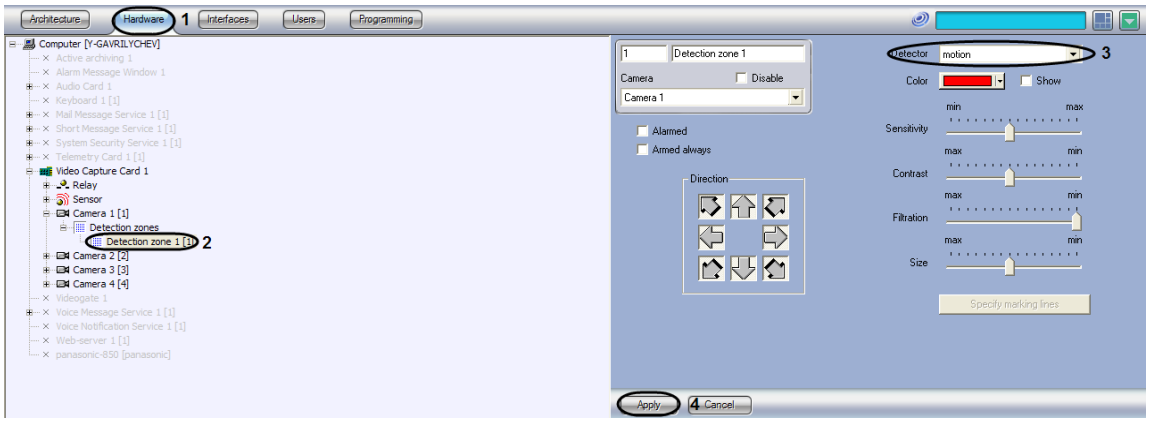


Figure 8.4-54. Detector registration

4. In the "Detector" list, select the required type of detection tool.

When a detection tool is connected, the controls for configuring the selected detection tool are activated. Controls that are not required are disabled. With different types of detectors, the same graphics object may correspond to different settings.

The setup procedure depends on the type of detection tool. Setup sequences for different types of detection tools are described in the relevant sections.

5. Click the “Apply” button (Figure 8.4-54, 4).

A detection tool is now connected.

8.4.9.5 *Configuring detection tools*

8.4.9.5.1 Configuring Main motion detection tool

The main motion detection tool is used to detect motion on the guarded location and to generate the system alarm events when the relevant camera is armed.

Main motion detection tool configuration is performed for each camera independently.

In most cases the default settings for Main motion detection tool are sufficient for it to function properly.

To configure Main motion detection tool, do the following:

1. Display the video surveillance monitor on the screen and check if INTELLECT™ properly registers alarms on camera.

If registration is proper, then additional settings may be skipped.

Note. If alarms on camera are registered improperly (for example, a detection tool is triggered by artificial or natural video signal noise (rain, snow, etc), a detection tool does not detect small object motion and high speed motion), a Main motion detection tool is to be configured. The proper setup of a Main motion detection tool allows significantly lowering the probability of unsatisfactory camera alarm detection.

2. Go to the“Hardware” tab in the “System settings” dialog box (Figure 8.4-55, 1).

3. Select the “Camera” object corresponding to the camera on which a detection tool is configured, in the objects tree of the “Hardware” tab (Figure 8.4-55, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

4. Select the “Basic settings” tab on the settings panel of the “Camera” object (Figure 8.4-55, 3).

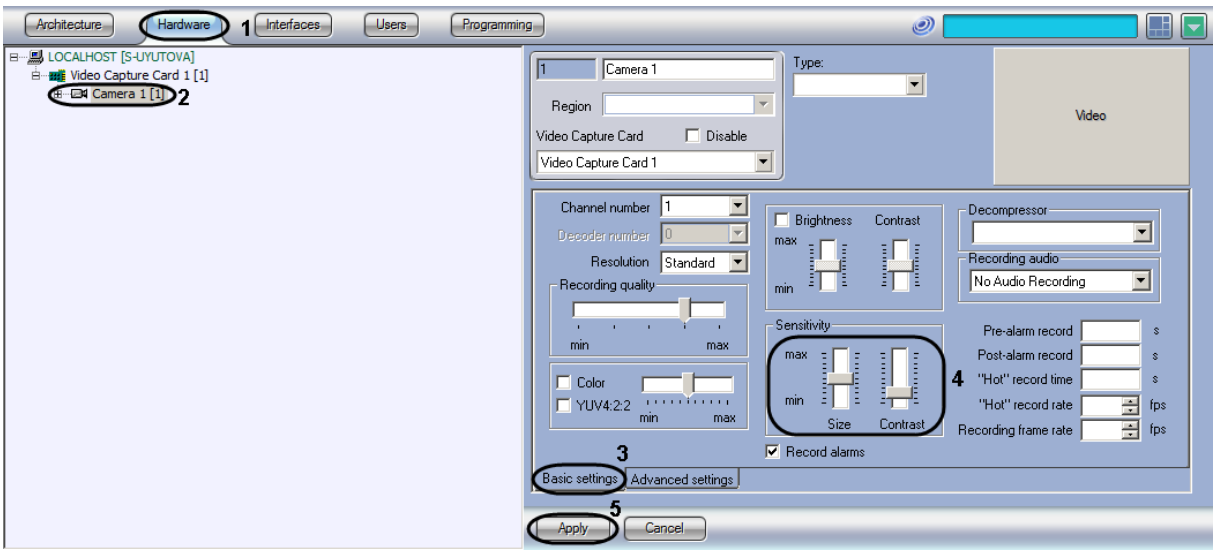


Figure 8.4-55 Configuring Main motion detection tool

5. Set the “Size” value by moving the slider of the same name (Figure 8.4-55, 4). The value of this setting corresponds to the part of the total frame square, occupied by the smallest detected object. When an object bigger than the preset one moves, the motion detection tool switches to the alarm status.

The best valueof the “Size” parameter is defined by testing the triggering of a detection tool. With low values of the “Size” parameter, triggering by noise (including rain, snow) is more probable. With high values of the “Size” parameter, triggering by object motion is less probable.

The value that is slightly lower than the average size of the moving objects in the frame is recommended to be set to the “Size” parameter. If a detection tool triggers upon video signal noise, then it is necessary to change the “Contrast” parameter.

6. Set the “Contrast” value by moving the slider of the same name (Figure 8.4-55, 4). The value of this setting corresponds to the contrast of detected object.

The best valueof the “Contrast” parameter is defined by testing the triggering of a detection tool. With low values of the “Contrast” parameter, triggering by moving objects, color spectrum of which is very similar to that of the background, is more probable. In most cases the default “Contrast” setting (the average value) is sufficient.

7. Click the “Apply” button.

Main motion detection tool is now configured.

8.4.9.5.2 Configuring Motion detection tool

The Motion detection tool diskovers moving objects in the zone under control. When a moving object is detected, it is dynamically framed. The motion is detected by calculating the gradient between sequential frames to time.

To configure Motion detection tool, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-56, 1).

2. Select the “Detection zone” object corresponding to the detection tool that is to be configured, in the objects tree of the “Hardware” tab (Figure 8.4-56, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

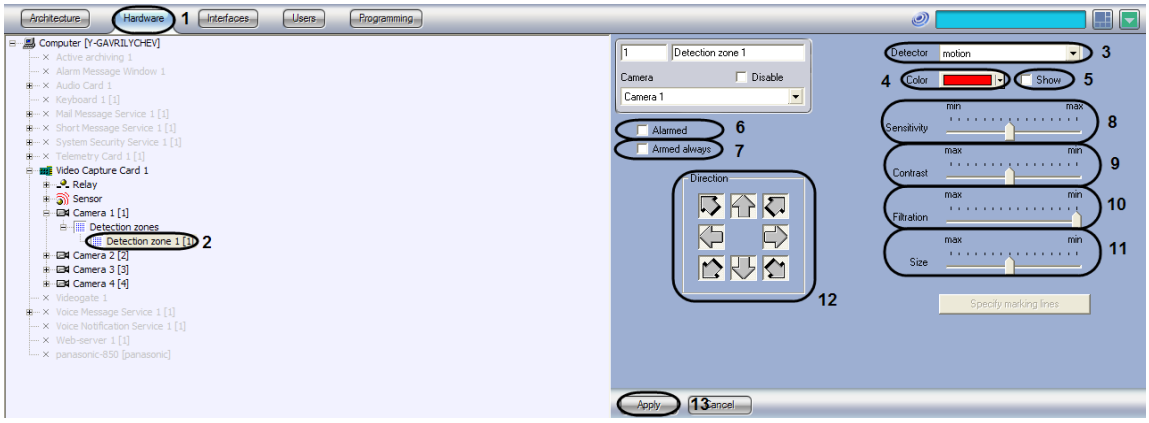


Figure 8.4-56 Configuring Motion detection tool

3. Enable the motion detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the motion detection tool registered earlier (Figure 8.4-56, 3).

4. By default, the detected moving object is dynamically framed with its motion direction is marked with an arrow. If the moving object does not need to be framed, set the “Show” checkbox unchecked (Figure 8.4-56, 5).

5. By default, the moving object is framed in red. The frame color may be changed (Figure 8.4-56, 4).

To change frame color, select the color in the “Color” list or on the “Select color” panel, called by the “Select color” command in the “Color” list. To return the default frame color, select the “By default” command in the “Color” list.

6. To enable the auto recording option on a motion detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-56, 6).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed when the detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

7. To disable disarming of the motion detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-56, 7).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

8. Set the value of the “Sensitivity” parameter by moving the the slider of the same name. This setting corresponds to the minimum value of the average brightness of the moving object,

with which the detection tool triggers by its motion only, and not by noise in a video signal (including rain, snow, etc.) (Figure 8.4-56, 8).

The best value of the “Sensitivity” parameter is defined by testing false triggering of detection tools. With low values of the “Sensitivity” parameter, false triggering by noise is more probable. With high values of the “Sensitivity” parameter, triggering by object motion is less probable.

Set the value of the “Sensitivity” parameter after setting the “Size”, “Filtration” and “Contrast” parameters. It is recommended to select the value of the “Sensitivity” parameter that will exclude false triggering by noise.

9. Set the value of the “Contrast” parameter by moving the slider of the same name. This setting corresponds to the contrast of the detected object (Figure 8.4-56, 9).

The best value of the “Contrast” parameter is defined by testing the triggering of detection tools. With low values of the “Contrast” parameter, triggering by moving objects, color spectrum of which is very similar to that of the background, is less probable. With high values of the “Contrast” parameter, false triggering of detection tools by noise is more probable.

In most cases the default setting (the average value) is sufficient.

10. Set the value of the “Filtration” parameter by moving the the the slider of the same name (Figure 8.4-56, 10). This setting corresponds to the object’s upper speed threshold, with which the detector is to trigger. With the minimum value of this parameter, the detection tool triggers upon objects moving at any speed.

The best value of the “Filtration” parameter is defined by testing the triggering of detection tools. With low values of the “Filtration” parameter, triggering by noise (including rain and snow) is more probable. With high values of the “Filtration” parameter, triggering by object motion is less probable. If a detection tool triggers upon noise, then it is necessary to change the value of the “Sensitivity” parameter.

11. Set the value of the “Size” parameter by moving the slider of the same name (Figure 8.4-56, 11). This setting corresponds to the part of the total frame square, occupied by the smallest detected object. When an object that is bigger than the preset one moves, the motion detection tool switches to the alarm status.

The best value of the “Size” parameter is defined by testing the triggering of detection tools. With low values of the “Size” parameter, triggering by noise (including rain and snow) is more probable. With high values of the “Size” parameter, triggering by object motion is less probable.

It is recommended to set the value of the “Size” parameter that is slightly lower than the average size of objects moving in the frame. If a detection tool triggers upon video signal noise, then change the value of the “Sensitivity” parameter.

12. By default, a detection tool recognizes motion in any direction. To disable detection of motion in certain directions, click the relevant buttons in the “Direction” group. A detection tool detects motion in the directions of the “pressed” arrow buttons and does not detect it in the directions of “pulled” arrows (Figure 8.4-56, 12).

13. Click the “Apply” button (Figure 8.4-56, 13).

Motion detection tool is now configured.

8.4.9.5.3 Configuring Focus detection tool

This detection tool notifies the Operator about camera tampering, resulting in focus loss or camera sensitivity degradation. The high frequency component of the video signal is analyzed to check for presence of distinct contours.

To configure Focus detection tool, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-57, 1).

2. Select the “Detection zone” object corresponding to the required detection tool, on the “Hardware” tab in the objects tree (Figure 8.4-57, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

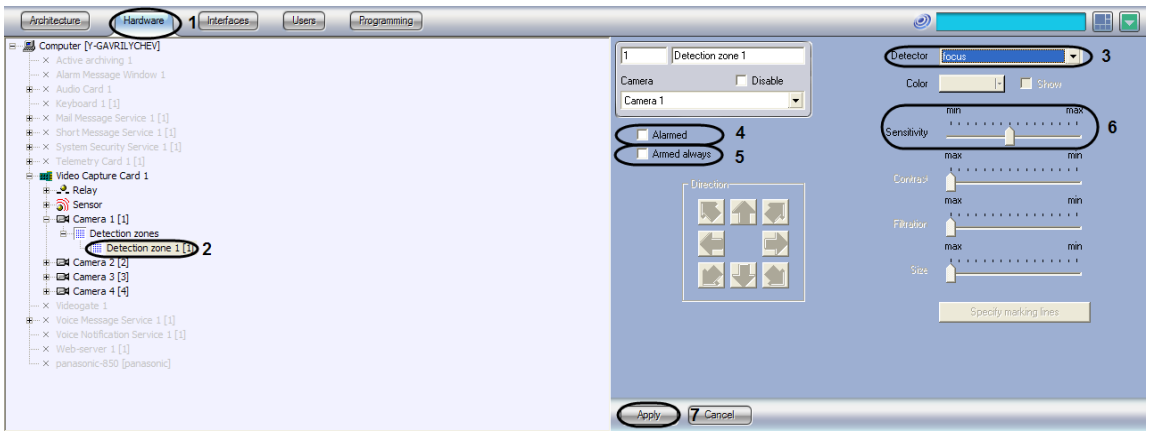


Figure 8.4-57 Configuring Focus detection tool

3. Enable the focus detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the focusing detection tool registered earlier (Figure 8.4-57, 3).

4. To enable the auto recording option on a focus detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-57, 4).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed after detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

5. To disable disarming of the focus detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-57, 5).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

6. Set the value of the “Sensitivity” parameter by moving the the slider of the same name (Figure 8.4-57, 6). This setting corresponds to the minimum drop in image sharpness (that is

the difference between the average number of contours and the number of contours in the current frame), with which the detection tool is to trigger.

The best value of the “Sensitivity” parameter is defined by testing the triggering of detection tools. In most cases the default setting is sufficient.

7. Click the “Apply” button (Figure 8.4-57, 7).

Focus detection tool is now configured.

8.4.9.5.4 Configuring Stability detection tool

Stability detection tool reacts to any change in video camera position. Operation of the detection tool is based on the comparison between parameters of each frame and the average parameters. It uses high frequency filtration to detect the objects’ outlines, if they are sharply-defined.

To configure Stability detection tool, do the following:

1. Go to the“Hardware” tab in the “System settings” dialog box (Figure 8.4-58, 1).

2. Select the “Detection zone” object corresponding to the required detection tool, on the “Hardware” tab in the objects tree (Figure 8.4-58, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

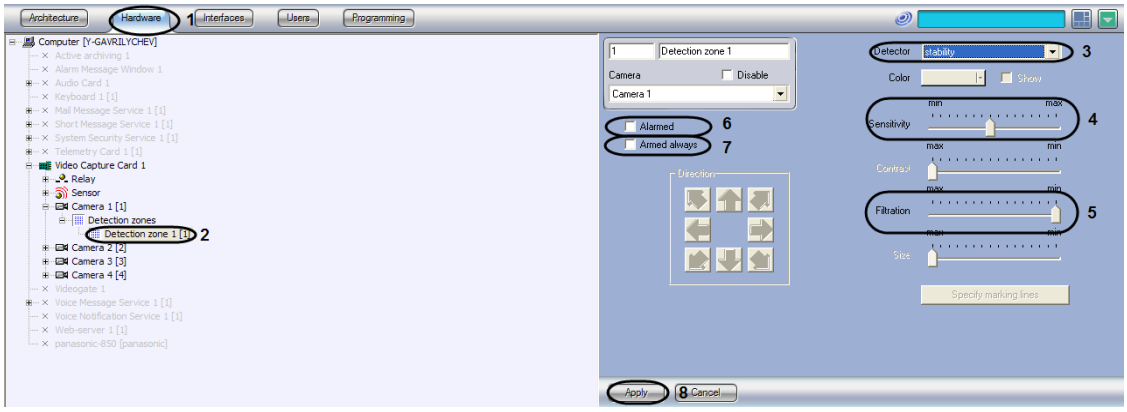


Figure 8.4-58 Configuring Stability detection tool

3. Enable the stability detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the focusing detection tool registered earlier (Figure 8.4-58, 3).

4. Set the value of the “Sensitivity” parameter by moving the the slider of the same name (Figure 8.4-58, 4). This setting corresponds to the minimum drop in image sharpness (that is the difference between the average number of outlines and the number of outlines in the current frame), with which the detection tool is to trigger.

The best value of the “Sensitivity” parameter is defined by testing the triggering of detection tools. In most cases the default setting is sufficient.

5. Set the value of the “Filtration” parameter by moving the the slider of the same name (Figure 8.4-58, 5). This setting corresponds to the object’s upper speed threshold, at which the detector is not to trigger.

The best value of the “Filtration” parameter is defined by testing the triggering of detection tools. In most cases the default setting is sufficient.

6. To enable the auto recording option on a stability detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-58, 6).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed after detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

7. To disable disarming of the stability detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-58, 7).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

8. Click the “Apply” button (Figure 8.4-58, 8).

Stability detection tool is now configured.

8.4.9.5.5 Configuring Background change detection tool

This detection tool reacts to changes in the scene background due to physical tampering of the CCTV camera. Operation of the detection tool is based on calculation of the standard deviation of integral frame intensity from its mean value.

To configure Background change detection tool, do the following:

1. Go to the“Hardware” tab in the “System settings” dialog box (Figure 8.4-59, 1).

2. Select the “Detection zone” object corresponding to the required detection tool, on the “Hardware” tab in the objects tree (Figure 8.4-59, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

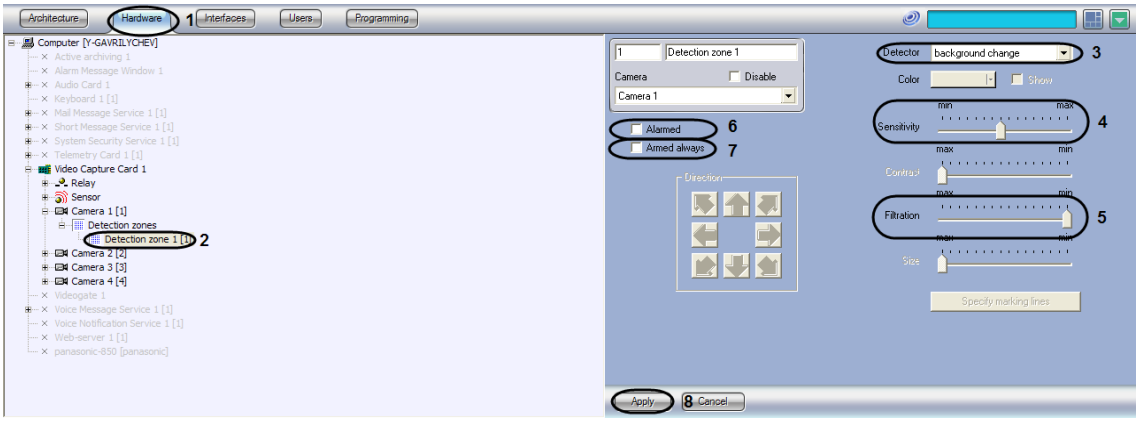


Figure 8.4-59 Configuring Background change detection tool

3. Enable the background change detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the focusing detection tool registered earlier (Figure 8.4-59, 3).

4. Set the value of the “Sensitivity” parameter by moving the the slider of the same name (Figure 8.4-59, 4). This setting defines the deviation of the integral frame brightness from its mean value at which the detection tool is to trigger.

The best value of the “Sensitivity” parameter is defined by testing the triggering of detection tools. In most cases the default setting is sufficient.

5. Set the value of the “Filtration” parameter by moving the slider of the same name (Figure 8.4-59, 5). This setting corresponds to the object’s upper speed threshold, at which the detector is not to trigger.

The best value of the “Filtration” parameter is defined by testing the triggering of detection tools. In most cases the default setting is sufficient.

6. To enable the auto recording option on a background change detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-59, 6).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed after detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

7. To disable disarming of the background change detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-59, 7).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

8. Click the “Apply” button (Figure 8.4-59, 8).

Background change detection tool is now configured.

8.4.9.5.6 Configuring Blind detection tool

Blind detection tool detects camera blinding. Operation of the detection tool is based on comparison of the bitmap histogram of the current frame to that of the reference blinding frame (white).

To configure Blind detection tool, do the following:

1. Go to the“Hardware” tab in the “System settings” dialog box (Figure 8.4-60, 1).

2. Select the “Detection zone” object corresponding to the required detection tool, on the “Hardware” tab in the objects tree (Figure 8.4-60, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

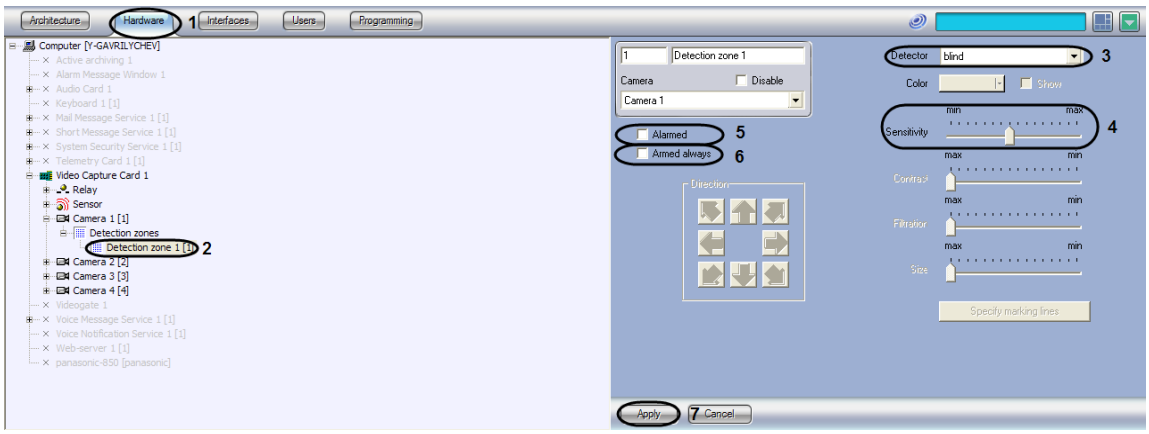


Figure 8.4-60 Configuring Blind detection tool

3. Enable the blind detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the focusing detection tool registered earlier (Figure 8.4-60, 3).

4. Set the value of the “Sensitivity” parameter by moving the the slider of the same name (Figure 8.4-60, 4). This setting defines the image blinding rate, expressed in the difference between the brightness histogram median position of the current and reference frames with which the detection tool is to trigger.

The best value of the “Sensitivity” parameter is defined by testing the triggering of detection tools. In most cases the default setting is sufficient.

5. To enable the auto recording option on a blind detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-60, 5).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed after detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

6. To disable disarming of the blind detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-60, 6).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

7. Click the “Apply” button (Figure 8.4-60, 7).

Blind detection tool is now configured.

8.4.9.5.7 Configuring Cover detection tool

Cover detection tool detects camera covering. Operation of the detection tool is based on analysis of the broadening of the frame histogram, relative to the histogram median of the reference covering frame (grey).

To configure Cover detection tool, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-61, 1).

2. Select the “Detection zone” object corresponding to the required detection tool, on the “Hardware” tab in the objects tree (Figure 8.4-61, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

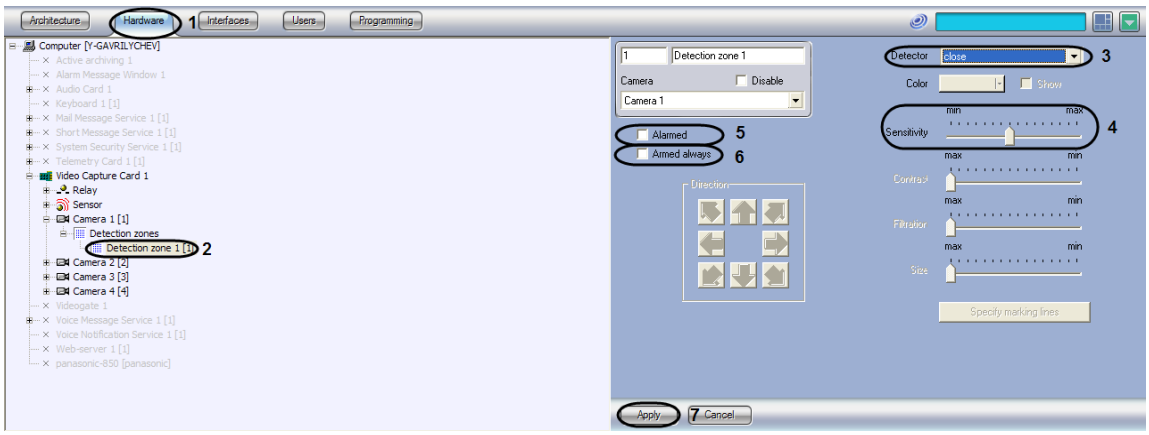


Figure 8.4-61 Configuring Cover detection tool

3. Enable the cover detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the focusing detection tool registered earlier (Figure 8.4-61, 3).

4. Set the value of the “Sensitivity” parameter by moving the the slider of the same name (Figure 8.4-61, 4). This setting corresponds to the contraction rate of the frame brightness histogram, i.e. estimation of grey filling ratio with which the detection tool is to trigger.

The best value of the “Sensitivity” parameter is defined by testing the triggering of detection tools. In most cases the default setting is sufficient.

5. To enable the auto recording option on a cover detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-61, 5).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed after detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

6. To disable disarming of the cover detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-61, 6).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

7. Click the “Apply” button (Figure 8.4-61, 7).

Cover detection tool is now configured.

8.4.9.5.8 Configuring Face detection tool

Face detection tool recognizes «faces» objects in the controlled zone. While detecting the «faces» in the frame the following can be observed:

1. A face is dynamically framed on the frame;
2. If Face Intellect is installed, then there is possibility to record a frame with a face to the file of .bmp format to the folder «<Face-Intellect>\ Bmp\ person\».

Note. There are no additional detection zones while creating the "Face detection" object. It is not possible to arm the camera while using the face detection tool.

To configure Face detection tool, do the following:

1. Go to the "Hardware" tab in the "System settings" dialog box(Figure 8.4-62, 1)
2. Select the "Face detection" object corresponding to the required detection tool, on the "Hardware" tab in the objects tree (Figure 8.4-62, 2). The settings panel for the selected object appears on the right of the "Hardware" tab.

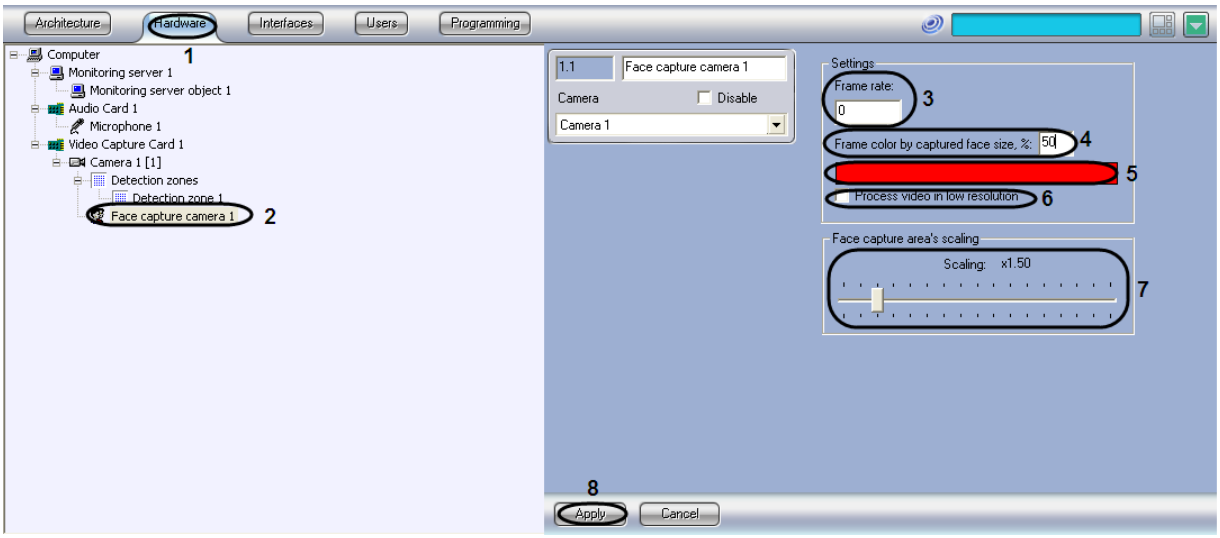


Figure 8.4-62 Configuring Face detection tool

3. Specify how many fps from the video stream are processed by the Face detection program module. This parameter is necessary for reducing the load on the Server (Figure 8.4-62, 3)
4. Specify the size of a face in percent relatively to the sizes of camera's video surveillance window when the face is required to be dynamically framed (Figure 8.4-62, 4)
5. If the color of a dynamic frame is to be changed, then left click the "Color" field (Figure 8.4-62, 5). Select the required color in the standard "Color" dialog box and click "OK".
6. By default the Face detection tool processes a video with the resolution, set for the Camera parent object. To process a video with 320x240 pixels resolution, set the "Process video in low resolution" checkbox (Figure 8.4-62, 6)

Note. Enabling this option reduces the load of the Server's processor, but the probability of face detection also reduces.

Attention! The "Process video in low resolution" setting is not relevant in case, when a high resolution is set for a Camera parent object.

7. Estimate the part of detected faces while processing the video with 320x240 pixels resolution. In case, when this value is not high enough, set the “Process video in low resolution” checkbox unchecked.
8. Set the “Face capture area’s scaling” slider to the position corresponding to the required scaling of a face in the frame for recording (Figure 8.4-62, 7). The current scale value is displayed in the field above the slider and ranges from 1 (only the face is recorded) to 5 (the whole frame is recorded).

Note. This setting is relevant in case of installed Face-Intellect system. A frame with a face is recorded to the “< Face-Intellect>\ Bmp\ person\” folder.

9. Click the “Apply” button (Figure 8.4-62, 8).

Face detection tool is now configured.

8.4.9.5.9 Configuring Abandoned objects detection tool

Abandoned objects detection tool is capable of detecting objects that have been abandoned (or lost) from the scene. If the time of presence/absence of a motionless object exceeds the preset time, then the detected object is framed.

The special algorithm analyses the changes in averaged frames within a certain time interval. The detection tool is capable of recognizing lost objects and the objects that are always within the scene. This is done by the motion detection tool that registers the object’s appearance in the frame.

To configure Abandoned objects detection tool, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-63, 1).

2. Select the “Detection zone” object corresponding to the required detection tool, on the “Hardware” tab in the objects tree (Figure 8.4-63, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

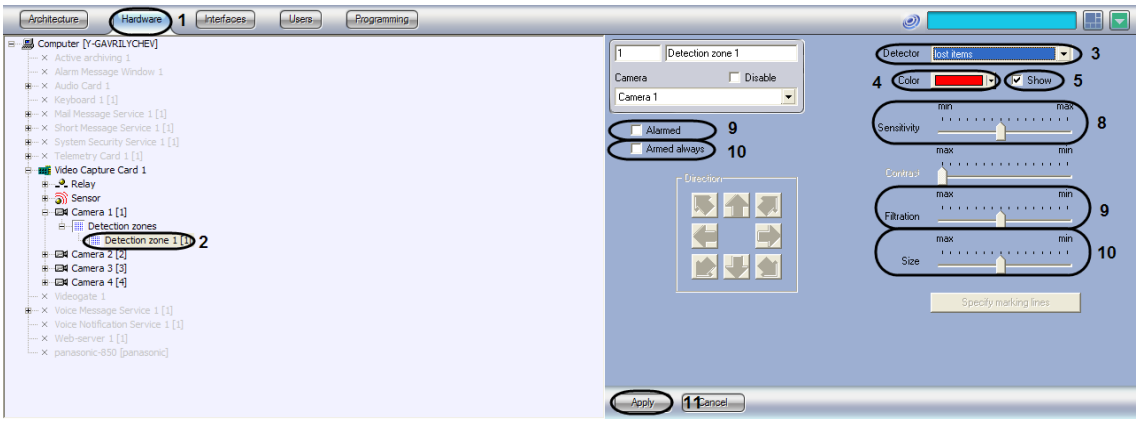


Figure 8.4-63 Configuring Abandoned objects detection tool

3. Enable the abandoned objects detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the abandoned objects detection tool registered earlier (Figure 8.4-63, 3).

4. By default, abandoned (or lost) objects are framed in red. The frame color can be changed.

5. To change the frame color, select it in the “Color” list or on the “Select color” panel, called by “Select color” command in the “Color” list (Figure 8.4-63, 4). To return the default frame color, select the “By default” command in the “Color” list.

6. By default, the detected (or lost) object is dynamically framed. If an abandoned (or lost) object is not to be framed, then set the “Show” checkbox unchecked (Figure 8.4-63, 5).

7. Set the value of the “Sensitivity” parameter by moving the the slider of the same name (Figure 8.4-63, 6). This setting corresponds to the minimum value of the average brightness of the abandoned (or lost) object, which triggers the detection tool only by its appearance in the frame, not by the appearance of any other objects.

The best value of the “Sensitivity” parameter is defined by testing the false triggering of detection tools. With low values of the “Sensitivity” parameter, false triggering of detection tools by appearance of other objects is more probable. With high values of the “Sensitivity” parameter, detection of abandoned objects is less probable. It is recommended to select a “Sensitivity” value, which will exclude false triggering of detection tools.

8. Set the value of the “Filtration” parameter by moving the slider of the same name (Figure 8.4-63, 7). This setting corresponds to the time interval at the end of which the object in the frame is considered to be “abandoned” (or “lost”). The “Max” position of the slider corresponds to 3 minutes, the “Min” position – to 3 seconds.

9. Set the value of the “Size” parameter by moving the slider of the same name (Figure 8.4-63, 8). This setting corresponds to the part of the total frame square, occupied by the smallest detected object. When an object that is bigger than the preset one is detected as “abandoned”, the abandoned objects detection tool switches to the alarm status.

The best value of the “Size” parameter is defined by testing the triggering of detection tools. It is recommended to set the value to the “Size” parameter that is slightly higher than the mean size of abandoned (or lost) objects in the frame. If there is a false triggering of a detection tool, it is necessary to change the value of the “Sensitivity” parameter.

10. To enable the auto recording option on an abandoned objects detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-63, 9).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed after detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

11. To disable disarming of the abandoned objects detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-63, 10).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

12. Click the “Apply” button (Figure 8.4-63, 11).

Abandoned objects detection tool is now configured.

8.4.9.5.10 Configuring Infrared detection tool

Infrared detection tool is used for thermal imagers – infrared cameras. Infrared detection tool detects moving objects within the controlled scene. Detected moving objects are dynamically framed. The motion is detected by calculating gradients between consequent frames.

Note 1. The thermal imager is a device, that allows both day and night, to control the situation in any kind of weather, functioning in the thermal, invisible spectral range. It enables to see things that are invisible for night vision devices and TV cameras. Heavy snow, fog, the absence of lighting at night strongly reduce the effectiveness of standard video surveillance facilities. The thermal imager, unlike the common highly sensitive camera or infrared camera, functions properly without regard to the weather and illumination: moonless night, heavy clouds, mist, smoke or, vice versa, very bright sunlight do not affect its functioning. The sensitive element of the thermal imager operates in the invisible spectral range and in fact is not affected by the environmental changes. The thermal imager provides instant temperature measurement at thousands of object points.

Note 2. The video signal from the thermal imager is treated as a standard video signal, but the size of a detected object may be very small (as small as 3 pixels), so the detection tool needs fine tuning.

To configure Infrared detection tool, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-64, 1)

2. Select the “Detection zone” object corresponding to the required detection tool, on the “Hardware” tab in the objects tree (Figure 8.4-64, 2). The settings panel for the selected object appears on the right of the “Hardware” tab.

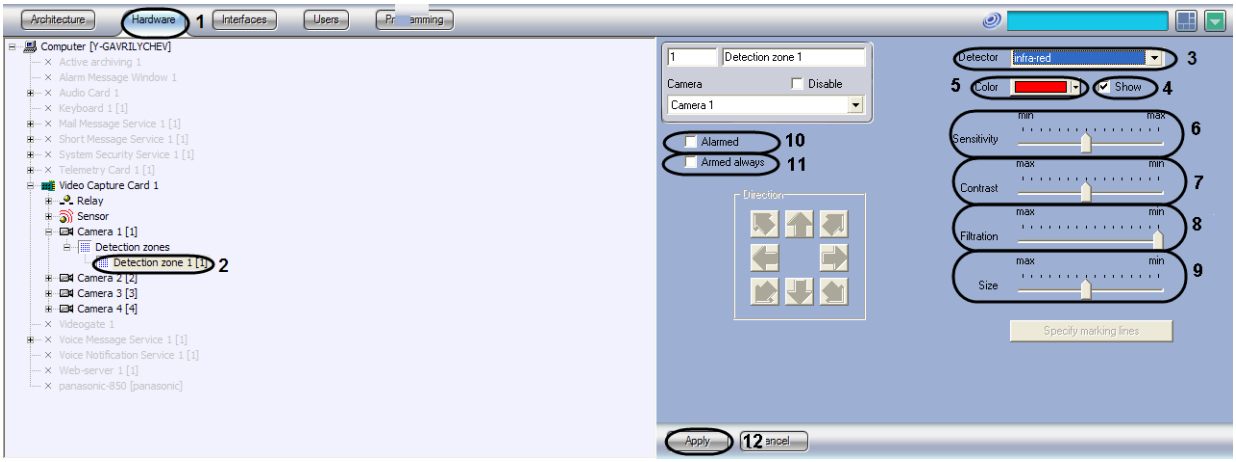


Figure 8.4-64 Configuring Infrared detection tool

3. Enable the infrared detection tool (see the “Enabling, configuring and disabling video detection tools” section) or select the infrared detection tool registered earlier (Figure 8.4-64, 3).

4. By default, detected moving objects are dynamically framed. If a moving object is not to be framed, set the “Show” checkbox unchecked (Figure 8.4-64, 4).

5. To change the framecolor for outlining the moving object, left-click the “Color” field (Figure 8.4-64, 5). Select the required color in the “Color” dialog box and click “OK”.

6. Set the “Sensitivity” slider to the position corresponding to the minimal value of the average brightness of the moving object which triggers the detection tool by its motion (Figure 8.4-64, 6).

Note. The best value of the “Sensitivity” parameter is defined by testing the false triggering of detection tools. With low values of the “Sensitivity” parameter, false triggering of detection tools by thermal noise is more probable. With high values of the “Sensitivity” parameter, detection of motion in the frame is less probable.

Set the “Sensitivity” parameter when the “Size”, “Filtration” and “Contrast” parameters are set. It is recommended to set the value of the “Sensitivity” parameter which does not lead to false triggering by noise in video signal.

7. Set the “Contrast” slider to the position corresponding to the minimal value of the contrast which triggers the detection tool by its motion (Figure 8.4-64, 7).

Note. The best value of the “Contrast” parameter is defined by testing the triggering of detection tools. With low values of the “Contrast” parameter the detection tool triggering by motion of objects colors of which are close to the color of the background is less probable. With high values of the “Contrast” parameter triggering of detection tools by noise in a video signal is more probable.

In most cases the default setting (mean value) is sufficient.

8. Set the “Filtration” slider to the position corresponding to the minimal rate of object motion, which triggers the detection tool (Figure 8.4-64, 8).When the slider is set to the “Min” position,the detection tool triggers by objects moving at any rate.

Note. The best value of the “Filtration” parameter is defined by testing the triggering of detection tools. With low values of the “Filtration” parameter triggering of detection tools by noise (including snow and rain) in a video signal is more probable. With high values of the “Filtration” parameter triggering of detection tools by motion in the frame is less probable. If a detection tool triggers upon noise in a video signal, then change the value of the “Sensitivity” parameter.

9. Set the “Size” slider to the position corresponding to minimal size of the object, which triggers the detection tool (Figure 8.4-64, 9). The size of the object is given in portion relating to the overall area of the square. When there is motion of the object which size exceeds the given value, motion detection tool switches to the alarm status.

Note. The best value of the “Size” parameter is defined by testing the triggering of detection tools. With low values of the “Size” parameter triggering of detection tools by noise (including snow and rain) in a video signal is more probable. With high values of the “Size” parameter triggering of detection tools by motion in the frame is less probable.

It is recommended to set the value to the “Size” parameter that is slightly lower than the mean size of objects moving in the frame. It is recommended to set the value of the “Size” parameter that is a little less than the mean size of objects moving in the frame. If a detection tool triggers upon noise in a video signal, then change the value of the “Sensitivity” parameter.

10. To enable the auto recording option on an infrared detection tool alarm for the selected camera, set the “Alarmed” checkbox (Figure 8.4-64, 10).

Note 1. If the “Recording alarms” option is disabled in the “Camera” object settings, then no video recording is performed after detection tool triggers.

Note 2. If the “Alarmed” option is disabled in the detection tool settings, then detection tool arming is ineffective, though the line with the name of this detection tool is highlighted with a yellow square in the feature menu of the video surveillance window.

11. To disable disarming of the abandoned objects detection tool by any user (irrespectively of his rights), set the “Armed always” checkbox (Figure 8.4-64, 11).

Note. When the “Armed always” checkbox is set, the line with with the name of the detection tool is not displayed in the feature menu of the video surveillance window.

12. Click the “Apply” button (Figure 8.4-64, 12).

Infrared detection tool is now configured.

8.4.10 Configuring forensic search in an archive

8.4.10.1 *General information*

The forensic search in an archive is a search of video recordings in the archive using video recording metadata. The forensic search of video recordings in an archive is performed by object parameters that get into the field of video camera vision, e.g. in the direction of the object motion.

For the forensic search video parameters are to meet the same requirements as Requirements to video parameters while working with detection tools (see the “Requirements to video parameters while working with detection tools” section).

The following tools are used in INTELLECT™ for the forensic search: “Line Crossing” and “Motion in the Area” that are available in the video surveiilance window. Working with these tools is described in details in the “Intellect software package: Operator’s Guide” manual.

To implement the functionality of the forensic search in INTELLECT™ it is necessary to create and configure the following objects:

1. VMDA metadata storage;
2. Tracker.

It is possible to create VMDA detection tools on the base of the “Tracker” object. If VMDA detection tools are configured, only video of detection tool triggering can be found while forensic search. When recording is enabled, the “Tracker” object records all motion paths of objects that it has detected, regardless of whether the “VMDA” detection tools are created on its base or not.

8.4.10.2 *Creating and configuring VMDA metadata storage*

VMDA metadata storage stores object trajectories covered by a camera. Information that is stored in the VMDA metadata storage is used for the forensic search in an archive.

To configure the VMDA metadata storage, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-65, 1).
2. Create the “VMDA metadata storage” object on the base of the “Computer” object in the objects tree. The settings panel for the created object appears in the right part of the “Hardware” tab (Figure 8.4-65, 2).

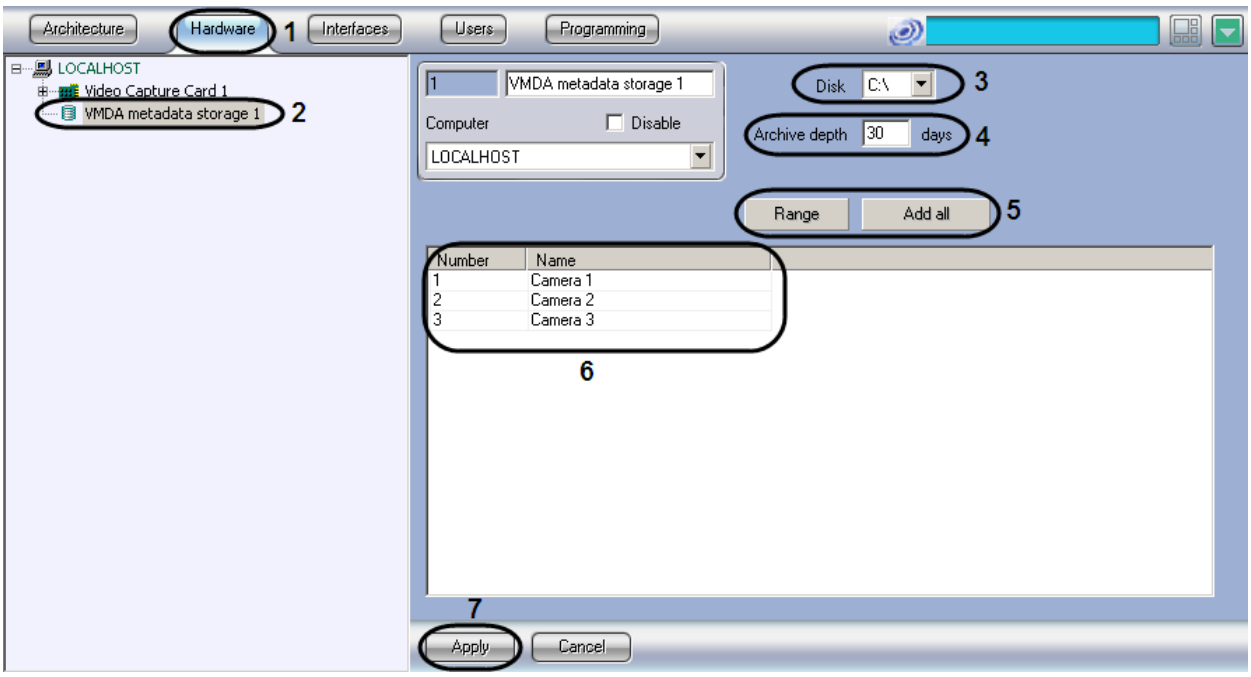


Figure 8.4-65 The “VMDA metadata storage” creation and configuration

3. In the “Disk” drop-down list, select the disk for saving the archive (Figure 8.4-65, 3).
   Note. The archive will be saved on the selected disk in the “VMDA” folder.

Attention! Storing the data to the VMDA metadata storage may be very computer-intensive. The following actions are to be performed for proper system operation:

1. ***Create the “VMDA metadata storage” object on a separate Server.***
2. ***Enable disk caching by means of redundant array of independent disks or OS.***

4. In the “Archive depth” field, set the time period (in days) of storing the archive (Figure 8.4-65, 4).
5. Select cameras metadata from which is to be saved in a created storage. To select all cameras registered in the system click the “Add all” button or click the “Range” button to go to the “Add/Edit Camera objects” window (Figure 8.4-65, 5).

   As a result all selected cameras are displayed in the table (Figure 8.4-65, 6). One can edit the list of selected cameras in the table.

6. To save the changes, click the “Apply” button (Figure 8.4-65, 7).

The VMDA metadata is now created and configured.

8.4.10.3 *Creating and configuring the “Tracker” object*

The “Tracker” object is designed for motion detection and saving video recordings to VMDA metadata storage.

To configure the “Tracker” object, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.4-66).
2. Select the “Camera” object in the objects tree of the “Hardware” tab (Figure 8.4-66).
3. Create the “Tracker” object on the base of the “Camera” object. The settings panel for the created object appears on the right in the “Hardware” tab (Figure 8.4-66).

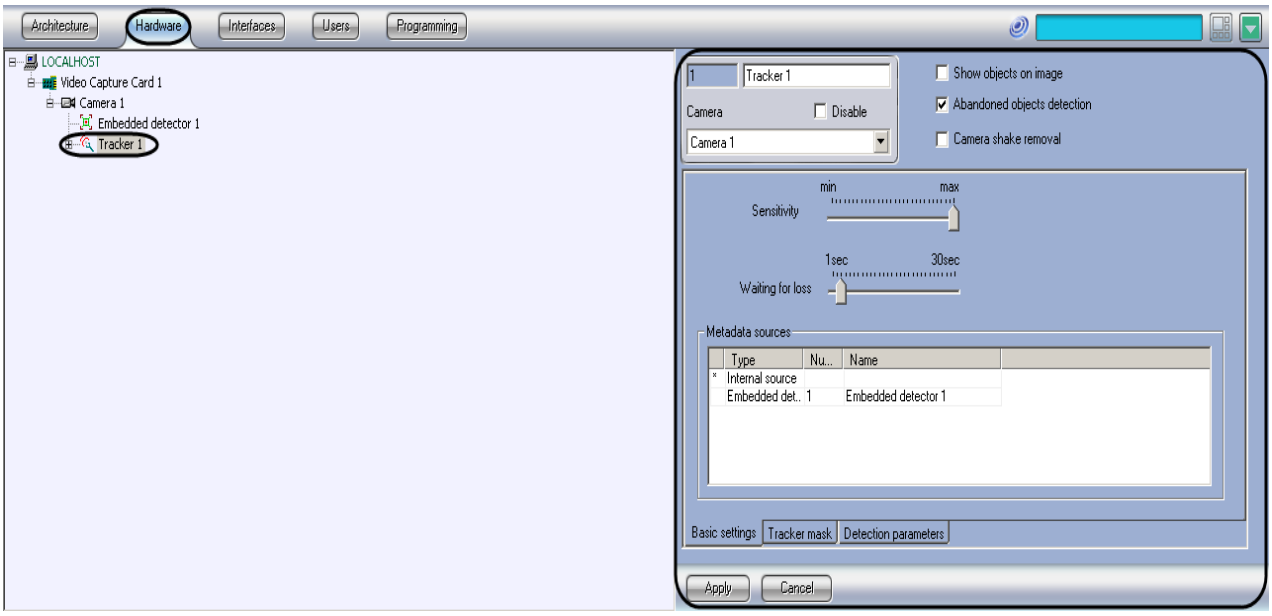


Figure 8.4-66 The “Tracker” object

4. Set the “Show objects on image” checkbox (Figure 8.4-67, 1), if the objects are to be selected on the preview screen (Figure 8.4-68).

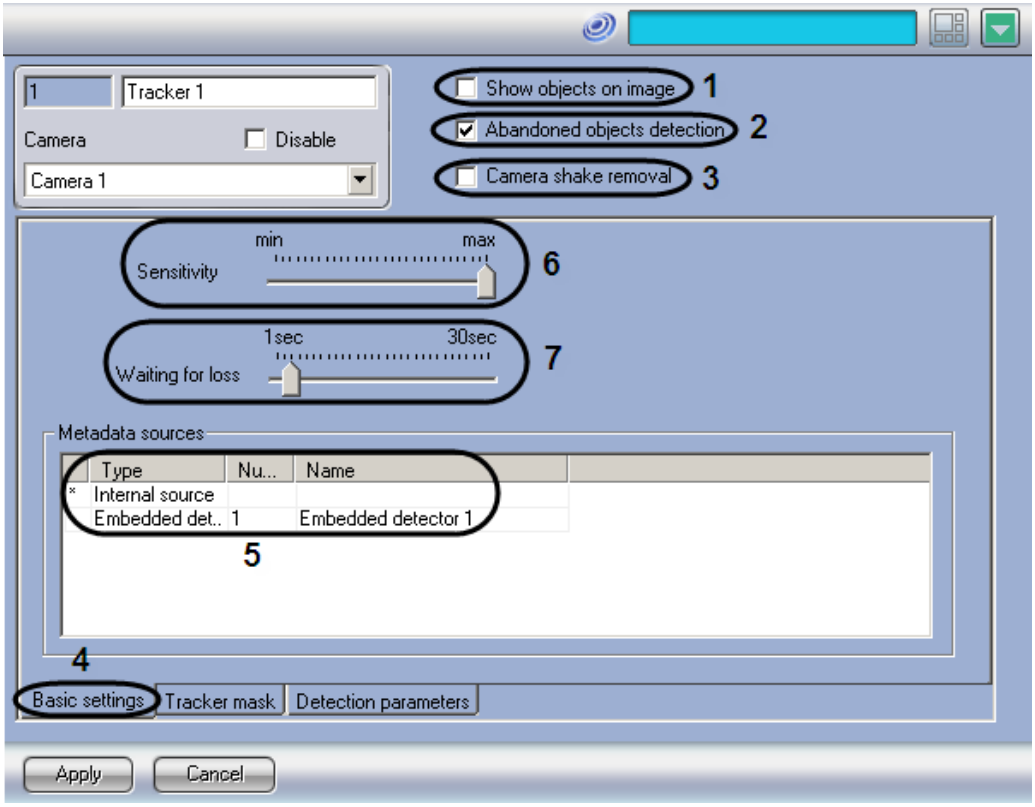


Figure 8.4-67 Configuring the “Tracker” object

Figure 8.4-68 Selecting the objects

Note. To enable displaying tracker ID, set "1" value for the DrawDetectorNumbers line parameter in the HKEY_LOCAL_MACHINE\SOFTWARE\AXXONSOFT\INTELLECT\Video (HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ AXXONSOFT \INTELLECT\Video for 64-bit system) registry.

Frame color is adjusted by the DrawDetectorColors parameter in the same registry:

- *When value is "1", then the frame color is the average one in the area*
- *When value is "0", then the frame color is white.*

5. To allow VMDA detectors monitoring abandoned objects in area covered by the camera set the "Abandoned objects detection" checkbox (Figure 8.4-67, 2).

Note. If there is no need to monitor abandoned objects in area covered by the camera, disable the "Abandoned objects detection" option to reduce Server load. Disabling this option you disable detectors configured to monitor abandoned objects.

6. If the camera is installed on the moving object, then set the "Camera shake removal" checkbox to stabilize the image and reduce detector's errors (Figure 8.4-67, 3).

Attention! When the "Camera shake removal" option is active, the Server load increases.

7. Go to the "Basic settings" tab (Figure 8.4-67, 4).
8. In the "Metadata sources" table, set checkboxes next to objects used for metadata creation (Figure 8.4-67, 5):

- Internal source. VMDA detectors are used as metadata source (see *Creating and configuring VMDA detection* section).
- Embedded detector. Metadata goes from detectors embedded in the camera (see *Embedded detectors* section).

9. Set the value of the "Sensitivity" parameter by moving the slider to the required position (Figure 8.4-67, 6). The parameter value corresponds to minimal value of moving object's averaged brightness on which the detector will trigger only to its motion, not to video signal noise (including snow, rain, etc.).

Note. If the slider is in the left end position, then the value of the "Sensitivity" parameter is selected automatically.

10. Set the "Waiting for loss" slider into position corresponding to time when the object stops moving and is considered to be active and the detector is still tracking it (Figure 8.4-67, 7). If the object is motionless for a longer period than the value which has been set, then the object is considered to be "lost".

Note. If the "lost" object starts moving it is considered as a new one.

11. To disable analysis in the area covered by the camera click the "Set mask" button in the "Tracker mask" tab and specify the area in the preview field (Figure 8.4-69).

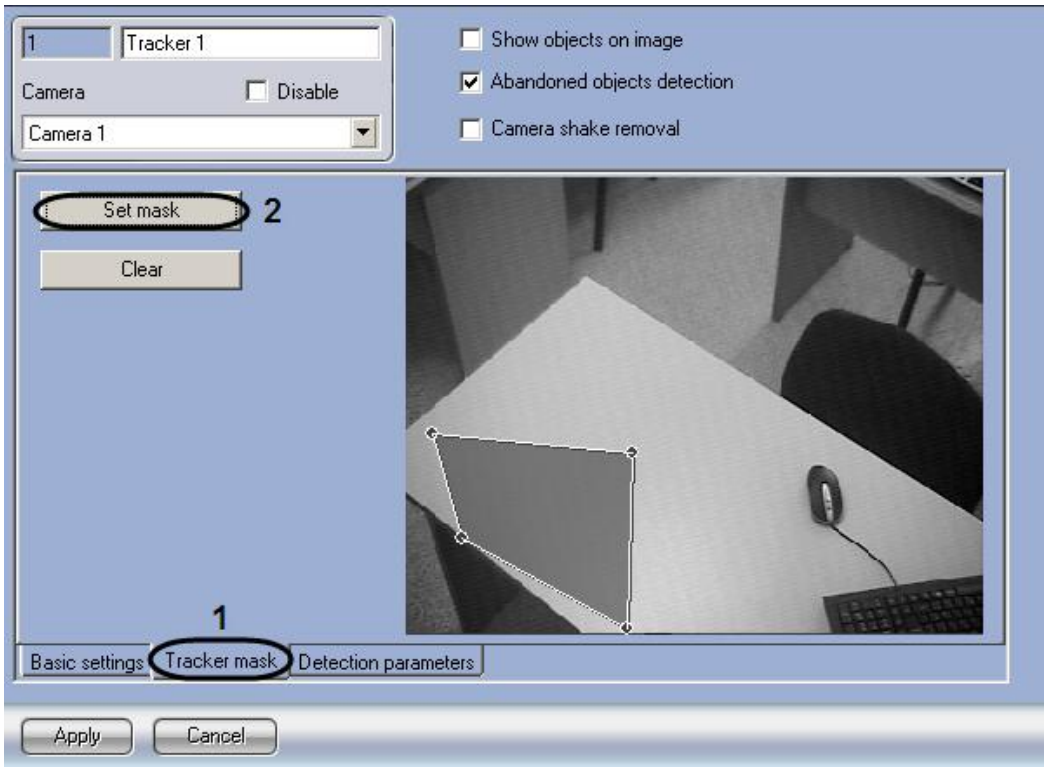


Figure 8.4-69 Disabling analysis in the area

12. To set the minimal and maximal sizes of detected object do the following:

    12.1 Go to the "Detection parameters" tab (Figure 8.4-70, 1).

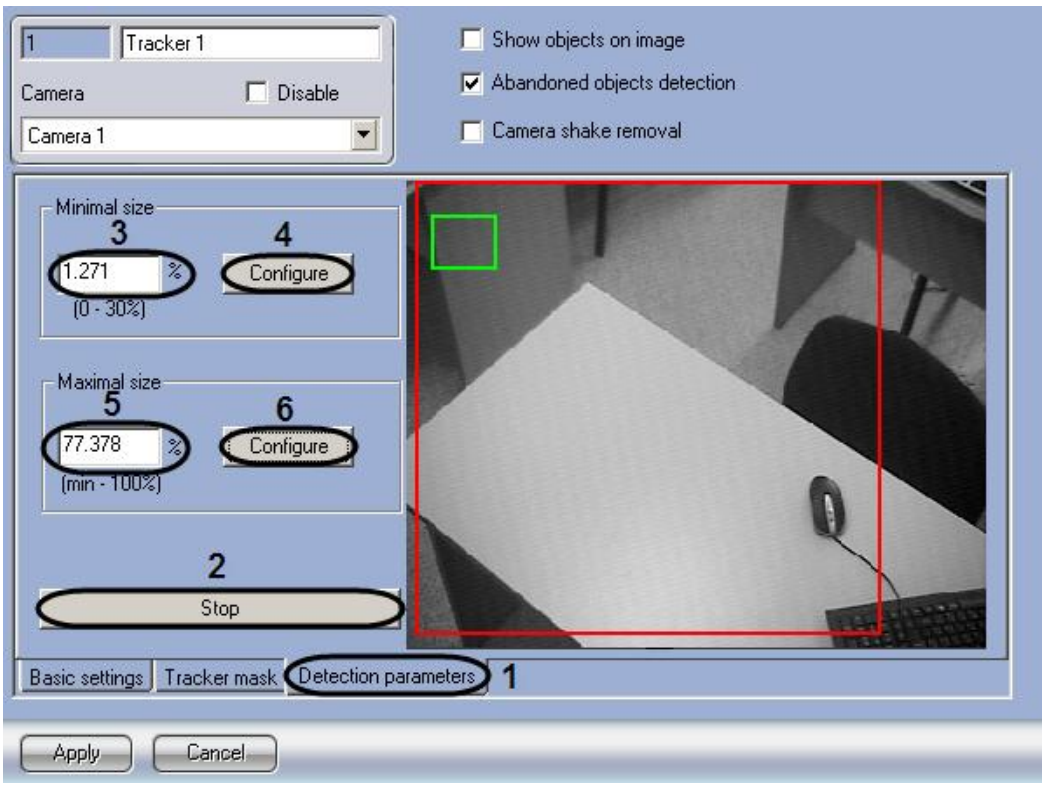


Figure 8.4-70 Setting the sizes of detected object

12.2 To stop playback in the preview, click the “Stop” button (Figure 8.4-69, 2).

Note. To resume playback, click the “Resume playback” button (Figure 8.4-71).

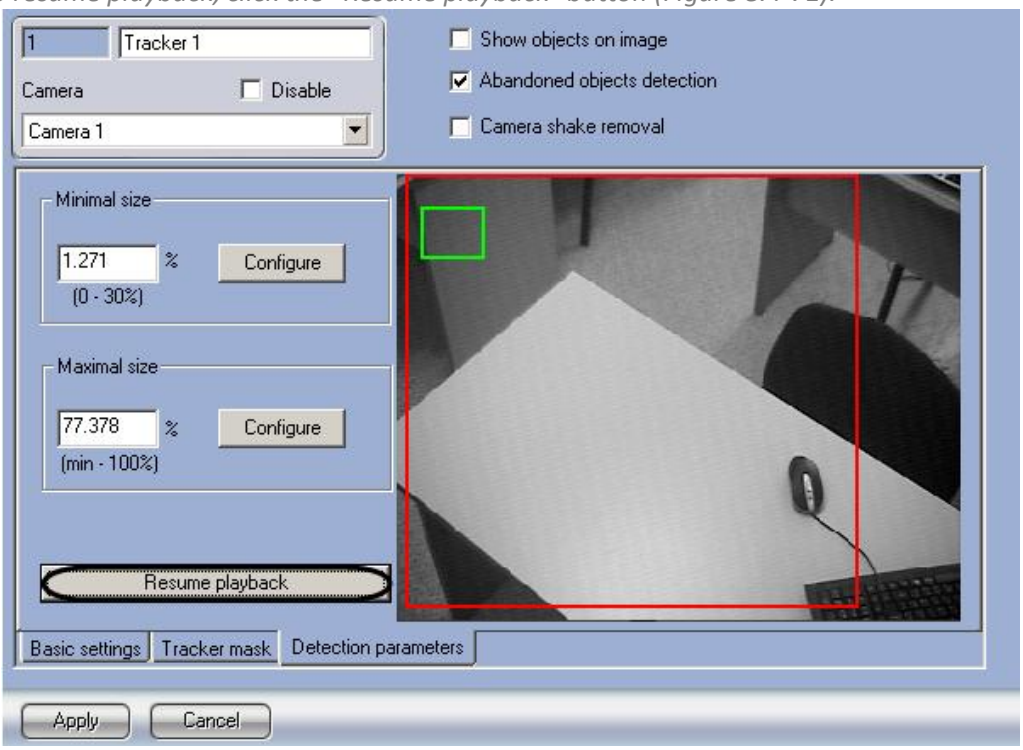


Figure 8.4-71 The “Resume playback” button

12.2 In the “Minimal size” group specify the minimal size of detected object as a percentage of total image area (Figure 8.4-70, 3) or click the “Configure” button and specify the size in the preview area (Figure 8.4-70, 4).

Note. Range of values of the "Minimal size" parameter varies from 0 to 30% relatively the frame size.

12.4 In the "Maximal size" group, specify the maximal size of detected object as a percentage of total image area (Figure 8.4-70, 5) or click the "Configure" button and specify the size in the preview area (Figure 8.4-70, 6).

Note. Maximal size is to be bigger than the minimal one and not more than 100%. If the maximal size is the same as the minimal, then there is no detection.

13 To save the changes, click the "Apply" button.

The "Tracker" object is now created and configured. During video signal recording in VMDA metadata storage the information about all objects in camera coverage will be recorded.

8.4.10.4 *Creating and configuring VMDA detection*

VMDA detection are detection tools due to triggering of which some actions can be performed in the system. For instance, when the detection tool with corresponding settings triggers, the alarm on camera is generated and recording to the archive starts. Thus VMDA detection tools allow recording to the archive and, therefore, the recording of object trajectories, not steadily, but in the required situations.

To create a "VMDA detector", do the following:

1. Go to the "Hardware" tab in the "System settings" dialog box (Figure 8.4-72).
2. Select the "Tracker" object in the objects tree of the "Hardware" tab.
3. Create the "VMDA detection" object on the base of the "Tracker" object. The settings panel for the created object appears on the right of the "Hardware" tab (Figure 8.4-72).

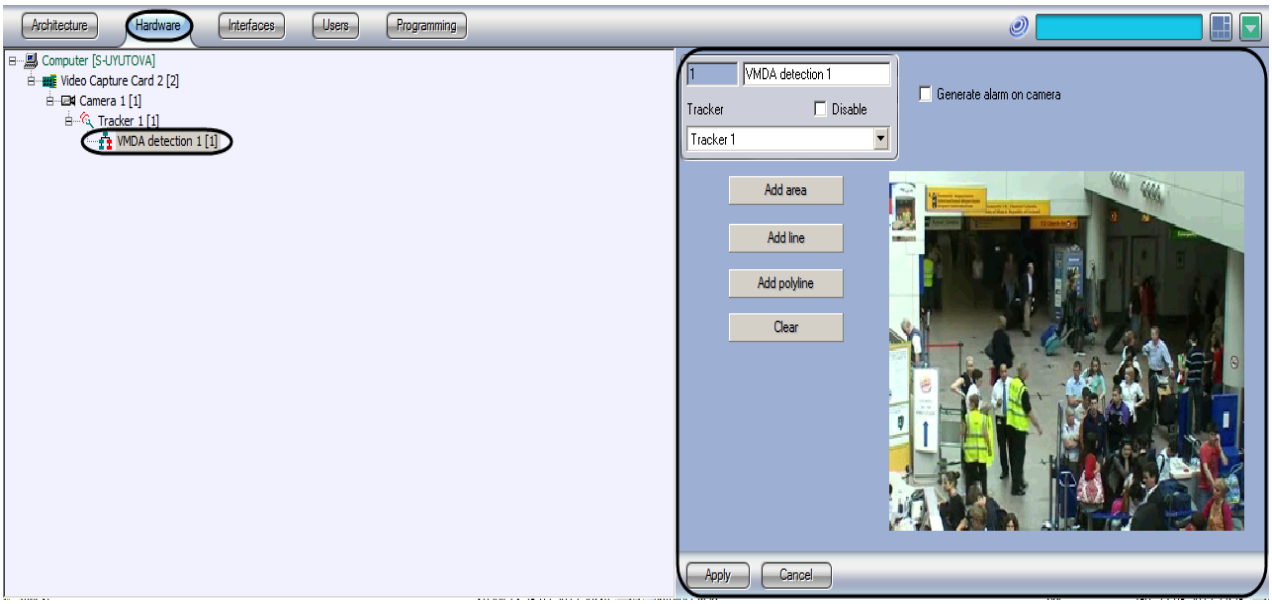


Figure 8.4-72 The "VMDA detection" object

*Note. Video from the camera on the baase of which the "VMDA detection" object is created is displayed in the "Video" field (*Figure 8.4-72*).*

The “VMDA detection” is now created. Information only about the objects that triggered detector action is recorded to the VMDA metadata storage.

Attention! Creating VMDA detection on IP cameras, do not forget about information in the “Requirements for IP devices of audio and video input” section.

8.4.10.4.1 Cross line detector configuration

A cross line detector is a VMDA detector that triggers when the trajectory of an object that is in the camera coverage and crosses a virtual line.
To configure a cross line detector, do the following:

1. Go to the settings panel for a “VMDA detection” object (Figure 8.4-73).

Figure 8.4-73 A cross line detector configuration

2. Select a line type (direct or polyline) the crossing of which leads to a detector triggering. Only one line can be added. The first line will be deleted if there is an attempt to add a second one.
    - 2.1 If a detector is to trigger while crossing a direct line, click the “Add line” button (Figure 8.4-73, 1).
    - 2.2 If a detector is to trigger while crossing a polyline, click the “Add polyline” button (Figure 8.4-73, 2).
3. In the “Video preview” field (Figure 8.4-73, 4), set the end point of the line, by clicking left mouse button, which crossing leads to a detector triggering (Figure 8.4-74).

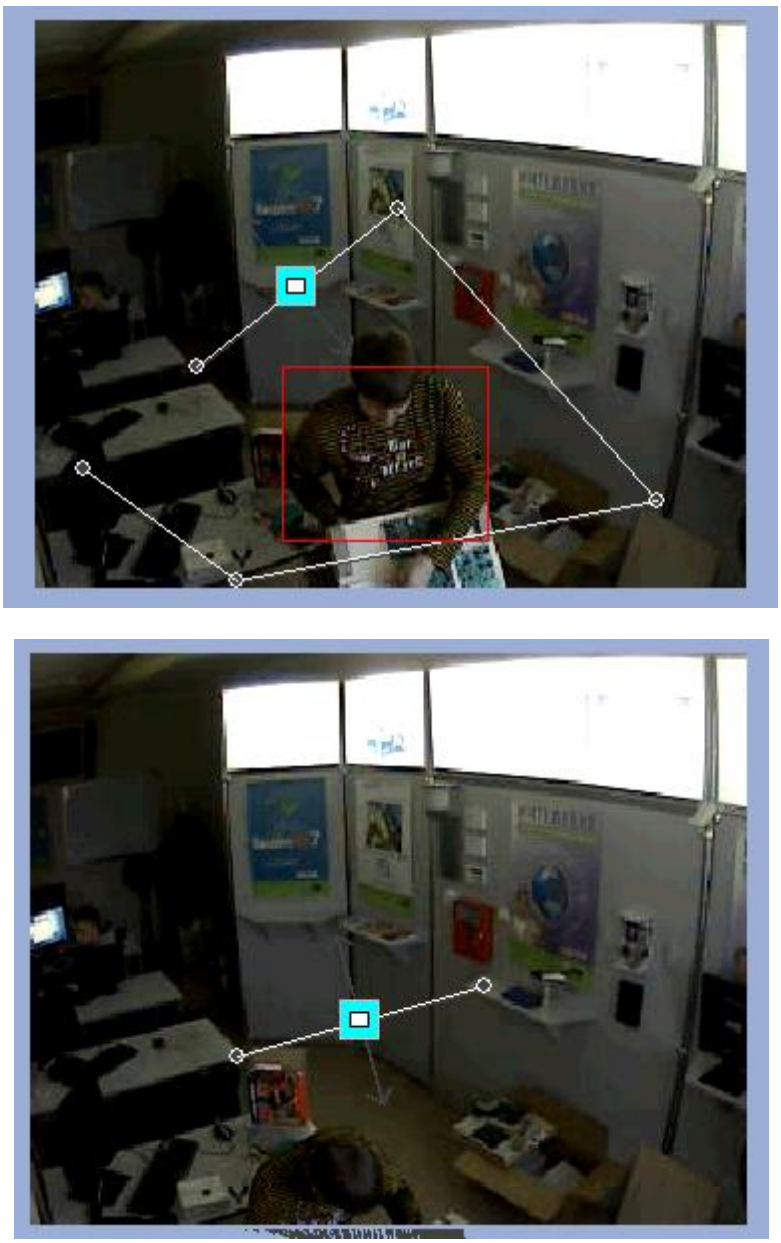


Figure 8.4-74 A cross line detector

4. Make necessary operations with a line. Line operations are shown in Table 8.4-5.

Table 8.4-5 Line operations

Operation	Result
Left mouse click in the video surveillance window	Creation of a line's end point
Hover to an end point and holding the left button pressed move the mouse	Shift of a line's end point
Hover to an end point and click the right mouse button	A line's deletion

5. To select object type for which the detector will be enabled, click the symbol. Available object types are in the Table 8.4-6.

Table 8.4-6 Object types

Symbol	Type	Purpose
	Any object	Detector triggers when the line is crossed by any object
	Man	Detector triggers when the line is crossed by a man
	Vehicle	Detector triggers when the line is crossed by a vehicle

6. By clicking the left mouse button upon one of the grey arrows, set the object's direction across the line by which the detector will trigger. The arrow will be colored white (Figure 8.4-75).

Figure 8.4-75 Selection of an object's direction for a detector triggering

Note 1. It is necessary to set at least one object's direction across the line.

Note 2. If both directions are set, the detector will trigger at any line crossing by an object.

7. If the alarm is to be generated when the detector triggers, set the "Generate alarm on camera" checkbox (Figure 8.4-73, 5).
8. To save the changes, click the "Apply" button (Figure 8.4-73, 6).

*Note. To clear the preview field from a visual elemnt (line), click the "Clear" button (*Figure 8.4-73*, 3).*

A cross line detector is now configured.

8.4.10.4.2 Motion in the Area detector configuration

A motion in the area detector is a tracker detector that operates when the object (objects) makes some actions in a virtual area that is in the camera coverage.

To configure a motion in the area detector, do the following:

1. Go to the settings panel for a “VMDA detection” object (Figure 8.4-76).

Figure 8.4-76 Area detector setup

2. Click the “Add area” button (Figure 8.4-76, 1).
3. In the “Video preview” field (Figure 8.4-76, 3), set, by one by one clicking left mouse button, nodal points of the area which state is to be analysed (Figure 8.4-77).Only one area can be added. If there is an attempt to add a second area, the first one will be deleted.

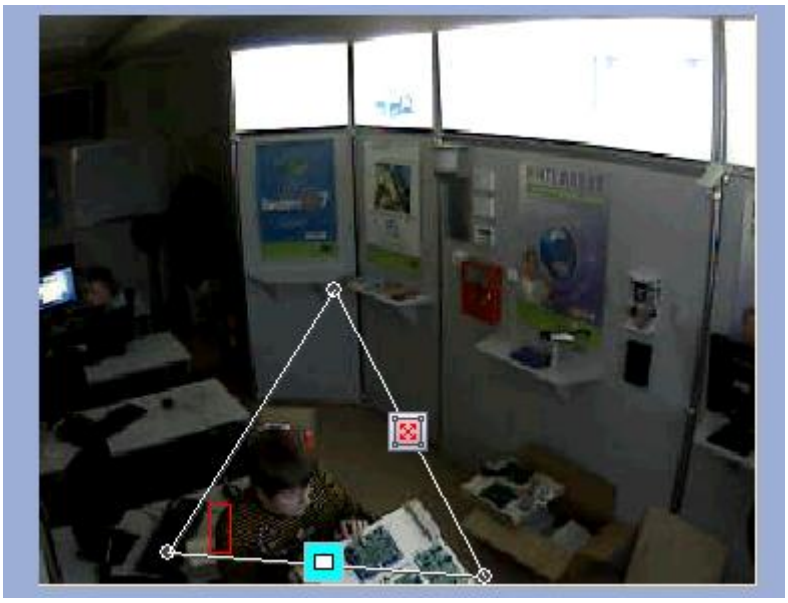


Figure 8.4-77 Motion in the area detector

4. Make necessary operations with a line. Line operations are shown in Table 8.4-7.

Table 8.4-7 Area operations

Operation	Result
Left mouse click in the video surveillance window	Area's nodal point addition
Hover to a nodal point and holding the left button pressed move the mouse	Area's nodal point shift
Hover to a nodal point and press right mouse button	Line deletion. If there are three nodal points the whole area will be deleted

5. To select an object type for which the detector will trigger, click the symbol. Available object types are given in Table 8.4-8.

Table 8.4-8 Object types

Symbol	Type	Purpose
	Any object	Detector triggers while dealing with any object
	Man	Detector triggers while dealing with any man
	Vehicle	Detector triggers while dealing with any vehicle

6. To select a detector type, click the symbol. Available detector types are given in Table 8.4-9.

Table 8.4-9 Detector types

Symbol	Type	Purpose
	Any motion in the area	Detector triggers due to any motion in the area
	Entrance into the area	Detector triggers due to object's entrance into the area
	Exit from the area	Detector triggers due to the exit of object from the area
	Appearance in the area	Detector triggers due to the object's appearance in the area
	Disappearance in the area	Detector triggers due to the object's disappearance in the area
	Stop in the area	Detector triggers due to the object's stop in the area
	Staying in the area more than 10sec	Detector triggers due to the object's staying in the area more than 10sec
	Left item	Detector triggers due to the item left in the area

7. If the alarm is to be generated when the detector triggers, set the "Generate alarm on camera" checkbox (Figure 8.4-76, 4).
8. To save the changes, click the "Apply" button (Figure 8.4-76, 5).

*Note. To clear the preview field from a visual element (area), click the "Clear" button (*Figure 8.4-76*, 2).*

A motion in the area detector is now configured.

8.4.11 Embedded detectors

At the moment of writing the documentation the build-in analytics of Axis, Sony cameras, Stretch cards (if it is supported-see reference manual concerning these devices) has been integrated into the Intellect software complex.

Note. Build-in analytics of the following cameras and cards are available in the Intellect PC at the moment of writing the documentation: Axis M1031-W, Axis M7001, Axis Q1921, Sony SNC-DM110, Sony SNC-RX570P, Sony SNC-RZ50P, Stretch VRC-6004, Stretch VRC-6008, Stretch VRC-6416.

This section contains an example of build-in detectors auto setup. One should consult with reference manual while setting up build-in detectors of special devices manually.

8.4.11.1 *Creating embedded detectors*

To create build-in detectors do the following:

1. With the help of IP creation wizard create IP devices that support build-in analytics.

2. In result the created objects will be displayed in the objects tree together with build-in detectors (Figure 8.4-78).

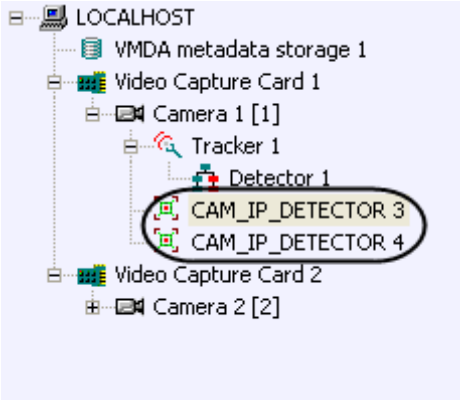


Figure 8.4-78 Build-in detectors creation

Build-in detectors creation is completed.

8.4.11.2 *Configuring embedded detectors*

To configure embedded detectors, do the following:

1. Go to the settings panel for the “Embedded detector” object (Figure 8.4-79).

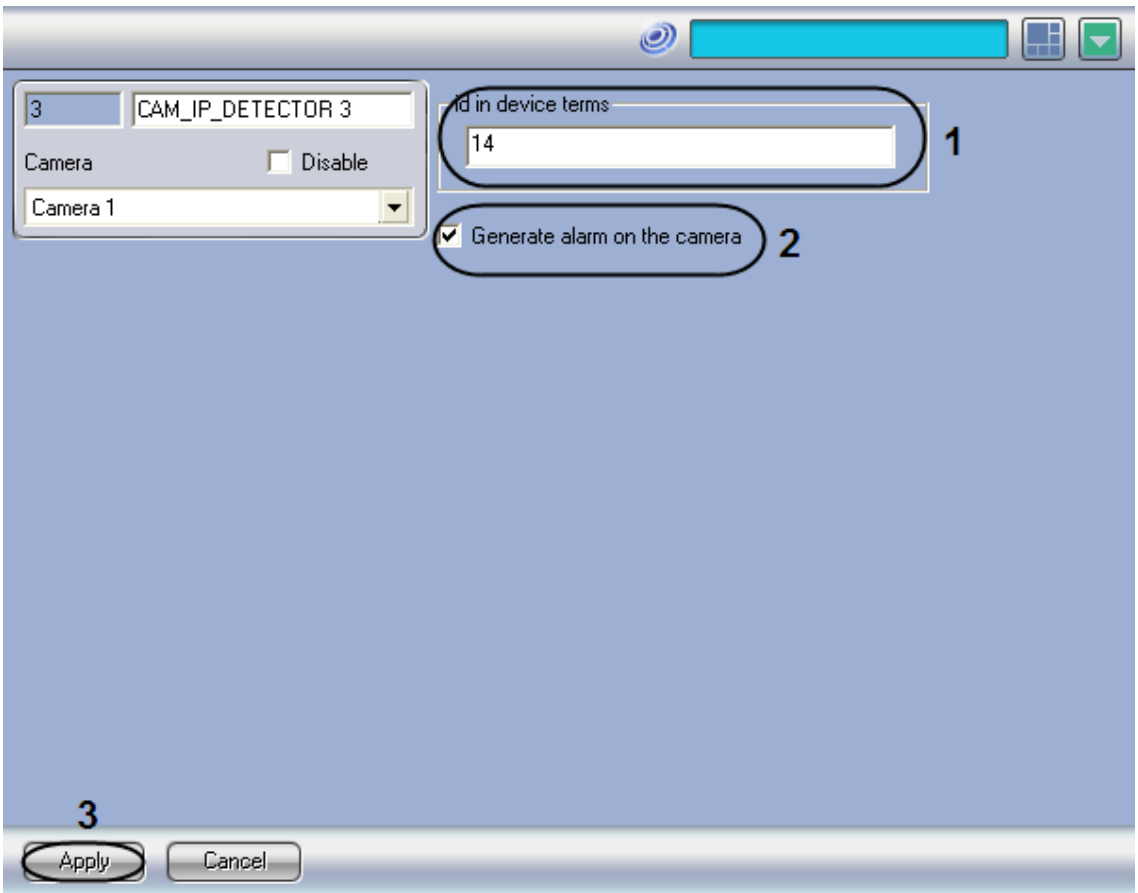


Figure 8.4-79 Configuring embedded detectors

2. In the “id in device terms” field the detector code in the device is specified (camera, card) (Figure 8.4-79, 1). It is recommended to leave this field unchanged for proper operation of the detector.
3. Set the “Generate alarm on the camera” checkbox if the alarm is to be generated on the camera by detector’s response (Figure 8.4-79, 2).
4. Click the “Apply” button to save the changes (Figure 8.4-79, 3).

Embedded detectors are now configured.

8.4.12 Configuring titles display on a video recording

The “Titles database” object is a child object of the “Camera” system object. It is designed for configuring titles display on a video recording and maintaining titles database.

This object allows setting the limits of titles output, font parameters and color of words. Titles are output into the field on a video recording from a camera.

If the “Titles database” object is not created in the system, then titles are not displayed.

Note. Titling on a video recording can be performed, for instance, using the scripts or programs in INTELLECT™ embedded language (see INTELLECT™ Software Package.Programming Guide (JScript) and INTELLECT™ Software Package.Programming Guide).

To configure the “Titles database” object, do the following:

1. Go to the “Hardware” tab of the “System settings” dialog box (Figure 8.4-80, 1)
2. Create the “Titles database” object on the base of the “Camera” object (Figure 8.4-80, 2).

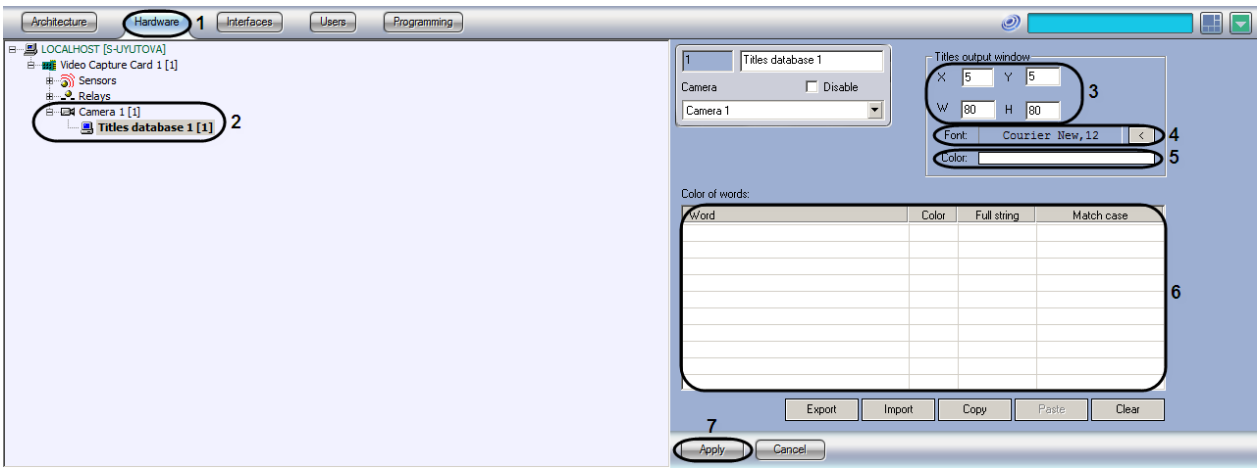


Figure 8.4-80 Configuring the “Titles database” system object

Note. No more than 12-16 “Titles database” objects are recommended to be created on one computer for proper operation of the system. Moreover, MS SQL Srever is to be on the same computer as the “Titles database” object.

3. Specify the parameters of the titles output window (Figure 8.4-80, 3):
   3.1. Set coordinates of the upper left corner of the titles output window: “X” (horizontal indent from left border of screen) and “Y” (vertical indent from top border of screen) fields.
   3.2. Set measurement of the titles output window: “W” (width of the titles output window) and “H” (height of the titles output window) fields.

4. Specify the parameters of font used for titles output:
   4.1. Click the "<" button (Figure 8.4-80, 4).
   4.2. In the appeared Windows dialog box, specify font parameters and click "OK".
   4.3. Double left-click the "Color" field (Figure 8.4-80, 5)
   4.4. In the appeared Windows dialog box, select color and click "OK".
5. Specify the parameters for words highlighting (Figure 8.4-80, 6):
   5.1. Right-click the "Color of words" field and select "Add" in the appeared context menu. (Figure 8.4-81).

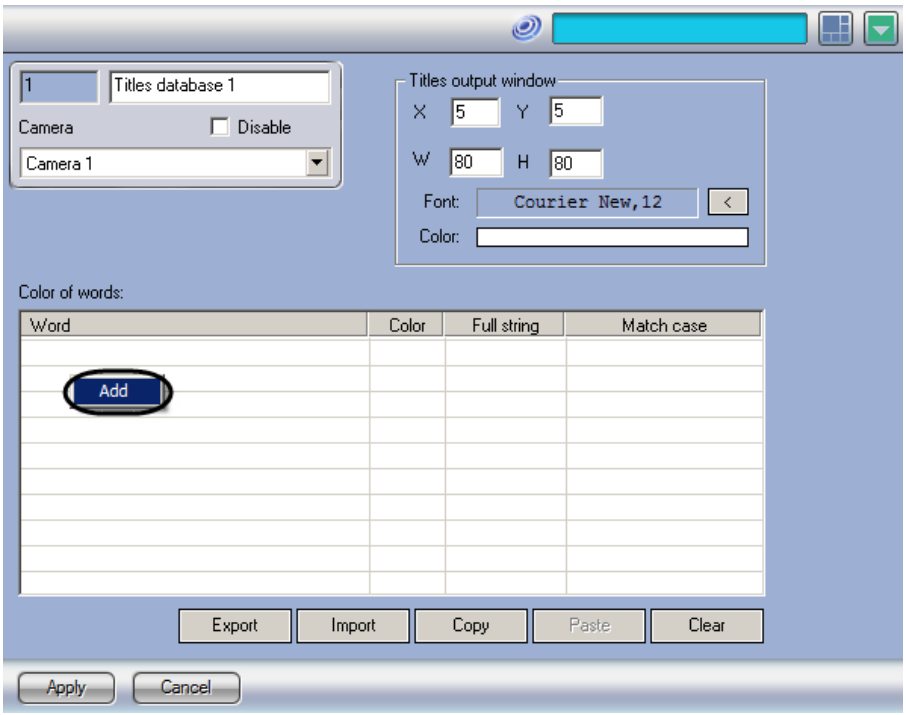


Figure 8.4-81 Adding a word

   5.2. In the appeared dialog box, type-in a required word and click "OK". The word is added to the "Color of words" table (Figure 8.4-82).

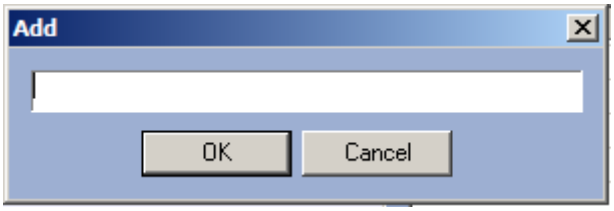


Figure 8.4-82 The "Add" dialog box

   5.3. Specify the color with which the word will be highlighted by double left-clicking the "Color" field next to the specified word. In the appeared Windows dialog box, select color and click "OK".
   5.4. If the full string with a word is to be highlighted, then set the "Full string" checkbox.
   5.5. If the case of word characters is to be matched, then set the "Match case" checkbox.
   5.6. Repeat steps 5.1-5.5 for all required words.

Note. Use the context menu for operations with words in the table (right-click a word). If the table is to be cleared, then click "Clear".

6. Click the "Apply" button (Figure 8.4-80, 7)

The "Titles database" object is now configured.

Note. Use the "Copy" and "Paste" buttons to import all settings from one "Titles database" object to another.

The "Color of words" table can be saved and imported from a file. The "Export" and "Import" buttons are used to save and import the table.

8.5 Configuring video viewing from fish-eye cameras

8.5.1 General information

A module for viewing video from fish-eye cameras is for:

1. Viewing video from several fisheye cameras;
2. Viewing archive from each camera;
3. Converting video into one of the following formats:
   3.1. Single View (virtual telemetry);
   3.2. 360° Panorama;
   3.3. Panorama 2*180°;

A Module enables using one of the following video converters with different video formats:

1. Sentry converter enables converting video into following formats:
   1.1. Single View.
   1.2. 360° Panorama.
2. Vivotek converter enables converting video into following formats:
   2.1. Single View.
   2.2. 360° Panorama.
   2.3. Panorama 2*180° with the camera on the ceiling or on the floor.
3. Immervision converter enables converting video into following formats:
   3.1. Single View.
   3.2. Panorama 2*180° with the camera on the ceiling or on the floor.
   3.3. 360° Panorama with the camera on the wall.

8.5.2 Configuring the Fisheye camera monitor interface object

To start working with the module for viewing video from fish-eye cameras configure the "Fisheye camera monitor" interface object as follows:

1. Create the "Fisheye camera monitor" object based on the "Screen" object in the interface tab of the "System Settings" dialog box (Figure 8.5-1, 1)

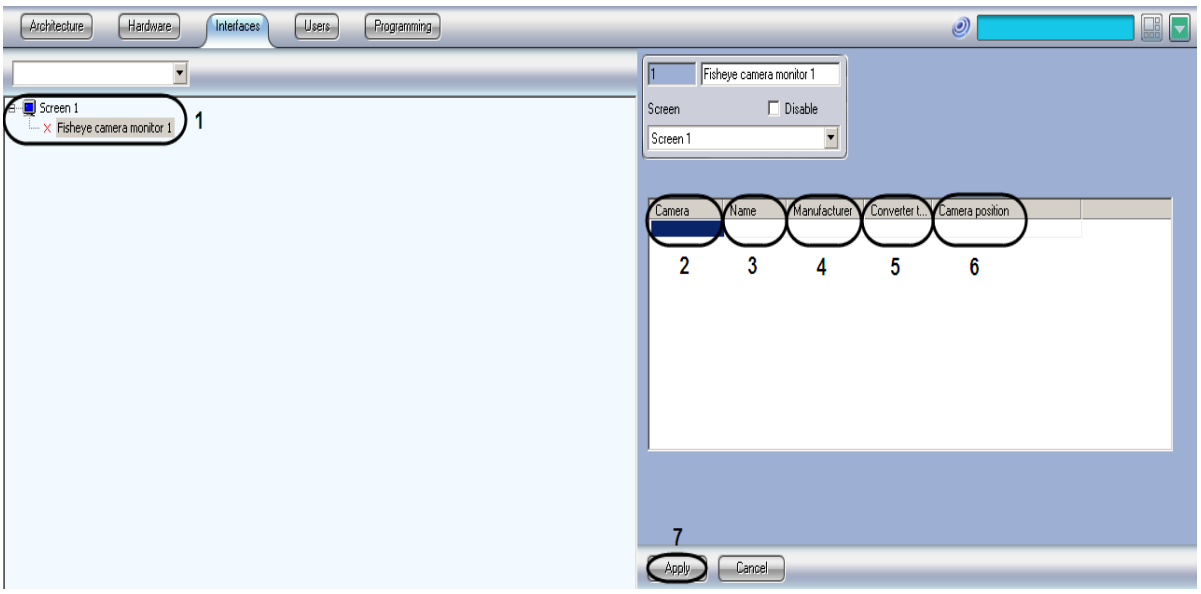


Figure 8.5-1 Configuring the Fisheye camera monitor object

2. In the “Camera” drop-down list select the number of a fisheye camera, video from which is to be processed (Figure 8.5-1, 2).
3. Left-clicking the “Camera” field it is automatically filled with the name of the selected camera (Figure 8.5-1, 3).
4. Left-clicking the “Manufacturer” field it is automatically filled with the type of video capture card on the base of which the “Camera” object is created (Figure 8.5-1, 4).
5. In the “Converter type” drop-down list select the type of a converter (Figure 8.5-1, 5).
6. In the “Camera position” drop-down list select the value corresponding to the position of the selected camera (Figure 8.5-1, 6).
7. To save all the changes click the “Apply” button (Figure 8.5-1, 7).

Viewing video and archive from the fisheye camera is carried out in the “Fisheye camera monitor“ box. For more details of its operation see *INTELLECT™ software package. Operator’s Guide* manual.

The “Fisheye camera monitor” interface object is now configured.

8.6 Configuring the access to the archive in external storage

8.6.1 General information

One can view video archive from embedded storage of IP devices (NVR video recorders) in INTELLECT™ software package.

Note.Video is not recorded to external storage in INTELLECT™ software package.

*Access to video archive of external storage is configured using the **External storage** object. Viewing video from external archive is carried out in the **Video surveillance** box. The details of its operation are given in INTELLECT™ software package. Operator’s Guide manual.*

8.6.2 Creating the External storage object

To create the **External storage** object do the following:

1. Go to the **Hardware** tab in the **System settings** dialog box (Figure 8.6-1, 1).

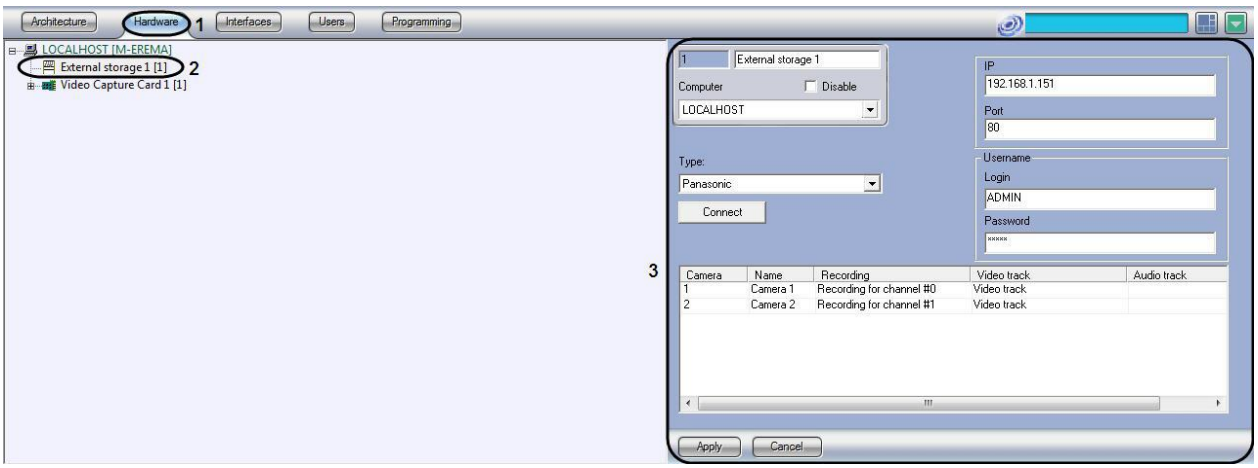


Figure 8.6-1 Creating the External storage object

2. Create the **External storage** object in the objects tree of the **Hardware** tab (Figure 8.6-1, 2). In the right part of the **Hardware** tab the setting panel of the selected object is displayed (Figure 8.6-1, 3).

After this one can continue configuring the connection to external storage (see *Configuring the connection to external storage* section) and set the list of cameras to access the external storage (see *Setting the list of cameras to access the external storage* section).

Creation of the External storage object is completed.

8.6.3 Configuring the connection to external storage

To configure the connection to external storage in INTELLECT™ software package do the following:

1. Go to the setting panel of the **External storage** object (Figure 8.6-2).

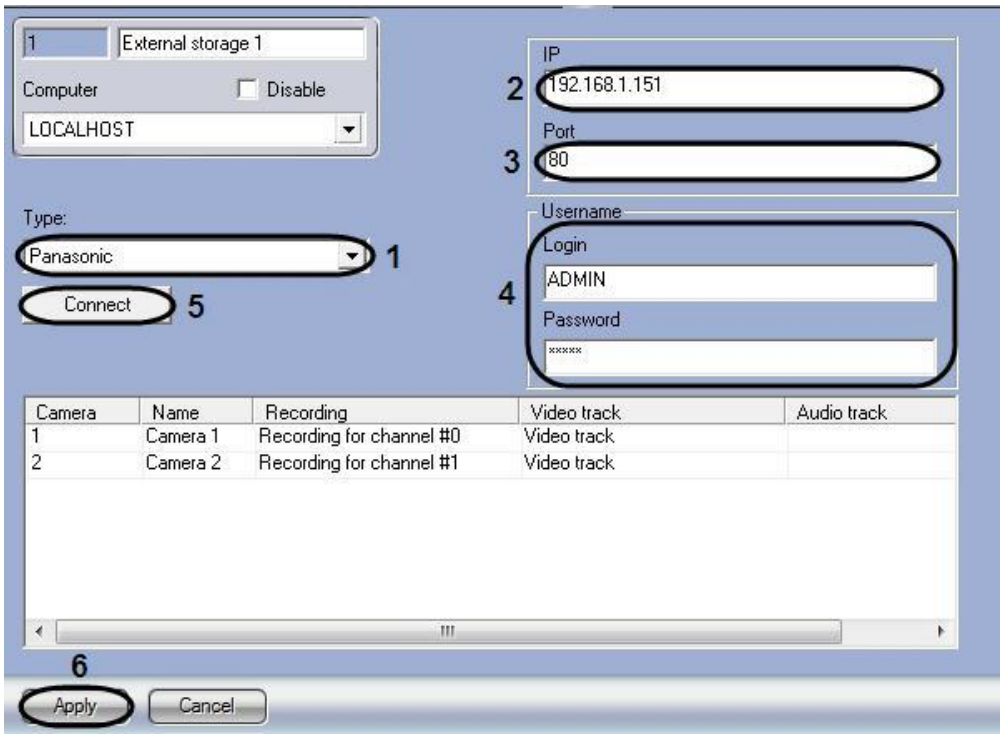


Figure 8.6-2 Configuring the connection to external storage

2. From the **Type** dropdown list select the interfacing protocol for the connected device (Figure 8.6-2, 1).
3. In the **IP** field specify the IP address of the device with external storage (Figure 8.6-2, 2).
4. In the **Port** field specify the port for device connection (Figure 8.6-2, 3).
5. In corresponding fields of the **Username** group specify the login and password to connect to external storage (Figure 8.6-2, 4).

Note. Login and password depend on device settings. See default login and password in reference documentation on manufacturer's device.

6. Click **Connect** (Figure 8.6-2, 5). If the device is connected then one can set the list of cameras for playing back video from the external storage archive and match the number of camera in INTELLECT™and external storage from which the video is to be received (see *Setting the list of cameras to access the external storage* section).
7. To save all the changes click **Apply** (Figure 8.6-2, 6).

Configuration of the connection to external storage is completed.

8.6.4 Setting the list of cameras to access the external storage

One can configure several cameras to view video from the external storage. Each camera is configured for one channel of the device with external storage.

If one camera is selected for viewing video from several external storages, then the archive is viewed only from the archive that is matched with camera while the **Monitor** object is configured (see *Selecting and configuring video cameras* section).

To set the list of cameras to access the external storage do the following:

1. Go to the setting panel of the **External storage** object (Figure 8.6-3).

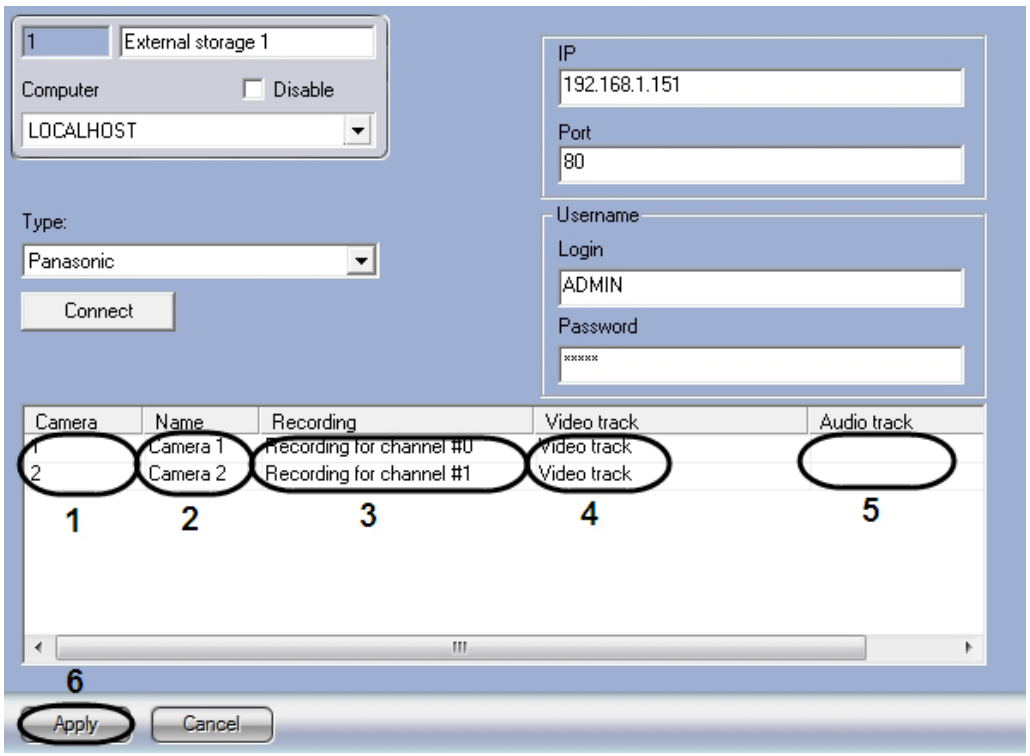


Figure 8.6-3 Setting the list of cameras to access the external storage

2. In the **Camera** column specify the number of the camera used for video archive viewing (Figure 8.6-3, 1).
3. Double left click in the **Name** field (Figure 8.6-3, 2). This field is automatically filled with the name of selected camera.
4. In the **Recording** column specify the channel of the device with external storage that will be used by camera (Figure 8.6-3, 3).

Note. Recording names are received from the device with external storage and are not changed in INTELLECT™.

5. In the **Video track** column specify the video channel within selected recording (Figure 8.6-3, 4).

Note. Names of video tracks are received from the device with external storage and are not changed in INTELLECT™.

6. In the **Audio track** column specify the audio channel within selected recording (Figure 8.6-3, 5).
7. Repeat steps 2-6 for all cameras that are to be used for viewing the archive from the external storage.
8. To save all the changes click **Apply** (Figure 8.6-3, 6).

Setting the list of cameras to access the external storage is completed.

8.7 Configuring telemetry

In digital video surveillance system PTZ devices are used for extension of video surveillance area by mechanical rotation of the camera. Detailed description of connection and configuration of PTZ

devices is given in *INTELLECT™ software package. Installing and configuring security system components guide* manual.

8.8 Configuring audio subsystem

8.8.1 General information on configuring audio subsystem

In the video surveillance systems, based on INTELLECT™ software, the audio subsystem contains software modules and hardware devices, used to receive, transmit, digitize, process, record and play back audio signals from video surveillance and audio monitoring system microphones.

Audio subsystem hardware includes optionally:

1. video capture cards;
2. standard soundcards;
3. multi-channel soundcards;
4. audio capture IP-devices;
5. microphones;
6. loudspeakers and headphones.

Audio subsystem software includes:

1. components for configuring the audio signal digitizing devices;
2. components for recording digital audio signals;
3. components for transmitting digital audio signals to Remote Workplaces and remote servers;
4. components for digital audio signals playback.

8.8.1.1 *Audio digitizing devices*

Audio capture and digitizing devices are used to receive and process analog audio signals from connected microphones.

To enter and digitize an audio signal, the servers, created in the INTELLECT™ software, use:

1. video capture cards;
2. standard soundcards;
3. multi-channel soundcards;
4. IP-devices.

8.8.1.1.1 Video capture cards

Video capture cards, used as audio capture devices, support reception and digitization of audio signals. Video capture cards don’t support audio signal output to headphones and loudspeakers.

Video capture cards digitize audio signals in conjunction with processing and digitization of video signals. Audio and video signals are processed independently.

The facility to receive and digitize audio signals depends on the server hard- and software configuration, on the type of video capture cards and the key file parameters.

8.8.1.1.2 Standard soundcards, microphones, loudspeakers and headphones

Standard soundcards are used for audio capture and audio output devices. They receive and digitize audio signals, reconvert digitized audio signals and feed them to the loudspeakers and headphones.

INTELLECT™ software system supports the audio signal sample rate range, corresponding to the standard soundcard and restricted to a 48 kHz frequency.

Usually up to 2 microphones and 1 headphone are used with a standard soundcard.

8.8.1.1.3 Multichannel audio capture devices

Multichannel audio capture devices are PCI cards (for example, MidiMan Delta, Comart Hera, Olkha 9P) or outer hardware and software modules (for example, Echolot USB-32), used for digitization and processing of 2 or more audio signals. For the list and features of INTELLECT™ software compatible multichannel audio capture devices, see the Integration section on the site of AxxonSoft company: http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.

Multichannel audio capture devices reproduce sound and digitize audio signals in parallel, or sound is reproduced by the standard sound cards. The Audio signal sample rate range depends on the audio capture device type. The INTELLECT™ software system sample rate range, available to the installed card, is restricted to a 48 kHz maximum value.

8.8.1.1.4 IP-devices

The INTELLECT™ software system supports audio signals reception, digitization, processing and playback using audio capture IP-devices. IP-cameras and IP-servers' built-in microphones or the external analog microphones, connected to IP-devices, may be used for receipt, digitization and processing of audio signals. Outer loudspeakers or headphones, connected to IP-servers may be IP-devices used for playback of audio signals. For the list of INTELLECT™ software compatible IP-devices for audio signals reception, digitization, processing and playback see the Integration section on the site of AxxonSoft company:
http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.

The audio signal sample rate range depends on the IP-device type, which is used as the audio capture device. The sample rate range, available to the installed card, is restricted to a 48 kHz maximum value.

8.8.1.2 *Configuring the digitization devices for audio signals*

Audio capture and digitizing devices are configured via the "System Setup" dialog box.

Audio capture and digitizing devices are configured by setting the audio signal sample rate and sound volume.

The sample rate is the same for all audio signals, processed by a common device; it can't be individually set for every audio signal.

Volume is adjusted after the audio signal has been digitized by the audio capture device. With INTELLECT™ software you can restrict volume to a certain value or switch on the automatic gain control (AGC). This levels out the sound volume across the range to a constant level.

8.8.1.3 *Digitized audio signal recording*

Audio signals archiving provides post-event analysis of evidence footage.

Audio recording can be performed:

1. As an audio and video synchro recording;
2. Independently, by Operator command.
3. As a sound activated audio recording.

In synchro recording mode, audio recordings are combined with video recordings; they are stored in the videoserver archive.

When audio signals are recorded by Operator command or by sound activation, audio recordings are separately stored in the audio archive.

Once the archive disk(s) is full, the archive is overwritten.

8.8.1.4 *Digital audio signal transmission to Remote Workstations and servers*

INTELLECT™ software enables to transmit audio signals to Remote Workstations on IBM PC's, connected to the videoserver via local TCP/IP net, and to remote servers.

INTELLECT™ software doesn't support audio signal transmission to Remote Workplaces on the base of the web-server, PocketPC or SmartPhone.

Both real-time and archive audio signals may be transmitted to Remote Workstations.

8.8.1.5 *Audio signal playback*

Audio signal playback is performed on Remote Workplaces with the use of the "Video surveillance monitor" or "Audio player" interface objects.

Realtime audio monitoring and synchro audio and video playback is performed by the video monitor. Nonsynchronous audio recording cannot be replayed by the video monitor.

The Audio player allows to playback audio signals from microphones, and to replay audio recordings. Audio recordings, synchronous to video recordings, cannot be replayed by the Audio player.

A standard soundcard installed on a Remote Workstation or remote server and configured by INTELLECT software, with microphones or loudspeakers attached to its output, is necessary to play back audio signals.

8.8.2 Registration of audio cards and microphones in INTELLECT™ software

Audio capture cards are registered in the INTELLECT™ software by creating and setting up "Audio card" objects. "Audio card" objects are created on the «Hardware" tabon the base of the "Computer" objects. The Audio capture card registration sequence depends on the type and number

of devices used. The registration sequence of different types of audio cards is described in the relevant sections.

An example of the FS-5 card registration as an audio capture device is shown in Figure 8.8-1.

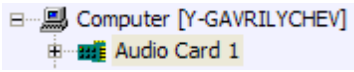


Figure 8.8-1. Example of FS-5 video capture card registration as an audio capture device

Microphones are registered in the INTELLECT™ software by creating the objects of the same name and by assigning numbers to the channels to connect them to the audio capture devices. “Microphone” objects are created on the «Hardware” tabon the base of the relevant “Audio Card” objects. The registration sequence of microphones depends on the type and number of audio capture cards used, and on the allowable configuration prescribed in the key file. An example of the «Hardware” tabobjects tree after two microphones, connected to an FS-5 card, were registered, is shown in Figure 8.8-2.

Figure 8.8-2. Anexample of registration of 2 microphones, connected to an FS-5 card

8.8.3 Configuring audio signals digitization and processing

8.8.3.1 *Audio signals sample rate settings*

The signal sample rate affects the quality of the audio signal and audio recording size. The higher the audio signal sample rate, the higher the signal quality and, hence, the efficiency of real-time and post-event analysis. When the audio signal sample rate increases, the size of the audio stream, transmitted by the network to Remote Workplaces and recorded to the disk, increases. These factors should be considered while choosing the sample rate of the audio signals.

The audio signal sample rate range depends on the audio capture device type. In INTELLECT™ software the upper threshold value of the sample rate range is 48 kHz.

By default, the audio signals sample rate is set to the minimum value. The sample rate is set for each audio capture device individually and covers any microphone, connected to it. Different sample rate settings for different microphones, connected to the same audio capture device, are unavailable.

To change the audio signal sample rate, follow the steps:

1. Go to the «Hardware” tab in the “System Settings” dialog box.
2. Select the relevant “Audio Card” object, created before, on the «Hardware” tabin the objects tree. The Settings panel of the selected object appears in the right part of the «Hardware” tab(Figure 8.8-3).

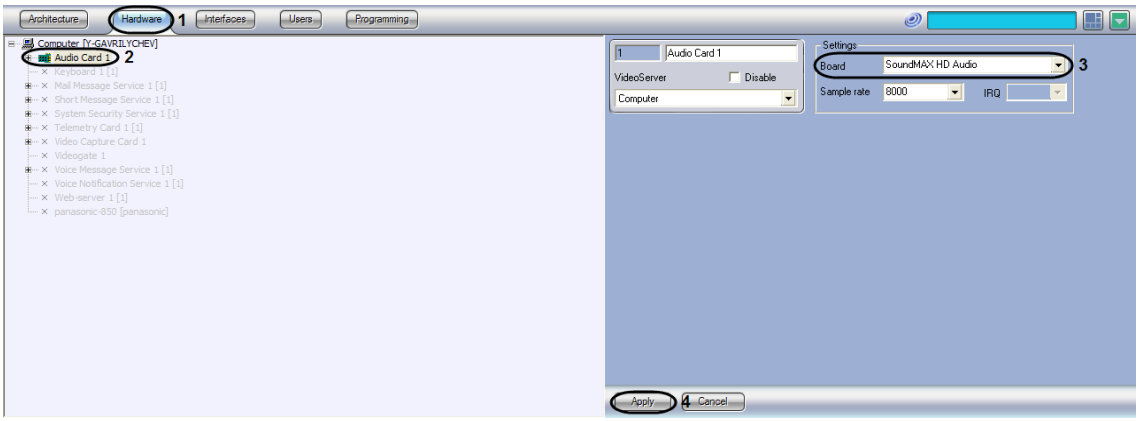


Figure 8.8-3. Audio signals sample rate settings

3. From the “Sample rate” list select the required sample rate of the audio signals.

4. Click the “Apply” button.

Audio signals sample rate settings for the audio card are completed.

8.8.3.2 *Set up of audio signal volume amplification*

It is possible to amplify incoming audio signals with the help of software.

Note. If the signal power varies during the audio session, it is necessary to increase the audio signal power by a constant value and to use Automatic Gain Control (AGC).

To amplify audio signal do the following:

1. Go to the Settings panel of the Microphone system object (Figure 8.8-4).

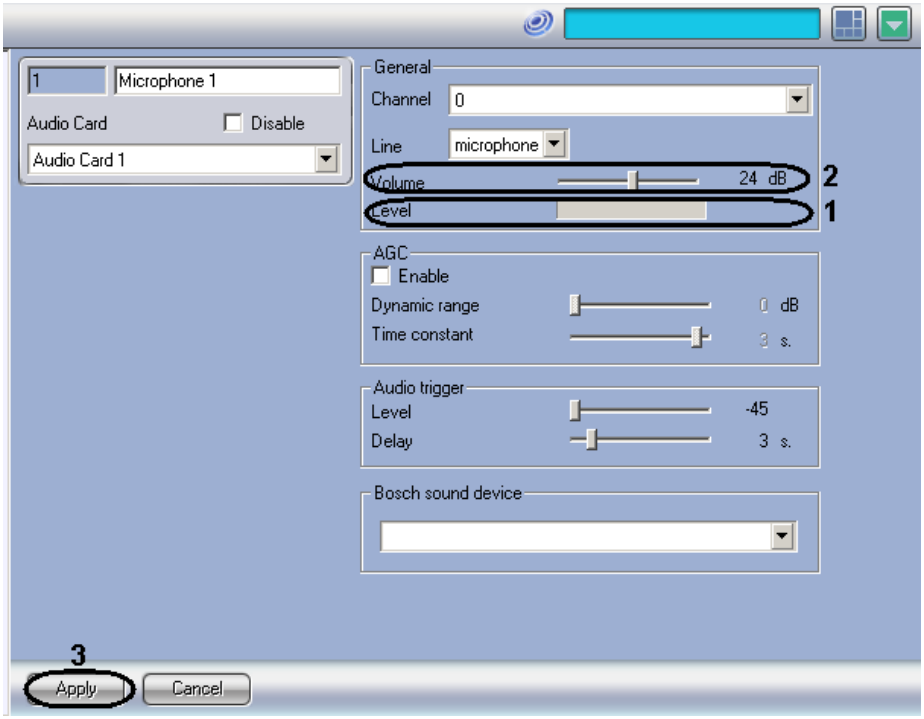


Figure 8.8-4. Set up of audio signal volume amplification

2. Feed the audio signal with to the microphone. Power level of incoming signal will be displayed on the indicator Level (Figure 8.8-4, 1).

3. When necessary set the slider Volume to the position, corresponding to the required value of amplification (Figure 8.8-4, 2).The current value in dB is shown in the right field next to the slider.

4. Repeat steps 2 and 3 for the required power level of audio signal.

5. Press Apply button to save all the changes (Figure 8.8-4, 3).

Set of audio signal volume amplification is completed.

8.8.3.3 *Setting up the Automatic Gain Control for sound cards of Olha line*

Automatic Gain Control (AGC) is designed to make the audio signal volume constant. AGC mechanism should be set only with the use of sound cards of Olha line : Olha-9P, Olha-10LP, Olha-12U, Olha-14.

It is recommended to use AGC when input audio signal power is unsteady or when the power of the sound signals, coming from different sources and forming the joint audio signal, differs significantly. AGC levels out the power levels of audio signal components from different sources.

INTELLECT™ software has an AGC adjust option. AGC has two adjustable parameters: a target power level, to which AGC brings different audio signals, and the adjustment time of bringing the signal to the target power level. The second parameter has certain restrictions: the less time it takes to bring the signal to a certain power level, the lower the quality of AGC operation, which may result in greater power level jumps in the processed signal. However a longer adjustment time lengthens the areas where the power of the processed audio signal builds up and decreases. So, processing may bring sizable distortions into the audio signal. Hence, AGC settings depend substantially on the conditions of audio signal formation, and when these conditions have been changed, new AGC settings should be set.

AGC is independently applied to any audio signal from any microphone of the video surveillance and audio monitoring system.

By default, AGC is disabled. The AGC option is enabled for each microphone independently.

To set up the AGC follow the steps:

1. Go to the settings panel of Microphone system object (Figure 8.8-5).

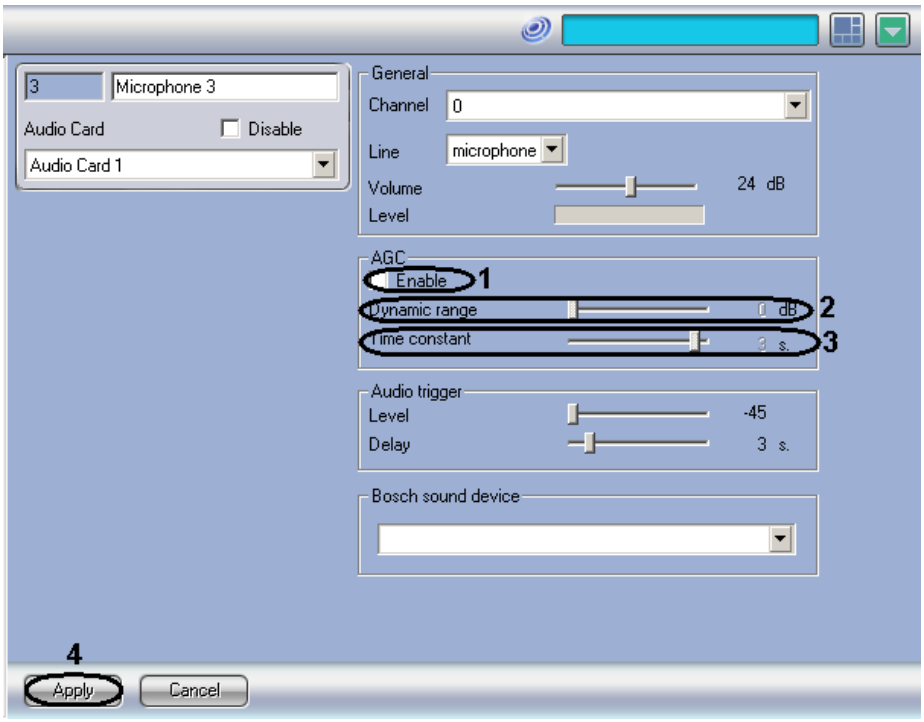


Figure 8.8-5. Setting up the automatic gain control of the audio signal

2. Set the “Enable” checkmark in the “AGC” group (Figure 8.8-5).

3. As a result, sliders in the “AGC” group Dinamic range and Time constant are activated (Figure 8.8-5, 3).

4. Set the “Dynamic range” slider to the position, corresponding to the desired level of video signal’s output power. The current power value, measured in decibels, is shown in the field on the right of the slider (Figure 8.8-5).

5. Set the “Time constant” slider to the position that corresponds to the time of bringing the signal to the defined power level (Figure 8.8-5). The value of the time constantin seconds, set by the slider, is displayed on the right of it.

6. Click the “Apply” button to save all the changes (Figure 8.8-5).

7. It is recommended to check AGC correctness after the settings were made. To do so, use one of the audio playback devices of the INTELLECT ™ software, for example, Audio player object. Audio player should be preset for audio signals playback.

8. If audio signal power is too high, move the “Dynamic range” slider some points to the left. If audio signal power is too low, move the “Dynamic range” slider some points to the right.

9. If increasing and decreasing of audio signal power is perceptible, move the “Time constant” slider some points to the left. If significant jumps in audio signal power are perceptible, move the “Time constant” slider some points to the right.

10. When necessary repeat 7-10 steps. If AGCis set up correctly, finish AGC setting up procedure.

AGC setting up is completed.

8.8.4 Configuring audio signals recording

8.8.4.1 *Audio signals recording modes*

Audio recording can be performed:

1. As audio and video synchro recording;
2. By sound activation, i.e. when input audio signal power exceeds a certain value.

In synchro recording mode audio and video signals' recording is initialized simultaneously (by Operator's command or by alarm).

Note. During pre-recording period, no audio signal is recorded.

Audio and video signals' recording is stopped simultaneously. Audio recording shutdown may be caused by:

1. Video recording shutdown (by Operator command or by the end of alarm recording);
2. Post-alarm recording shutdown (if the relevant camera is configured to perform post-alarm recording).

In synchro recording mode, audio recordings are combined with video recordings; they are stored in the videoserver archive.

In sound activated recording mode, audio recording is initialized at the moment, when signal power exceeds a preset (threshold) value. Audio signal recording is shutdown at the moment, when signal power becomes lower than a preset value, that has been previously exceeded.

An audio recording file, created in sound activated recording mode, includes an audio signal segment from the start till the end of the recording. In sound activated recording mode, audio recording files are stored in a separate server archive (audio archive).

8.8.4.2 *Selecting the disks for audio archive storage*

INTELLECT™ software performs audio signal archiving to the local server disks only.

In synchro recording mode, audio recording files are stored together with video recordings in the "Video" folder(s). So, selecting the disks for audio recording storage in synchro recording mode is equivalent to selecting the disks for video recording storage. For description of the procedure, see the relevant section of this Guide. In sound activated recording mode, audio recording files are stored in the 'AUDIO" folder separately from the video archive.

By default, no HDD is listed for the sound activated audio recording storage, hence, sound activated recording is unavailable. To enable the sound activated recording, select one or more disks.

Note. Use disks with the NTFS file system for storing the archive. If the FAT32 file system is in use, then there can be problems caused by this system, for instance — it has no logging.

Disk(s) selection is done in one of the following ways:

1. Estimate the disk capacity, necessary for audio archive storage in the sound activated mode. The estimation technique is described in the relevant section of this Guide.

2. Go to the “Computer” object settings panel (Figure 8.8-6).

3. Select the “Computer” object on the “Hardware” tab in the objects tree. The settings panel of the selected object appears in the right part of the “Hardware” tab (Figure 8.8-6,4).

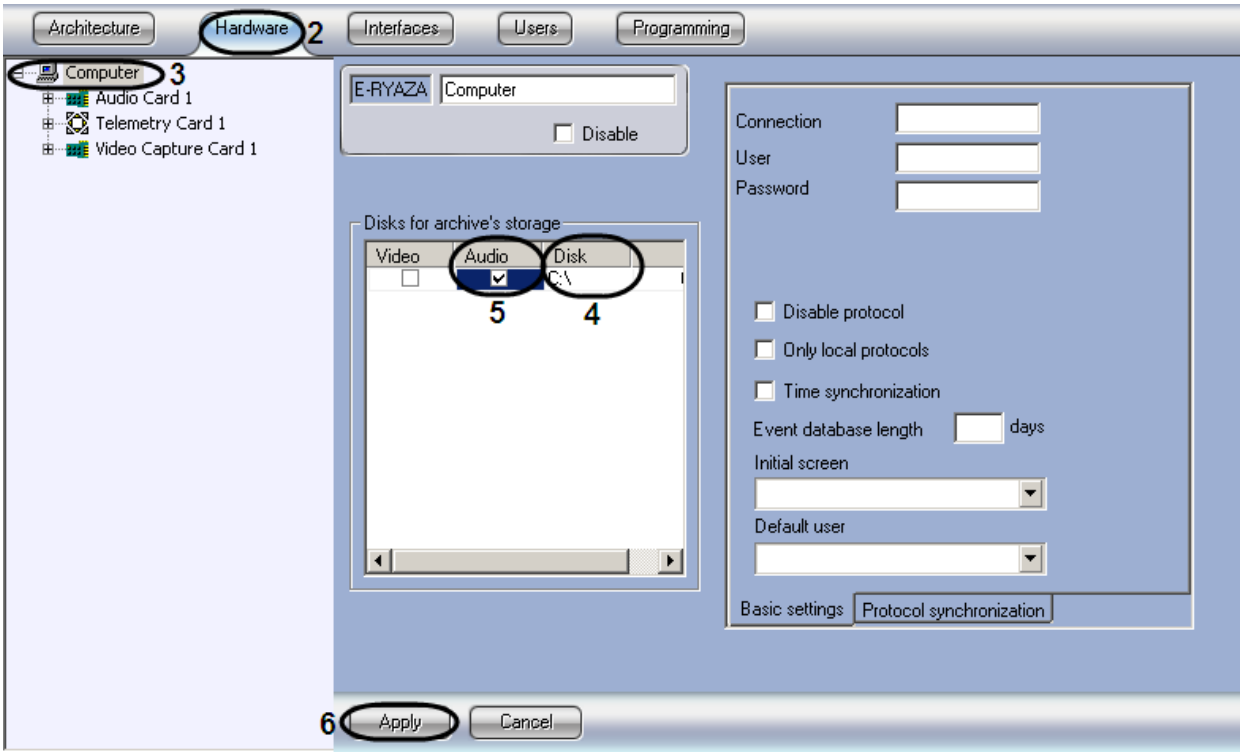


Figure 8.8-6. Selecting the disks for audio archive storage

3. The local disk names, available for audio archiving, are presented in the “Disk” column of the “Archive storage disks” table. The “GB” column contains the relevant disks’ capacities in gigabytes (GB). Select the disks for audio archiving and make sure that the total selected disk capacity is sufficient. Set the checkmarks in the “Audio” column for the selected disks’ names.). Local, net and USB disks are available for storing.
4. To add a net disk via UNC paths do the following:
   4.1 Go to the last line in the disk list and click the down key (Figure 8.8-7).

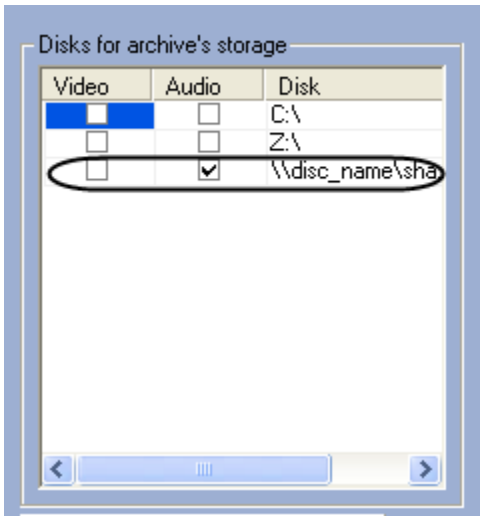


Figure 8.8-7 Setting the UNC path to a net disk

4.2 Enter the path to a net disk in the appeared line (Figure 8.8-7). UNC path is set in the format «\\server_name\share_name», where «server_name» is the name of file server and «share_name» is the net name of general folder.

4.3 Set a checkbox in the Video column for created disk (Figure 8.8-7).

5. Click the “Apply” button (Figure 8.8-6,6).

Selecting the disks for audio archive storage is completed.

8.8.4.3 *Setup of sound activated recording*

The sound activated audio recording mode is the mode, in which audio signal recording starts at the moment, when signal power exceeds a preset level and is shutdown at the moment, when signal power becomes lower than the preset level that has been previously exceeded.

To set up the sound activated recording, INTELLECT™ software uses the settings:

1. “Level” - When audio signal power exceeds a threshold value (“Level” setting) during a preset interval (“Delay”), audio signal recording starts automatically(alarm’s registration).

1. The “Delay” setting defines the time interval, during which audio signal is prerecorded after the end of alarm.

Sound activated recording is adjusted separately and independently for any microphone. It is recommended to select the optimal settings by trial and error to avoid malfunction.

By default, sound activated audio signal recording is disabled.

Enabling and setting up the sound activated recording option for a selected microphone is done in the following way:

1. Select the disk(s) to store audio recordings in the sound activated mode (see. Selecting the disks for audio archive storage).

2. Set the Audio player object to operate with the selected microphones.

3. Go to the “Microphone” system object settings panel.

4. Set the slider «Audio trigger» to the position, corresponding to the required level of video signal.The current level in conventional units is displayed in the field on the right of the slider (Figure 8.8-8).

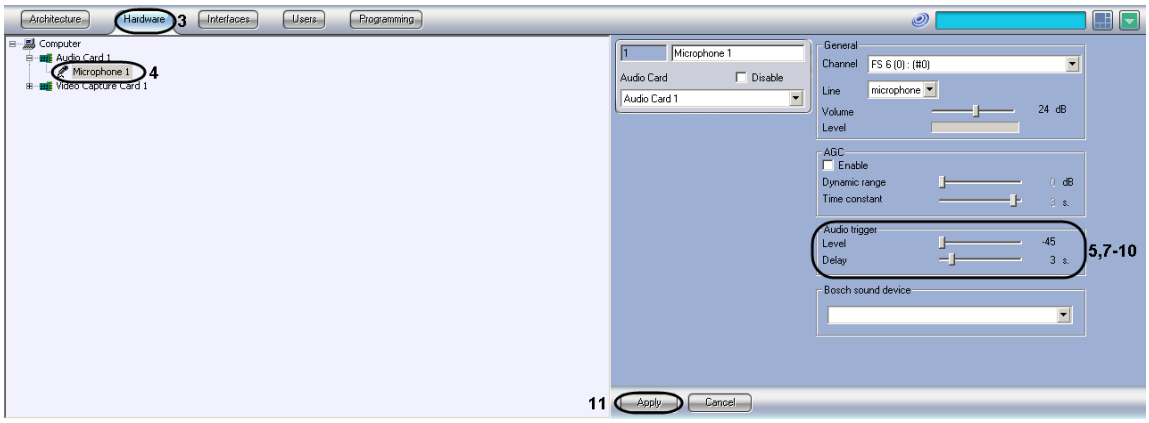


Figure 8.8-8. Setup of sound activated recording

5. Set the “Audio trigger” slider to the position, corresponding to the required delay time of audio signal after the end of alarm. The current delay time in sec is displayed in the field on the right of the slider.

6. Click the “Apply” button to save all the changes.

7. With the help of Audio player object check if the sound activated recording is initialized, when the sound signal of the required volume is fed to the microphone. If not, reduce the value of Level by moving the “Level” slider some points to the left (see 4-5 steps).

8. With the help of Audio player object check, if the sound activated recording is initialized, when the sound signal of lower volume, is fed to the microphone. If yes, move the “Level” slider some points to the right (see 4-5 steps) to increase the setting value.

9. Repeat steps 7-9. If the sound activated recording is properly set up, complete the set up procedure.

Setup of sound activated recording of audio signal is completed.

8.8.4.4 *Configuring audio and video synchro recording*

Audio and video synchro recording is applied to enable post-event analysis of evidence footage, retrieved simultaneously from video surveillance system microphones and cameras. In this mode audio is recorded by start and end video recording times.

Audio and video synchro recording is configured by coupling cameras, registered in INTELLECT™, with microphones. Any single camera can be coupled with only one microphone. Any single microphone can be coupled with only one camera.

The procedure of audio and video synchro recording configuration is described in “Configuring audio and video synchro recording” section.

8.8.5 Configuring Audio Analytics

8.8.5.1 *General information*

The INTELLECT ™ software package features integrated audio analytics, which are supplied in the form of a pack of detection tools made by Audio Analytic Ltd. Audio analytics allow for automatically analyzing the audio signal received by INTELLECT ™ software from connected microphones and recognizing sounds of different types. The type of sounds detected depends on the audio analytics that are used.

The INTELLECT ™ software package includes the following types of audio analytics:

1. Shattered glass detection. The glass break analytics has been designed to allow detection of the four main types of glass found in buildings: laminated glass, mirror glass, reinforced glass, and armored glass. The following detection tools are available:

1.1. "Tempered Glass Break Detector". A sample of the tempered glass breaking sound is available here.

1.2. "Wire Laminated Plate Glass Detector". A sample of the wired glass breaking sound is available here. A sample of the laminate glass breaking sound is available here. A sample of the plate glass breaking sound is available here.

Note. It is recommended to select both of these detection tools for general glass break detection.

1.3. "Risco RG-65 Vitron Glass Break Simulator". This detects the specific sound of the Risco RG-65 glass break simulator being used in plate glass mode, and is intended for use by installers to test for proper operation of the analytics after installation. It should only be enabled during test mode and should be disabled during normal operation. A sample of the sound recognized by the detection tool is available here.

2. Car alarm sound detection. The following detection tools are available, matching the standard car alarm signals used in Europe and North America:

   2.1 "Clean Sawtooth". A sample of this signal can be found here.

   2.2 "Fuzzed Sawtooth". A sample of this signal can be found here.

   2.3 "Reverse Sawtooth". A sample of this signal can be found here.

   2.4 "Single Tone". A sample of this signal can be found here.

   2.5 "Toned". A sample of this signal can be found here.

   2.6 "Tophat". A sample of this signal can be found here.

   2.7 "Two Tone". A sample of this signal can be found here.

Note. It is recommended to select all seven car alarm detection tools for general car alarm detection to ensure that any type of car alarm is detected.

3. Agression detection. Agression is characterized by change of voice timbre, pitch and intonation. A sample of this signal can be found here.

Attention! For proper functioning of audio analytics, you are advised to set a sample rate of 16,000 Hz or over. To set the sample rate, go to the configuration panel for the "Audio Card" object (see the section Settings panel of the Audio card ***). Audio analytics functionality is not guaranteed at sample rates lower than the one indicated.***

The output of the detection tools is a display of events (in the “Event Viewer”) that match the trigger start times and end times of the detection tool.

8.8.5.2 *How to configure audio analytics:*

Configure audio analytics in the following order:

1. Create an “Audio Analytics” object;
2. Set a type of analytics;
3. Configure the audio detection tools.

8.8.5.3 *Creating an “Audio Analytics” object*

An “Audio Analytics” object is based on the “Microphone” object, in the “Hardware” tab of the “System Settings” dialog box (Figure 8.8-9).

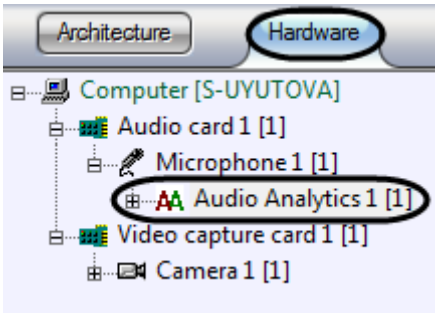


Figure 8.8-9 An Audio Analytics object

8.8.5.4 *Specifying the type of analytics*

The type of analytics determines the type of signal that is analyzed. The choice of a type of analytics determines the type of detection tools that will be used.

To configure the type of analytics in the INTELLECT ™ software package, create the corresponding object based on the “Audio Analytics” object in the “Hardware” tab of the “System Settings” dialog box.

To specify a type of audio analytics:

1. Right-click on an “Audio Analytics” object in the objects tree (Figure 8.8-10).

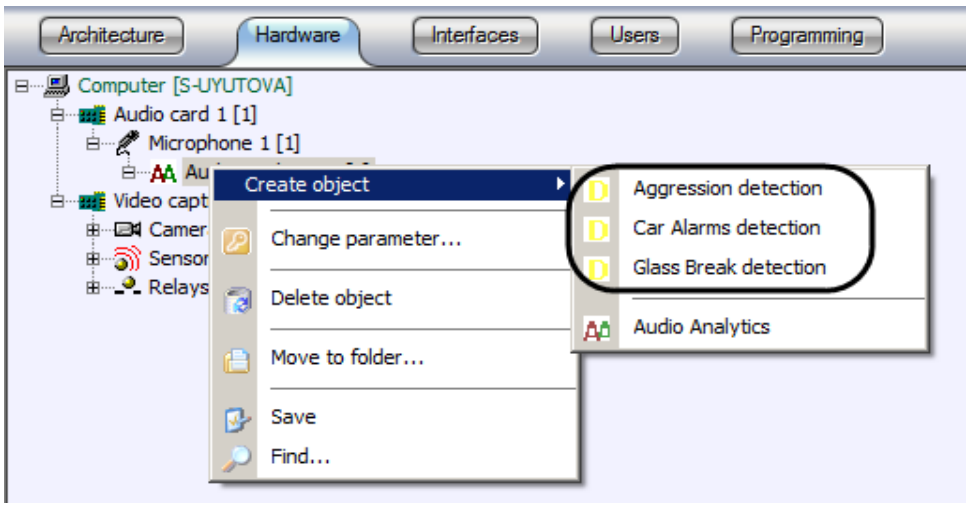


Figure 8.8-10 Creating a detection object

2. In the feature menu select an object that corresponds to the type of audio analytics (Figure 8.8-10).
    a. “Car Alarms detection” – detection of car alarm sound;
    b. “Glass Break detection” – detection of broken glass sound;
    c. “Agression detection” – detection of aggression sound.
3. Set the number and name of a detector (Figure 8.8-11, 1).

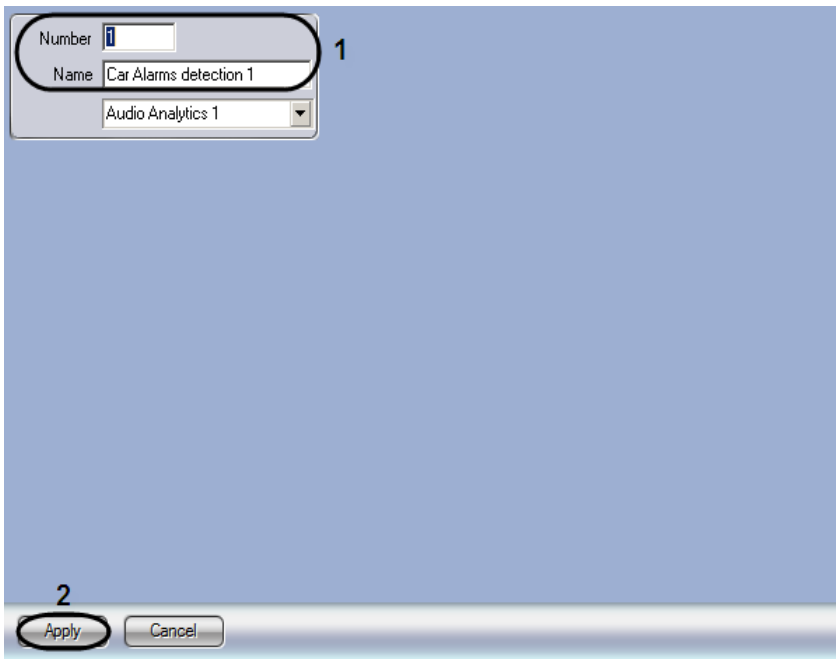


Figure 8.8-11 Specifying the object name and number

4. To complete the object creation, click the “Apply” button (Figure 8.8-11, 2).

The type of analytics has now been specified.

8.8.5.5 *Configuring an audio detector*

To configure an audio detector in the INTELLECT ™ software package, go to the settings panel for an object corresponding to the detection tool. This object is based on an “Audio Analytics” object, in the “Hardware” tab of the “System Settings” dialog box (Fig. 8.8—1).

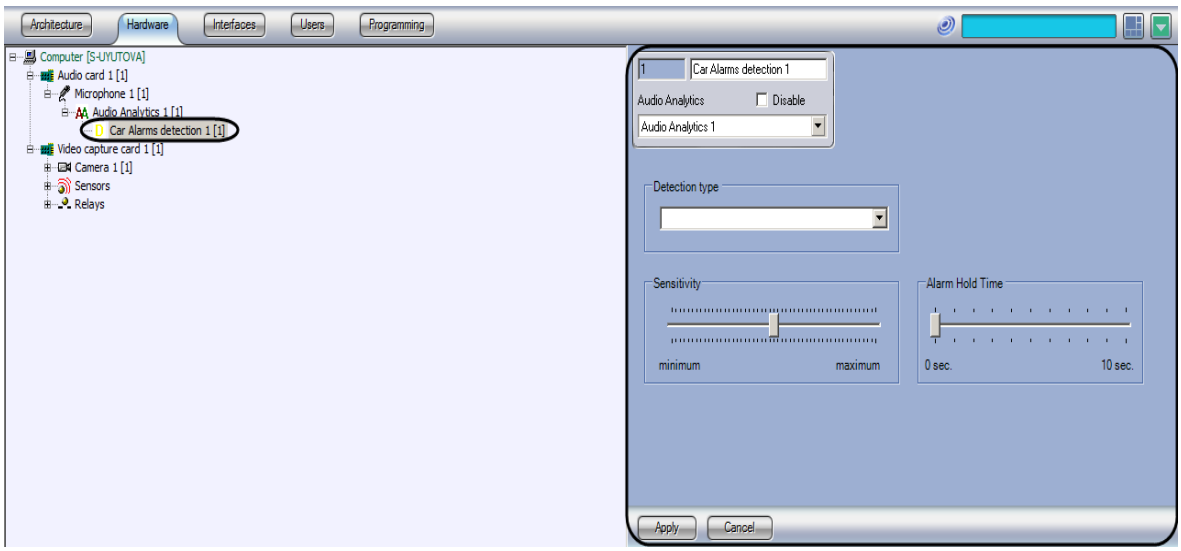


Fig. 8.8—1 A Car Alarms detection object

An audio detection tool is configured as follows:

1. Go to the settings panel for a “Detection” object (Fig. 8.8—2).

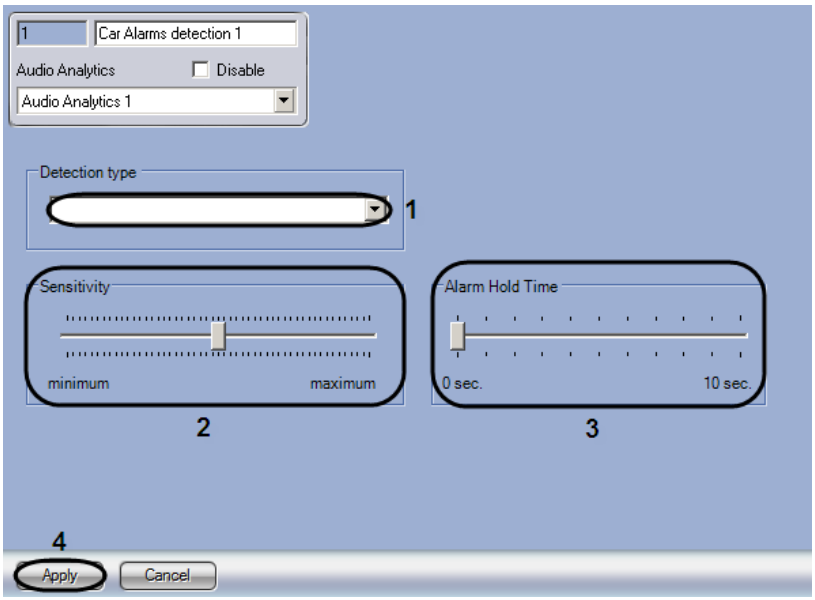


Fig. 8.8—2 Configuring a detector tool

2. In the “Detection type” drop-down list, select a type of detector tool (see Fig. 8.8—2, 1).

Note 1: If the type of a functioning detection tool that has already been configured has been changed, you must configure its sensitivity again.

Note 2: The types of detection tools that are available depend on the chosen type of audio analytics.

3. “Sensitivity” represents the threshold which is used for comparison during analysis of the incoming signal. When an audio detector type is selected a default detection sensitivity will be automatically set. Under most circumstances this default value will give acceptable performance. If circumstances require this detection sensitivity to be changed, for example

high background noise, then set the “Sensitivity” value by moving the corresponding slider as needed (Fig. 8.8—2, 2).

To determine the optimal “Sensitivity” value, test the detection tool for false triggers. When the “Sensitivity” value is increased, there is a greater likelihood that the detector will be falsely triggered by audio signal static. When the “Sensitivity” value is decreased, there is a lower likelihood that the necessary sounds will be correctly recognized by the detection tool.

4. To configure the “Alarm Hold Time”, move the slider as appropriate. This time is the number of seconds by which the detection tool will be delayed from returning to the normal state after the alarm ends (see Fig. 8.8—2, 3).

Configuration of the “Alarm Hold Time” allows avoiding "fragmentation" of an alarm event into several events, when a detection tool goes into an alarm state several times in a short period because of a low-level input signal.

5. To save the changes in INTELLECT ™ software, click the “Apply” button (see Fig. 8.8—2, 4).

The audio detection tool is now configured.

8.8.5.6 *Sample macros for audio analytics*

When a detection tool is triggered, a "Event Start" event is sent to the system; when it ends, an "Event End" event is sent. These events can be handled by:

1. JScript scripts (for more about creating scripts, see the document INTELLECT ™ software Package: Programmer’s Guide (JScript))
2. Programs made in the programming language built into INTELLECT ™ software (for more information, see the document INTELLECT ™ software Package: Programmer’s Guide)
3. Macros (see the section Creating and using macros)

Sample macros. When the detection tool is triggered, start writing from camera 1. When the trigger has ended, stop writing.

Create two “Macro” objects and set their parameters as shown in the table (Table 8.8—1).

Table 8.8—1 Macro parameters

No.	Events		Actions	
	Object	**Event**	**Object**	**Action**
1	Detector 1 (see Fig. 8.8—3, 1)	Event beginning (see Fig. 8.8—3, 2)	Camera 1 (see Fig. 8.8—3, 3)	Start recording (see Fig. 8.8—3, 4)
2	Detector 1 (see Fig. 8.8—4, 1)	Event ending (see Fig. 8.8—4, 2)	Camera 1 (see Fig. 8.8—4, 3)	Stop recording (see Fig. 8.8—4, 4)

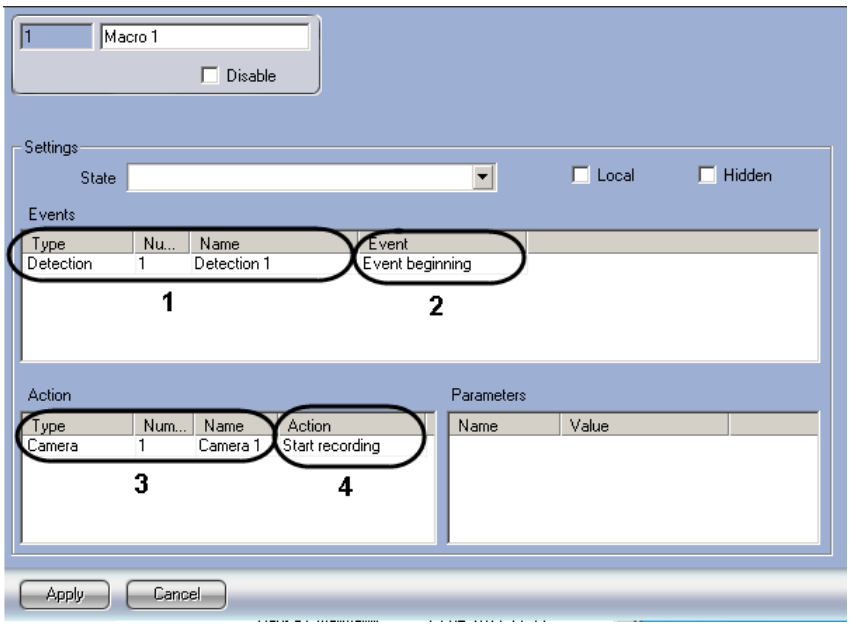


Fig. 8.8—3 The settings panel for the Macro 1 object

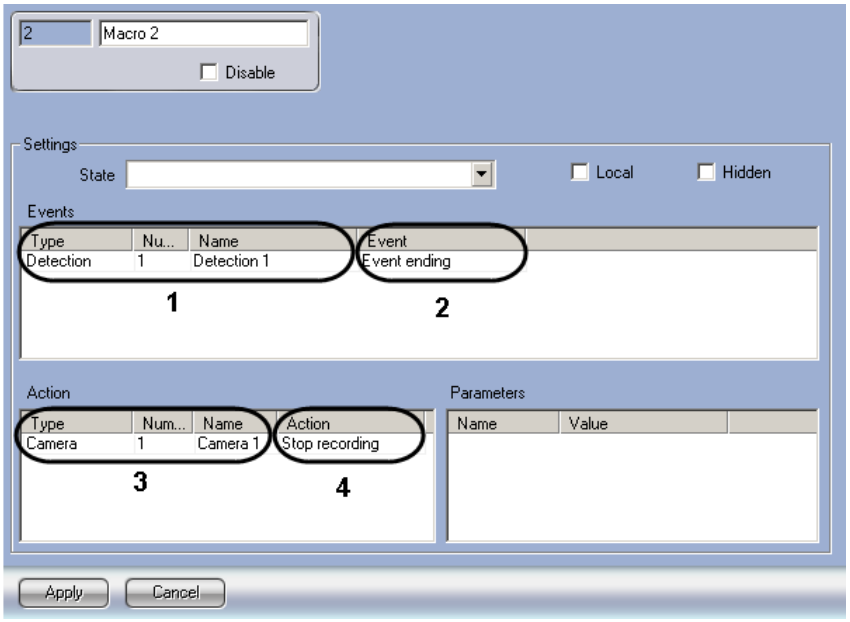


Fig. 8.8—4 The settings panel for the Macro 2 object

Note. It's also possible to use other types of actions besides recording video from cameras. For example the following ones:

1. *The "Play audio file" action of the "Audio player" object for audible alarm alert to operator.*
2. *The "Add camera" action of the "Monitor" object for displaying the camera associated with the microphone at which the detection tool has triggered.*

8.8.6 Setup of audio signal transmission to Remote Workstations and servers

INTELLECT™ software has the facility to transmit audio signals both from microphones and from the archive to Remote Workstations and servers.

INTELLECT™ software version 4.74 doesn't support audio signal transmission to Remote Monitoring Workstations on the base of a web-server, PocketPC or a SmartPhone.

Audio signal transmission to Remote Workplaces and servers, connected by the TCP/IP net, is performed only via "Video surveillance monitor" or "Audio player" interface objects.

The video monitor has the facility to transmit only audio signals from the microphones that have been set to synchro video and audio recording. The Audio player may be configured to transmit audio signals from all video surveillance system microphones to the Remote Workstations and servers.

To enable audio signal transmission to Remote Workplaces and servers, follow the steps:

1. Go to the "Interfaces" tab in the "System Setup" dialog box.
2. Create the "Screen" object, if it was not created before (Figure 8.8-12).

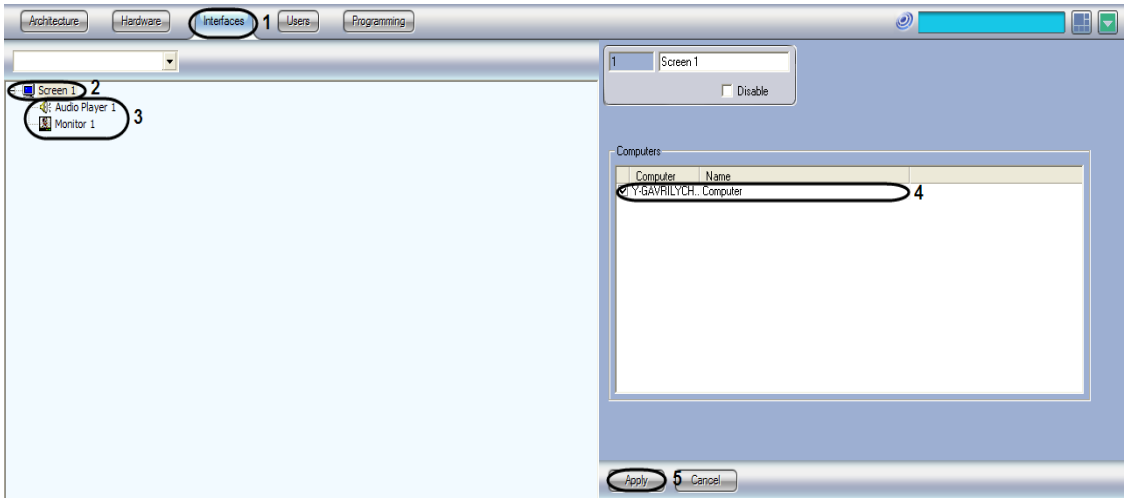


Figure 8.8-12. Setup of audio signal transmission to Remote Workplaces and videoservers

3. Set the checkmarks in the "Computers" table for those Remote Workplaces and servers, where audio signals should be transmitted.
4. Click the "Apply" button.
5. Create and set up "Monitor" and/or "Audio player" objects (for description of setting up these objects see the relevant sections).

Setup of audio signal transmission to Remote Workplaces and servers is completed.

8.8.7 Configuring audio playback

INTELLECT™ software provides an audio playback using the "Playing card" object. The "Playing card" object combines speakers objects in case the playing card has several channels. You can direct sound from the microphone to the dynamic using audio sswitch (see 8.8.12 part of this manual), macrocommand or script.

8.8.7.1 *Creating and configuring the "Playing card" object*

The "Playing card" object is registered on the basis of the "Computer" object in the "Hardware" tab of the "System settings" dialog box (Figure 8.8-13).

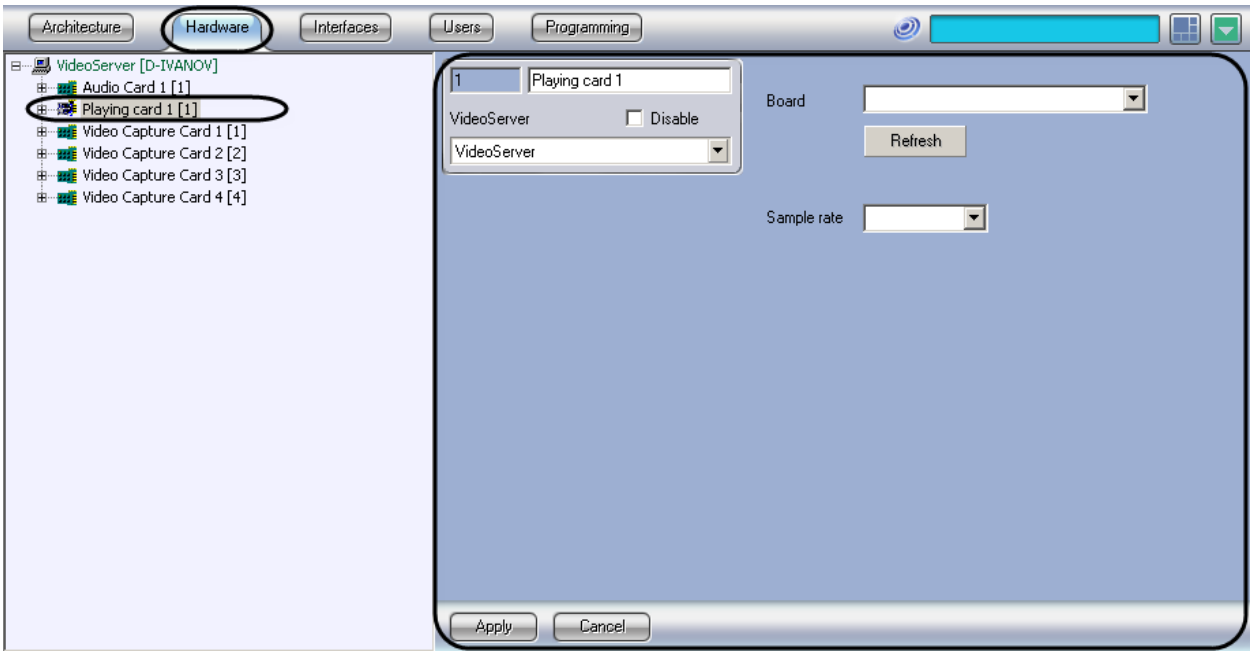


Figure 8.8-13. Creating the "Playing card" object

To configure the "Playing card" object, do the following:

1. Go to the settings panel of the "Playing card" object (Figure 8.8-14).

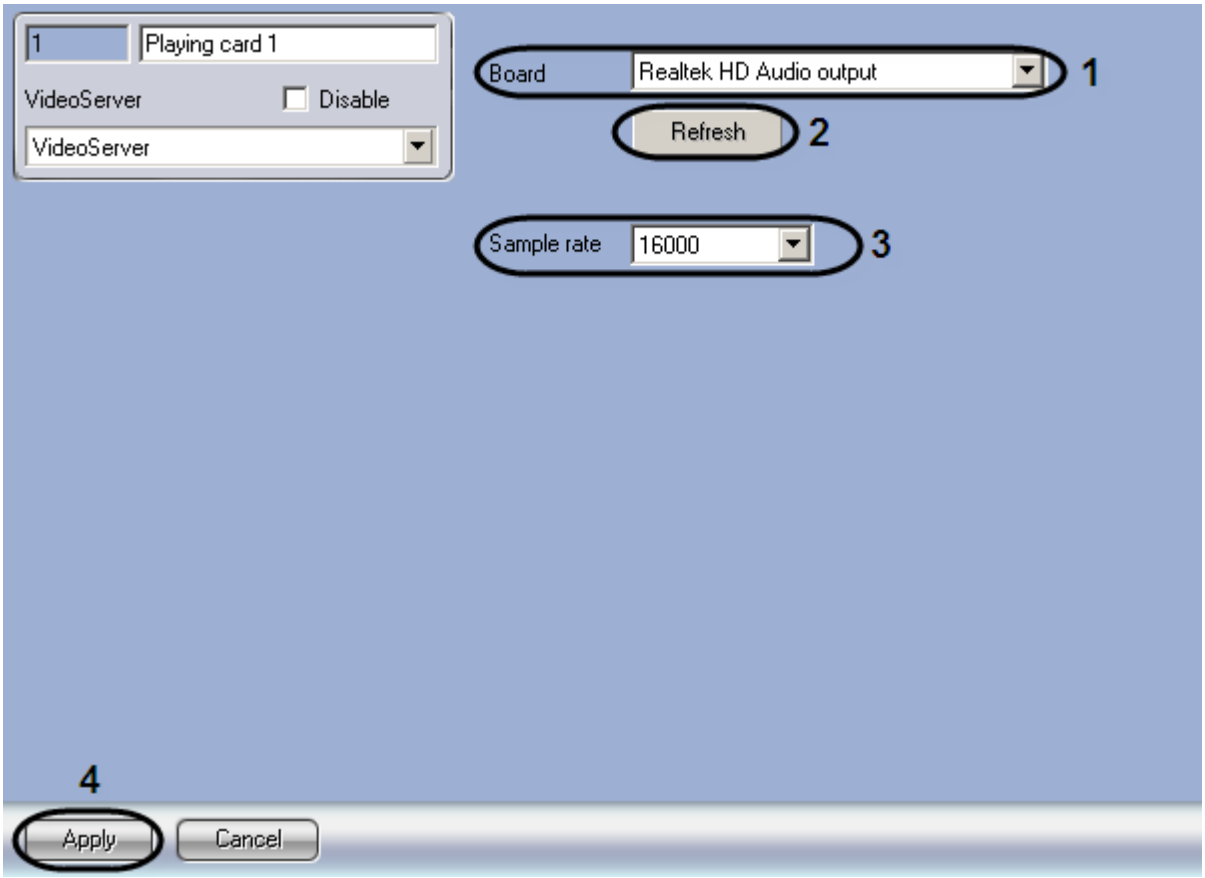


Figure 8.8-14. Configuring the "Playing card" object

2. Select the type of audio digitization device in the "Board" dropdown list (Figure 8.8-14, 1).

Note. SoundBlaster, ADC video card, audio digitization USB devices, IP cameras digitization devices are used as audio digitization devices.

3. Select the rate of audio digitization in the "Sample rate" dropdown list (Figure 8.8-14, 3).

4. To save the changes, click the "Apply" button (Figure 8.8-14, 4).

Note. The "Refresh" button is for returning to previous settings of audio digitization device if new settings were not saved (Figure 8.8-14, 2).

The "Playing card" object is now configured.

8.8.7.2 *Creating and configuring the "Speaker" object*

The "Speaker" object is an audio playback device.

The "Speaker" object is registered under the "Playing card" object in the "Hardware" tab in the "System settings" dialog box (Figure 8.8-15).

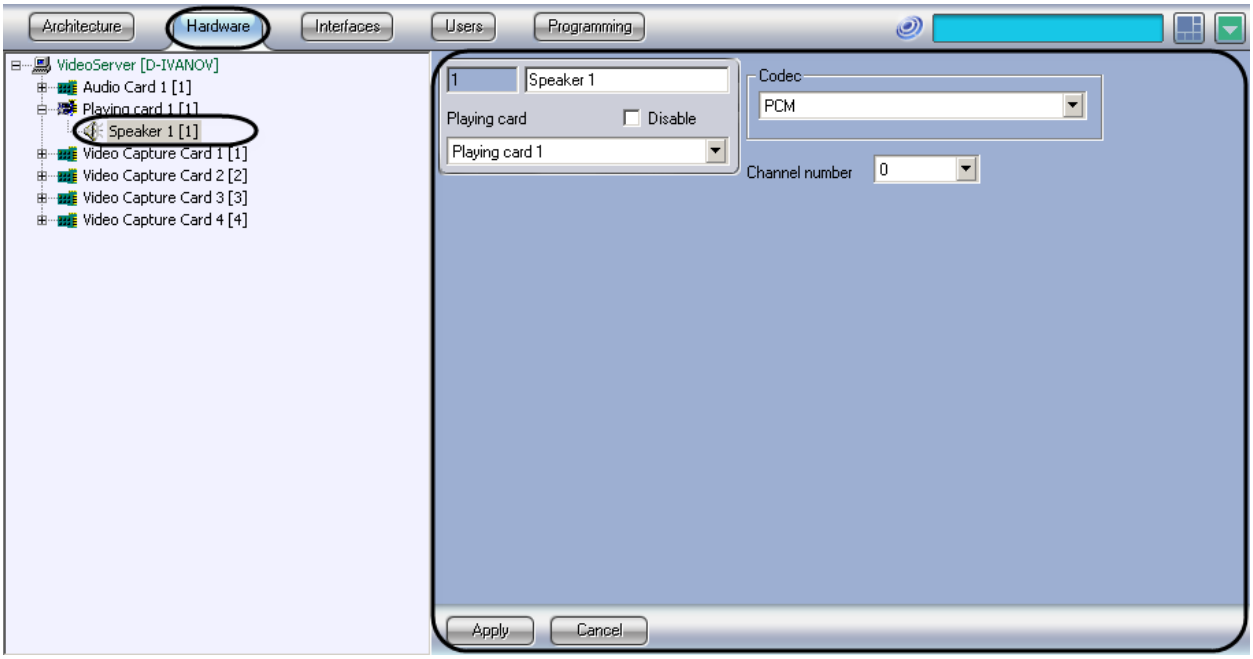


Figure 8.8-15. Creating the "Speaker" object

To configure the "Speaker" object, do the following:

1. Go to the setting panel of the "Speaker" object (Figure 8.8-16).

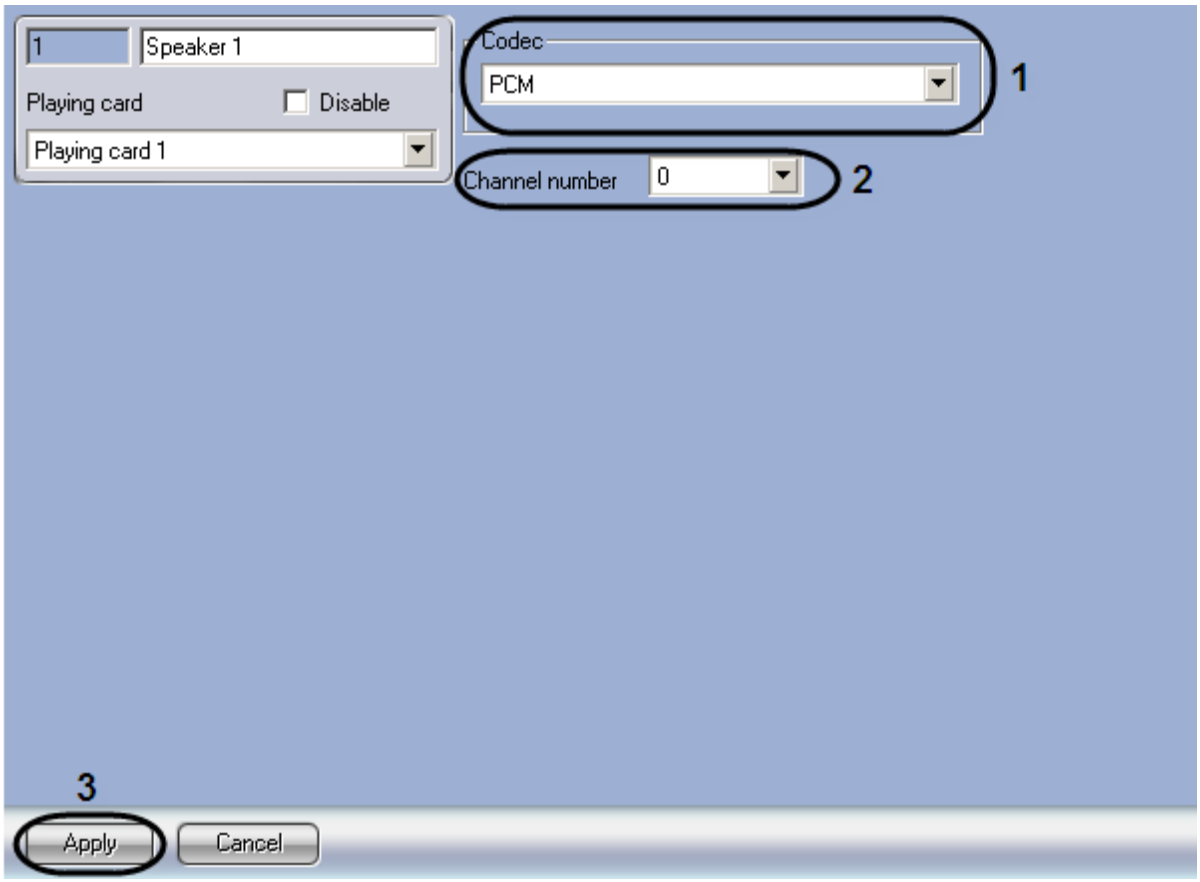


Figure 8.8-16. Setup of the «Speaker» object

2. Select the coding format of reproductible audio signal in the “Codec” dropdown list (Figure 8.8-16, 1).
3. Select channel number of speaker connection in sound card from the list of the same name (Figure 8.8-16, 2).
4. To save the changes click the “Apply” button (Figure 8.8-16, 3).
5. Select the “Operator’s speacker:” object from the list on the settings panel of the “Computer” object (Figure 8.8-17).

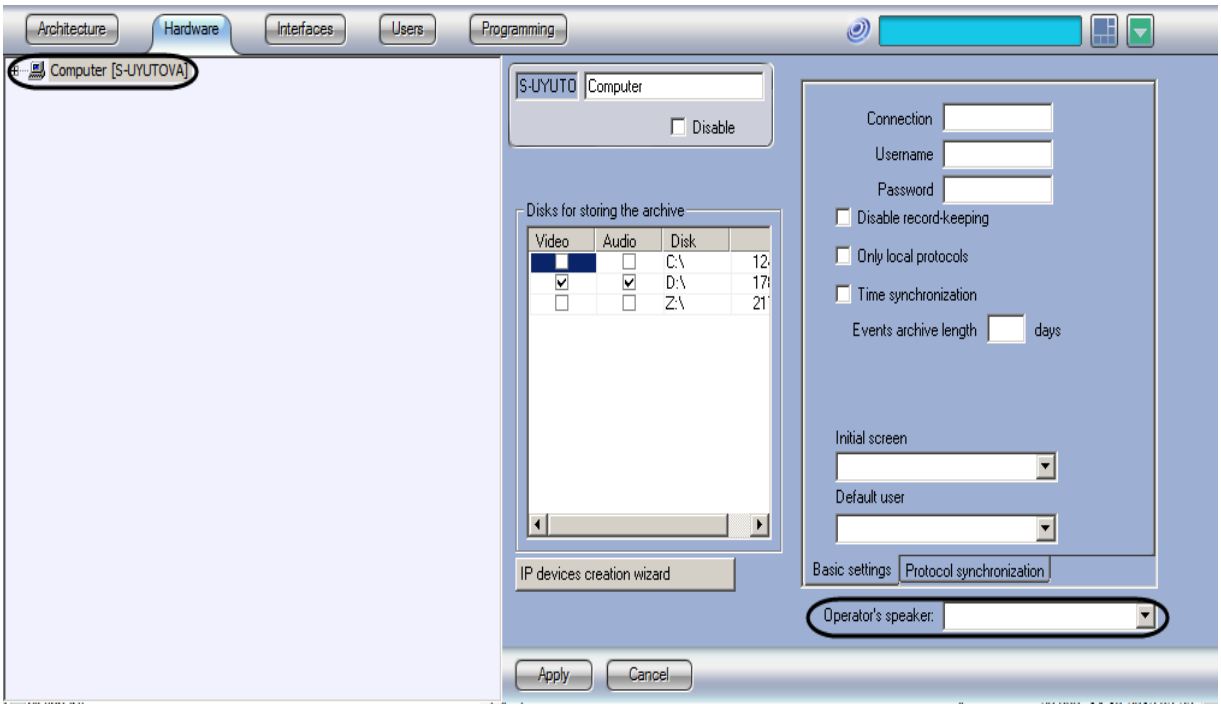


Figure 8.8-17 Specifying the speaker to computer

Note. Several "Speaker" objects can be configured in the system. When the speaker is changed over using the "Operator's speaker" list, then Intellect is to be restarted on the computer where it is in use.

6. Click the "Apply" button.

The "Speaker" object is now configured.

8.8.8 Features of audio signals playback using the video monitor

The video monitor has the facility to play back audio signals only from the microphones that have been set to synchro video and audio recording. INTELLECT™ software provides an audio playback option for real-time audio signal and for audio signals, archived in the synchro recording mode.

The option of audio signals playback by the video monitor is automatically activated for any microphone, when it is set to synchro video and audio recording with a camera. This option is deactivated automatically, when the synchro video and audio recording option is disabled for the selected camera and microphone.

8.8.9 Features of audio signals export using the video monitor

The video monitor has the facility to export audio signals only from the microphones that have been set to synchro video and audio recording.

In order to provide synhro audio export when a video recording is exported from the video monitor interface, the "Audio player" object is to be bound to the Monitor. The configuration of binding is described in "Binding Audio player to the Monitor" section. If audio player is not bound, then video from the Monitor interface will be exported without sound even if the archive is recorded with sound. Information on how to create and configure the "Audio player" object is given in the "Configuring audio signals playback using the "Audio player" section of this manual.

Detailed information on how to export video recordings from the video monitor interface is given in the “Export of video recording supported with sound” section of INTELLECT™ software package. Operator’s guide.

8.8.10 Configuring audio signals playback using the “Audio player” object

8.8.10.1 *Audio player setup sequence*

Audio player object is a subclass of the Screen interface object and is designed for implementing the following functions:

1. perform recording of sound activated audio signals;
2. record audio signals by Operator command;
3. play back input audio signals;
4. play back audio signals, recorded by sound level or by Operator command;
5. perform voice notification.

To set Audio player object do the following:

1. Select the screen and create for it Audio player object.
2. Set the parameters of Audio player interface object.
3. Set the recording and playback of audio signals from microphones.
4. Set the voice notification during alarms registration by cameras’ motion detectors.

Note. Setup sequence of Audio player object for transmition of audio signals to IP-device is described in the Setting up the transmission of audio signals to IP-device and the Setting up the transmission of audio signals to IP-device Bosch.

8.8.10.2 *Creating the Audio player object*

To create the Audio player object do the following:

1. Select the required object Screen on the tab Interface of System settings dialog window (Figure 8.8-18).

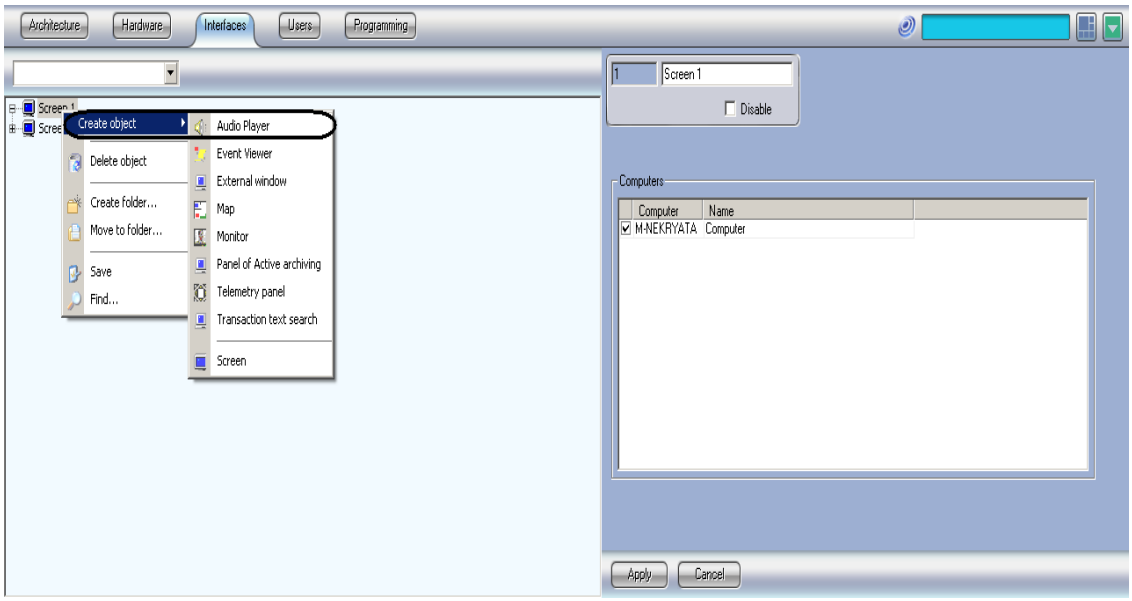


Figure 8.8-18. Creating the Audio player object

2. Click with the right mouse button upon the selected object Screen and in the contectual menu , that will open, select Create object ⇨ Audio player (Figure 8.8-18, 1).

3. In the window, that will open, set the name and number of the object Audio player and then click Apply button (Figure 8.8-19).

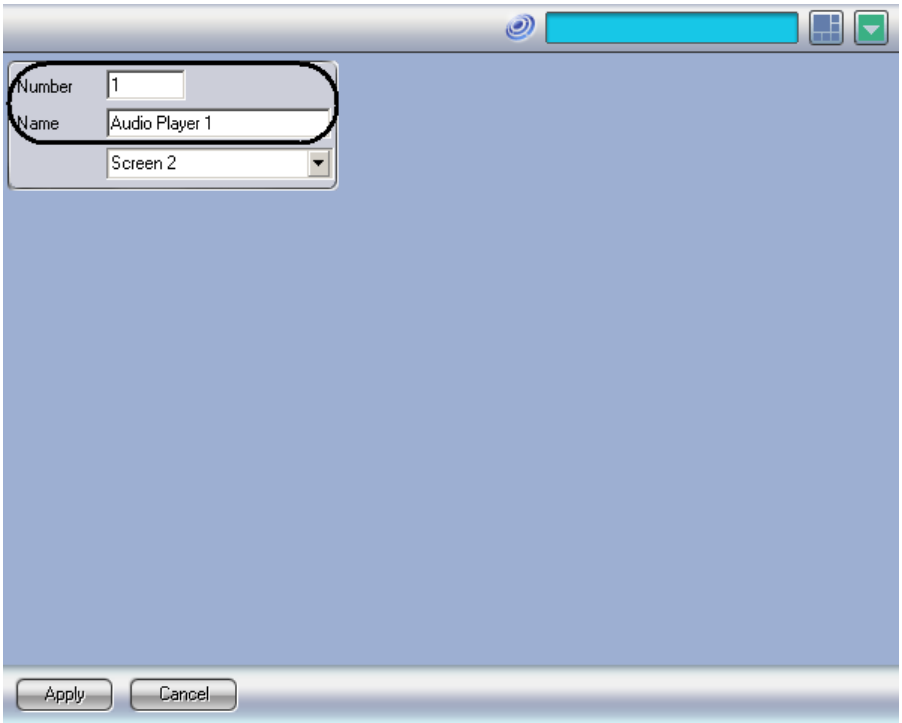


Figure 8.8-19. Setting up the number and name of the Audio player object

Note.In result Settings panel of Audio player object will be shown.

4. Repeat steps 1-3 for all the required objects Screen and Audio player.

Creation of Audio player object is over.

8.8.10.3 *Setting the parameters of the "Audio player" interface box*

To set the parameters of the "Audio player" interface box, do the following:

1. Go to the settings panel of the "Audio player" interface box (Figure 8.8-20).

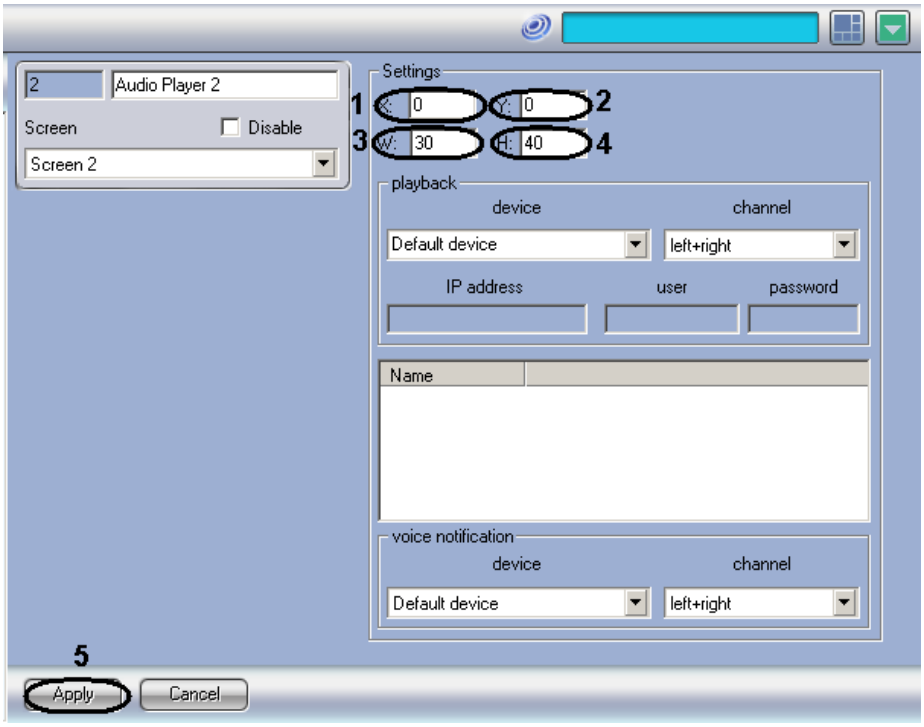


Figure 8.8-20. Setting the parameters of the "Audio player" interface box

2. Set the coordinates of Audio player window's left upper corner:fields«X»(horizontal indent from the left image border) and «Y» (vertical indent from the upper image border.Figure 8.8-20-Coordinates are given in percentage in relation to screen size horizontally and vertically.

3. Set the dimensions of the "Audio player" interface box: fields «W» (window's width) and «H» (window's height) – Figure 8.8-20, 3 and 4. Dimensions are given in percentage in relation to screen size horizontally and vertically.

Note. Minimal allowed value of parameter«W» is 35%, «H» – 40%. With lesser value displayed width or height of the window will correspond to minimal allowed value.

4. Click Apply button to save all the changes (Figure 8.8-20, 5).

Setting the parameters of the "Audio player" interface box is completed.

8.8.10.4 *Setting uo the recording and audio signals' playback*

With the help of Microphone object the following opportunities of Audio player object are realized:

1. Playback of audio signals from the microphones.

2. Recording of audio signals by sound level or by Operator command.

To set up the recording and playback of audio signals from the microphones do the following way:

1. Go to the settings panel of Audio player interface object (Figure 8.8-21).

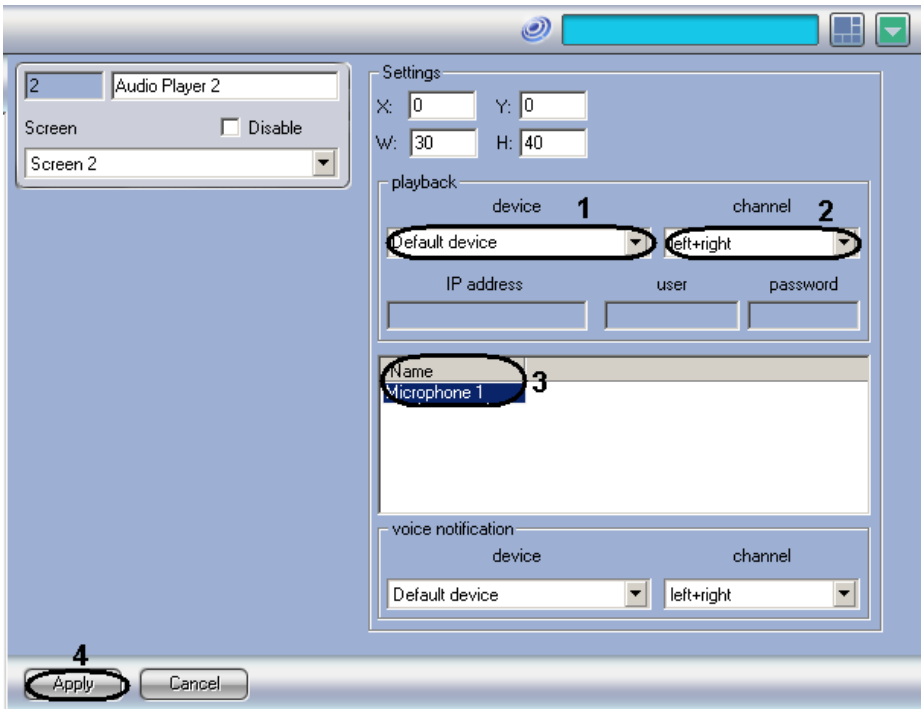


Figure 8.8-21. Setting up the recording and playback of audio signals from the microphones

2. From the dropdown list Device of Playback group select the required device of audio signals backup (Figure 8.8-21, 1).

Note. Standard sound map corresponds to to the value Default device.

3. From the dropdown list Channel of Playback group select the required channel of audio signals backup (Figure 8.8-21, 2).

4. Form the dropdown lit in the column Name select the name of Microphone object, which audio signals are suggested to be recorded/played back (Figure 8.8-21, 3).

5. Repeat step 4 for all the required Microphone objects.

6. Click Apply button to save all the changes (Figure 8.8-21, 4).

Setting up the recording and playback of audio signals from the microphones is completed.

8.8.11 Setting up the voice notification

It is possible to transmit voice notification with the registration of alarms by main motion detectors of cameras.

When motion detector works, audio file which is situated in Wav subdirectory in INTELLECT™ software root directory, is played. The files have .wav extension and are called cam_alarm_N, where N is a number of a video camera.

Note. By default INTELLECT™ software provides 16 audio files for 16 cameras, respectively. You can add your own audio file if the number of cameras is greater one specified by default. It is enough to move a new audio file (wav format required) to a Wav subdirectory and change its name to:

*cam_alarm_N, where N is a number of a video camera (> 16). If there is no file with name corresponding to camera, then there is a standard sound of Windows OS - **Ding**.*

Before setting up the voice notification it's necessary to make sure that the following conditions are carried out:

1. Standard sound card is installed on the required computer (also integrated into the motherboard);
2. The devices of audio signals playback (dynamics and headphones) are connected to audio outputs of the sound card.

Setting up the voice notification is carried out in two ways:

1. Using «Audio player» object;
2. Using «Sound notification» object.

It's recommended to use only one variant.

8.8.11.1 *Setting up the voice notification using «Audio player» object*

To set up the voice notification using «Audio player» object do the following:

1. Go to the setting panel of «Audio player» object (Figure 8.8-22).

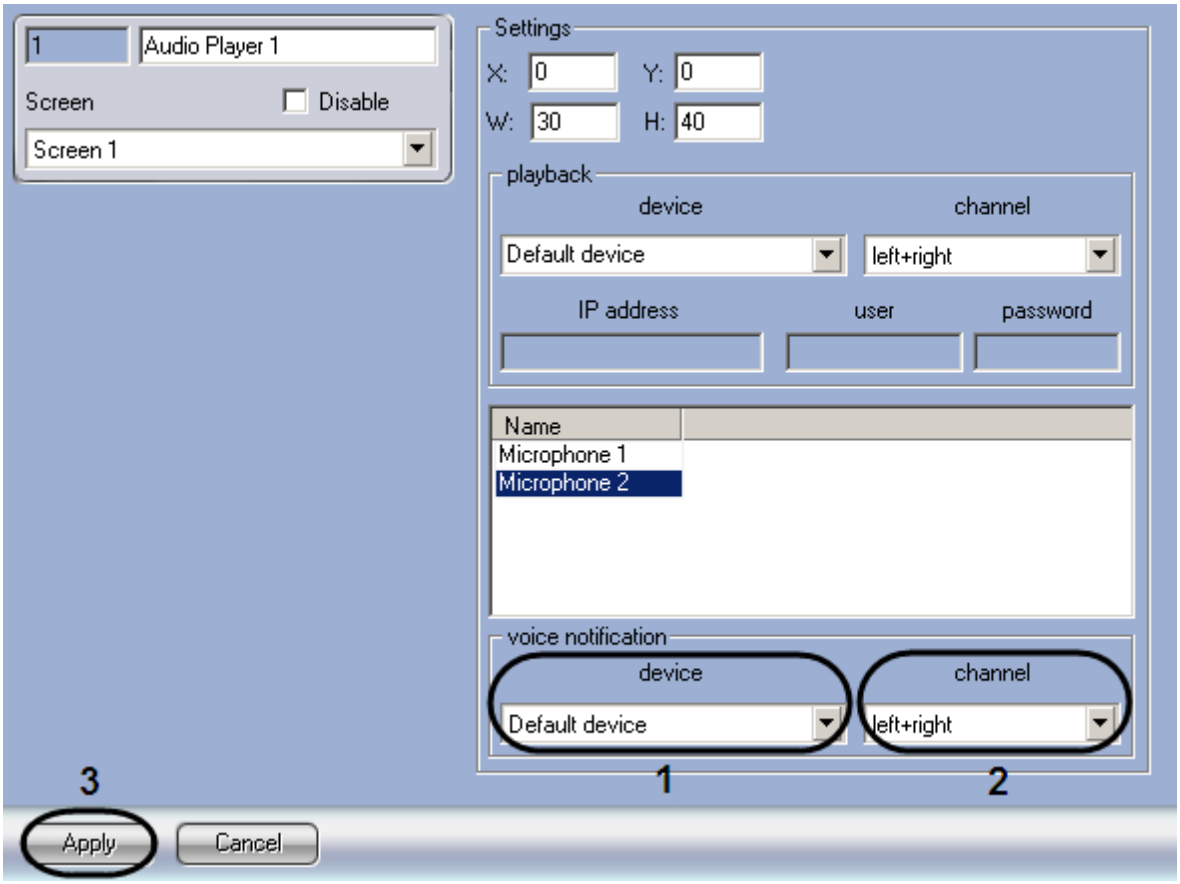


Figure 8.8-22. Setting up the voice notification

2. Select required voice notification device in «Device» dropdown list of «Voice notification» group (Figure 8.8-22, 1).

Note.

Standard sound card corresponds to «Default device».

To switch the voice notification off select «Switch off».

3. Select required voice notification channel in «Channel» dropdown list of «Voice notification» group (Figure 8.8-22, 2).
4. Click «Apply» button to save all the changes (Figure 8.8-22, 3).

Setting up the voice notification using «Audio player» object is completed.

8.8.11.2 *Setting up the voice notification using Sound notification object*

To set up the voice notification using «Sound notification» object do the following:

1. Create «Sound notification» object on the basis of «Computer» object in «Hardware» tab of «System setting» dialog box (Figure 8.8-23).

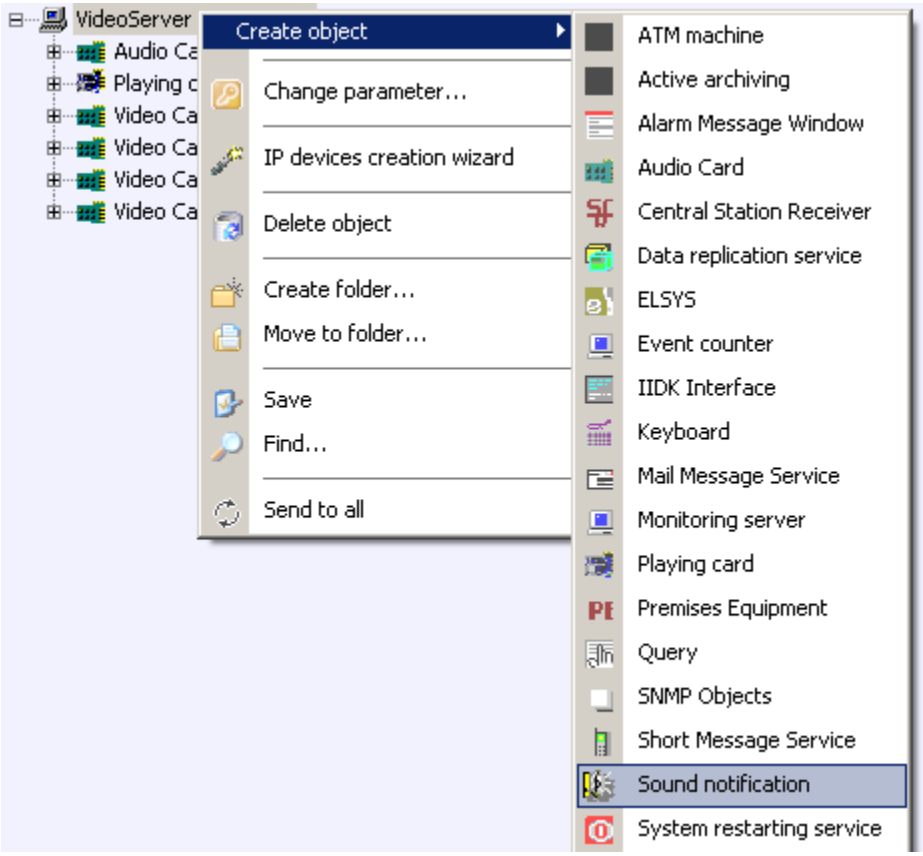


Figure 8.8-23. Creating the «Sound notification» object

2. Go to the setting panel of «Sound notification» object (Figure 8.8-24).

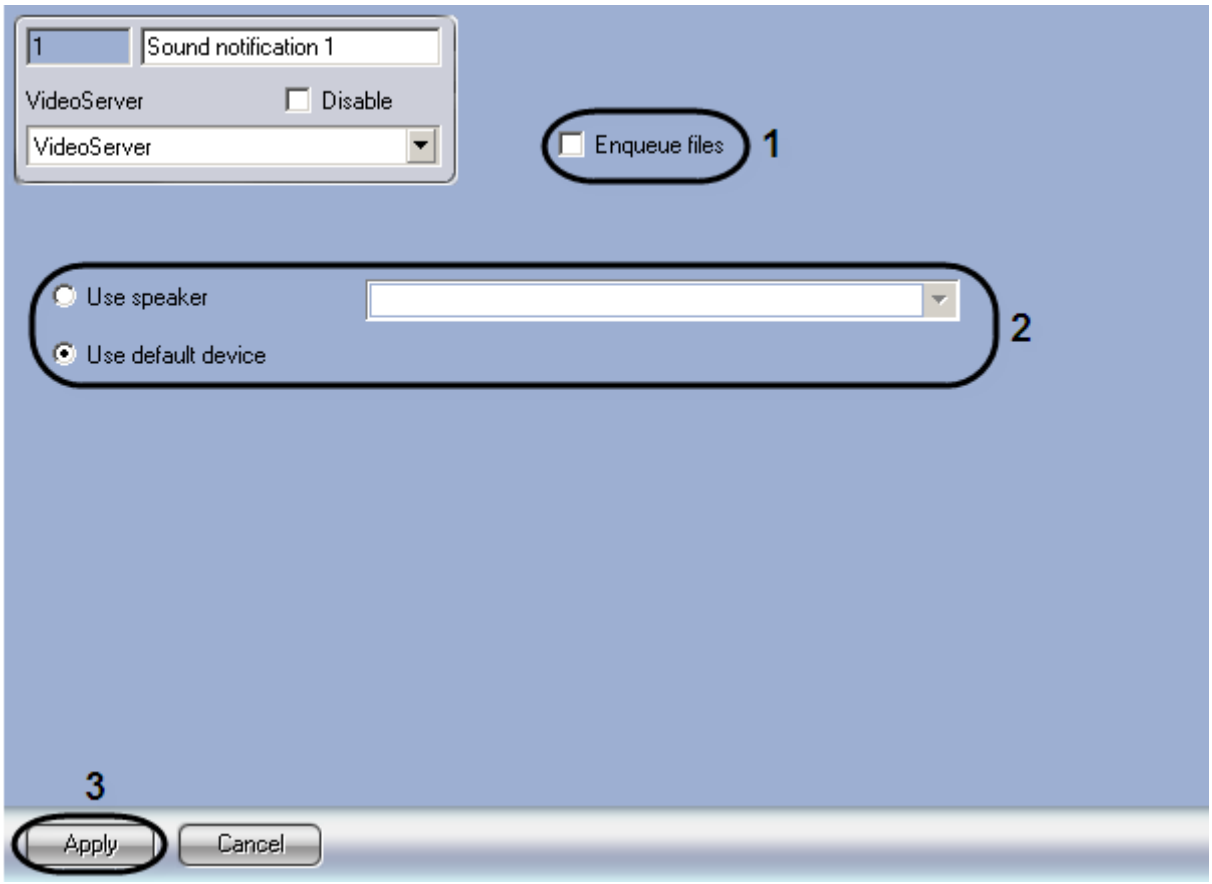


Figure 8.8-24. Setting panel of «Sound notification» object

3. If it's necessary, set «Enqueue files» check box in order to play alarm sound notification files that appear simultaneously one after another (Figure 8.8-24, 1).
4. If the voice notification device is a standard sound card, set the switch into «Use default device» mode. Otherwise set the switch into «Use speaker» mode and select the voice notification device in the dropdown list (Figure 8.8-24, 2).
5. Click «Apply» button to save all the changes (Figure 8.8-24, 3).

Setting up the voice notification using «Sound notification» object is completed.

8.8.12 Setting up the sound switch

You can direct audio signal that arrives from any sound source (microphone) to any sound detector (speaker) in order to play it back in INTELLECT™ software. The "Live sound switch" object is used for that.

8.8.12.1 *Creating and configuring the "Live sound switch" object*

The «Live sound switch» object is created on the basis of «Screen» object in «Interfaces» tab of «System setting» dialog box (Figure 8.8-25).

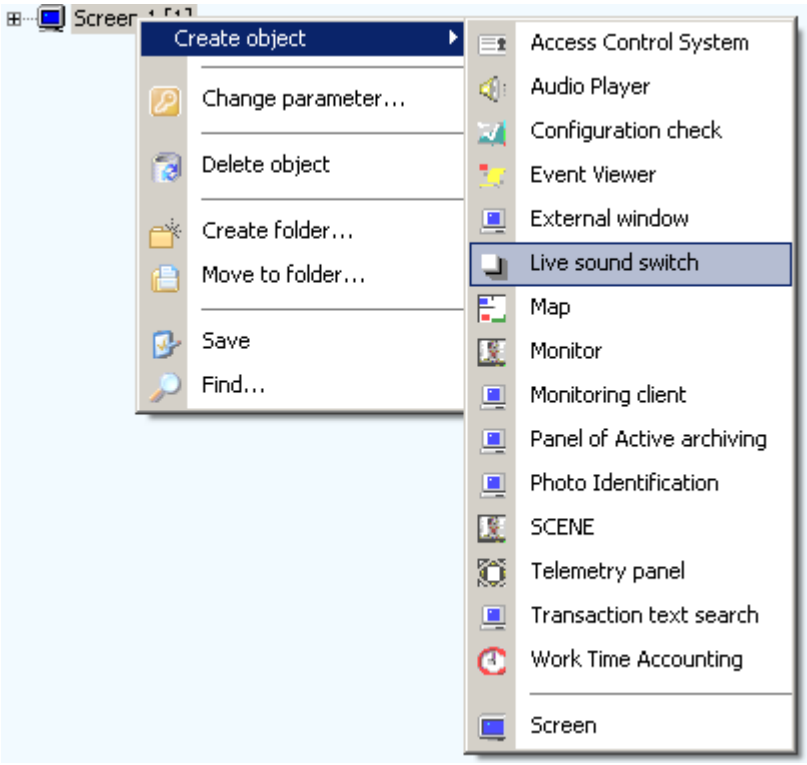


Figure 8.8-25. Creating the «Live sound switch» object

To set up the «Live sound switch» object do the following:

1. Go to the setting panel of the «Live sound switch» object (Figure 8.8-26).

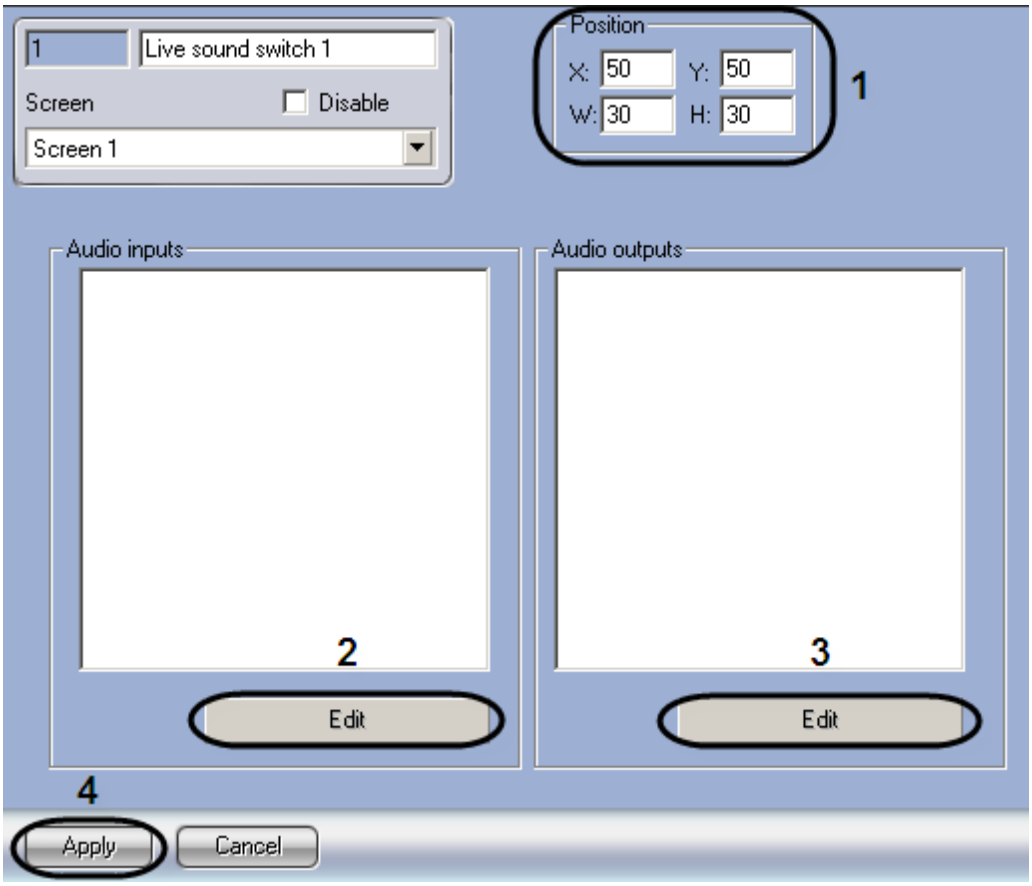


Figure 8.8-26. The setting panel of the «Live sound switch» object

2. To set the position of the «Live sound switch» object dialog box, set a value of the position data of the left upper corner in «X:», «Y:» fields and value of width and height of the box in «W:», «H:» fields (Figure 8.8-26, 1).
3. To add sound sources click «Edit» in «Audio inputs» (Figure 8.8-26, 2).

The window of sound sources list editing is displayed (Figure 8.8-27).

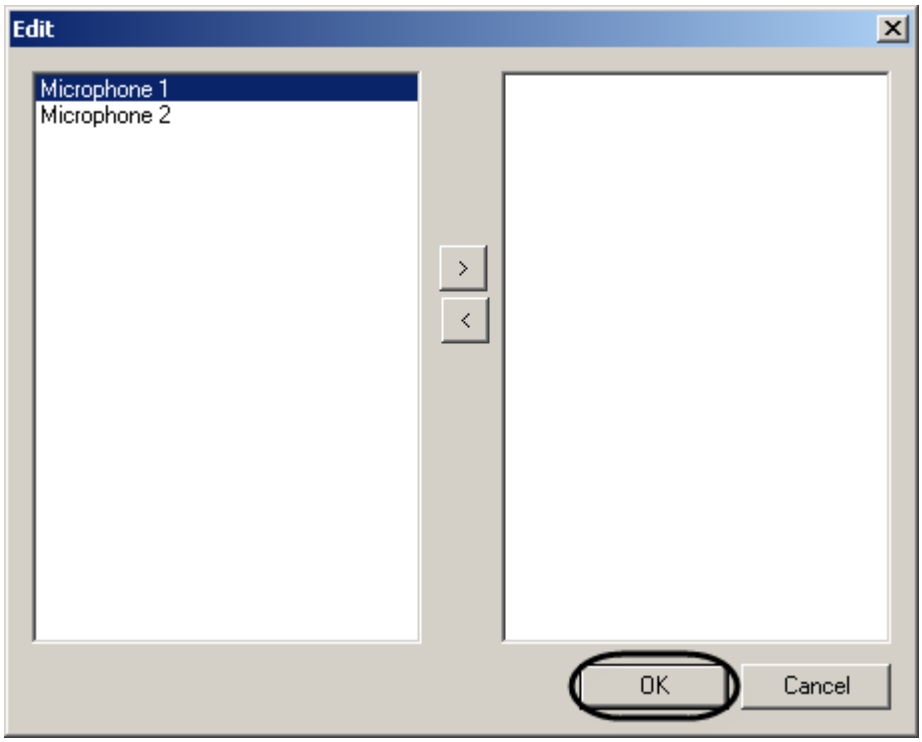


Figure 8.8-27. The window of sound sources list editing

4. Select the required sound sources in the left listand click > (Figure 8.8-27).

   As a result the selected sound sources are moved to the right list.

Note. To remove the sound sources from the right list select them and click < (Figure 8.8-27).

5. Click “OK” to save the changes (Figure 8.8-27).
6. To add the sound detectors click «Edit» in «Audio outputs» (Figure 8.8-26, 3). The sound detectors adding is made by analogy with sound sources adding (item 4-5).
7. Click «Apply» to save all the changes (Figure 8.8-26, 4).

The dialog box of the «Live sound commutator» object is displayed (Figure 8.8-28).

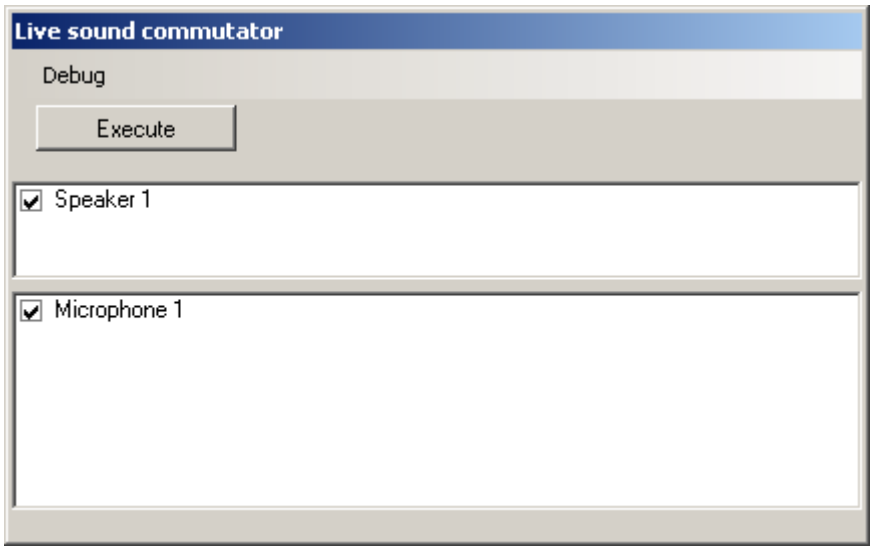


Figure 8.8-28. The dialog box of the «Live sound commutator» object

Setting up the «Live sound commutator» object is completed.

8.8.12.2 *Working with the «Live sound switch» object*

Working with the «Live sound switch» object is carried out in the dialog (Figure 8.8-29) the following way:

1. Set the check boxes against the microphones from which you want to receive the sound (Figure 8.8-29, 1).

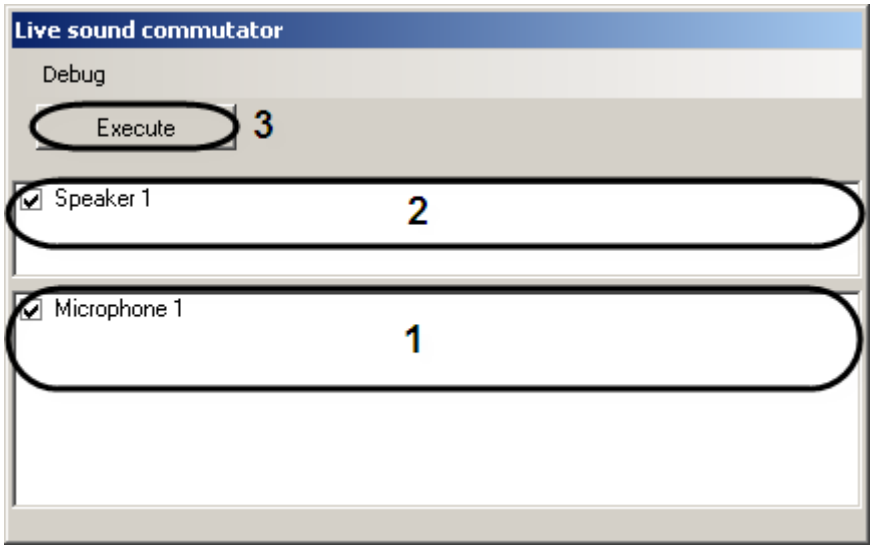


Figure 8.8-29. The dialog box of the «Live sound commutator» object

2. Set the check boxes against the speakers on wich the sound should be played (Figure 8.8-29, 2).
3. Click «Execute» (Figure 8.8-29, 3).

As a result the sound from selected microphones will go to the selected speakers.

Note. Sound in the speaker is mixed (overlayed) if several microphones are selected.

8.8.13 Features of standard sound card use

8.8.13.1 *General information on standard sound cards*

Standard sound cards are PCI cards or motherboard integrated modules, and are used to play back digital audio signals (2, 4, 6 or 8 sound channels) and/or to digitize analog video signals.

Usually standard sound cards have 1 output for connecting loudspeakers or headphones (modifications exist with 2 and 3 outputs for multi-channel sound realization and some others) and 1 input for connection of microphones.

Note. Sound cards have one plug for 2 channels to connect microphones to. To connect 2 microphones, resolder the connector or use the mini jack 2xRCA adapter.

Standard sound cards perform sound playback and audio signals digitization in parallel.

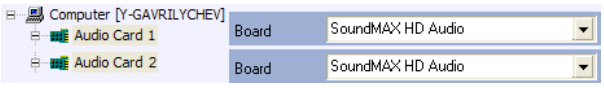
The audio signal sampling rate range depends on the audio card type. The INTELLECT™ software system sampling rate range, available to the installed card, is bounded by the 48 kHz maximum value.

8.8.13.2 *Features of standard sound card setup*

As a rule a standard sound card digitizes no more than 2 audio signals.

Each standard sound card is registered in the INTELLECT™ software by creating and setting up “Audio card” objects. “Audio card” objects are created on the “Hardware” tab on the base of the “Computer” object. During creation of the “Audio card” object for each standard sound card, the different values in the numbering sequence should be assigned to the “Board” parameter: for the first “Audio card” object the “FS 6 (0)” value should be selected, for the second one - “FS 6 (1)” and so on (Figure 8.8-30).

A.at single standard sound card registration



B. at registration of two standard sound cards of the same type

Figure 8.8-30. Example of “Board” settings for Realtek standard sound cards

To register the microphones, connected to the standard sound card input audio channels, create “Microphone” objects on the base of the “Audio card” object. Up to 2 “Microphone” objects may be placedn the base of a single “Audio card” object. The relevant hardware tree segment during the registration of the standard sound card and 2 microphones is shown in Figure 8.8-31.

Figure 8.8-31. The hardware tree segment at registration of a standard sound card and 2 microphones

After the sound card registration in the INTELLECT™ system, the values should be assigned to the "Channel" settings of the "Microphone" objects, according to the channel numbers of the microphone connections to a standard sound card.

To connect more than one microphone to a standard sound card, the mini jack 2xRCA adapter is used. The mini jack 2xRCA adapter numbering layout is shown in Figure 8.8-31. Examples of "Microphone" object settings with one and two FS-5 video capture cards, registered in the INTELLECT™ system, are shown in Figure 8.8-32 and Figure 8.8-30 correspondingly.

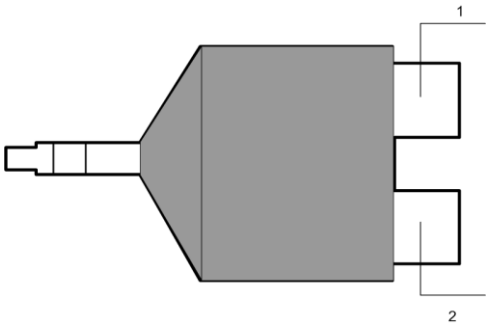
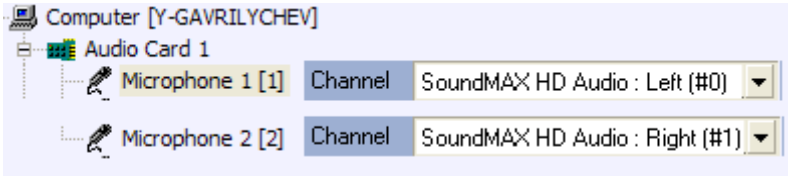
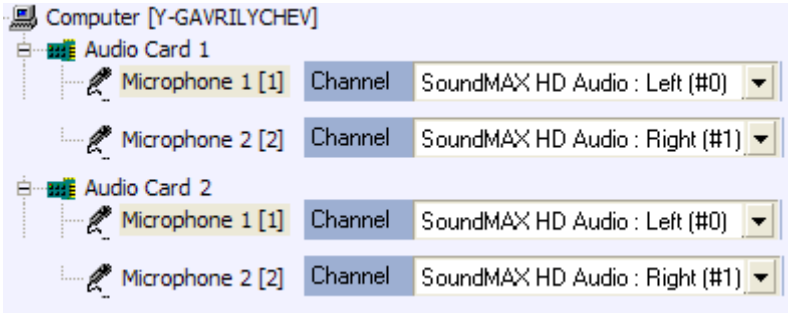


Figure 8.8-32. Mini jack 2xRCA adapter numbering layout



A.for a single standard sound card



B. for two standard sound cards

Figure 8.8-33. Examples of "Microphone" object settings

8.8.14 Using multi-channel audio capture devices

8.8.14.1 *General information on multi-channel audio capture devices*

Multi-channel audio capture devices are PCI cards (for example, MidiMan Delta, Comart Hera, Olha9P) or external hardware and software modules (for example, Echolot USB-32), used for digitization and processing of 2 or more audio signals. For the list and features of INTELLECT™ software compatible multi-channel audio capture devices, see the Integration section on the site of AxxonSoft company:
http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.

Multi-channel audio capture devices reproduce sound and digitize audio signals in parallel, or sound is reproduced by the standard sound cards. The audio signal sampling rate range depends on the audio capture device type. The INTELLECT™ software system sampling rate range, available to the installed card, is limited to the 48 kHz maximum value.

8.8.14.2 *Setting up multi-channel audio capture devices*

Usually multi-channel audio capture devices digitize 2 or more audio signals, de on the device type.

Each multi-channel audio capture device is registered in the INTELLECT™ software by creating and setting up “Audio card” objects. “Audio card” objects are created on the “Hardware” tab on the base of the “Computer” object. During creation of the “Audio card” object for each multi-channel audio capture device the value, corresponding to its name, should be assigned to the “Board” parameter (Figure 8.8-34).

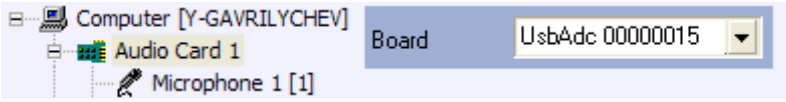


Figure 8.8-34. Example of the “Board” settings at Echolot USB-32 multi-channel audio capture device registration

To register the microphones, connected to the multi-channel audio capture device input audio channels, create “Microphone” objects on the base of the “Audio card” object. The number of “Microphone” objects, allocated on the base of a single “Audio card” object, is defined by the number of audio input channels and restricted by the License key file. The relevant hardware tree segment during the registration of the standard sound card and 8 microphones is shown in Figure 8.8-35.

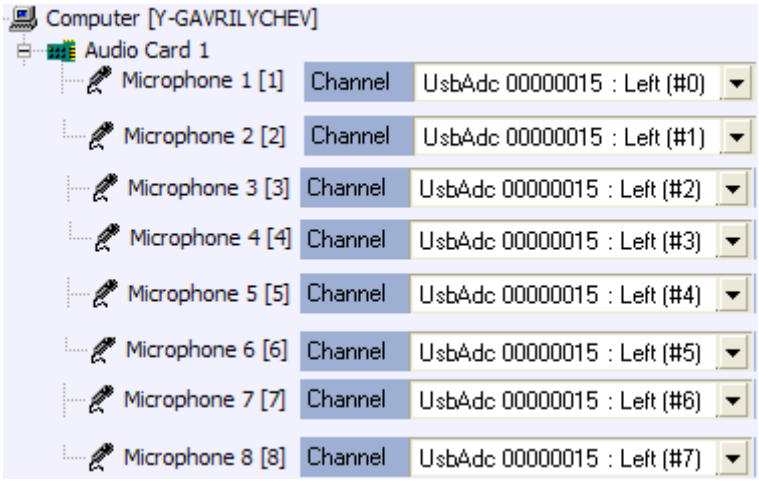


Figure 8.8-35. The hardware tree segment at registration of a Eholot USB-32 multi-channel audio capture device and 8 microphones

After registration in the INTELLECT™ system, the values should be assigned to the “Channel” settings of the “Microphone” objects according to the channel numbers of the microphone connections to the audio capture device. An example of “Microphone” object settings is shown in Figure 8.8-35.

8.8.15 Using IP-devices

8.8.15.1 *General information on IP-devices*

INTELLECT™ software system supports audio signals reception, digitization, processing and playback options, using audio capture IP-devices. IP-cameras and IP-servers built-in microphones or the external analog microphones, connected to IP-devices, may be used for audio signals receipt, digitization and processing. External IP-loudspeakers or headphones, connected to IP-servers may be used for audio signals playback. For the list of INTELLECT™ software compatible IP-devices for audio signal reception, digitization, processing and playback, see the Integration section on the site of AxxonSoft company:
http://www.axxonsoft.com/products/axxon_enterprise/core_functionality/integration.php.

The audio signal sampling rate range depends on the IP-device type, used as an audio capture device. The INTELLECT™ software system sampling rate range, available for the installed card, is limited to the 48 kHz maximum value.

8.8.15.2 *Setup of video signals transmission to IP-devices*

INTELLECT™ software has the facility to transmit audio signals from microphones to IP-devices and to play them back with loudspeakers or headphones, connected to IP-devices.

Audio signal transmission to IP-devices can be performed in two ways:

1. with the help of interface object the Audio player;
2. with the help of system object the voice notification service.

The object Audio player is used to transmit audio signals from the selected microphones on the supported IP-devices.

To set up the transmition of audio signals with the help of the Audio player object do the following:

1. Go to the tab of setting up interface object“Audio Player” (Figure 8.8-36).

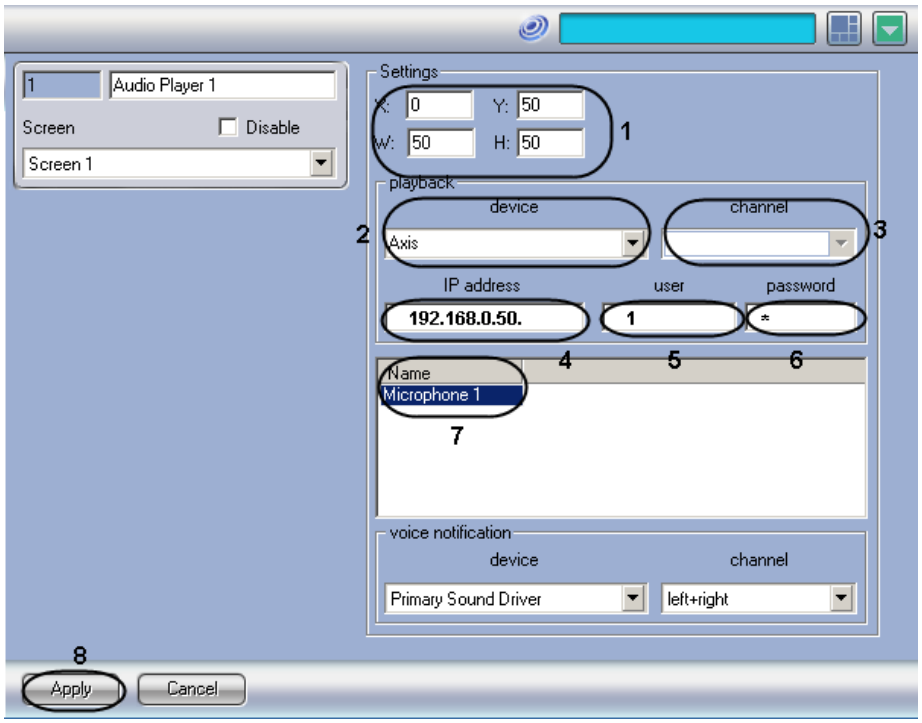


Figure 8.8-36. Setup example of audio signals' playback with the help of Audio Player

1. Enter the settings of the "Audio player" interface box (Figure 8.8-36, 1).

2. Select the required IP-device from the dropdown list Device (Figure 8.8-36, 2).

Note. Select the value Virtual Cable to transmit audio signals to IP-device Bosch (See. Setting up the audio signal transmition to IP-device Bosch)

3. From the dropdown list Channel, select the required audio signals'playback channel (Figure 8.8-36, 3).

4. In the field IP address enter the IP address of the selected IP-device (Figure 8.8-36, 4).

5. If necessary enter user name and password in the fields User and Password to connect to the selected IP-camera (Figure 8.8-36, 5-6).

6. From the dropdown list in the colomn Name select the object's name Microphone, from which audio signal has to be transmitted to the selected IP-device (Figure 8.8-36, 7).

7. Repeat step 7 for each selected microphone object.

8. Click the "Apply" button to save all the changes. (Figure 8.8-36,8).

Setup of the audio signal's transmition with the help of Audio player object is completed.

Note. To activate audio signals'transmition from the microphone to the IP-device click the button *(«Interception from microphone») in the "Audio player" interface box.*

«Voice notification» object is used to transmit files of WAV format to the supported IP-devices. Set up order of the object «Voice notification service»is described in the Setiing up the voice notification service.

Note. With joint use of the Audio player and voice notification service, bear in mind, that the sampling rate of audio signals, fed from microphones via the Audio player ("Sample rate" setting of "Audio card" object) and that of the audio files, transmitted with the voice notification service, must be the same.

8.8.15.3 *Setting up the transmission of audio signals to IP-device Bosch*

Transmission of audio signals to IP-device Bosch is performed with the use of Virtual Audio Cable driver.

Note. Information about program «Virtual Audio Cable» one can find in official reference manual of this program.

To set up the transmission of audio signals to IP-device Bosch do the following:

1. Install Virtual Audio Cable driver and set it in accordance with Figure 8.8-37, Table 8.8-1.

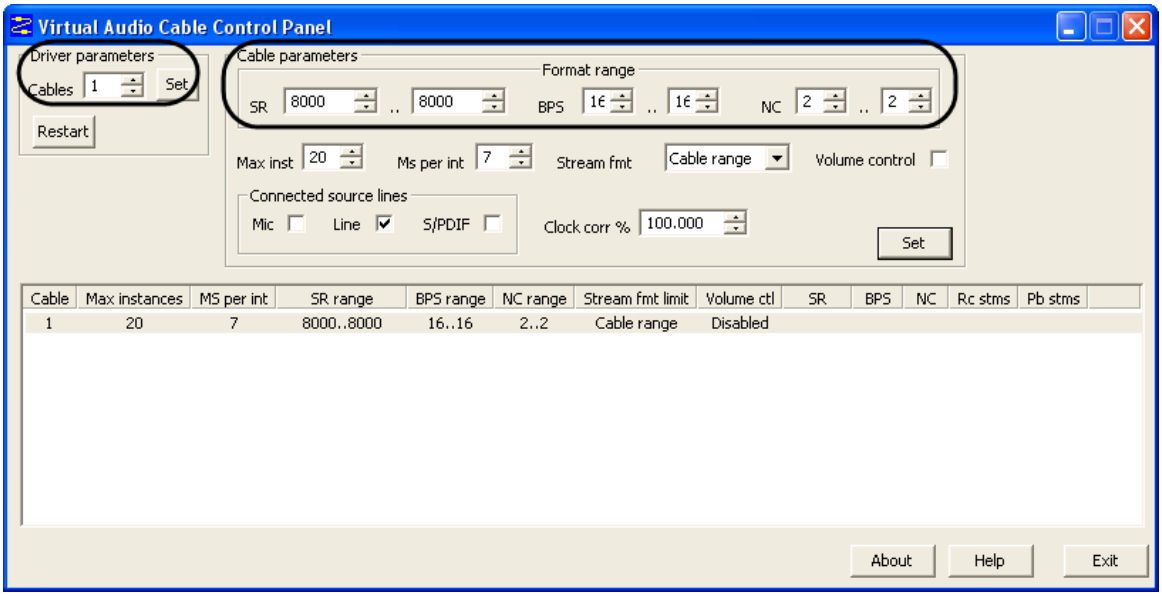


Figure 8.8-37. Example of setting up the Virtual Audio Cable for transmitting the audio signals to IP-device Bosch

Table 8.8-1

Driver set up utility	Group	Parameter	Description of parameter	Range of parameter's value
«Start» ⇨ «All programs» ⇨ «Virtual Audio Cable» ⇨ «Control Panel»	Driver parameters	Cable	Number of virtual audio cables	1
	Cable parameters ⇨ Format range	SR	Sampling rate of audio signals	8000..8000
		BPS	Depth of audio signals sampling	16..16
		NC	Number of channels of virtual audio cable	2..2

2. Start Intellect program complex.

3. Go to the settings panel of system object Audio card (Figure 322, Registration of audio input device and microphones in Intellect program complex).

4. From the dropdown list Board select the required IP-device Bosch(Figure 8.8-38, 1)

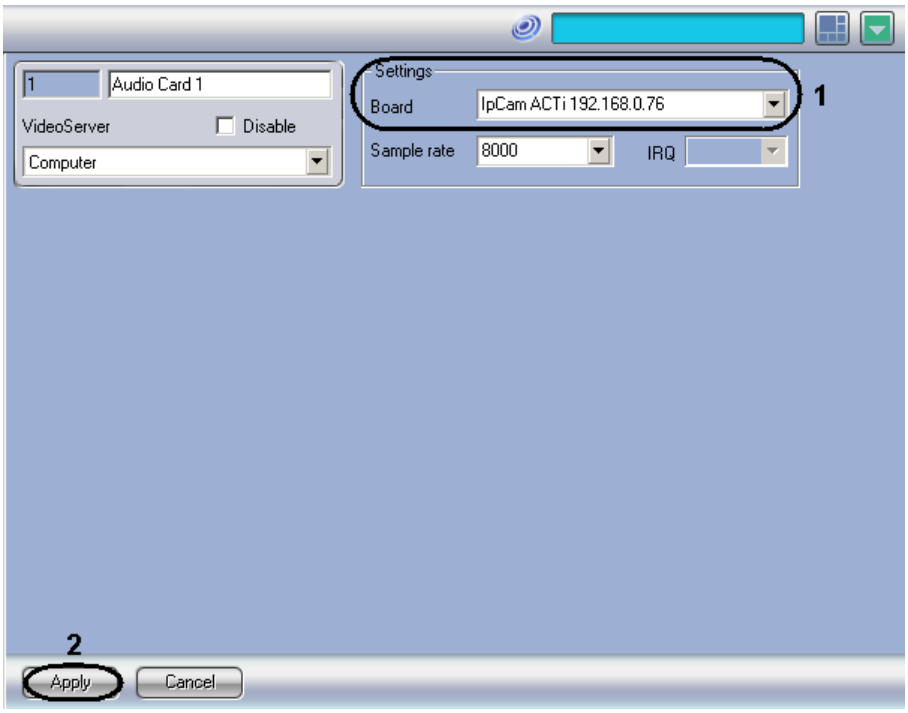


Figure 8.8-38. Setting up sound card Bosch

5. To save the changes click Apply button (Figure 8.8-38, 2).

6. Create Microphone object on the base of this object and go to its settings panel (Figure 8.8-39, Registration of audio input device and microphones in the Intellect program complex).

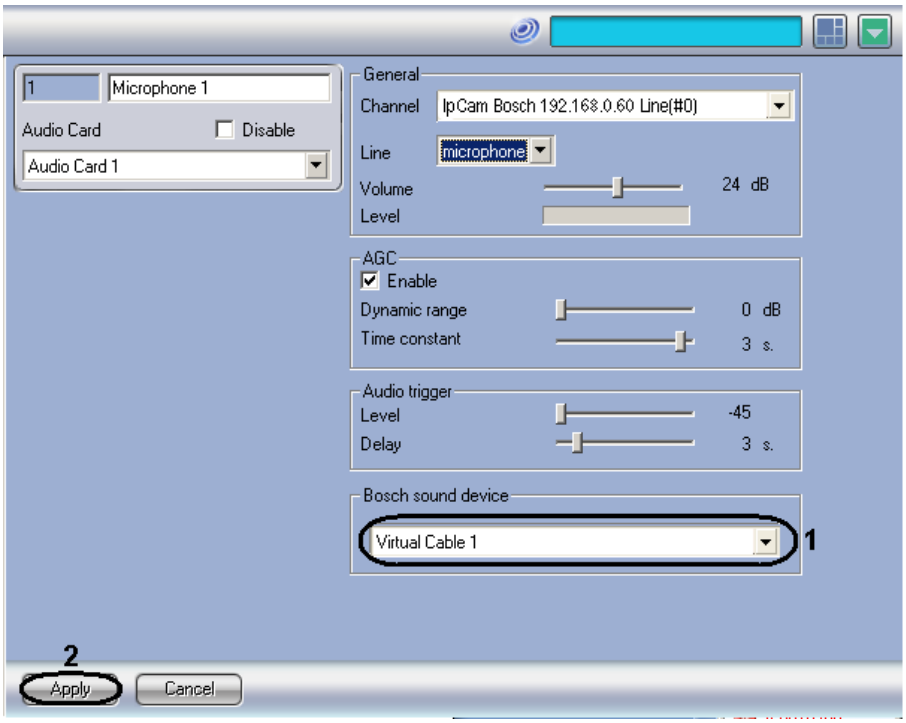


Figure 8.8-39. Selection of Bosh sound device

7. From the dropdown list Bosh sound device select the value Virtual Cable (Figure 8.8-39, 1).

8. To save the changes click Apply button (Figure 8.8-39, 2).

9. Go to the settings panel of the Audio player interface object(Figure 8.8-40, Setting up the audio signals playback with the use of Audio player).

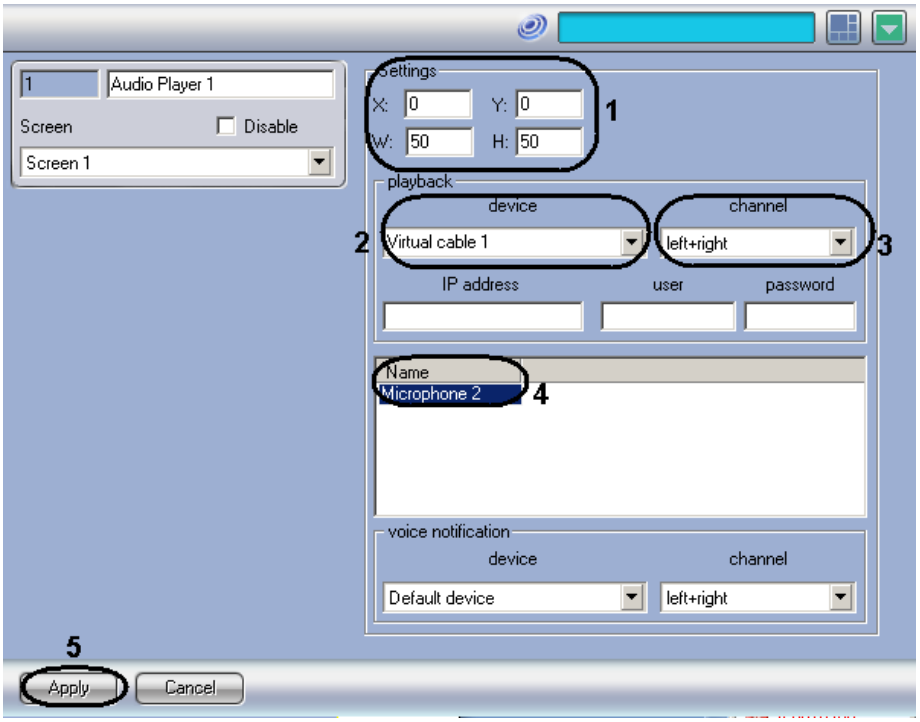


Figure 8.8-40. Setting up Audio player object for transmitting audio signal to IP-device Bosch

10. Set the coordinates and size of the “Audio player” interface box (Figure 8.8-40, 1).

11. From the dropdown list Device select the value Virtual Cable (Figure 8.8-40, 2).

12. From the dropdown list Channel select the required chanal of audio signals playback (Figure 8.8-40, 3).

13. From the dropdown list in the column Name select the name of Microphone object which audio signal has to be transmitted to IP-device Bosch (Figure 8.8-40, 4).

14. Repeat step for all the required Microphone objects.

15. To save the changes click Apply button (Figure 8.8-40, 5).

16. Restart Intellect program complex.

17. Setting up the transmission of audio signals to IP-device Bosch is completed.

Note. To enable the transmission of audio signals from the microphone to IP-device Bosh click the button *(«Interception from microphone») in the “Audio player” interface box.*

8.8.15.4 Configuring transmission of duplex audio signals to IP-devices

Transmission of duplex audio signals to IP-devices is configured by coupling speakers, registered in INTELLECT™ software, with microphones.

Note. Configuration of transmitting audio to a device is available for some Axis and JVC IP-cameras.

To configure transmission of duplex audio signals to IP-device, do the following:

1. Create and configure the “Camera” object on the base of the “Video capture card” object.
2. To work with a microphone of an IP-camera, create and configure the “Audio card” and “Microphone” objects (see “Registration of audio cards and microphones in INTELLECT™ software” section).
3. To work with a speaker of a camera, create and configure the “Playing card” and “Speaker” objects (see “Configuring audio playback” section).
4. To redirect a signal from a microphone to a speaker of a camera, create and configure the “Live sound switch” object (see “Creating and configuring the “Live sound switch” object” section).

As a result one can direct audio to a speaker of a camera while working with the “Live sound switch” object (see “Working with the «Live sound switch» object” section).

8.9 Setup and connection of the special keyboard

The “Special keyboard” device is used for efficient control of the main functions of interface objects in the INTELLECT™ software. The “Special keyboard” allows to control the following system’s main functions:

1. Video surveillance
2. Audio control
3. Telemetry
4. Events protocol
5. Macros
6. Sensor/Relay

Setting up the interaction of the “Special keyboard” device is performed with several stages:

- Connect the “Special keyboard” to the Workplace
- Setting up the keyboard layout(programming)
- Creation and set up of the “Special keyboard” object in the Intellect program complex
- Setting the keyboard layout’s rules of interpretation by Intellect program complex in the ini-file.

Note. When ini-file is used, that is delivered in the PC Intellect distributive, possibility of control of 16 cameras on one monitor is realized. To get ini-file, that solves more difficult tasks of interface objects control (e.g. on two or more monitors), one should apply to technical support service of AxxonSoft group company.

INTELLECT™ software supports the following models of the Special keyboard” device:

1. PROMAG KB-840. Is delivered beginning from version 4.7.5 of PC Intellect as a substitute of PROMAG KB-950A model

2. PROMAG KB-950A. Out of production.

Note. Information on connecting and setting up the PROMAG KB-950A model is the same as for PROMAG KB-840. Layoutin is described in the documentation for INTELLECT™ version 4.7.4 (see http://www.axxonsoft.com/support/documentation*).*

8.9.1 Connecting the special keyboard to the Workstations

To connect the "Special keyboard" to a workstation, follow the sequence:

1. Connection of the special keyboard to the computer PS/2 port.

2. One by one connection of other special keyboard devices to the special keyboard device (optionally)

3. Connection of standard keyboard to the special keyboard device

Note. When PC Intellect is used, up to ten special keyboard devices may be connected to one computer.

Standard safety regulations should be sticked to when the special keyboard device is being connected to the computer.

To connect the special keyboard device to the computer, do the following:

1. Switch off the computer power supply

2. Diskonnect the standard keyboard from the computer system unit.

3. Connect the special keyboard to the computer PS/2 port with the help of interface cable(Figure 8.9-1) .

Figure 8.9-1. The special keyboard device

Note. Before connecting the "Special keyboard" device, make sure that your hands are free of static electricity. To prevent damage to the system unit, it is recommended to use special protectors from static electricity (for example, an anti-static strap).

4. If necessary, connect interface cable of other special keyboard device to PS/2 pin of the connected device (Figure 8.9-2)

5. Repeat step 4 for all the required devices of special keyboard

6. Connect interface cable of standard keyboard to to PS/2 pin of the last connected special keyboard device (Figure 8.9-2).

Figure 8.9-2. Connecting the standard keyboard to the "Special keyboard" device

7. Switch off the power of computer

Connecting the Special keyboard device to a workstation is completed.

8.9.2 Setting up the layout of the special keyboard device

The special keyboard, delivered with the INTELLECT™ system, has already been programmed: for every key there is set a special set of characters that are correctly recognized in the system. On default the device layout corresponds to the object special keyboard with 0 identification number. Interpretation rules of special keyboard layout are set in the configuration file «<Intellect>\Modules\keyb_0.ini».

It is possible to reprogram the Special keyboard device for the Special keyboard object with 1 and over identification number.

Setting up the Special keyboard device (programming) is done in two stages:

1. Installation of software for programming the Special keyboard device

2. Programming the Special keyboard device

8.9.2.1 *Installation of the software for programming of the "Special keyboard" device*

Programming the keys of the Special keyboard device is performed with the help of software that is included in the delivery set of the Special keyboard device.

Special keyboard «KB840» is programmed with the help of «Visual KeyMaker» program.

Installing «Visual KeyMaker» program is done in the following way:

1. Insert the CD from the delivery set of the "Special keyboard" device into CD-ROM driver.
2. The auto explorer of the CD will be run. The given explorer contains a list of items, available for installation and exploring.

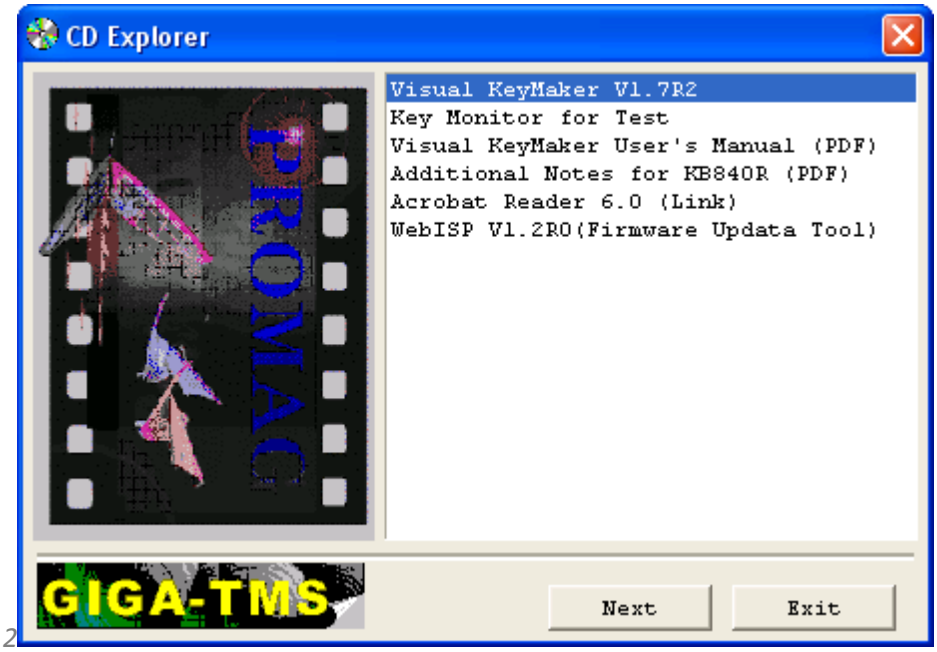


Figure 8.9-3. CD Explorer

3. Select the value «Visual KeyMaker» from the list of available items and then click «Next» (Figure 8.9-3).
4. Preperation window for running "InstallShield Wizard" will open as a result (Figure 8.9-4).

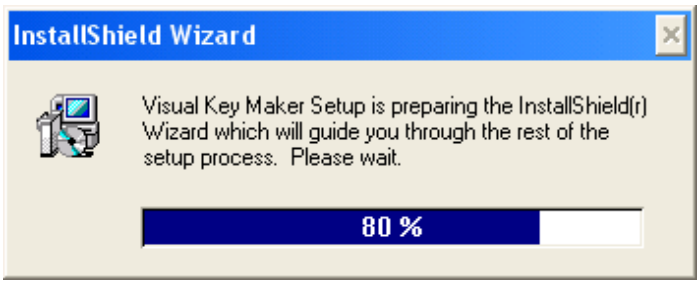


Figure 8.9-4. Preparation to run InstallShield Wizard

5. When the preparation to run «InstallShield Wizard» is over, a welcome message dialog window of the installation will be displayed. (Figure 8.9-5). Click «Next» to continue, click «Cancel» to cancel installation.

Figure 8.9-5. Welcome dialog window

6. Set the directory of program installation «Visual KeyMaker» (Figure 8.9-6). To change the directory, given on default, click «Browse». In the opened dialog window «Choose Directory» select the required folder and then click «OK».

7. Click «Next» to continue, click «Cancel» to cancel installation (Figure 8.9-6).

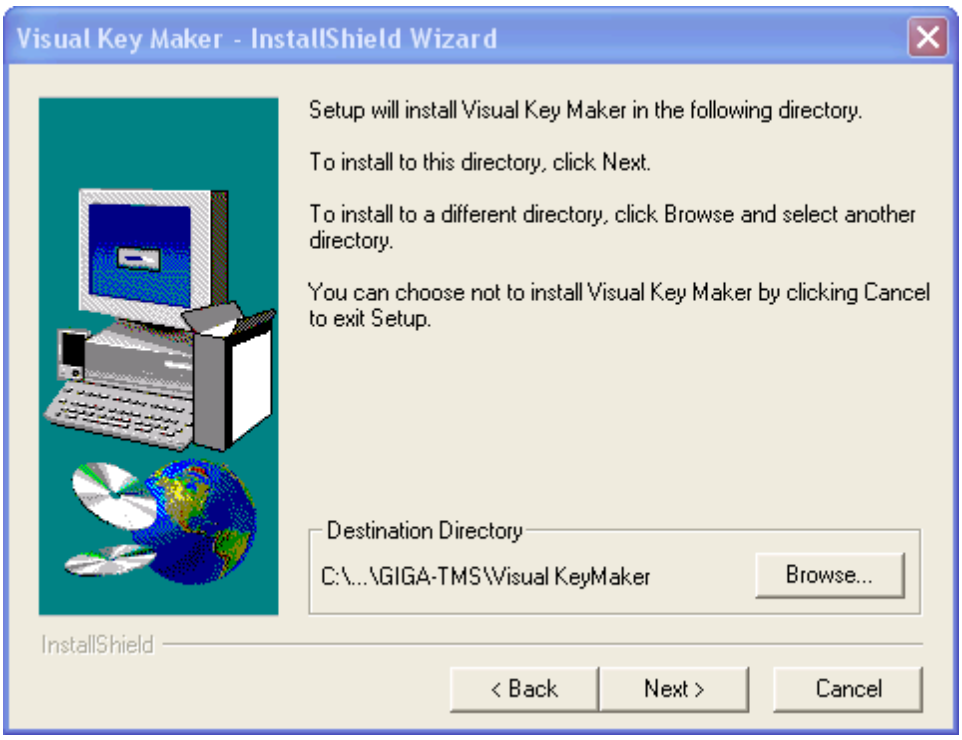


Figure 8.9-6. «Visual KeyMaker» installation directory

8. Enter the name of a program folder, created in Windows OS “Start” menu (displayed by selecting “Start” -> “All programs”), where the launching commands for this program will be displayed (Figure 8.9-7).

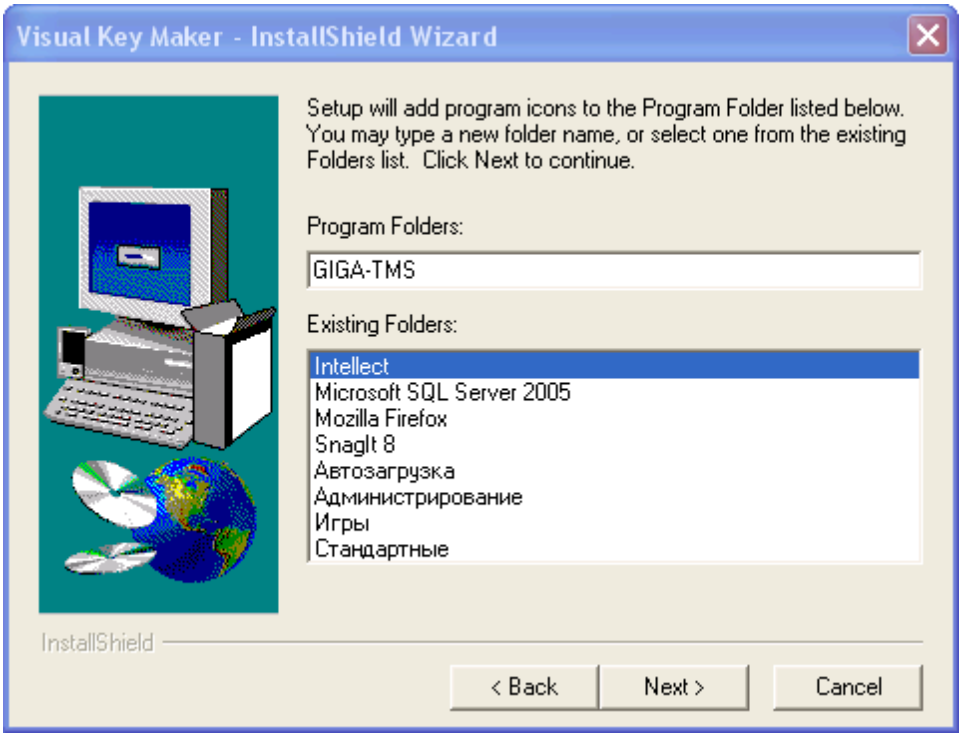


Figure 8.9-7. Name of folder, created in Windows OS Start menu

9. Check installation parameters, set during step 6.To change installation parameters click «Back». To run installation process, click «Next». To exit from installation program click «Cancel» (Figure 8.9-8).

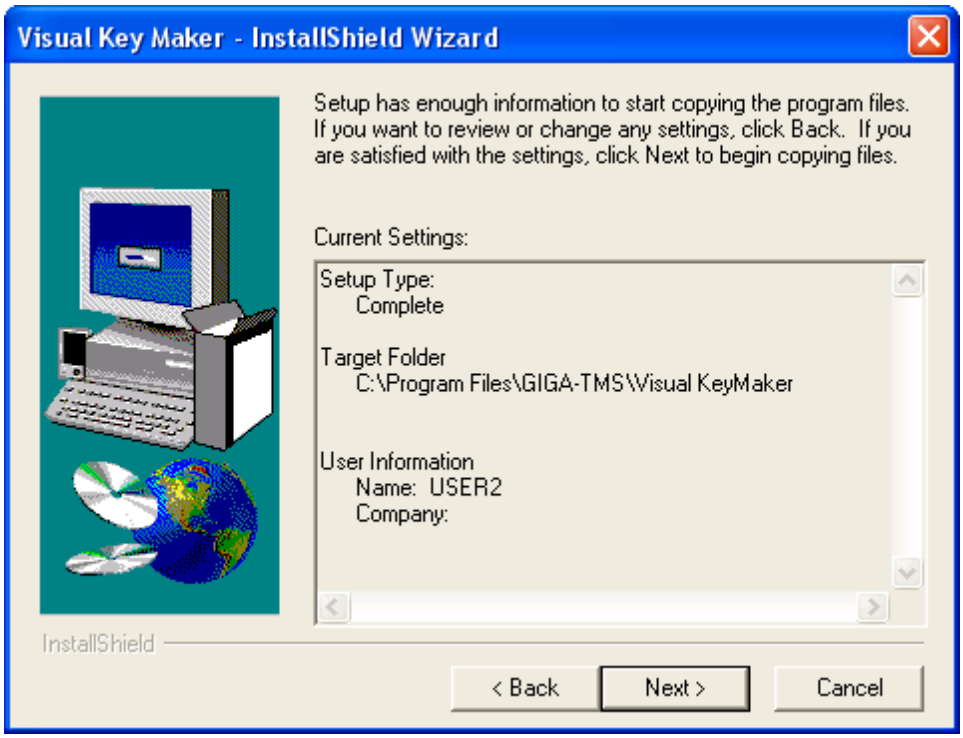


Figure 8.9-8. Checking installation parameters

10. After copying the files, the folder, created in OS Windows Start menu and ending the installation dialog window will open (Figure 8.9-9,Figure 8.9-10).

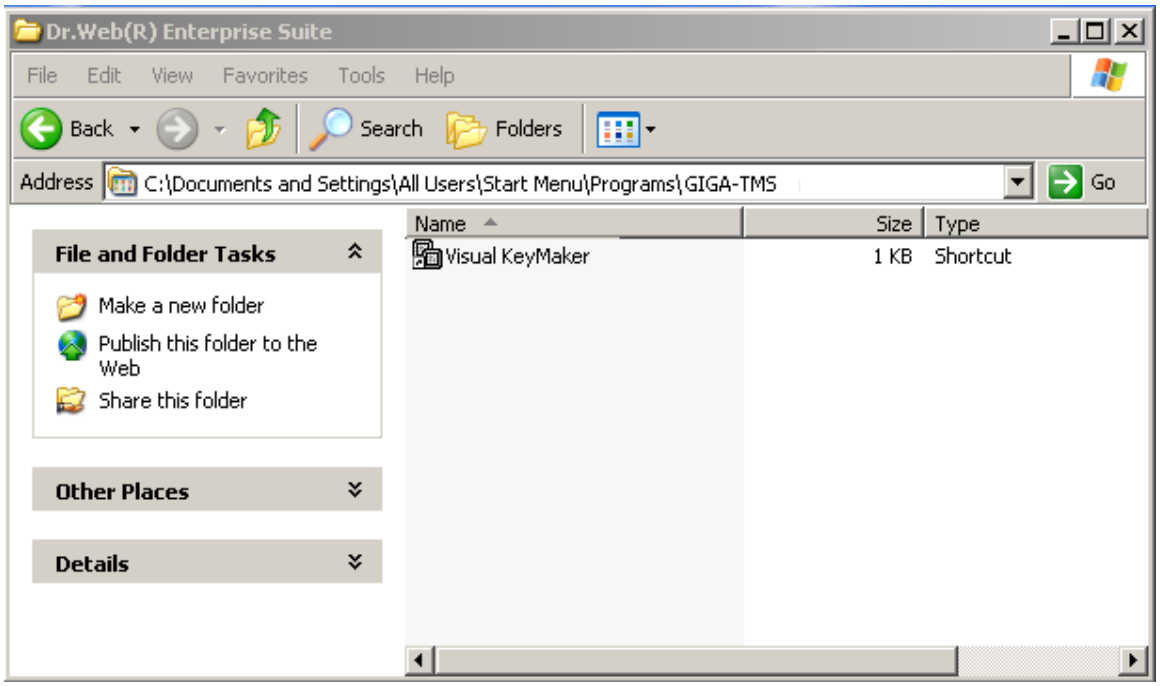


Figure 8.9-9. Folder in OS Windows Start menu

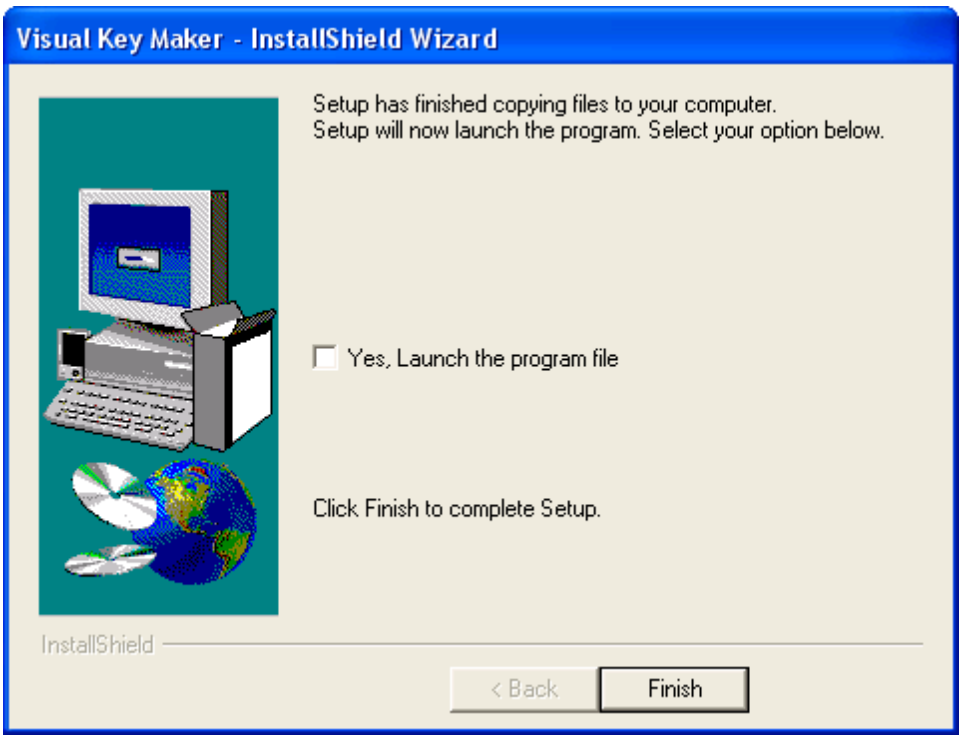


Figure 8.9-10. Ending the installation

11. To launch «Visual KeyMaker» program after ending the installation, set «Yes, Launch the program file» checkbox (Figure 8.9-10).

12. Click «Finish» to finish installation (Figure 8.9-10).

Installation of «Visual KeyMaker» is completed.

8.9.2.2 *Programming the "Special keyboard" device in Windows OS*

Note. Detailed information about programming the Special keyboard is given in official manual «Visual KeyMaker».

To program the Special keyboard device do the following:

- Connect the Special keyboard device to computer's COM-port with the help of connection plug RS-232, that is included in the delivery package (Figure 8.9-11).

Note. Connection of the Special keyboard device to serial port should be performed, when the power of the computer is diskonnected. Otherwise the device may be damaged.

Figure 8.9-11. Connecion of the Special keyboard device to computer's COM-port

- Run «Visual KeyMaker» on the computer with connected Special keyboard device. It is launched from the Windows start menu: «Start» ⇨ «Programs» ⇨ «GIGA-TMS» ⇨ «Visual KeyMaker».

Note. «Visual KeyMaker» program may be also launched by the Windows "Run" command, which is displayed from the "Start" menu: «Start» ⇨«Run». Enter the full path to the file, which launches the VKeyMaker.exe application, in the "Open" field.

- As a result the "Visual KeyMaker" interface box will open. In case when Special keyboard device is correctly connected to computer's COM-port, COM value will be displayed in the bottom part of the interface box (Figure 8.9-12).

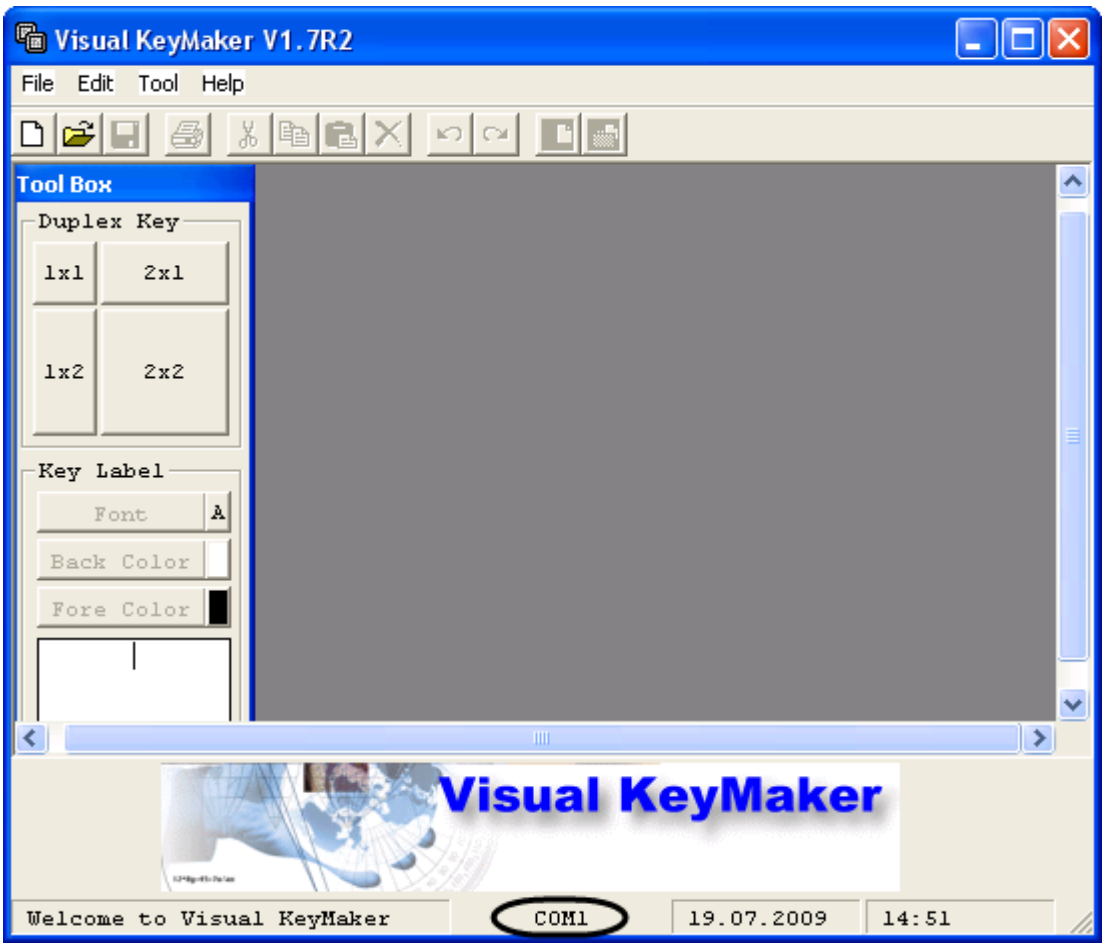


Figure 8.9-12. «Visual KeyMaker»program interface

- Open file with settings for the Special keyboard device programming. For this run the main menu's command «File» ⇨ «Open», in the standard dialog window «Open» select the required file and click Open (Figure 8.9-13).

Note. To get the file with settings for the Special keyboard device programming apply to Technical support service of AxxonSoft company.

File with settings for PROMAG KB-840 model programming has tab. extension. File name corresponds to the suggested identification number of the Special keyboard object in Intellect PC and a form «kb840-0n», where n – object number from 0 to 9. In case, when one Special keyboard device is used, it is recommended to use «kb840-00.tab» settings file.

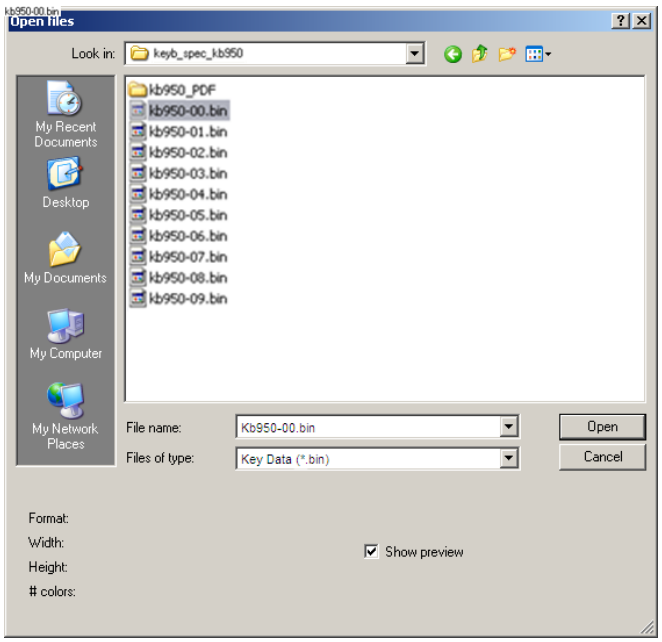


Figure 8.9-13 Selection of settings file for programming

- In result settings for programming the Special keyboard device will be displayed in the "Visual KeyMaker" interface box (Figure 8.9-14).

Note. Every key in the layout has a set of symbols of the kind (<'>, <n>, <xx>) – see.Figure 8.9-14.Symbols have the following value:

1. *<'> - symbol, that let Intellect PC recognize, that command has come from the Special keyboard device*
2. *<n> - single-valued identification number of the Special keyboard object, corresponding to the connected device*
3. *<xx> - two-digit key number (numeration is performed from the left to the right, top-to-bottom).*

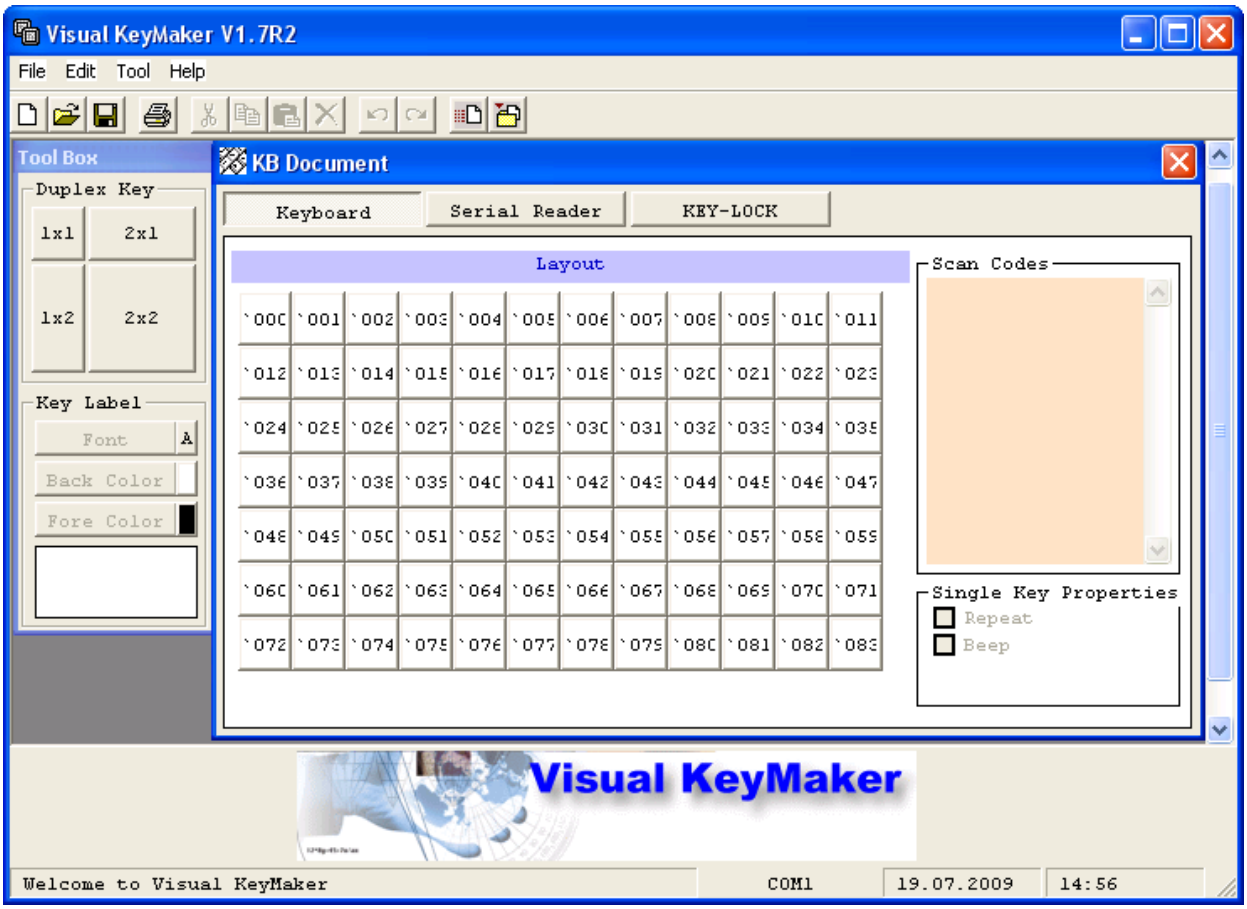


Figure 8.9-14. Settings for programming

- To apply settings for programming the Special keyboard device run the command for the main menu: «Tool» -> «Download to KB».
- Indicator of command's execution will be displayed in the window «Progress Bar» (Figure 8.9-15).

Note. Slowdown of all processes in OS Windows is possible during programming operation.

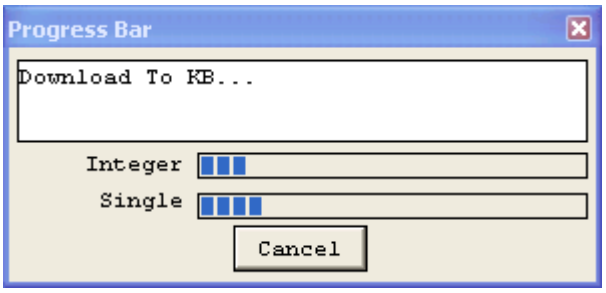


Figure 8.9-15. Indicator of command's execution

- After successful operation «Download Reader Settings to KB OK» will open. Click «OK» to close the window.

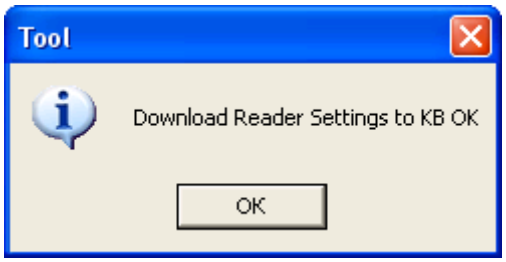


Figure 8.9-16. Shutting-down the programming

- Run the command of the main menu :«File» ⇨ «Exit».
- As a result dialog window prompting to save the file with the Special keyboard device layout will open. Click No to exit without saving the layout (Figure 8.9-17).

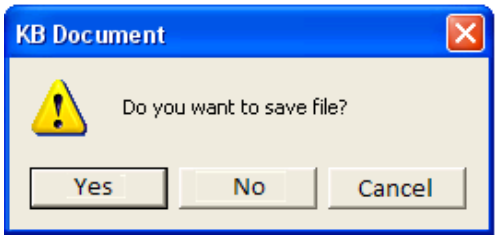


Figure 8.9-17. Exit without saving the layout

- Connect the power of computer and then diskonnect the Special keyboard device from COM-port

Programming the Special keyboard device is completed.

Note. After programming the Special keyboard device it is recommended to sign on the opposite side of the device its number (n) based on the used number for programming kb840-0n.tab file.

8.9.3 "Special keyboard" device setup in INTELLECT™ software

To create and set up the "Special keyboard" system object in INTELLECT™ software, follow the sequence:

1. Open the "Hardware" tab in the System Settings dialog box (Figure 8.9-18).

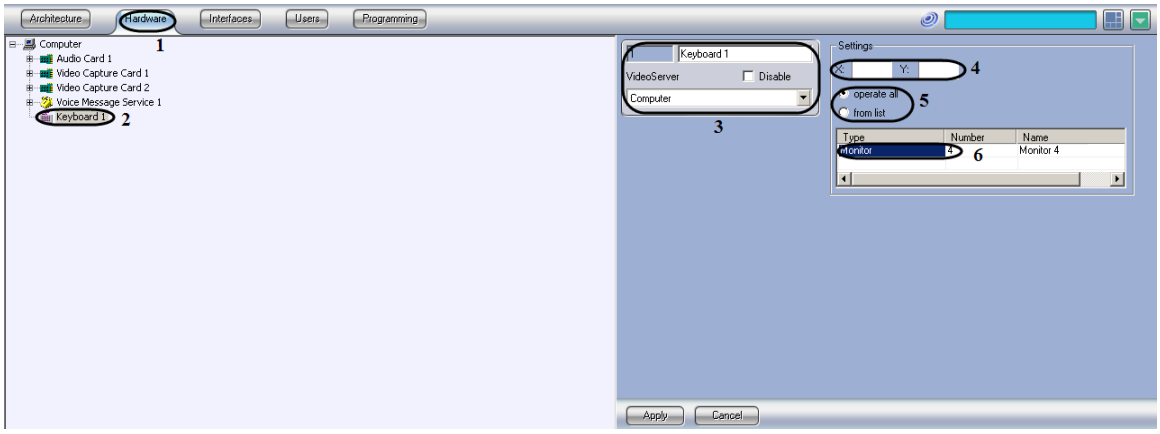


Figure 8.9-18 Settings panel of Special keyboard system object

2. Create the “Special keyboard” system object on the base of the “Computer” object or select the relevant object in the objects tree on the “Hardware” tab of Intellect settings panel.

3. Enter the IDnumber of the created object, its name and select the “Computer” system object to be the parent one for the“Special keyboard” object.

Note. The object ID should be the same as the file number, used for programming the device (see the “Programming the “Special keyboard” device in Windows OS” section), and should be within the range from 0 to 9.

The “Computer” system object should match the computer, to which the “Special keyboard” device is connected.

4. Enter the coordinates of the interface box (coordinates of the left upper corner), used to enter the object’s number, which should be controlled by the Special keyboard device. Coordinates are given in percentage in accordance with horizontal and vertical screen sizes correspondingly.

5. It is necessary to define what interface objects of the distributed video surveillance system will be controlled by the “Special keyboard” device. The “Control all” item is selected, Operator can control all the interface objects, that corresponds to the installation of configuration file. The “From the list” item allows control interface objects, denoted in the list.

Note. Interface objects are controlled when a command is sent to these objects by clicking a key on the keyboard. For instance, when LOCK and UNLOCK commands are sent, interface objects are locked or unlocked.The correspondence between a command and the key on the keyboard is described in ini-file (see “Settings the interpretation rules of the “Special keyboard” layout by Intellect program complex” section).

6. It is necessary to define what interface objects of the distributed video surveillance system will be controlled by the “Special keyboard” device. In the columns Type and Number it is necessary to select interface object that is controlled by “Special keyboard” device, in the column Name the name of the selected interface object is automatically displayed.

8.9.4 Settings the interpretation rules of the “Special keyboard” layout by Intellect program complex

Pressing of any button on the “Special keyboard” device corresponds to certain option activation in INTELLECT™ software. The buttons and options lookup table is described in the files with an ini extention. The name of the file with an .ini extension should like : keyb_n, where n is the “Special keyboard” device identification number (from 0 to 9) in the system.

In case, when one “Special keyboard” device should be connected to a workstation, standard keyb_0.ini file, that is included in the delivery package, is recommended to be used. After installation this file is located in the folder «<Intellect>\Modules».

In case, when more than one “Special keyboard” device should be connected to a workstation, a set of files keyb_n.ini should be used. These files are to be located in the folder «<Intellect>\Modules».

8.9.4.1 *The use of standard ini-file*

The following functions of Intellect PC may be realized with the use of ini-file:

a. Hide/display the video surveillance monitor.

b. Change the number of video surveillance windows on the Monitor.

c. Layout of video surveillance windows.

d. Listing of video surveillance windows.

e. Enabling the surveillance window.

f. Scaling of images in video surveillance window.

g. Arming and disarming the cameras.

h. Events' recording in accordance with the command.

i. Playback of video recordings.

j. Archive navigation.

Standard ini-file allows managing 16 cameras on one video surveillance Monitor. The given functional is realized by the Special keyboard object with 0 identification number.

Preparation to use the functionality, provided by standard ini-file, is done in the following way:

1. Open keyb_0.ini file, located in the catalogue «<Intellcect>\Modules».

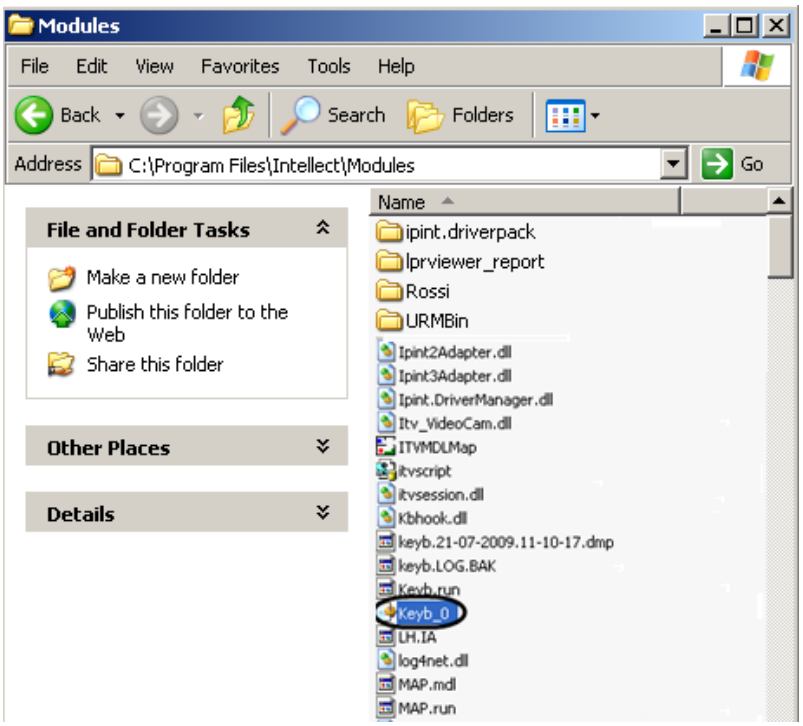


Figure 8.9-19. Location of keyb_0.ini file

2. Make sure, that value of «targets» parameter corresponds to Monitor object's identification number, which control should be performed with the use of Special keyboard device. Otherwise Monitor object's number should be changed to the required value in the line «targets». After changing the value of «targets» parameter save the changes in keyb_0.ini file.

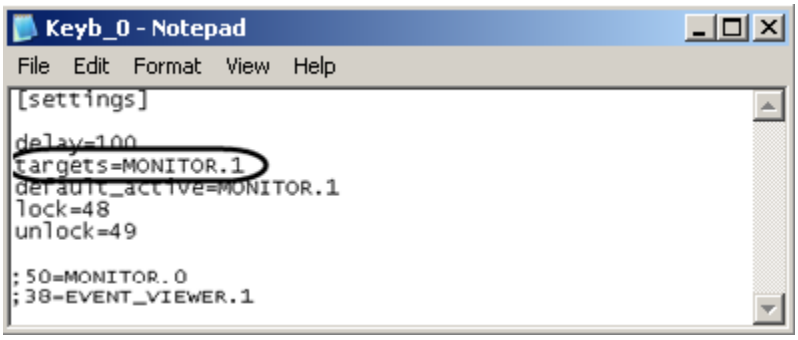


Figure 8.9-20. The content of «keyb_0.ini» file

3. Close keyb_0.ini file.

4. Visual form of Special keyboard device layout is given in Figure 8.9-21.

Note. To get layout file it is necessary to apply to Technical support service of AxxonSoft. The given layout should be printed, cut the symbols and put them to the keys of the Special keyboard device.

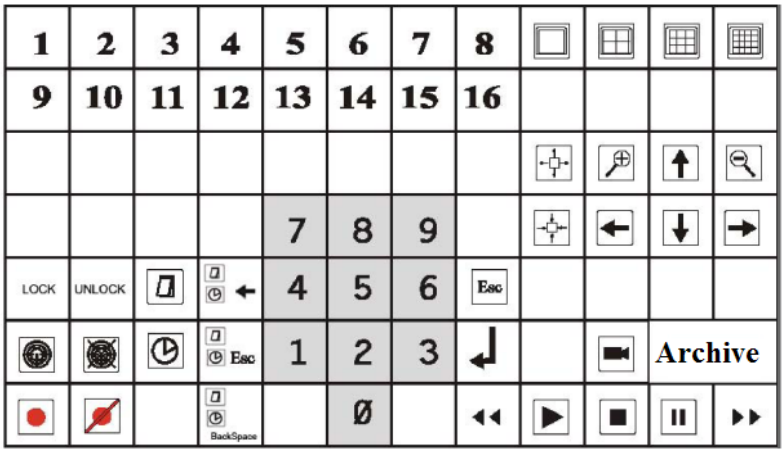


Figure 8.9-21. Special keyboard device layout with the use of standard ini-file

5. Check the interaction of Special keyboard device and Intellect PC in the following way:

   a. launch the INTELLECT™ software.

   b. display the video monitor, controlled by the "Special keyboard" device.

   c. click the "Special keyboard" buttons in turn.

6. In case, when actions are not carried out when keys of Special keyboard device are pressed, check the following issues:

1. Special keyboard” connection to a workstation.

2. Special keyboard device layout setup.

3. Special keyboard device setup in INTELLECT™ software.

4. Setting the PC Intellect interpretation rules for special keyboard device layout.

Preparation to use the functionality, provided by standard ini-file, is completed. The special keyboard device is ready for work.

Note. To set the interpretation rules for additional keys of special keyboard device standard ini-file has to be modified (see. Editing of standard ini-file (optionally)).

8.9.4.2 *Setting up Intellect program software with the use of several Special keyboard devices*

It is possible to connect several Special keyboard devices simultaneously to a workstation and control the necessary interface objects with the help of it.

Note. On default one Special keyboard device is provided for controlling 16 cameras on one video surveillance Monitor.

Preparation to use several Special keyboard devices in Intellect PC is done in the following way:

1. Prepare to use functionality, provided by standard ini-file, in accordance with step by step instruction the Use of standard ini-file.The given functional is realized by the Special keyboard object with 0 identification number

2. Copy ini-files to catalogue«<Intellect>\ Modules» to use additional devices the Special keyboard. keyb_n.ini file corresponds to every additional Special keyboard device , , where n is the “Special keyboard” device number (from 0 to 9) in the Intellect PC.

Figure 8.9-22. Location of ini-files to use several Special keyboard devices simultaneously

The number of copied files corresponds to the number of connected additional Special keyboard devices.

To get ini-files one should apply to Technical support service of AxxonSoft company.

3. Get ready to use functionality, provided by copied ini-files, in accordance with step by step instruction the Use of standard ini-file. The given functional is realized by the Special keyboard objects with ID from 1 and above.

Preparation to use several Special keyboard devices in Intellect PC is completed. Special keyboard devices are ready to work.

8.9.4.3 *Editing the standard ini-file(optionally)*

It is possible to edit standard ini-file to change interpretation rules of the Special keyboard device layout.

Editing ini-file is done in the following way:

1) Open the required configuration file keyb_n.ini, where n – identification number of the corresponding Special keyboard object.

2) Find parameter– two digits number of the required key(is set during programming-see. Programming the Special keyboard device)

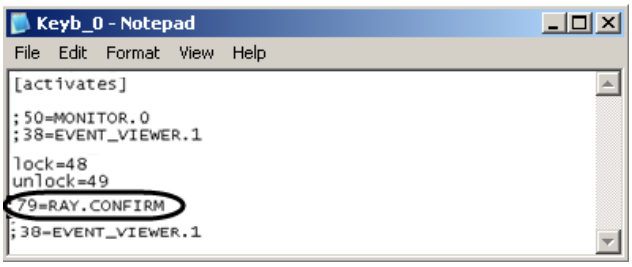


Figure 8.9-23. Editing ini-file

3) When there is commentary symbol «;» in the line with parameter and/or in the headline of parent section delete it.

4) Set the value of the parameter-PC Intellect command, that has to be carried out pressing the button.

Note. Description of Intellect PC commands is given in the document Intellect program complex: Programming guide.

5) In case, when the parameter is met in the file not by once, enter the commentary symbol before its name in all the lines, that are not used.

6) Repeat steps 2-5 for all the required keys of the Special keyboard device.

7) Save the changes and then close configuration file.

Editing the ini-file is completed.

8.10 Notification services

8.10.1 Setting up the Alarm Message window

8.10.1.1 *General description and usage details of the Alarm Message window*

The Alarm Message window notifies the operator about alarms and opens above all other windows in case of an alarm event on a set device.

8.10.1.2 *Creating and setting up the Alarm Message Window object*

To set up the Alarm Message window, do the following:

1. Go to the Hardware tab of the System Settings window (Figure 8.10-1).

2. Create the Alarm Message Window object in the Computer node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Setting window.

Figure 8.10-1. Creating and setting up the Alarm Message object

3. Set the coordinates (X, Y), in percent, for the position of the Alarm Message window.

Note. By default, X and Y coordinates are 0, thus, if they are not changed, the window opens in the upper left corner of the screen.

4. Press the Apply button to save the settings for the Alarm Message object.

Figure 8.10-2 shows a general view of the Alarm Message: this window will open above all other windows at a set position (60, 60) upon receiving an alarm event from Camera 3.

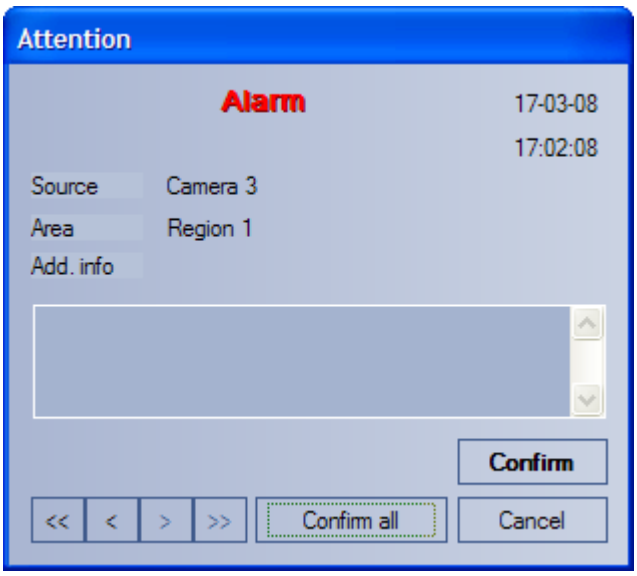


Figure 8.10-2. General view of the Alarm Message window

Note. To disable opening the Alarm Message window, check the Disable checkbox in the settings panel of the Alarm Message Window object.

8.10.2 Setting up the Short Message Service (SMS)

8.10.2.1 *General description and usage details of the Short Message Service*

The Short Message Service (SMS) is used for sending short messages to mobile phones about alarm events registered by Intellect software. A short message is sent automatically upon registration of any of the events specified in the corresponding macro.

The short messages are transferred using the services of the GSM mobile providers. To send the short messages, dedicated devices are used: GSM modems, GSM adapters and mobile phones.

Note A. When using Intellect software SMS service a certain fee should usually be paid to the mobile providers.

Note B.To be able to send the short messages, a GSM modem, a GSM adapter or a mobile phone supporting ETSI GSM 07.07 or ETSI GSM 07.05 should be installed on the computer.

Note CThe following modem models are currently integrated into Intellect PC:

A. 3G -modem Huawei E160, is identified as HUAWEI Mobile Connect -3G Modem in OS Windows. Modem coltrol program is not required to be run to work with this device.
B. 3G-modem ZTE MF626 is identified as ZTE Proprietary HS-USB Modem in OS Windows.To use his device it is necessary to install the hardware, which installation will be run automatically after the modem is connected.

To create and send a short message:

1. Create and set up the Short Message Service object.

2. Create and set up the Short Message object.

3. Create a macro for sending the short message.

8.10.2.2 *Creating and setting up the Short Message Service object*

To set up the Short Message Service object, do the following:

1. Go to the Hardware tab of the System Settings window (Figure 8.10-3).

2. Create the Short Message Service object in the Computer node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Setting window.

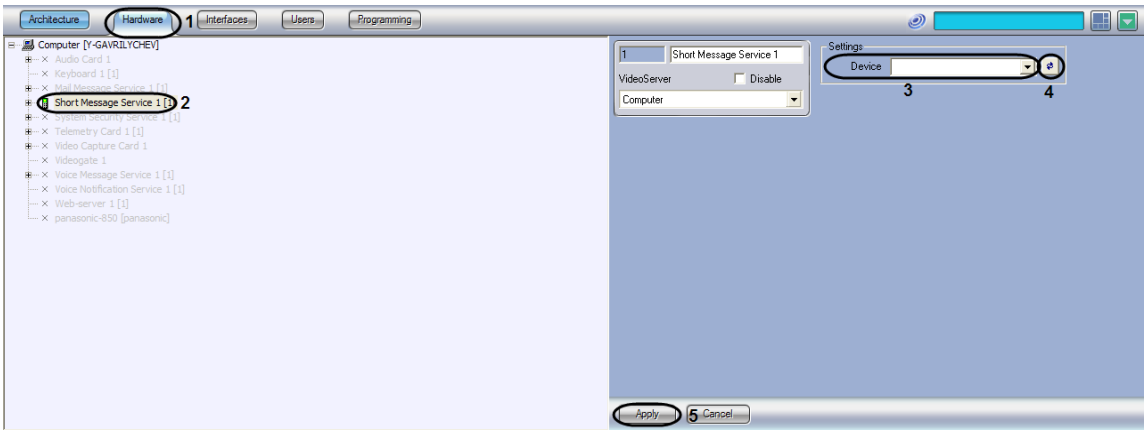


Figure 8.10-3. Creating and setting up the Short Message Service object.

3. Select the GSM-device to be used for sending SMS, in the Device drop-down list.

4. Press the refresh button for the system to update the list if the device was not listed.

5. Press the Apply button to save the settings for the Short Messages Service object.

8.10.2.3 *Creating and setting up the short messages*

To set up the Short Message object, do the following:

1. Go to the Hardware tab of the System Settings window (Figure 8.10-4).

2. Create the Short Message object in the Short Message Service node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Setting window.

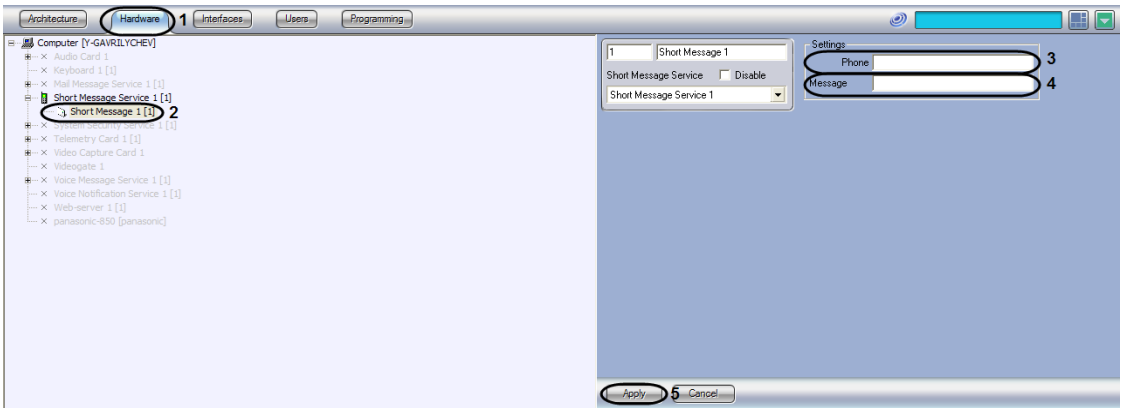


Figure 8.10-4. Creating and setting up the Short Message object

3. Enter the telephone number into the Phone field in the following format: [prefix "+"] [country code] [city/provider code] [phone number] with no spaces or other delimiters.

4. Enter the message text into the Message field.

Press the Apply button to save the settings for the Short Message object.

8.10.2.4 *Creating and setting up the macro for sending the short message*

The message is sent upon execution of a macro. The macro is executed immediately after a set event occurs. To create the macro for sending the short message:

1. Go to the Programming tab of the System Settings window (Figure 8.10-5).

2. Create a Macro object in the objects tree of the Programming tab.

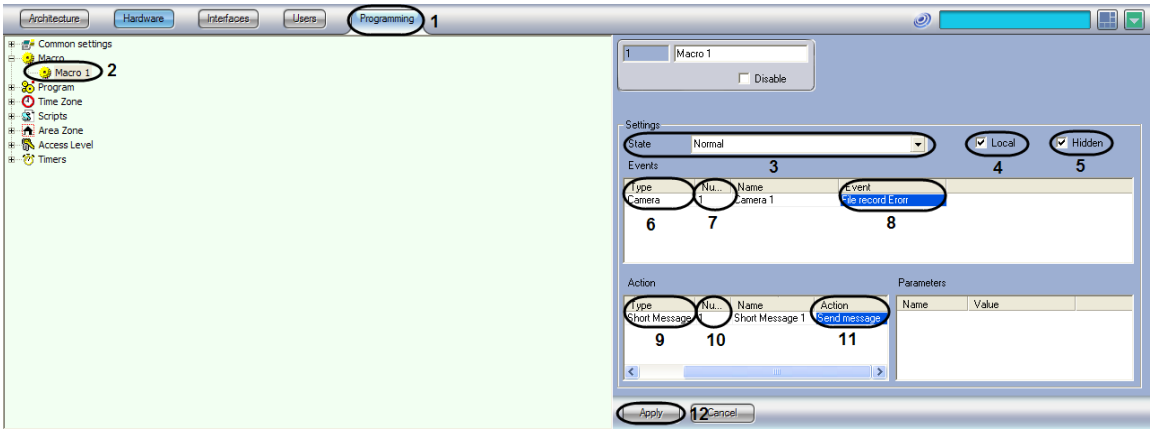


Figure 8.10-5. Creating and setting up the macro for sending the short message

3. Set the State parameter.

4. Check the Local checkbox to send the message from a local computer only.

5. Choose the event object type for the SMS macro to be related to.

6. Choose the event object number for the SMS macro to be related to.

7. Choose the event name which will trigger the sending of the short message.

8. Choose the Short Message object in the Type column.

9. Choose the number of the Short Message object to be sent by the macro.

10. Choose Send Message in the Action column.

Press the Apply button to save the settings for the Macro object.

8.10.3 Setting up the Mail Message Service (E-mail)

8.10.3.1 *General description and usage details of the Mail Message Service*

The Mail Message Service (E-Mail) is used for sending e-mail messages about the alarm events registered by Intellect software, to remote system users. Sending e-mail messages is triggered automatically upon registration of any of the events set in the macro.

To be able to send e-mail messages, the computer should be connected to the internet via a local area network or remote TCP/IP connection.

The e-mail messages are sent by the Mail Message Service. To send e-mail messages in Intellect, you should first register a mailbox in the Mail Message Service.

Note. When registering your mailbox in the Mail Message Service, note the following:

1. *Intellect's Mail Message Service does not support SMTP servers with Secure Password Authorization (SPA).*
2. *Intellect's Mail Message Service supports only the following authorization algorithms on SMTP servers: LOGIN, CRAM-MD5, PLAIN.*

To create and send an e-mail message:

1. Create and set up the Mail Message Service object.
2. Create and set up the Mail Message object.
3. Create a macro for sending the e-mail message.

8.10.3.2 *Creating and setting up the Mail Message Service*

To set up the Mail Message Service object, do the following:

1. Go to the Hardware tab of the System Settings window (Figure 8.10-6).
2. Create the Mail Message Service object in the Computer node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Settings window.

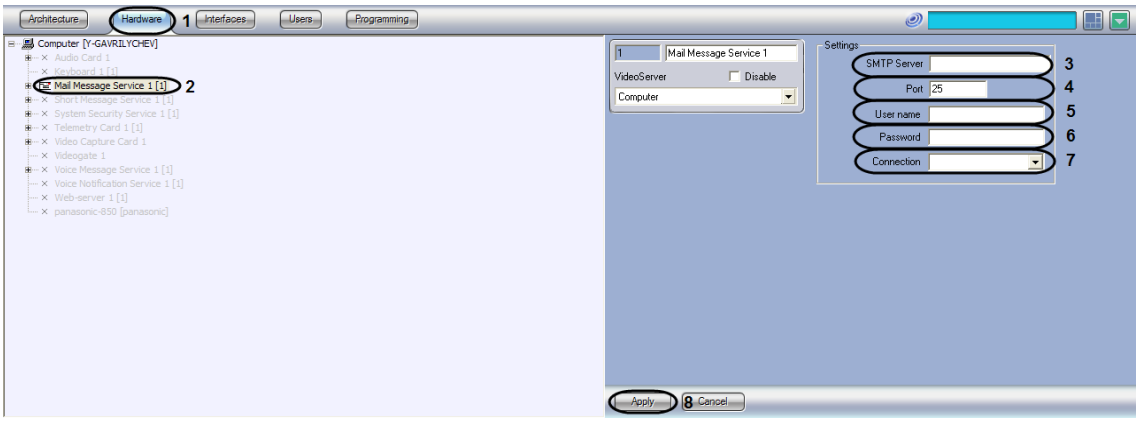


Figure 8.10-6. Creating and setting up the Mail Message Service object

3. Enter the URL address of the SMTP server.
4. Enter the port number for outgoing messages.
5. Enter the username for authorization on the SMTP-server.
6. Enter the password for authorization on the SMTP-server.

7. Choose the internet connection type.

Press the Apply button to save the settings for the Mail Messages Service object.

8.10.3.3 *Creation of e-mail messages*

To set up the Mail Message object, do the following:

1. Go to the Hardware tab of the System Settings window (Figure 8.10-7).

2. Create the Mail Message object in the Mail Message Service node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Setting window.

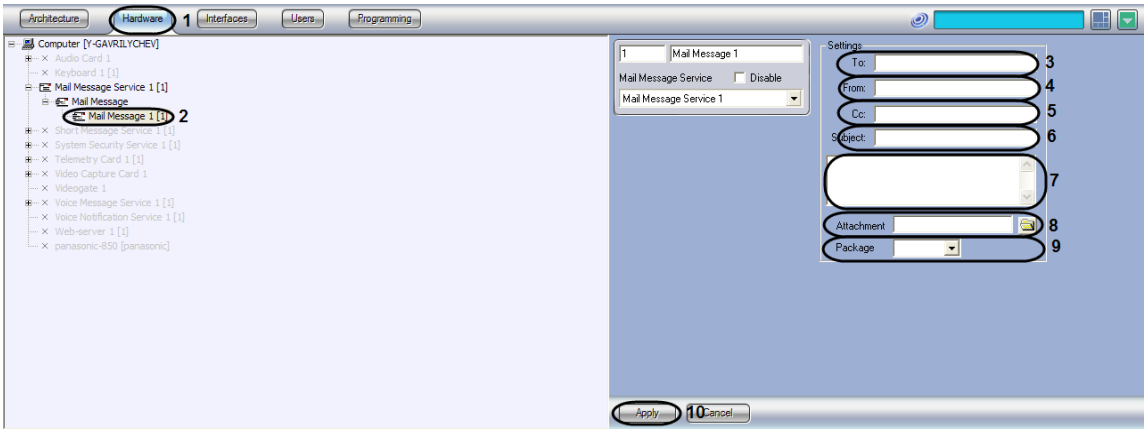


Figure 8.10-7. Setting up the Mail Message object

3. Enter the e-mail address of the recipient.

4. Enter the e-mail address of the sender.

5. Enter additional addresses (Cc:) to send this message to, if necessary.

6. Enter the subject of the message.

7. Enter the text of the message to be sent to the specified addresses.

8. Attach a file to the alarm message (report, audio, image), if necessary.

9. Specify if the attachment should be packaged (archived).

Press the Apply button to save the settings for the Mail Message object.

8.10.3.4 *Creating and setting up a macro for sending the e-mail message*

The message is sent upon execution of a macro. The macro executes immediately after the registration of the event it is set for. To create the macro for sending the e-mail message:

1. Go to the Programming tab of the System Settings window (Figure 8.10-8).

2. Create a Macro object in the objects tree of the Programming tab.

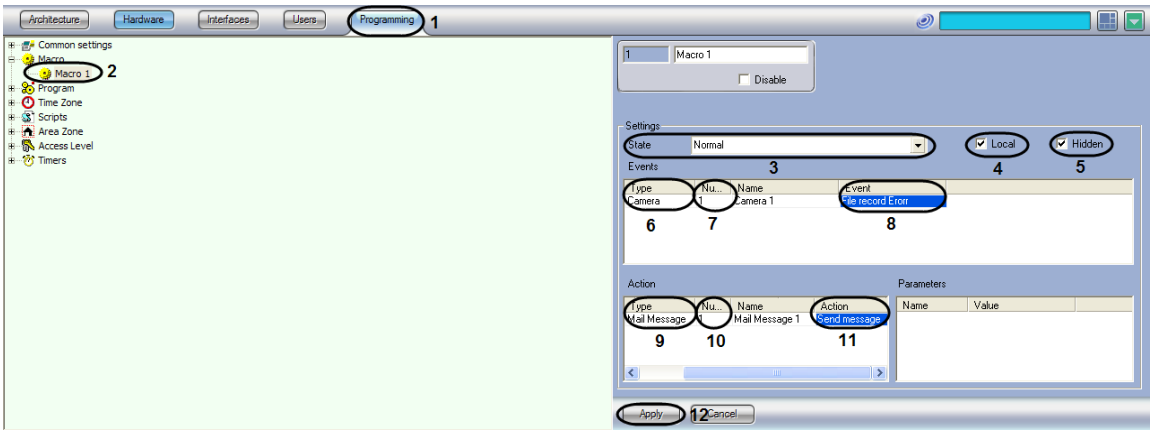


Figure 8.10-8. Creating and setting up the macro for sending the e-mail message

3. Set the State parameter.

4. Check the Local checkbox to send the messages from a local computer only.

5. If the manual start of macros from the main control panel of PC Intellect should be forbidden, set the Hidden checkbox.

6. Choose the event object type for the e-mail macro to be related to.

7. Choose the event object number for the e-mail macro to be related to.

8. Choose the name of the event to trigger the sending of an e-mail message.

9. Choose the Mail Message object in the Type column.

10. Choose the number of the Mail Message object to be sent by the macro.

11. Choose Send Message in the Action column.

Press the Apply button to save the settings for the Macro object.

8.10.4 Setting up the Voice Message Service (V-dial)

8.10.4.1 *General information and usage details of the Voice Message Service*

The Voice Message Service is used to transmit voice messages over telephone lines. The Service automatically dials up the specified phone numbers and plays the audio files. The following dialing options are available: “until connection”, “until answer”, “until digital acknowledgement of message reception”. To be able to send a voice message, a voice modem (V-Dial) should be installed on the computer.

Note. For proper detection of a voice modem in INTELLECT™, the “inf” folder is to be created in the “Intellect/Modules” directory. The drivers of installed modem are to be copied to the “Intellect/Modules” directory. This action is to be performed for Windows Server 2008 / Vista / 7.

To create and send a voice message:

1. Create and configure the “Voice Message Service” object.

2. Create and configure the “Voice Message” object.

3. Create a macro for sending the voice message.

8.10.4.2 *Creating and setting up the Voice Message Service object*

To set up the Voice Message Service object, do the following:

1. Go to the Hardware tab of the System Settings window (Figure 8.10-9).

2. Create the Voice Message Service object in the Computer node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Setting window.

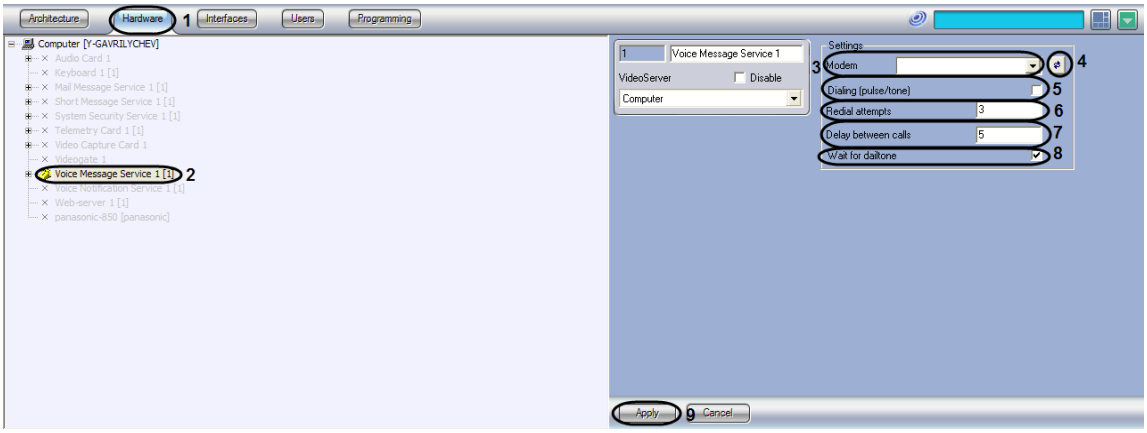


Figure 8.10-9. Setting up the Voice Message Service object

3. Choose a modem in the list of all modems available in the system.

4. If the modem is not in the list or there are no modems in the list, press the modem search button.

5. Check/uncheck the checkbox to choose the dialing mode.

6. Enter the number of dialing attempts.

7. Enter the delay between dialing attempts, in seconds.

8. Check the checkbox to wait for dialtone.

Press the Apply button to save the settings for the Voice Messages Service object.

8.10.4.3 *Creating voice messages*

To set up the Voice Message object, do the following:

1. Go to the Hardware tab of the System Settings window (Figure 8.10-10).

2. Create the Voice Message object in the Voice Message Service node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Setting window.

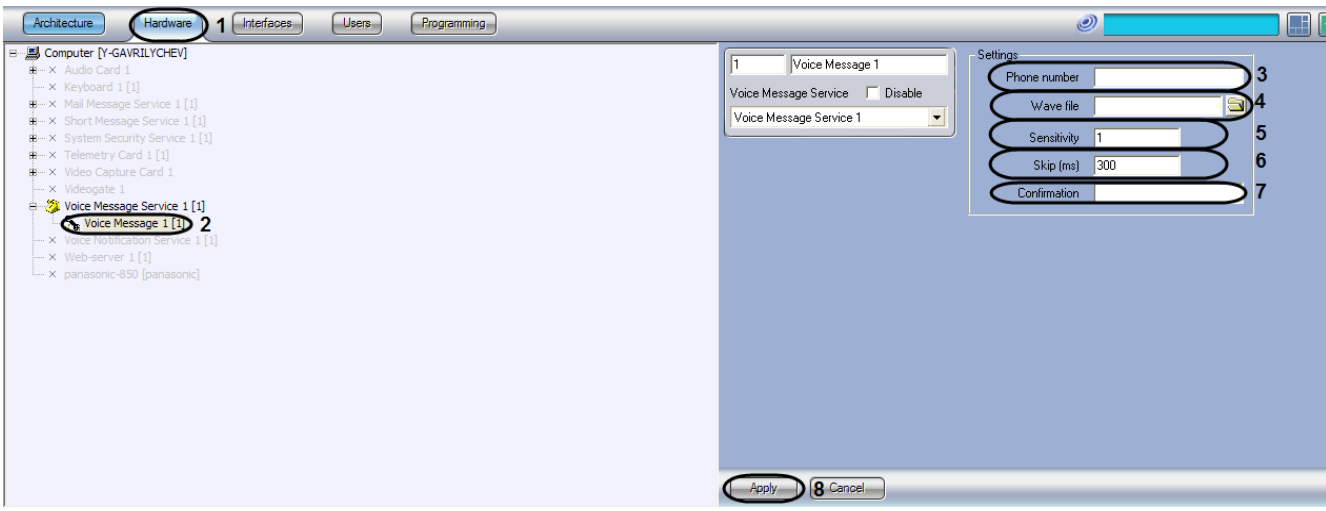


Figure 8.10-10. Setting up the Voice Message object

3. Enter the telephone number into the Phone field in the following format: [prefix "+"] [country code] [city/provider code] [phone number] with no spaces or other delimiters.

4. Load the wave file to be sent as a voice message.

5. Specify the sensitivity level, which will eliminate noise on the telephone line, ensuring correct message transmission. Values from 1 to 10 are acceptable.

6. Specify the delay between the recipient answering and the beginning of the message. Set in milliseconds (1000 ms = 1 sec).

7. Enter the code for the recipient to confirm receipt of the message. This is a digital code set in the system which the recipient dials in tone mode to confirm receipt of the message.

8. Press the Apply button to save the settings for the Voice Message object.

8.10.4.4 *Creating and setting up the macro for sending the voice message*

The message is sent upon execution of the macro. The macro executes immediately after the registration of the event it is set for. To create the macro for sending the voice message:

1. Go to the Programming tab of the System Settings window (Figure 8.10-11).

2. Create a Macro object in the objects tree of the Programming tab.

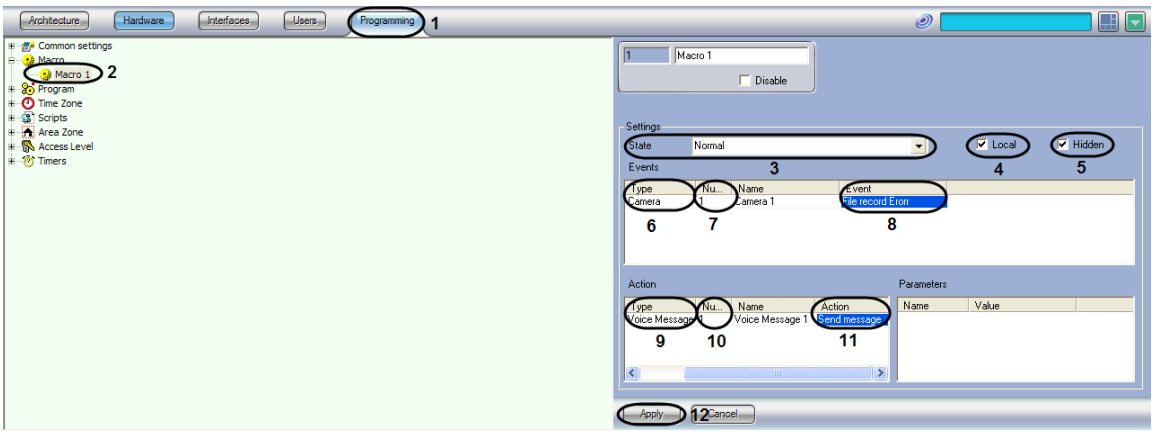


Figure 8.10-11. Creating and setting up the macro for sending the voice message

3. Specify the State parameter.

4. Check the Local checkbox to send the voice messages from a local computer only.

5. If the manual start of macros from the main control panel of PC Intellect should be forbidden, set the Hidden checkbox.

6. Choose the event object type for the voice message macro to be related to.

7. Choose the event object number for the voice message macro to be related to.

8. Choose the name of the event to trigger the sending of the voice message.

9. Choose the Voice Message object in the Type column.

10. Choose the number of the Voice Message object to be sent by the macro.

11. Choose Send Message in the Action column.

Press the Apply button to save the settings for the Macro object.

8.10.5 Setting up the Voice Notification Service

8.10.5.1 *General description and usage details of the Voice Notification Service (VNS)*

The voice notification service is used for audio notification of Intellect Operators about the alarm event registered by the system. This service allows voice notification of the remote workstations using the following devices: headphones (speakers) connected to the workstation's sound card, IP camera (Axis) or LinuxHub. The service provides automatic transmission of the voice notification to the specified device IP address and audio file playback.

To create and send the voice notification:

1. Create and set up the Voice Notification Service object.

2. Create a macro for sending the voice notification.

8.10.5.2 *Creating and setting up the Voice Notification Service object*

To set up the Voice Notification Service object, do the following:

a. Go to the Hardware tab of the System Settings window (Figure 8.10-12).

b. Create the Voice Notification Service object in the Computer node in the objects tree. The object appears in the objects tree, and the settings panel for this object opens on the right side of the System Setting window.

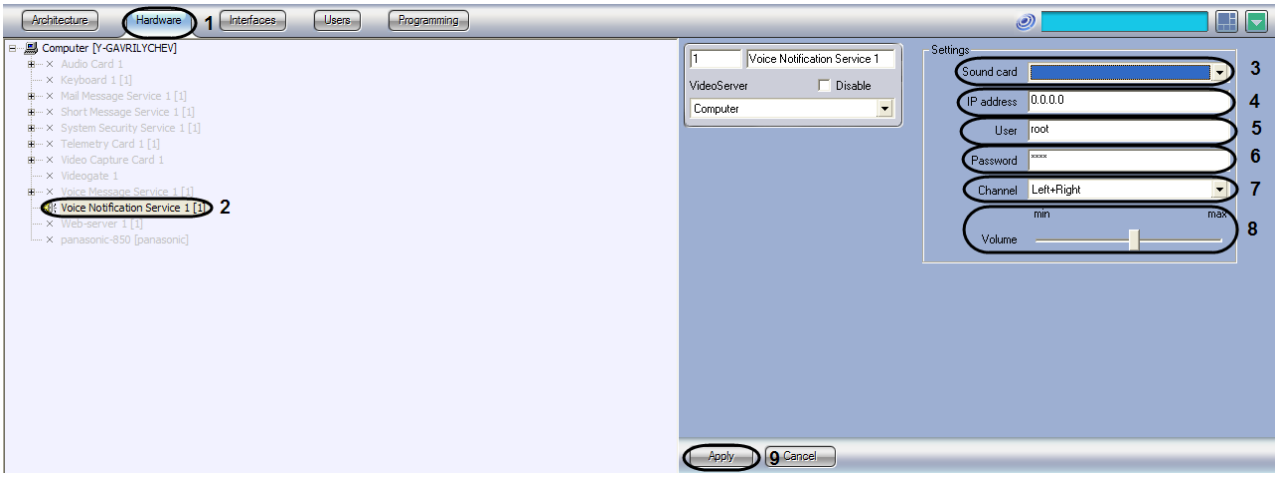


Figure 8.10-12. Setting up the Voice Notification Service object

c. Choose the device in the Sound card list to send the notification to.

d. Specify the IP address of the network device (sound card, IP camera or Linux Hub), used to access this device over the network. If the sound card of the local computer is selected, this field is disabled.

e. Specify the username of the network device (sound card, IP camera or Linux Hub), used to access this device over the network. If the sound card of the local computer is selected, this field is disabled.

f. Specify the password of the network device (sound card, IP camera or Linux Hub), used to access this device over the network. If the sound card of the local computer is selected, this field is disabled.

g. Choose the headphones (speakers) playback option in the Channel drop-down list.

1. If the soundcard has two outputs (left/right), the list contains the following options: a) Left, b) Left + Right, c) Right.

2. If the sound card has N outputs, the list contains the numbered outputs from 0 to N-1.

h. Specify the volume level using the slider.

i. Press the Apply button to save the settings for the Voice Notification Service object.

8.10.5.3 *Creating and setting up the macro for sending the voice notification*

The voice notification is sent upon execution of the macro. The macro executes immediately after the registration of the event it is set for. To create the macro for sending the voice notification:

1. Go to the Programming tab of the System Settings window (Figure 8.10-13).

2. Create a Macro object in the objects tree of the Programming tab.

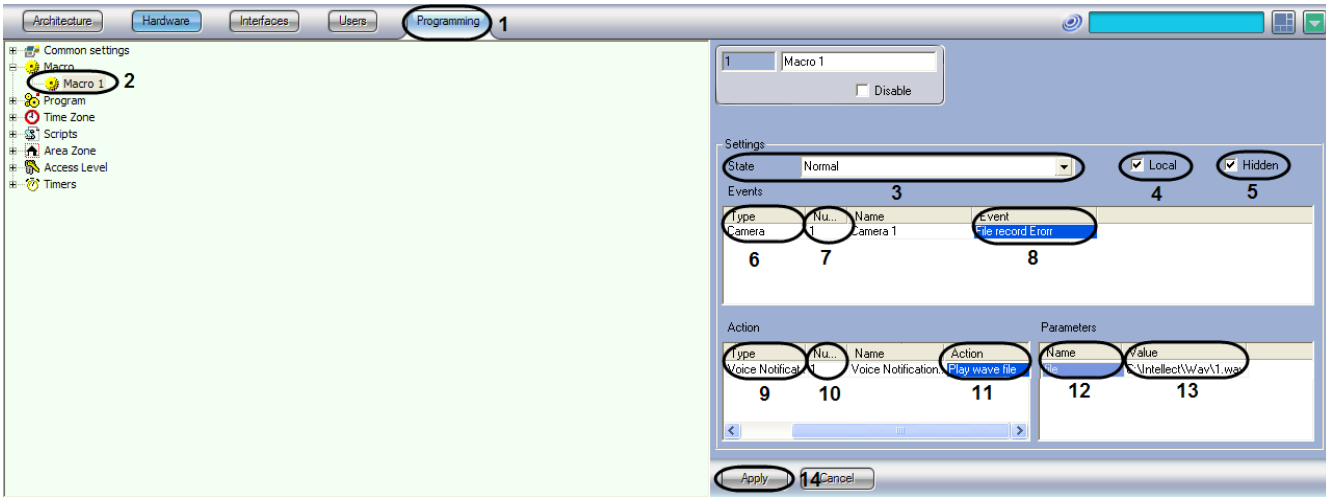


Figure 8.10-13. Creating and setting up the macro for sending the voice notification

3. Specify the State parameter.

4. Check the Local checkbox to send the voice notifications from a local computer only.

5. If the manual start of macros from the main control panel of PC Intellect should be forbidden, set the Hidden checkbox.

6. Choose the event object type for the voice notification macro to be related to.

7. Choose the event object number for the voice notification macro to be related to.

8. Choose the name of the event to trigger the sending of the voice notification.

9. Choose the Voice Notification object in the Type column.

10. Choose the number of the Voice Notification object.

11. Choose Play wave file action.

12. Click the Name field in the Parameters table. The Value field becomes available to specify the audio file.

13. Specify the full pathname of the wave file to be sent as the voice notification.

Press the Apply button to save the settings for the Macro object.

8.11 Configuring the SNMP-service

8.11.1 SNMP-service setting order

It is possible to create SNMP-service for resending messages about the registered events to SNMP-agent. This opportunity is realized with the use of «SNMP trap» system object.

Note. Data concerning SNMP-agent is given in the official SNMP protocol reference manual.

SNMP-service carries out the following functions:

1. Receipt of messages concerning the event, registered in the system;
2. Message conversion concerning the event to SNMP format;
3. Message transfer in SNMP format (trap) to SNMP-agent with the use of TCP/IP net protocol.

Setting the SNMP-service is done in the following order:

1. Create «SNMP trap» object on the basis of «Objects SNMP» system objects.
2. Select the events, which messages should be transferred to SNMP-agent.
3. Set the message conversion to SNMP format.
4. Se the trap with SNMP-message.

8.11.2 Creating the SNMP trap object

Creating the «SNMP trap» object is done in the following way:

1. Select Computer object on the tab Hardware of System settings dialog window (Figure 8.11-1).

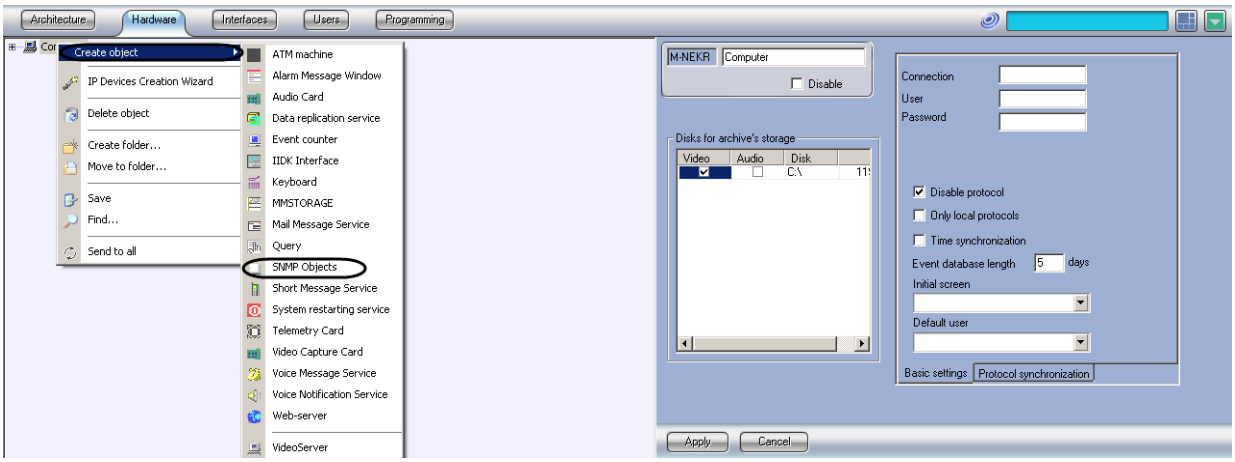


Figure 8.11-1. Creating the SNMP object

2. Make a right mouse click upon the selected Computer object and select «Create object» ⇨ «SNMP objects» in the contextual window (Figure 8.11-1).
3. Set the number and name of the object «SNMP objects» and then click Apply (Figure 8.11-2).

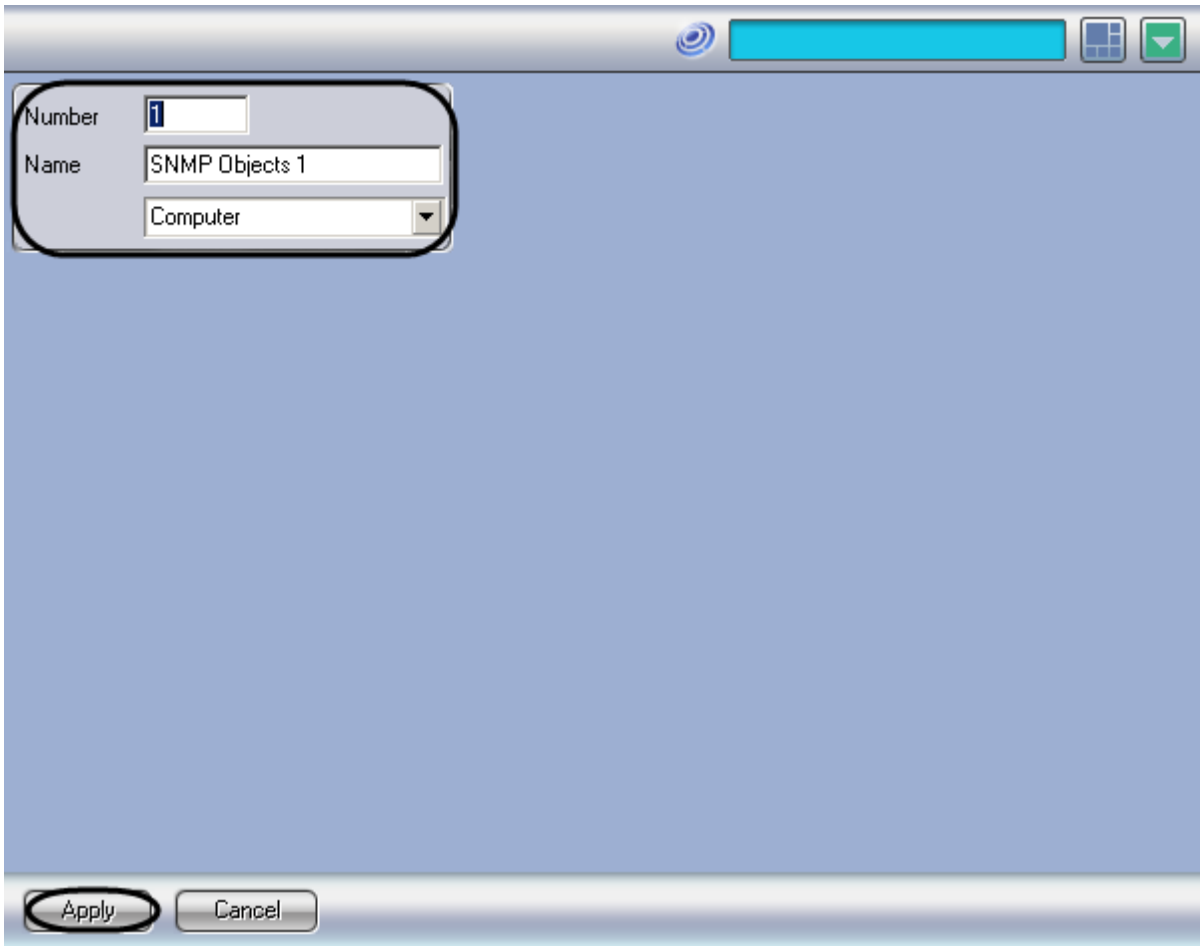


Figure 8.11-2. Setting the number and name of «SNMP objects» object

4. Select the created object «SNMP objects» on the tab Hardware of System settings dialog window (Figure 8.11-3).

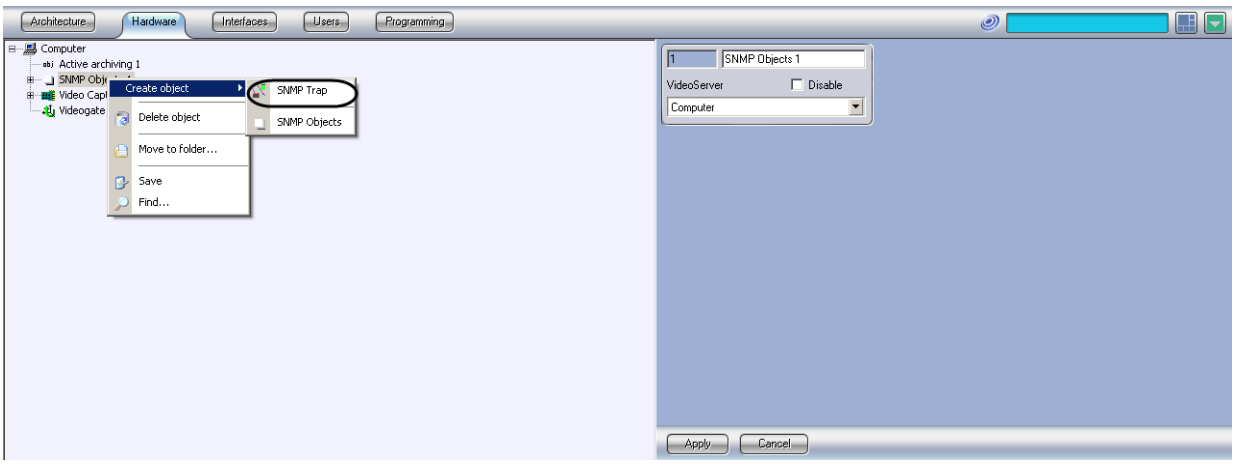


Figure 8.11-3. Creating the SNMP trap object

5. Make a right mouse click upon the selected object «SNMP objects» and select the point «Create object» ⇨ «SNMP trap» in the contextual window (Figure 8.11-3).

6. Set the number and name of SNMP trap object in the appeared window and then click Apply button (Figure 8.11-4).

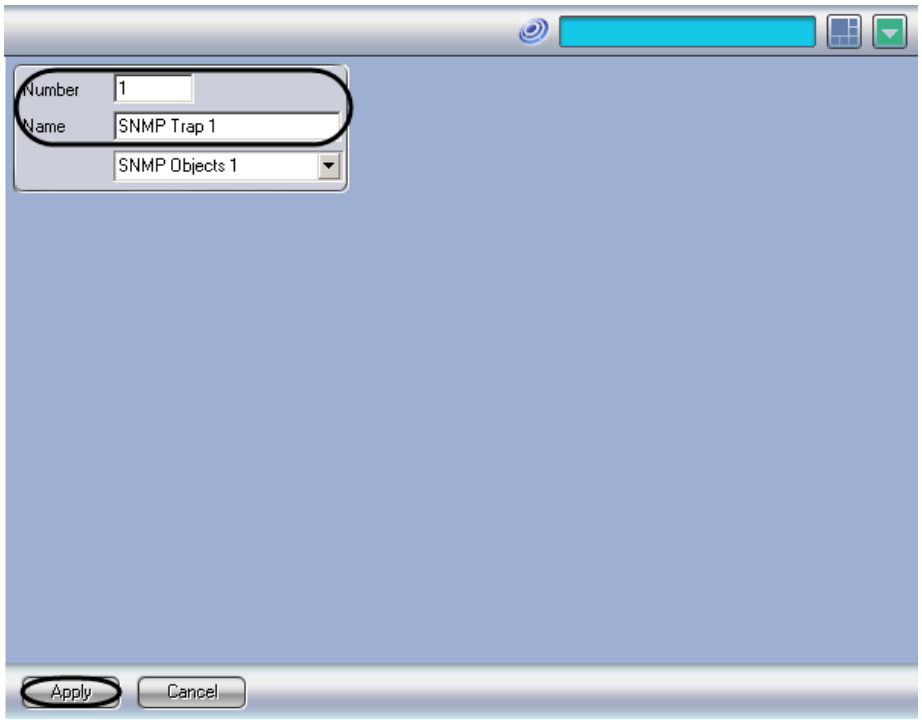


Figure 8.11-4. Setting the number and name of SNMP trap object

Note. Settings panel of SNMP trap object will appear in result.

Creating the SNMP trap object is over.

8.11.3 Events selection for transmitting to SNMP agent

Selection of events for transmitting to SNMP-agent is done in the following way:

1. Go to the settings panel of SNMP trap object (Figure 8.11-5).

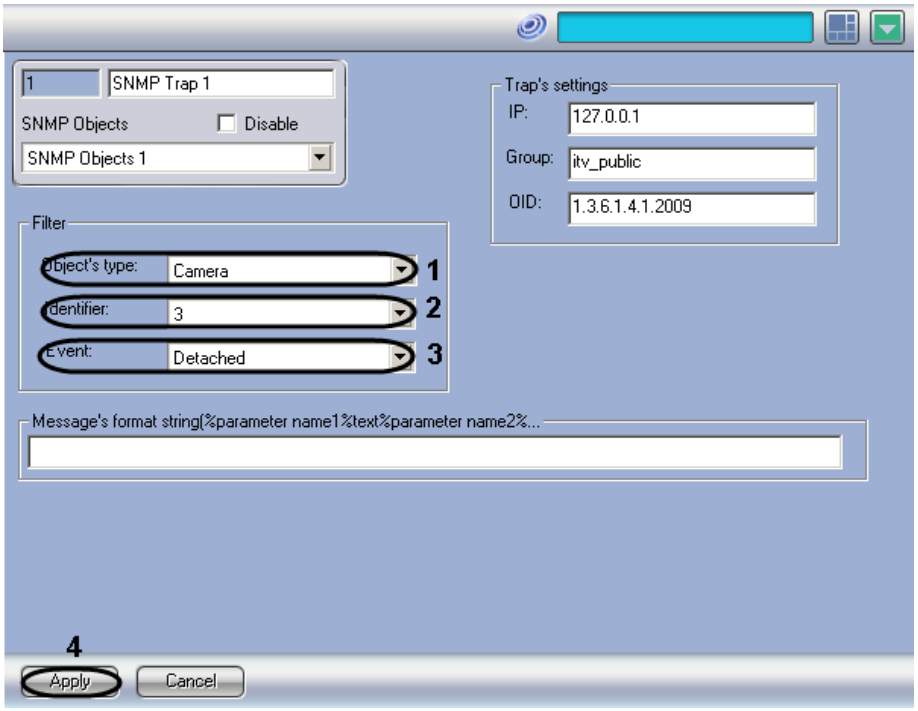


Figure 8.11-5. Setting up the events filter for transmitting to SNMP-agent

2. From the dropdown list Object's type of filter group select the object's type for which the required event may be registered (Figure 8.11-5, 1). If no object's type is selected, all the events concerning all the system objects will be transferred to SNMP-agent.

3. From the dropdown list Identifier of filter group select the object's identification number, which type has been entered during the second step (Figure 8.11-5, 2).If the field is not fulfilled, all the events concerning objects of the given type will be transferred to SNMP-agent.

4. From the dropdown list Event of filter group select the required object for the set during steps 2-3 object (Figure 8.11-5, 3). If the field is not fulfilled, all the events registered for the given event will be transferred to SNMP-agent.

5. Click Apply button to save the changes (Figure 8.11-5, 4).

Selection of events for transmitting to SNMP-agent is completed.

8.11.4 Configuring the message conversion into SNMP format

SNMP-service implements message conversion into SNMP format. SNMP-message is a sequence of parameters, describing the event. Parameter's name is changed by the value of this parameter in the pattern of SNMP-message with the event registration. Changing the SNMP-message is done in the following way:

1. Go to the settings panel of SNMP trap object (Figure 8.11-6).

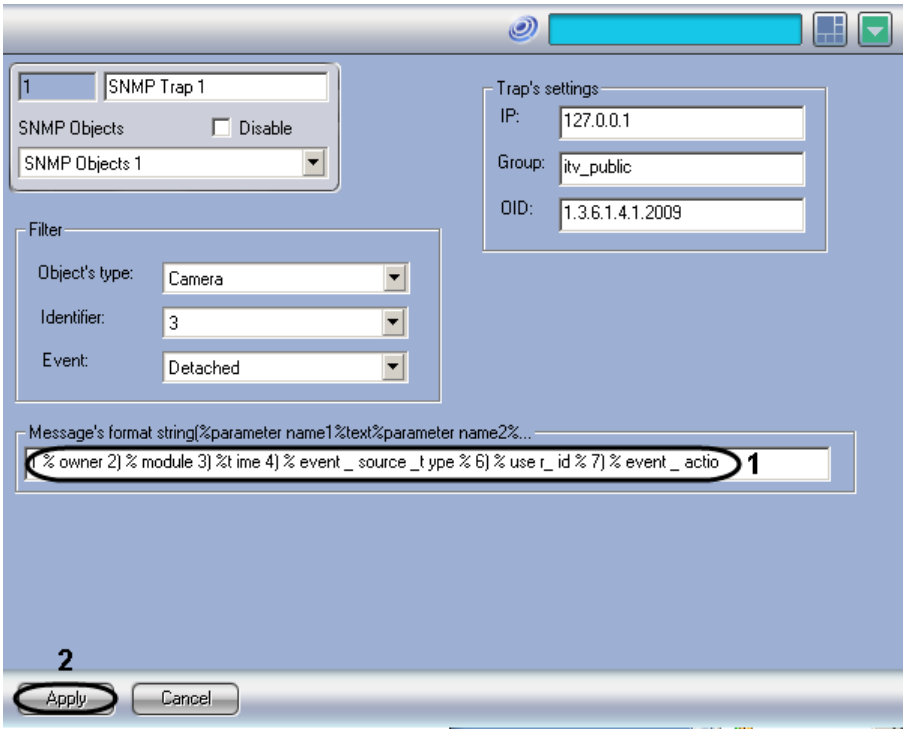


Figure 8.11-6. Setting up the message conversion into SNMP format

2. Enter in the field «Message's format string (%parameter's name1%text% parameter's name2%...» paarameters'names in the required sequence(Figure 383-1). Description of event's main parameters is given in the Table 8.11-1.

Table 8.11-1

Parameter's name	Description of parameter	Availability in the message
%event_action%	Event, registered in the system	Is determined by object's type, for which the event may be registered
%event_source_id%	Object's identification number, for which the event has been registered	
%event_source_type%	Object's type, for which the event has been registered	
%owner%	Computer name, from which the message has been received	Obligatory message's parameters
% time %	Time of event's creation	
%user_id%	Computer's user identification number, from which the message has been received	Optional message's parameters
%module%	Module's name, for which the event has been registered	

Note. In case when message's format string is not set, SNMP message is formed in accordance with the pattern %event_action%,%event_source_id%,%event_source_type%, %owner%,%user_id%,%module%.

3. To save the changes click Apply button (Figure 8.11-7).

Changing the pattern of SNMP-message is completed.

Example of SNMP-message, formed in accordance with the pattern 1)%owner% 2)%module% 3)%time% 4)% event_source_id % 5)% event_source_type % 6)% user_id % 7)% event_action % is exemplified in Figure 8.11-7.

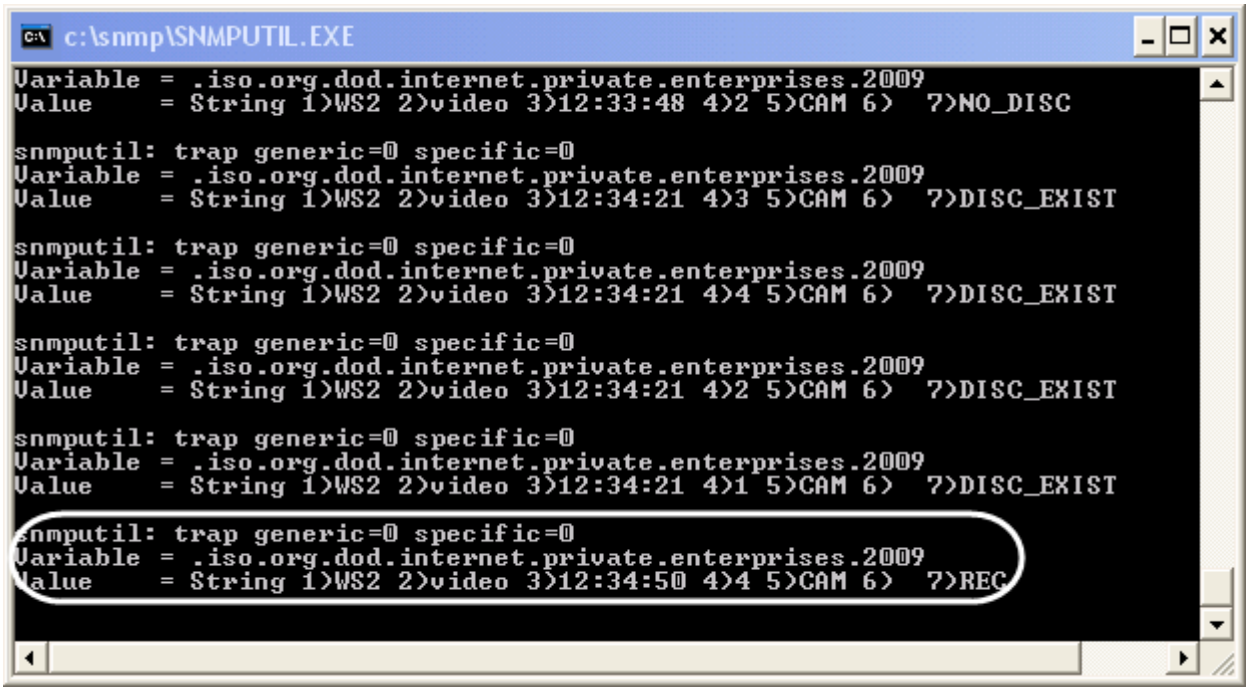


Figure 8.11-7. Example of SNMP-message

8.11.5 Setting up the trap with SNMP-message

Setting the trap with SNMP-message is done in the following way:

1. Go to the settings panel of «SNMP trap» system object (Figure 8.11-8).

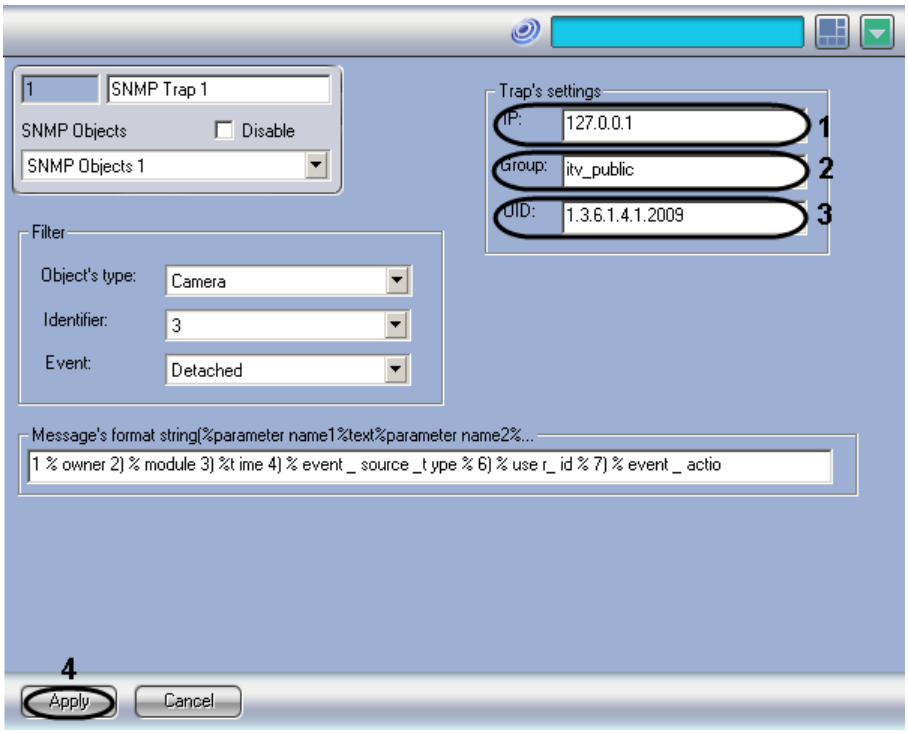


Figure 8.11-8. Setting up the trap with SNMP- message

2. In the «ip» field enter IP-address from SNMP-agent, that will receive SNMP-traps with messages concerning the events(Figure 8.11-8, 1).

3. In the field Group enter the community name for SNMP-trap authentication on the computer with installed SNMP-agent (Figure 8.11-8, 2).

Note. Safety model on the basis of communities is realized in Intellect program complex.

4. In the field«OID» enter the unique trap's number in the tree of SNMP-objects (Figure 8.11-8, 3).

5. To save the changes click Apply button (Figure 8.11-8, 4).

Setting up the trap with SNMP - message is completed.

8.12 Configuring the System restart service

8.12.1 General information on the "System restart service" module

The System restart service is designed to control the workability of Intellect software modules and their restart if there is no response during the specified time interval. Software as well as hardware control of workability can be used.

The System restart service allows performing the following actions if there is no response from the module:

1. Computer restart (hardware operability testing, additional devices are to be enabled). The computer will restart if the slave.exe process is not active.

2. Module restart. Only module which is not replying to requests will restart if there is no response from this module.

3. Core restart. The Intellect core will restart if there is no reply from the module.

The System restart service is configured on the settings panel of the “System restart service” object. This object is based on the “Computer” object in the “Hardware” tab of the “System settings” dialog box (Figure 8.12-1).

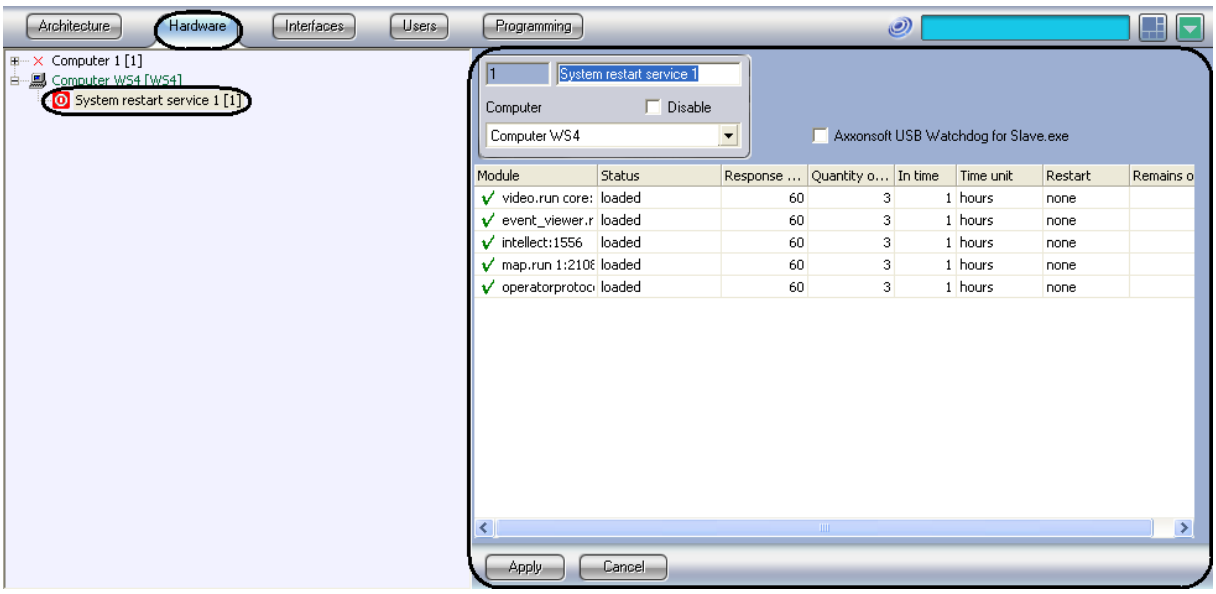


Figure 8.12-1 Configuring the “System restart service” object

Attention! You cannot edit the “System restart service” object remotely. If necessary the object is created and configured separately on all selected components of distributed environment.

8.12.2 Activating the hardware control of workability

Connect the AxxonsoftUSBWatchDog cable to activate the system of hardware control of workability (see “Intellect Software Package.Configuring components guide” document).

To activate the hardware control of workability do the following:

1. Go to the settings panel for the “System restart service” object (Figure 8.12-2).

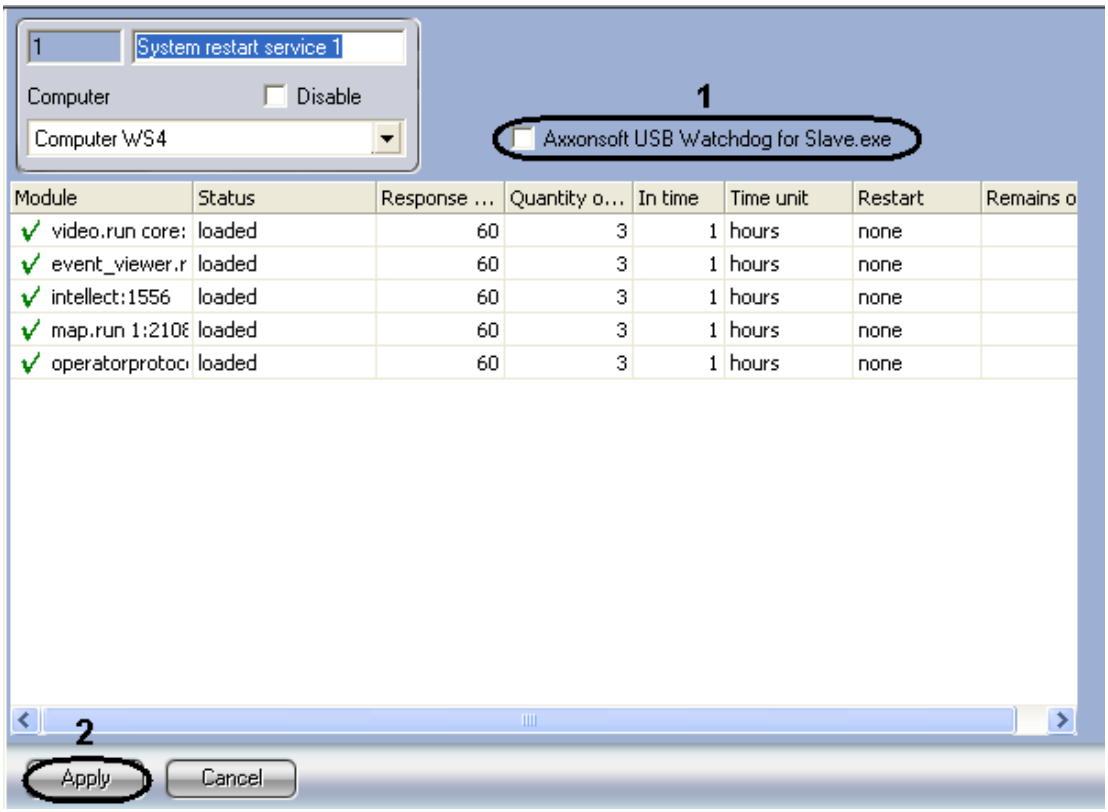


Figure 8.12-2 Configuring the control of module workability

2. Set the “Axxonsoft USB WatchDog for Slave.exe” checkbox (Figure 8.12-2, 1).

3. Click the “Apply” button (Figure 8.12-2, 2).

Hardware control of workability is now activated.

8.12.3 Configuring the software control of workability

Software control of workability allows restarting the module or Intellect core if there is no response from the module.

To configure the software control of workability, do the following:

1. Go to the settings panel for the “System restart service” object (Figure 8.12-3).

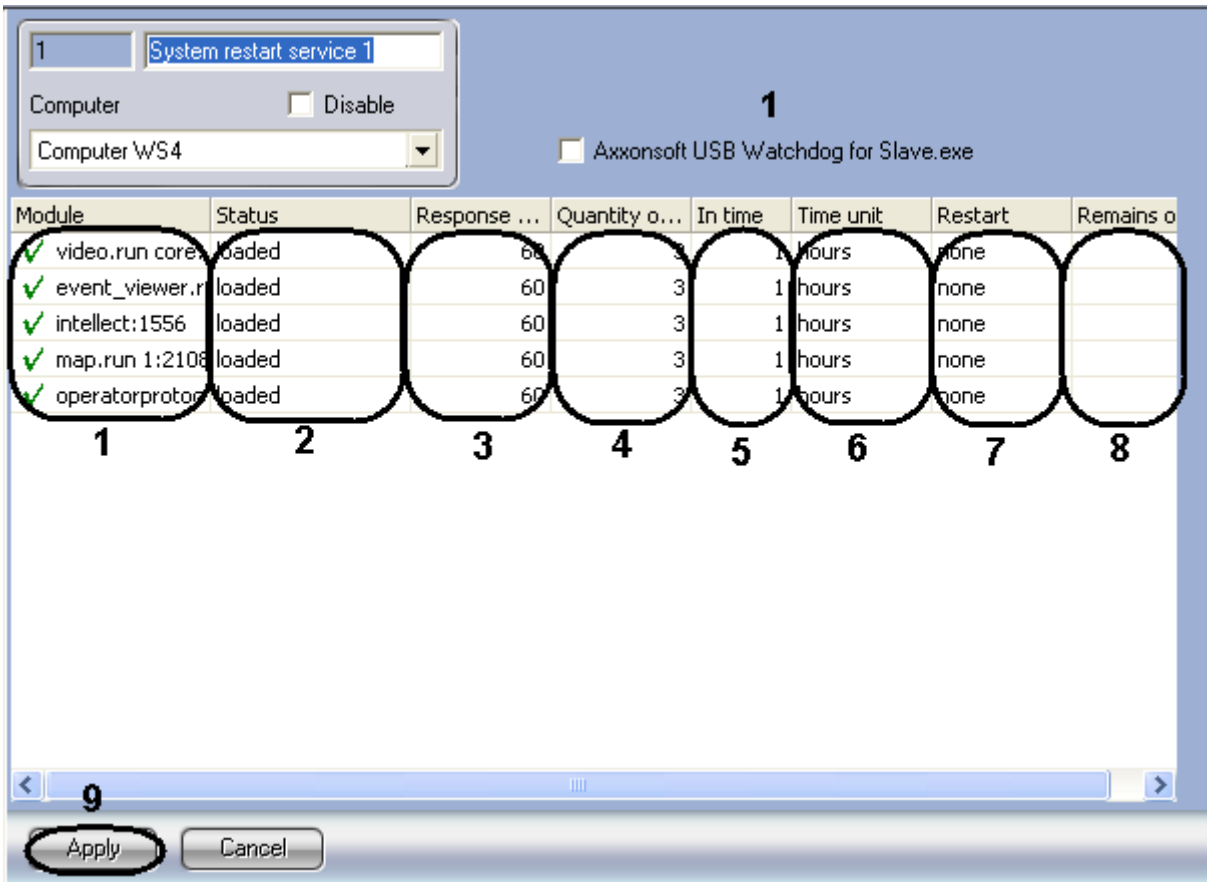


Figure 8.12-3 Configuring the software control of workability

2. The list of run modules on this computer is displayed automatically in the “Module” column (Figure 8.12-3, 1).

Note. Modules with the “In process” state are marked with ✓ sign. Modules with the “No response” state (red field) or “Shutdown” are marked with ! sign

3. The current state of modules is automatically displayed in the “Status” column (Figure 8.12-3, 2).

4. In the “Response timeout, sec”, type-in the time period in seconds during which the response from the module will be waited (Figure 8.12-3, 3).

Note. The system will restart if there is no response from the module within the waiting interval.

5. In the “Quantity of restart” field, type-in the maximum of restarts (module or Intellect core) that can be performed within the specified time period (Figure 8.12-3, 4).

6. In the “In time” field, type-in the new value and/or select in the “Time unit” dropdown list the required metric unit of period to change the value of time period during which the maximum restarts can be performed (Figure 8.12-3, 5-6).

7. In the “Restart” dropdown list, select the required method of restart (Figure 8.12-3, 7).

    7.1. Select the “module” method, to restart module without response.

7.2. Select the “core” method, to restart the Intellect core without response from the module.

Note. Select the “None” value if the restart is not needed when there is no response from the module.

8. The remaining number of restarts within the specified time period is automatically displayed in the “Remains of restarts” column (Figure 8.12-3, 8).

Note. The module changes over to the “Shutdown” state if the number of performed restarts exceeds the maximum.

9. To save changes, click the “Apply” button (Figure 8.12-3, 9).

The software control of workability is now configured.

8.12.4 Getting the information on memory consumption for processes

To the slave.log log file corresponding to the “Computer” object based on which the “System restart service” object is created the information about memory consumption by processes run by the Intellect software is recorded once in a minute.

Messages look like this:

!WARNING <<<process information>>> name="video.run", committed memory is 83001344 bytes (79MB, 81056KB). DELTA is 22687744 bytes (21MB, 22156KB).

The DELTA value is the difference between the current and previous values of memory consumption by this process.

8.13 Configuring the Videogate module

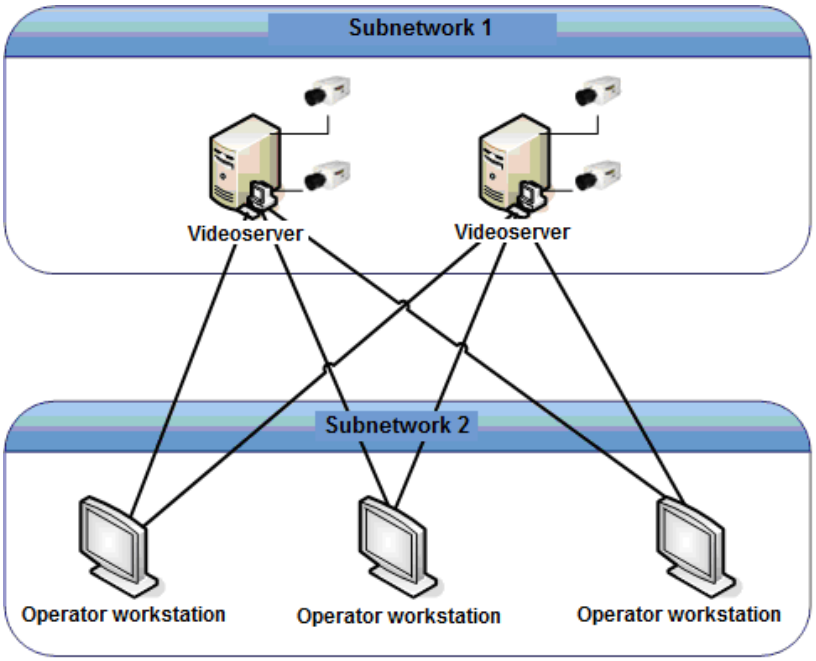
8.13.1 General information

Videogate is used in large distributed video surveillance systems for routing the video signals among servers and clients (or administrator workstations used as operator workstations) located in different subnetworks. Servers and remote workstations are grouped into different subnetworks due to the following reasons:

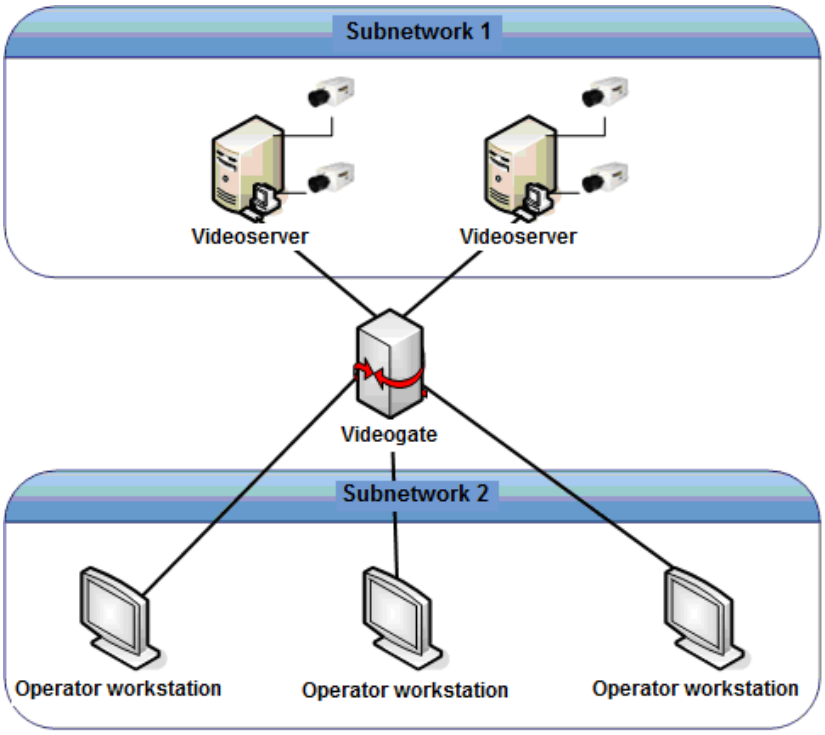
1. Technical limitations leading to the servers being connected by low band channels and the clients using a high band connection. For example, the servers may be distributed over a large area, while the clients are located in one room of the monitoring center.

2. Security requirements. For example, to eliminate unauthorized access to administrative functions, the servers and clients are isolated into a different subnetwork from the operator workstations. When the subsystem interface uses the videogate, the clients(or rather administration workstations used as operator workstations) do not have access to the administrative functions of the servers and administration workstations of another subnetwork, but receive video signals from the servers.

Figure 8.13-1 A and B show the schemes of construction of the video surveillance systems directly to the Videoservers with and via the videogate.



A. without the videogate



B. with the videogate

Figure 8.13-1. Schemes of interaction among the servers and the operator workstations via the videogate and without it

8.13.2 Order of setting up the Videogate object

To set the Videogate object do the following:

1. Create the Videogate object on the basis of the Computer system object.
2. Select and set cameras for transmitting the video signals through the Videogate.
3. When necessary select the disks for storing archive of Videogate module.

8.13.3 Creation of Videogate object

To create the Videogate object do the following:

1. Select the required Computer object on the tab Hardware of System settings dialog window (Figure 8.13-2).

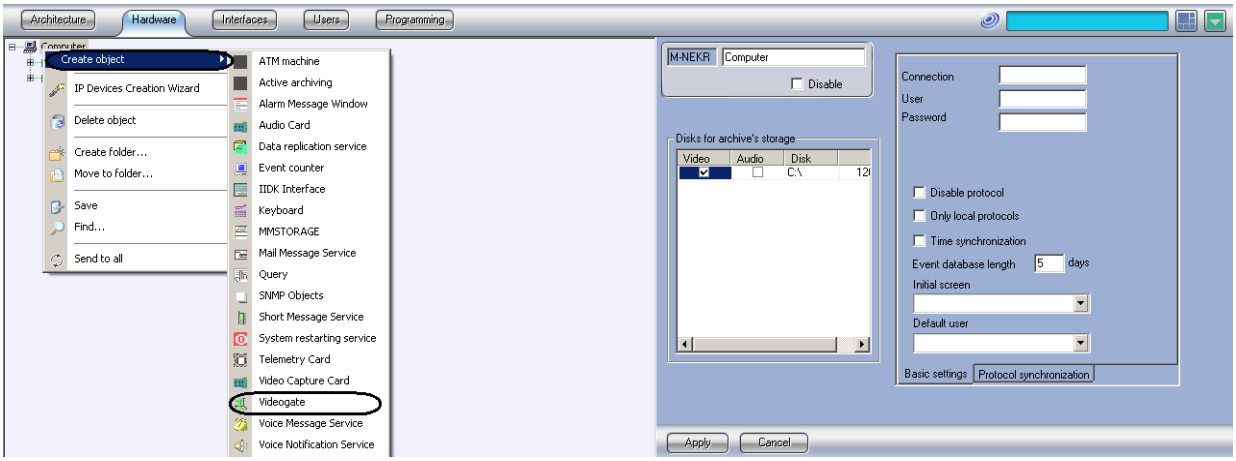


Figure 8.13-2. Setting up the Videogate module

2. Right mouse click upon the selected Computer object and select Create object> Video gate in the context menu that will open (Figure 8.13-3).

3. In the window, that will open, set the name and the number of Videogate object and the click Apply button (Figure 8.13-3).

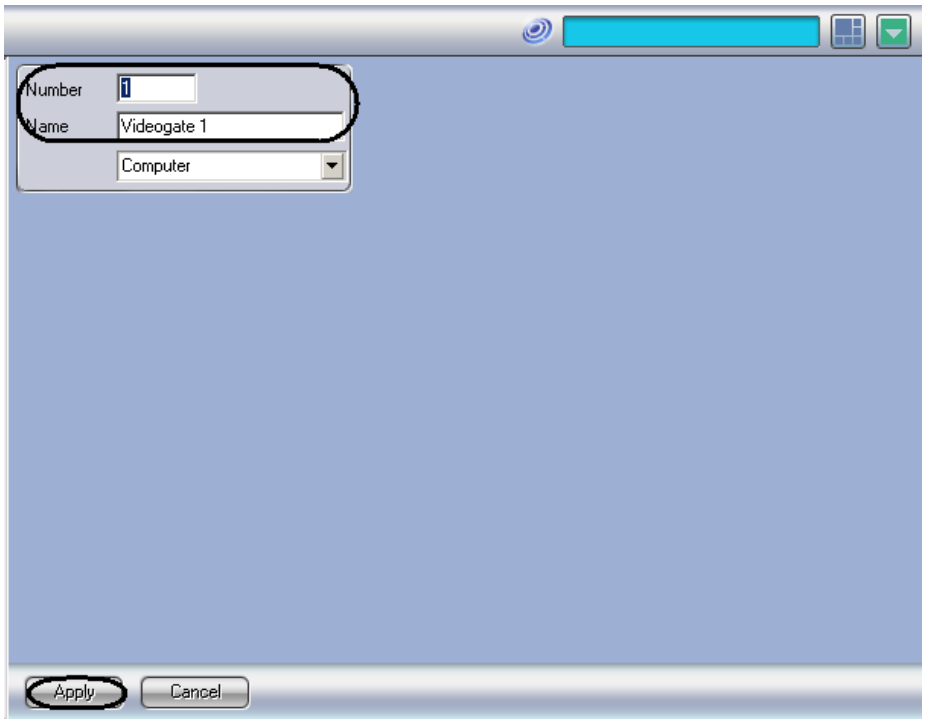


Figure 8.13-3. Setting the number and name of Videogate object

Note. In result settings panel of Videogate object will open.

4. Repeat steps 1-3 for all the required Computer and Videogate objects.

Creation of the Videogate object is completed.

8.13.4 Selecting and configuring the cameras

One can set and select cameras for transmitting the video signals through Videogate in two ways:

1. Separately. Use the settings panel of Videogate object.

2. Complex. Use the “Add/edit cameras” dialog box.

Note. Order of complex selection of video cameras for transmitting video signals through the Videogate is described in Complex selection of video cameras.

To select cameras on the settings panel of the “Videogate” object do the following:

1. Go to the settings panel of Videogate system object (Figure 8.13-4).

2. From the dropdown list in the column Number select the number of the required video camera (Figure 8.13-4, 1).

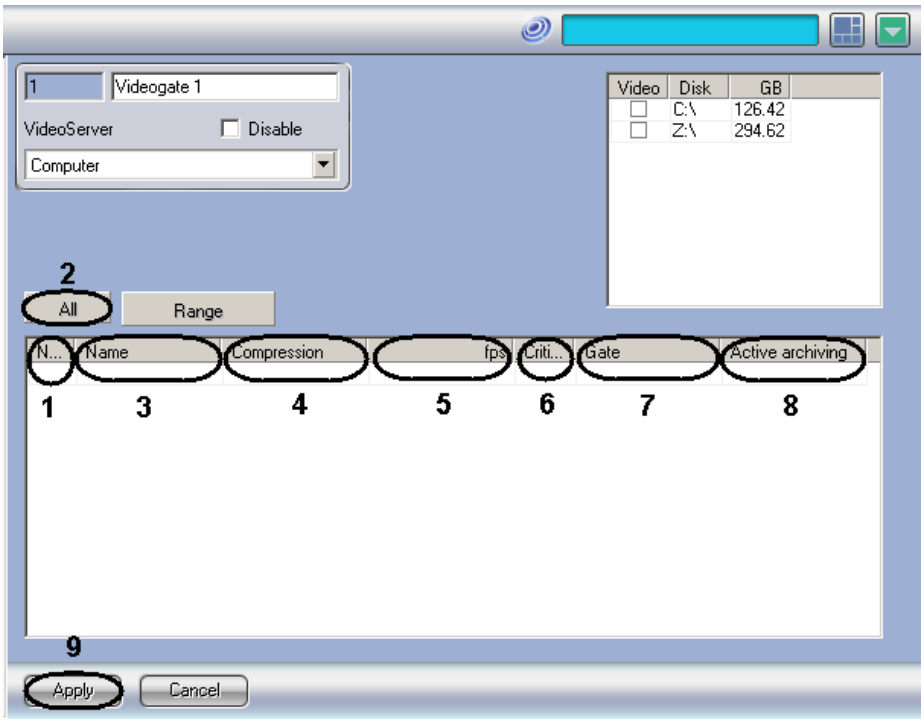


Figure 8.13-4. Selection of video cameras

Note. To select all cameras, registered in the system, click the “ALL” button (Figure 8.13-4, 2).

3. In result in the column Name the name of the selected camera will be displayed (Figure 8.13-4, 3).

4. In case, when compression level of the video signal for transmitting through the Videogate, select from the dropdown list in the column Compression the required compression level of video signal (Figure 8.13-4, 4). Compression level of the video signal rises from «0» (compression is absent) to «5» (maximum compression).

Attention! The compression level can be changed only for the video from analog cameras compressed by the Motion Wavelet codec.

Note. In case of setting the compression level video signal on the Server has to be preliminary decompressed, that leads to great load on CP of the Server.

5. In case, when video signal has to be thinned out for its transmitting through the Videogate, enter in the field in the column «fps» the required frame rate of the video signal (Figure 8.13-4, 5).

Note1. The given «fps» value must be less than the frame rate of video signal's digitizing by video input device. Otherwise frame rate of video signal will be equal to the frame rate of digitizing.

Note2. For correct thinning of a video stream compressed with the help of H.264 or MPEG4 codecs, the "fps" value is to be equal to keyframe rate specified in the device (IP-camera) or INTELLECT settings (see "Key frame rate settings" section).

6. In case, when transmission of video signals through the local net or from the Server to the Videogate has to be controlled, enter in the field in the column Critical rate minimal available value of frame rate of video signals, transmitted to the Videogate (Figure 8.13-4, 6).

Note. The given value Critical rate should not be more than the frame rate of video signal, transmitted to the Videogate.

The setting of critical rate on the Videogate must be combined with the settings of Alarm messages window system object (see. Setting up alarm messages window). In this case with the reduction of rate of inputting signals below the given value Alarm messages window will be displayed with the message "Reduced input rate".

7. In case, when video signal from the selected video camera is to be received from the other "Videogate" object, then select the name of this object from the dropdown list in the "Gate" column (Figure 8.13-4, 7).

8. In case, when the video signal from the selected camera has to be transmitted from the Active archiving object, select the name of this object from the dropdown list in the Active archive (Figure 8.13-4, 8).

9. Repeat steps 2-8 for all the required cameras.

10. To save all the changes click Apply button (Figure 8.13-4, 9).

Selection of cameras on the settings panel of the "Videogate" object is completed.

8.13.5 Complex selection of video cameras

There is opportunity of complex selection and editing parameters of video cameras for transmitting video signal through Videogate. Complex selection of cameras is performed in the following way:

1. Go to the settings panel of Videogate system object and then click Range button (Figure 8.13-5, 1).

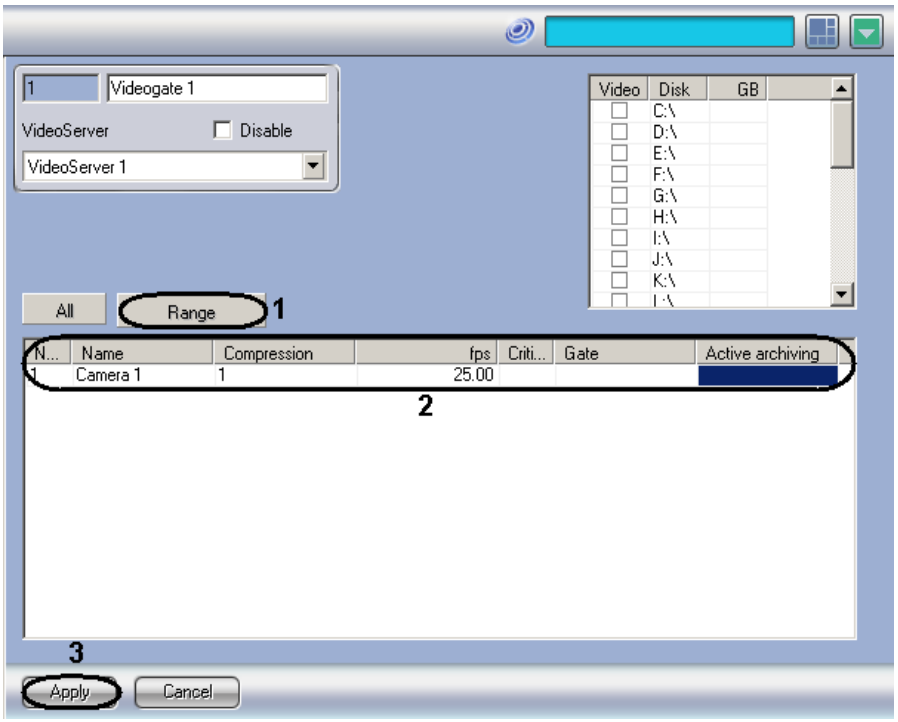


Figure 8.13-5. Range button

2. In result a dialog window Add/edit cameras will open (Figure 8.13-6).

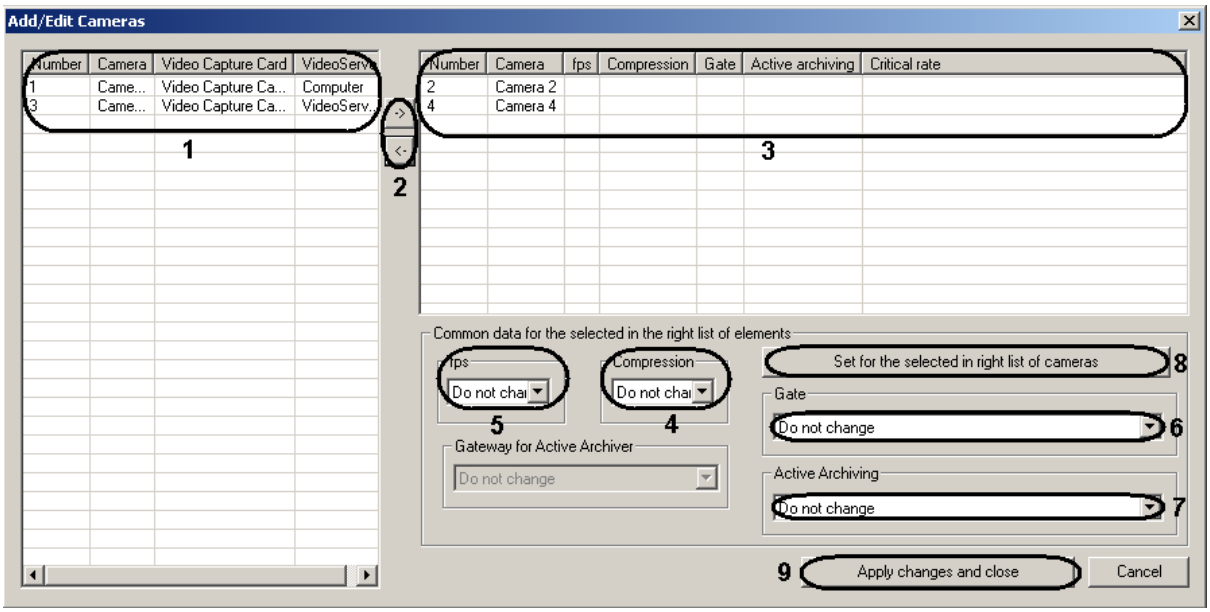


Figure 8.13-6. Add/edit cameras dialog window

3. Select the required objects in the left list of Add/edit cameras window (Figure 8.13-6, 1).

4. Remove the selected cameras to the right list, clicking the « » button (Figure 8.13-6, 2).

Note. Right list contains a list of cameras, selected for transmitting the video signals through the Videogate.

Button «<-» is used for back action, for removing the selected cameras from the right list to the left (Figure 8.13-6, 2).

5. In result the selected video cameras will be displayed in the right list of Add/edit cameras window (Figure 8.13-6, 3).

6. When necessary select in the right list the names of the required cameras for complex editing of parameters (Figure 8.13-6, 3).

Note. For all the selected cameras the same value of parameters will be set.

Note. There is no possibility to edit Critical rate parameter with the help of Add/edit cameras.

7. In case, when compression level of video signal has to be changed for transmitting through the Videogate, select from the Compression dropdown list the required compression level (Figure 8.13-6, 4).Compression level rises from «0» (no compression) till «5» (maximum compression).

Attention! The compression level can be changed only for the video from analog cameras compressed by the Motion Wavelet codec.

Note. In case of setting the compression level video signal must be preliminary decompressed on the Server that leads to great loading on the CP of the Server.

Settings «Compression», «fps», «Gate», «Active archive» belong to the group «Set for the selected in right list of cameras »(Figure 8.13-6, 6).

8. In case, when video signal has to be thinned out for transmitting through Videogate select from the «fps» dropdown list the required frame rate of video signals (Figure 8.13-6, 5).

Note. The given «fps» value must be less the frame rate of video signal's digitizing by video capture device. Otherwise frame rate of video signal will be equal to the frame rate of digitizing.

9. In case, if video signal form the selected cameras is to be received from the other "Videogate" object, then select the name of this objet from the "Gate" dropdown list (Figure 8.13-6, 6).

10. In case when video signal has to be transmitted from the selected cameras from the Active archive object, select from the Active archive dropdown list the name of this object (Figure 8.13-6, 7).

11. To save the set parameters click Set for the selected in right list of cameras button (Figure 8.13-6, 8).

12. In result the set parameters will be displayed in the right list of Add/edit cameras window (Figure 8.13-6, 3).

13. Repeat steps 6-11 for complex editing of all the required cameras.

14. To save all the changes and close Add/edit cameras window click Apply changes and close button (Figure 8.13-6, 9).

15. The given settings will be displayed on the settings panel of the “Videogate” object (Figure 8.13-5, 2).

16. To save the given changes click Apply button (Figure 8.13-5, 3).

Complex selection of cameras is completed.

8.13.6 Selection of disks for storing the archive of Videogate module

To enable video signals archiving, going through the Videogate, it is necessary to select the disks for archive storing.

To select the disks do the following:

1. Go to the settings panel of Videogate system object (Figure 8.13-7).

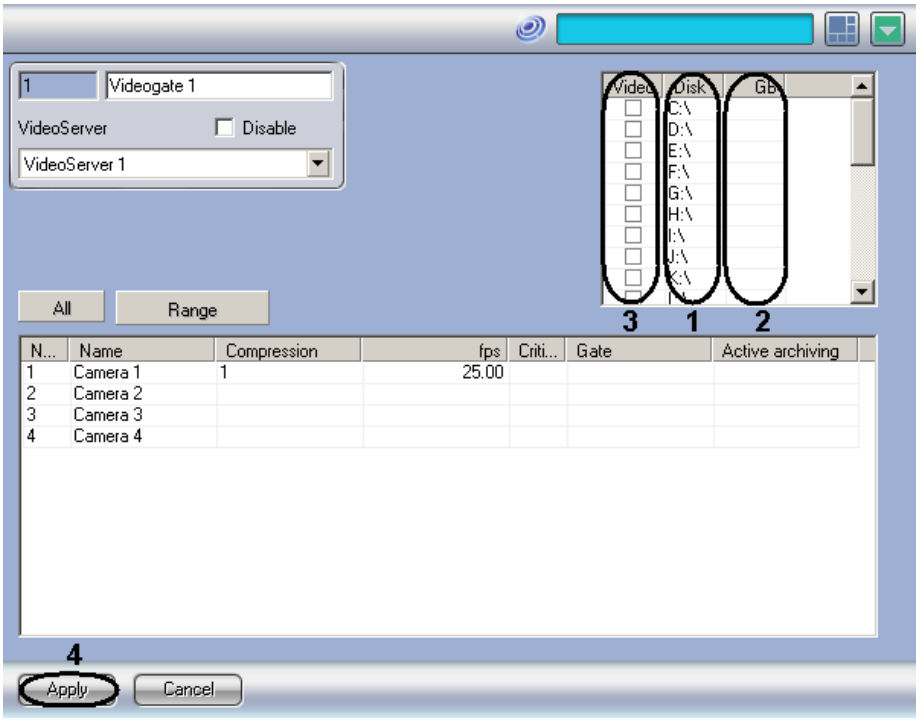


Figure 8.13-7. Selection of diskd for for storing the archive of Videogate module

2. Names of local (net, USB) disks, accessible for archive of Videogate module are given in the column Disk (Figure 8.13-7, 1).

Attention! For Windows Vista and Windows 7 OS with connected UAC it’s necessary to connect net disks through command prompt with Administrator’s rights. The way of connection is described in Connecting network disks in Windows Vista and Windows 7 OS part.

Note. To use net disks as an archive, set UNC paths to them in Intellect PC. Details of working with net disks in Intellect PC that is installed a s a Service are described in “Configuring the restart of the “ITV Intellect Core Server” service

If the “ITV Intellect Core Server” service is to be restarted, do the following:

1. Go to the Windows Control Panel in the “Start” menu.

2. Select “Administrative Tools” -> “Services”. The list of services registered in the system is displayed.
3. Select the “Properties” item in the context menu of the “Intellect Core Server” service.
   Note. The context menu is called with the right click on the name of the service.

4. Go to the “Recovery” tab in the displayed box (Figure 13.4-1, 1).

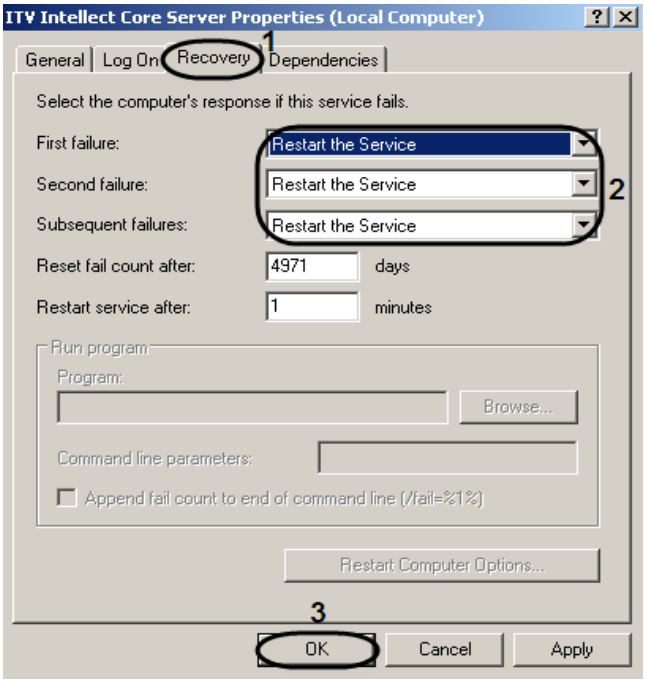


Figure 13.4-1 Configuring the restart of the “ITV Intellect Core Server” service

5. In the corresponding drop-down lists select the actions to be performed in case of the first, second and subsequent system failures (Figure 13.4-1, 2).
6. To save the changes, click the “OK” button (Figure 13.4-1, 3).

The restart of the “ITV Intellect Core Server” service is now configured.

Working with network disks of INTELLECT™ installed as a Service”.

3. In the column «GB» there is a size of free space on disk in GB (Figure 8.13-7, 2).

4. In the column Video put the check mark for disks, selected for storing archive of Videogate module (Figure 8.13-7, 3).

5. To add a net disk via entering the UNC path, do the following:
   5.1 Go to the last line in the Disk list and click Down key (Figure 8.13-8).

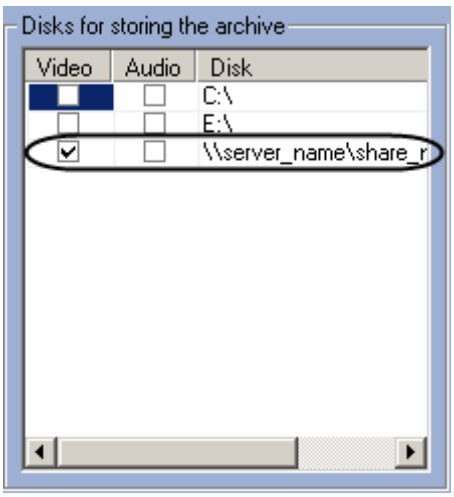


Figure 8.13-8 Entering the UNC path to a net disk

5.2 Enter the path to a net file in the appeared line in Disk column (Figure 8.13-8). UNC path is set in format «\\server_name\share_name», where «server_name» is file server's name and «share_name» is net name of generalfolder.

5.3 Set the checkbox for created disk in Video column (Figure 8.13-8).

6. To save the set changes click Apply button (Figure 8.13-7, 4).

Note. For storing the archive of Videogate module one should select disks that are not used for storing video archive from cameras (are selected in the settings panel of computer object). Otherwise after saving the given changes there will appear Error in the process of saving the Videogate object window (Figure 8.13-9).

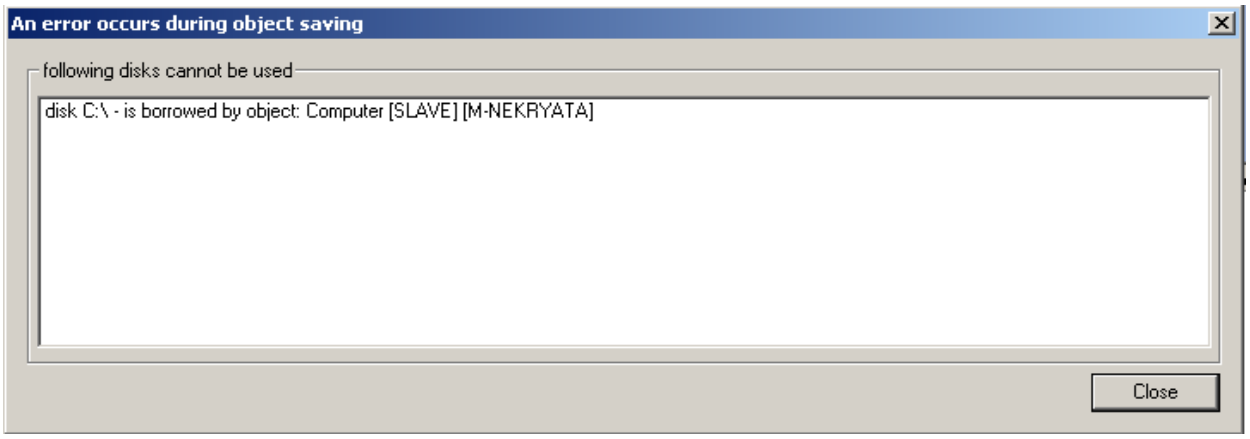


Figure 8.13-9. Error window

Note. In case, when no one disk is selected for storing video recordings, there is no recording of video signals to the archive of Videogate module.

Selection of disks for storing the archive of Videogate module is completed.

8.14 Configuring backup archiving

8.14.1 Purpose and implementation of backup archiving in the Intellect software

The Intellect software allows creating the backup copies of video and audio recordings. The Active Archiving module is used for creation of video and audio archives. When making a backup copy, the Intellect software copies video and audio recordings from the main archive of the videoserver to different storage devices.

The Active Archiving module copies the video archives received from the specified cameras to any of the available local or network hard drives.

The Active Archiving module supports the following functions:

1. Copying the video archive to local or network hard drives, or USB storage.
2. Changing the frame rate of the signal at the time of saving it to active archive.
3. Changing the rate of data transfer via a local network.
4. Setting up the periodicity of backup archiving.
5. Cyclic copying of the data to the connected storage devices.
6. Viewing the video archive from Active Archiving on the video surveillance monitor.
7. Monitoring the storage usage.

*Note. To record the audio archive together with the video archive, configure the **Active audio archive** object (see Configuring the Active audio archive module section).*

A folder named VIDEO which holds the backup video archive is created on the specified storage devices when setting up the corresponding objects.

The backup copying module can be controlled:

1. Manually using special interface objects.
2. Automatically using the built-in programming capabilities of Intellect software – macros and scripts.

8.14.2 Configuring the "Active Archiving" module

The "Active Archiving" module is used to make backup copies of the video archive from the videoserver. The "Active Archiving" module copies the video archives received from the specified cameras to the specified storage device.

Note. A remote workstation, where the active archiving is installed, is to have data about servers archive so that the video archive being copied uniformly from specified cameras. For this the remote workstation gets data about archive indexes from the server once in 30 seconds. After system restarting, data exchange is stopped until the "Active archiving" is started.

The “Active Archiving” module is configured by an “Active Archiving” system object. When the “Active Archiving” object is created, an “Active audio archive” object with the same identifier is created automatically.

8.14.2.1 *Configuring the “Active Archiving” object*

To configure the “Active Archiving” object, do the following:

1. Create the “Active Archiving” object on the base of the “Computer” system object;
2. Select and configure cameras to copy the video archive to the “Active Archiving”;
3. Set the parameters of video archive transmission over LAN;
4. Select disks to store the “Active Archiving” module.
5. Configure the video archive scaling when it is copied to the “Active Archiving”;
6. Configure the schedule of video archive copying to the “Active Archiving”;
7. Configure the “Panel of Active Archiving” interface object.

8.14.2.2 *Creating the “Active Archiving” object*

To create the “Active Archiving” object, do the following:

1. Select the required computer object on the “Hardware” tab of “System settings” dialog box (Figure 8.14-1, 1).

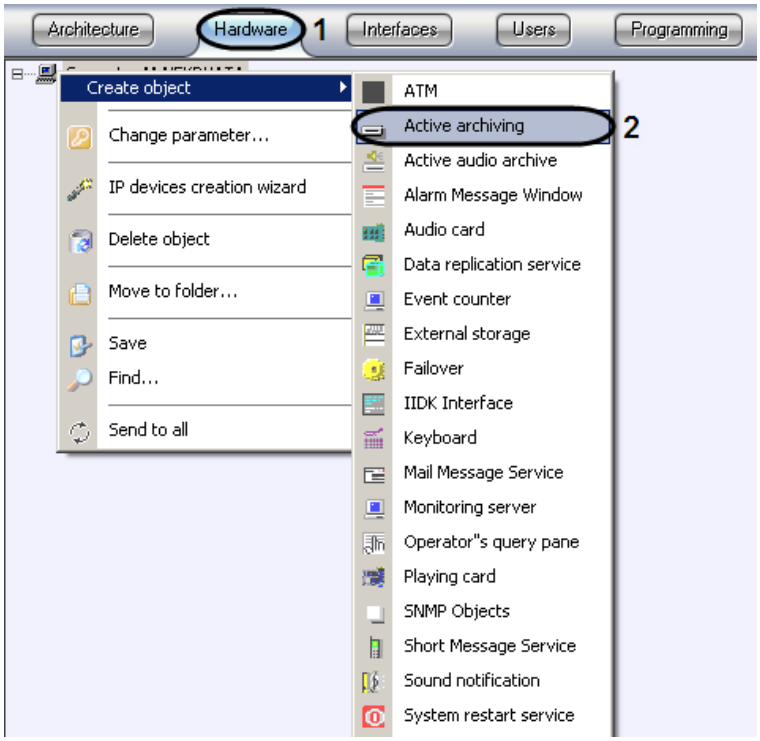


Figure 8.14-1. Creating the “Active Archiving” object

2. Click right mouse button upon the selected “Computer” object and select “Create object” ⇨ “Active Archiving” in the context menu (Figure 8.14-1, 2).

3. In the appeared window set the number and name of the “Active Archiving” object and then click the “Apply” button (Figure 8.14-2).

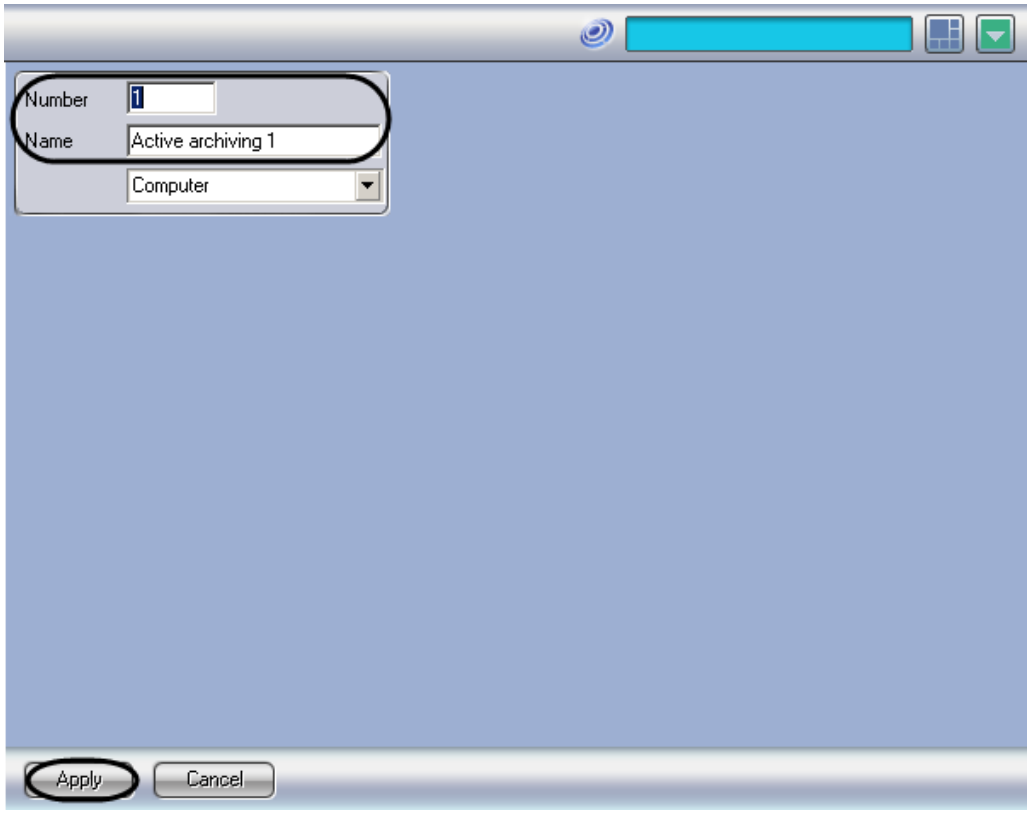


Figure 8.14-2. Setting the number and name of the “Active Archiving” object

Note. The settings panel for the “Active Archiving” object is displayed as a result.

4. Repeat steps 1-3 for all required “Computer” and the “Active Archiving” objects.

The “Active Archiving” object is now created.

8.14.2.3 *Selecting and configuring the cameras*

There are two ways to select and configure cameras for copying the video archive to the “Active Archiving”:

1. Separately. The settings panel for the “Active Archiving” object is in use.

2. Integrated selection. The “Add/Edit cameras” dialog box is in use.

Note. The order of cameras’ complex selection for copying the video archive to the “Active Archiving “is described in the “Integrated selection of cameras” section.

To select cameras on the settings panel of the “Active Archiving” object, do the following:

1. Go to the settings panel for the “Active Archiving” system object (Figure 8.14-3).

2. In the “Number” column of the “CAmeras” group, select the name of the required video camera (Figure 8.14-3, 1).

Note. To select all the cameras registered in the system, click the “All” button (Figure 8.14-3, 2).

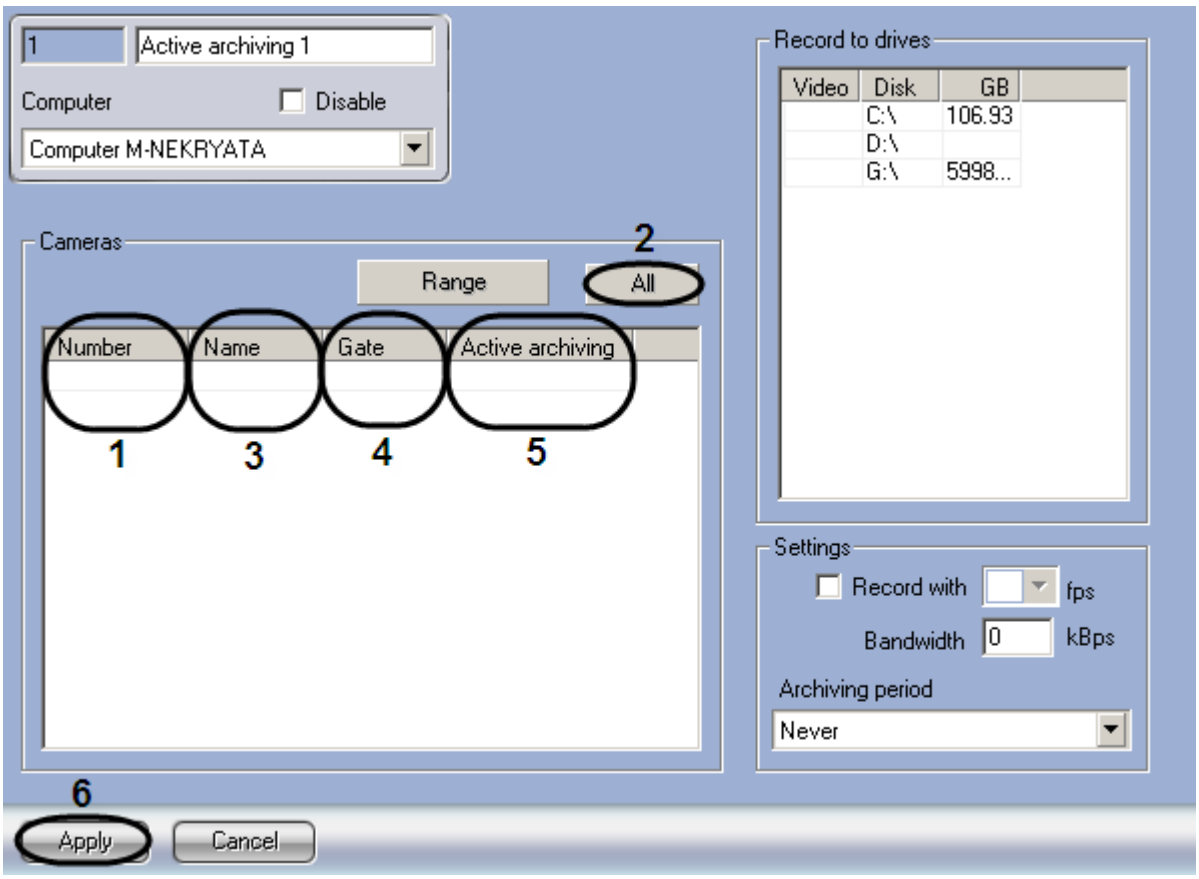


Figure 8.14-3. Selecting the cameras

3. As a result the name of the selected camera is automatically displayed in the “Name” column of the “Cameras” group (Figure 8.14-3, 3).

4. If a video archive from the selected camera is to be received via the “Videogate” object, then select the name of this object from the “Gate” drop-down list (Figure 8.14-3, 4).

5. If a video archive from the selected camera is to be transmitted from another “Active archiving” object, select the name of this object in the “Active archiving” drop-down list (Figure 8.14-3, 5).

6. Repeat steps 2-5 for all the cameras.

7. To save all the changes, click the “Apply” button (Figure 8.14-3, 6)

The cameras on the settings panel of the “Active Archiving” object are now selected.

8.14.2.4 *Integrated selection of cameras*

There is an opportunity of integrated selection and editing of cameras’ parameters for copying the video archive to the “Active Archiving”.

Integrated selection can be performed in the following way:

1. Go to the settings panel for the “Active Archiving” system object, click the “Range” button in the “Cameras” group (Figure 8.14-4, 1).

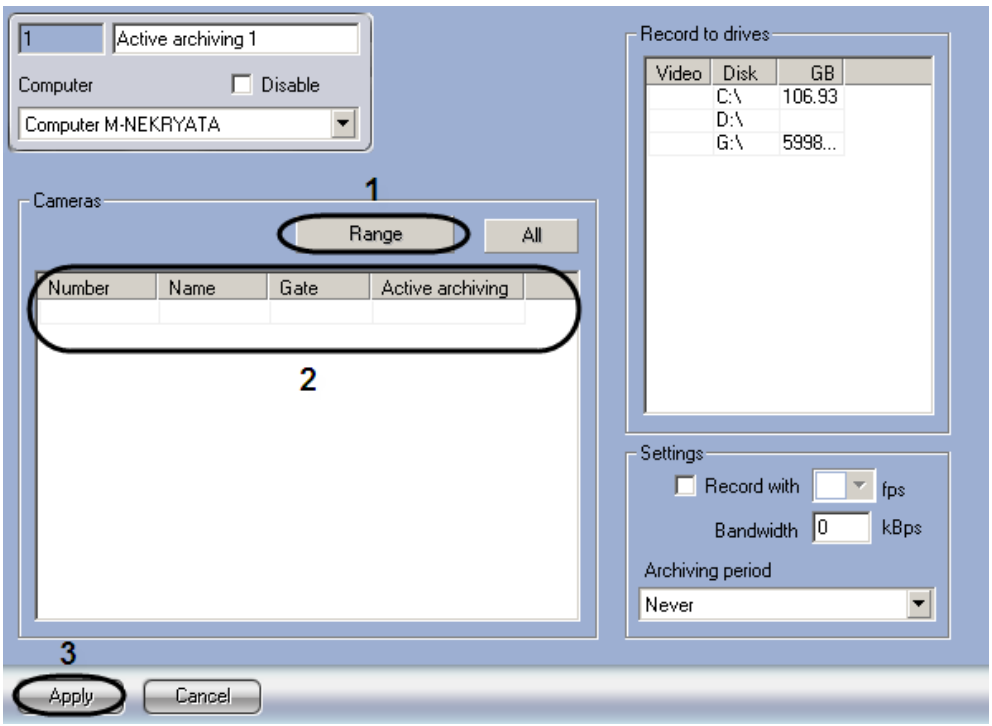


Figure 8.14-4. The "Range" button

2. As a result the "Add/Edit Camera Objects" dialog box opens (Figure 8.14-5).

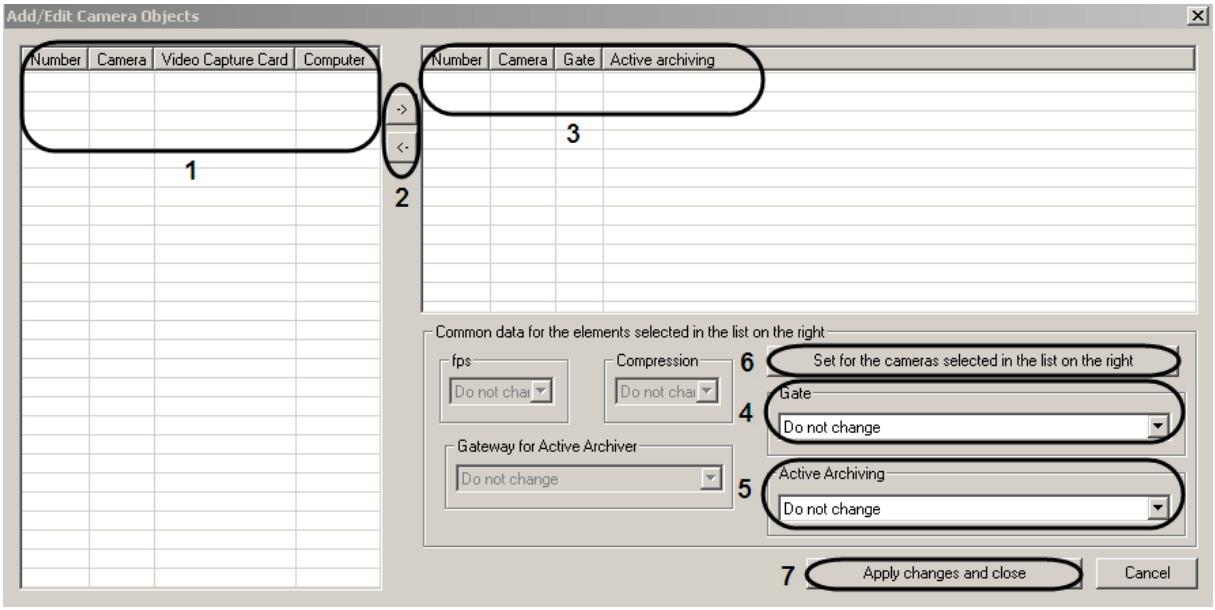


Figure 8.14-5. The "Add/Edit Camera Objects" dialog box

3. Select the required cameras in the left list of the "Add/Edit Camera Objects" box (Figure 8.14-5, 1).

4. Move the selected cameras to the right list by clicking the button (Figure 8.14-5, 2).

Note.The list on the right is the list of cameras selected for copying the video archive to the "Active Archiving".

The <- button is used for reverse action that is for moving the selected video cameras from the right list to the left one (Figure 8.14-5, 2).

5. As a result the selected cameras are displayed in the right list of the “Add/Edit Camera Object” box (Figure 8.14-5, 3).

6. If it is necessary in the right list select the names of required cameras for complex editing their parameters (Figure 8.14-5, 3).

Attention! For all the selected cameras the same parameters will be set.

7. If a video archive from the selected camera is to be received via the“Videogate” object, then select the name of this object from the “Gate” drop-down list (Figure 8.14-5, 4).

Note. The “Gate” and “Active Archiving” settings belong to the “Common data for the elements selected in the list on the right” group (Figure 8.14-5).

8. If a video archive from the selected camera is to be transmitted from another “Active archiving” object, select the name of this object in the “Active archiving” drop-down list (Figure 8.14-5, 5).

9. To save the parameters, click the “Set for the cameras selected in the list on the right” button (Figure 8.14-5, 6).

10. As a result the set parameters are shown in the list on the right of the “Add/Edit Camera Objects” box (Figure 8.14-5, 3).

11. Repeat steps 6-9 for complex editing of all the required cameras.

12. To save the changes and close the “Add/Edit Camera Objects” box, click the “Apply changes and close” button (Figure 8.14-5, 7).

13. Camera settings are shown in the “Cameras” table on the settings panel of the “Active Archiving” object (Figure 8.14-4, 2).

14. To save all the changes, click the “Apply” button (Figure 8.14-4, 3).

Integrated selection of video cameras is now over.

8.14.2.5 *Setting the parameters of video archive transmission over LAN*

There is a “Bandwidth” parameter in the settings for the “Active archiving” system object. This parameter limits the bandwidth for one video channel over LAN. To calculate total bandwidth, multiply this bandwidth by number of channels.

By default the bandwidth is not set. This means the data is transferred so that the local networks, or the videoserver resources, are loaded to the maximum. To reduce the network and Server load, set the bandwidth parameters.

To set the bandwidth parameters, do the following:

1. Go to the settings panel for the “Active Archiving” system object (Figure 8.14-6).

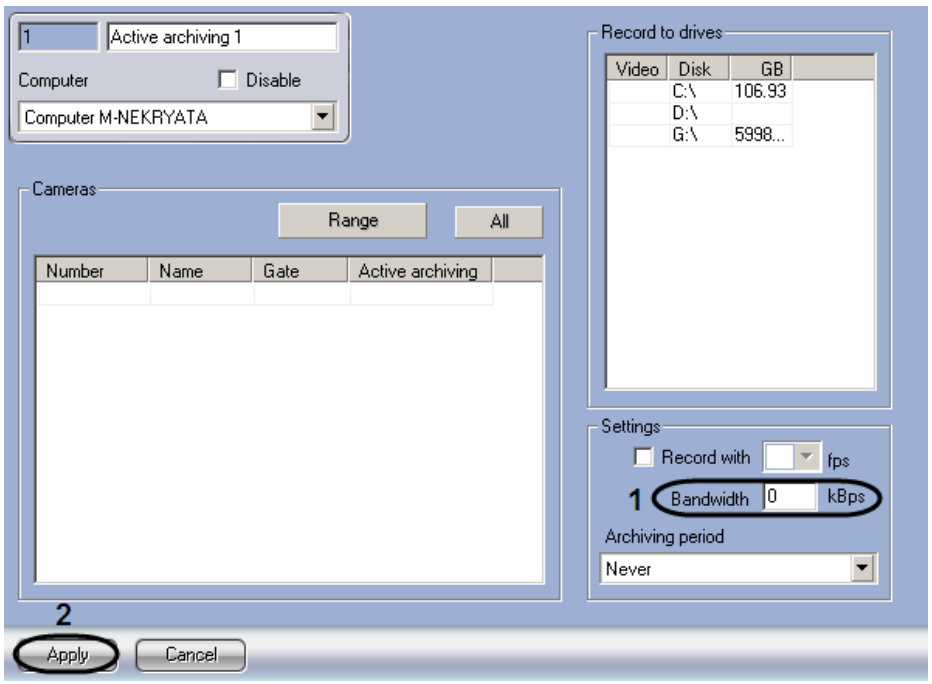


Figure 8.14-6 Setting the bandwidth parameters

2. Specify the value (kBps) of maximum bandwidth for transmitting one video channel over LAN in the “Bandwidth” field (Figure 8.14-6, 1).

3. To save the changes, click the “Apply” button and restart INTELLECT™ software (Figure 8.14-6, 2).

The parameters of transmitting video archive over LAN are now set.

8.14.2.6 *Selecting drives to store the archive of the “Active Archiving” module*

In INTELLECT™ software the backup copy of the video archive for the “Active Archiving” module is stored to local and network drives and to connected USB storage. Backup files are stored in the “VIDEO” folders on these drives.

By default backup archiving is disabled.

To select drives to store the archive of the “Active Archiving” module, do the following:

1. Got to the settings panel for the “Active Archiving” system object (Figure 8.14-7).

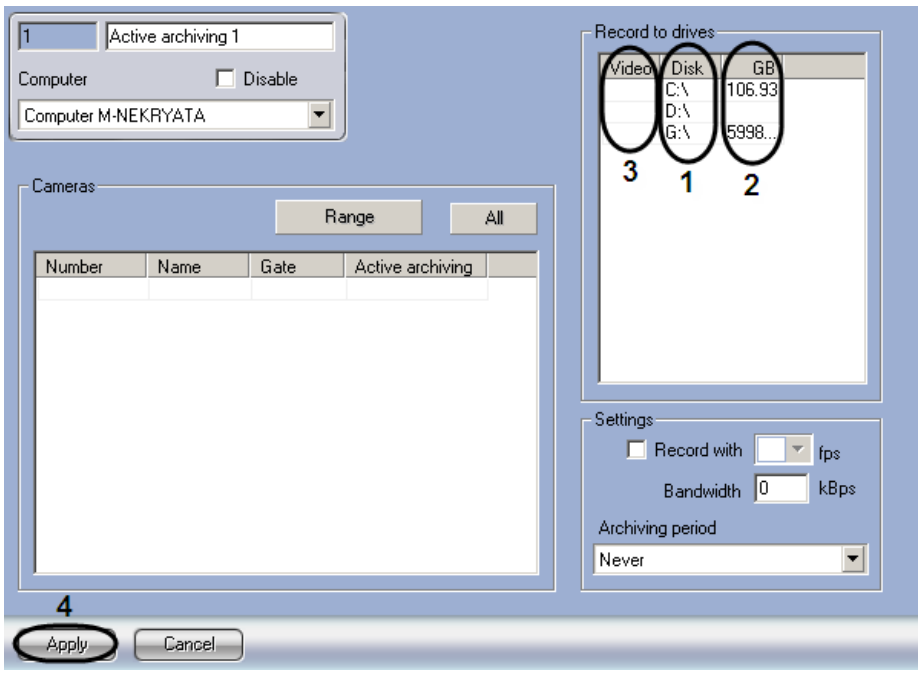


Figure 8.14-7. Selecting drives to store the archive of the "Active Archiving" module

2. Names of local (net, USB) drives available for storing the archive of the "Active Archiving" module are given in the "Disk" column of the "Record to drives" table (Figure 8.14-7, 1).

   Attention! It is necessary to connect net disks via a command prompt with Administrator's rights for Windows Vista and Windows 7 OS with enabled UAC. The way of UAC enabling is described in the "Connecting network disks in Windows Vista and Windows 7 OS" section.

   Note. To use net disks for a backup archive, set UNC paths to them in INTELLECT™ software. Details of working with net disks in INTELLECT™ software (installed as a Service) are given in "Configuring the restart of the "ITV Intellect Core Server" service

If the "ITV Intellect Core Server" service is to be restarted, do the following:

7. Go to the Windows Control Panel in the "Start" menu.
8. Select "Administrative Tools" -> "Services". The list of services registered in the system is displayed.
9. Select the "Properties" item in the context menu of the "Intellect Core Server" service.
   Note. The context menu is called with the right click on the name of the service.

10. Go to the "Recovery" tab in the displayed box (Figure 13.4-1, 1).

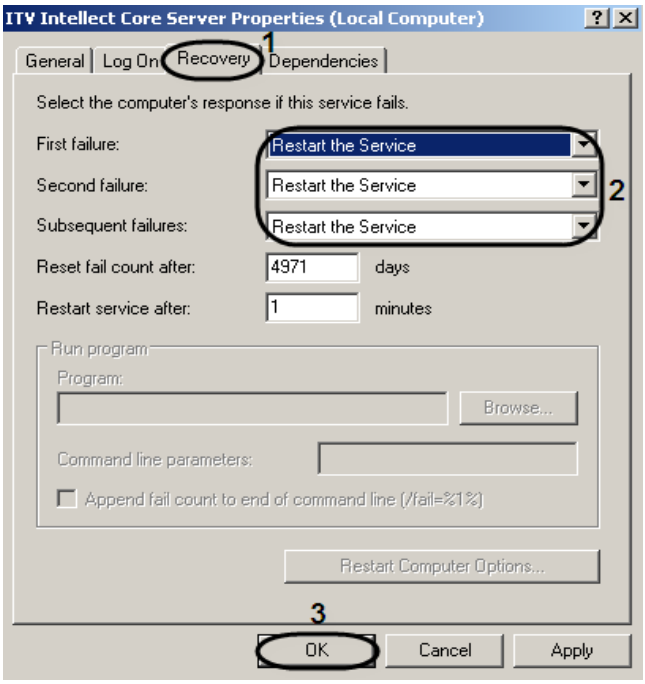


Figure 13.4-1 Configuring the restart of the "ITV Intellect Core Server" service

11. In the corresponding drop-down lists select the actions to be performed in case of the first, second and subsequent system failures (Figure 13.4-1, 2).
12. To save the changes, click the "OK" button (Figure 13.4-1, 3).

The restart of the "ITV Intellect Core Server" service is now configured.

Working with network disks of INTELLECT™ installed as a Service*" section.*

3. Free space on drivers (in Gb) is given in the "GB" column (Figure 8.14-7, 2).

4. In the "Video" column, set the checkboxes for drives, selected for storing the archive of the "Active Archiving" module (Figure 8.14-7, 3).

5. To add a net disk by giving the UNC path, do the following:

5.1 Go to the last line in the "Disk" list and click the down key (Figure 8.14-8).

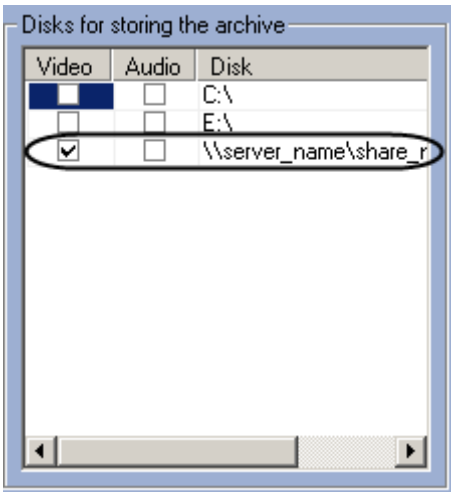


Figure 8.14-8 Specifying the UNC path to a net disk

5.2 Specify the path to a net file in the appeared line in the “Disk” column (Figure 8.14-8). The UNC path is set in the “\\server_name\share_name” format, where the “server_name»” is the name of file server and the “share_name” is the net name of general folder.

5.3 In the “Video” column, set the checkbox for the created disk (Figure 8.14-8).

6. To save the changes, click the “Apply” button (Figure 8.14-7, 4).

The drives for storing the archive of the “Active Archiving” module are now selected.

Note. If no drives have been selected, the “Active Archiving” backup is disabled.

8.14.2.7 *Configuring the scaling of the video archive*

Video signals can be scaled before they are copied to a backup archive of the “Active archive” module.

Note 1. Scaling is performed only with the use of Motion Wavelet codec in the “Active archive”, the size of fragment is shrinking. With the use of other codecs the scaling is performed incorrectly.

Note2. Scaling in the video gate may be performed with such codecs as MJPEG, Motion Wavelet, MPEG, H264 and MxPeg.

If the scaling rate is 25 fps, the videois processed at a lower rate for the first minute (~12 fps).

The maximum allowable scaling rate for MxPeg codec is 12 fps.

By default, a signal is copied from the server to the active archive without scaling.

To configure the scaling of video archive frames while copying them to the “Active Archiving”, do the following:

1. Go to the settings panel for the “Active Archiving” system object (Figure 8.14-9).

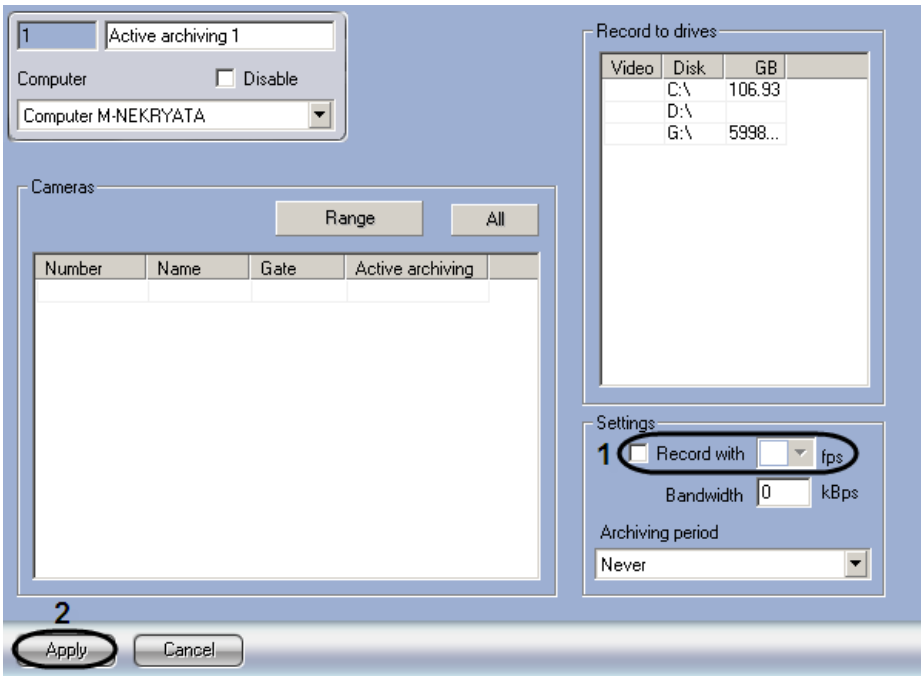


Figure 8.14-9. Configuring the scaling of video archive while copying it to the “Active Archiving”

2. To enable the video archive scaling, set the “Record with ___ fps” checkbox in the “Settings” group (Figure 8.14-9, 1).

3. In the “Record with ___ fps” drop-down list, select the required frame rate of video archive for transmitting to the “Active Archiving” (Figure 8.14-9, 1).

Note1. The selected “Record with ___ fps” value is to be less than frame rate of video signal digitized by a video capture card. Otherwise the frame rate of a video signal will be the same as the frame rate of digitizing.

Note2. The selected framerate value of the video archive that is to be transferred to the “Active archiving” is an average value. A real value of framerate may be different from that one, indicated in the “Record with ___ fps” drop-down list.

4. To save the changes, click the “Apply” button (Figure 8.14-9, 2)

Video scaling is now configured.

8.14.2.8 *Configuring the schedule of the video archive copying*

The “Active Archiving” module can be started in two ways:

1. Automatically. Due to the schedule of copying on the settings panel of the “Active Archiving” system object.

2. Manually. With the help of the “Panel of Active Archiving” interface object.

The process of automatic video archive copying is implemented starting with the latest recordings of video fragments. By default the automatic copying of video archive is not configured.

To configure the schedule of video archive's copying to the “Active Archiving”, do the following:

1. Go to the settings panel for the “Active Archiving” system object (Figure 8.14-10).

2. In the “Archiving period” drop-down list, select the required time zone (time period) of the “Active Archiving” module start (Figure 8.14-10, 1).

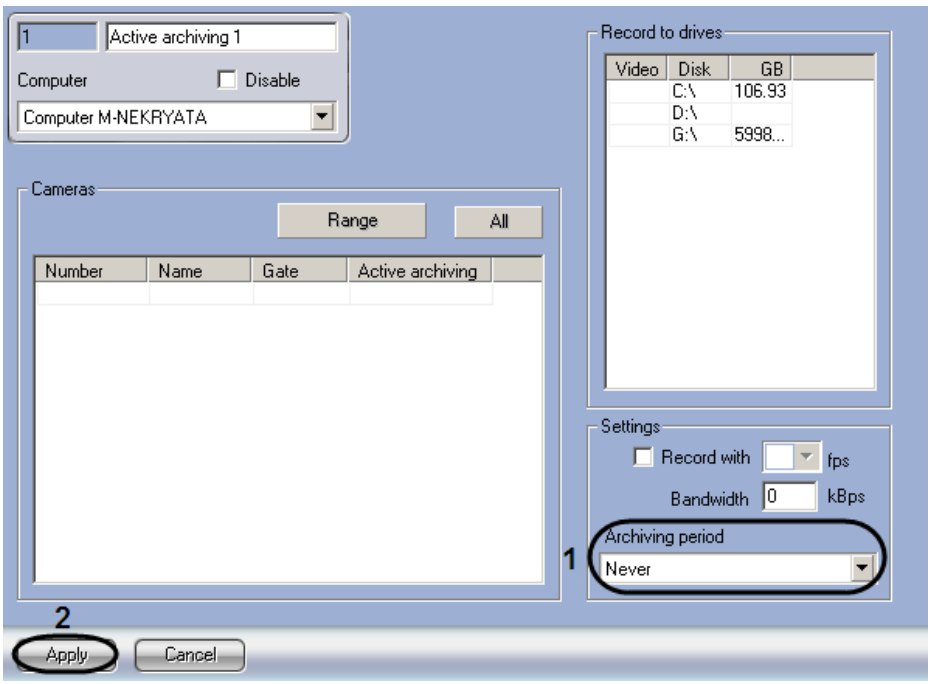


Figure 8.14-10. Configuring the schedule of video archive copying to the "Active Archiving"

3. To save the changes, click the "Apply" button (Figure 8.14-10, 2).

The schedule of video archive copying to the "Active Archiving" is now configured.

To start the archive backup manually, set the beginning and the ending dates of the archive to be copied and click the "Start" button (Figure 8.14-11).

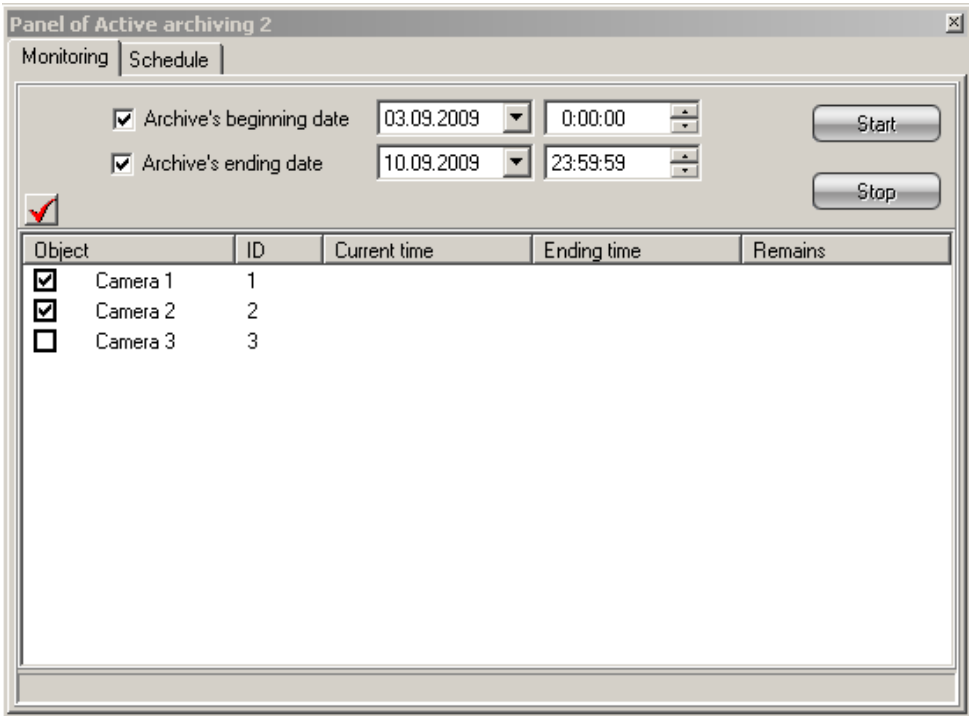


Figure 8.14-11. Starting the "Active Archiving" module with the help of the "Panel of Active archiving" object

8.14.2.9 *Configuring the "Panel of Active archiving" object*

The "Panel of Active archiving" interface object is designed for configuring the Panel of Active archiving, which is used for starting the backup archiving, changing its parameters and monitoring the backup process.

To configure the main parameters of the "Panel of Active archiving" object, do the following:

1. Go to the "Interfaces" tab in the "System Settings" dialog box (Figure 8.14-12, 1)

2. Select the "Panel of Active archiving" object in the objects tree of the "Interfaces" tab (Figure 8.14-12, 2). The settings panel for this object opens on the right of the "Interfaces" tab.

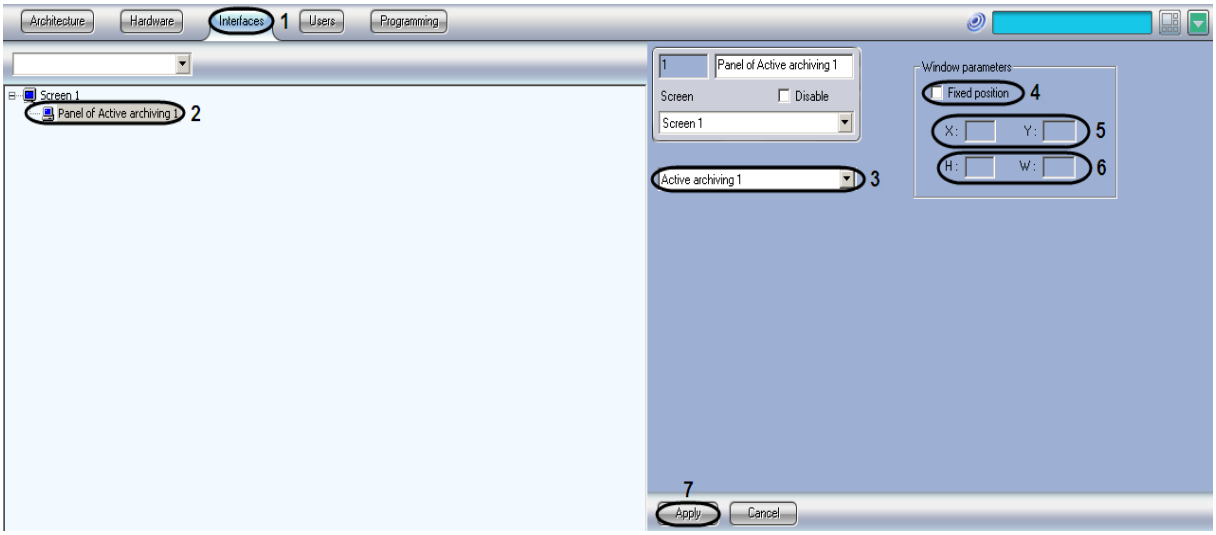


Figure 8.14-12. The settings panel for the "Panel of Active archiving" object

3. In the object list, select that "Active Archiving" object for which this panel is to be created (Figure 8.14-12, 3).

4. To set the exact position of the "Panel of Active archiving" box on the screen, set the "Fixed position" checkbox (Figure 8.14-12, 4).

As a result the "X", "Y", "W" and "H" fields are available for editing.

5. Specify "X" and "Y" coordinates of the upper left corner of the box, in percentage of the corresponding screen dimensions (Figure 8.14-12, 5).

6. Specify the width (W) and height (H) of the window, in percentage of the corresponding dimensions of the screen (Figure 8.14-12, 6).

7. Click the "Apply" button (Figure 8.14-12, 7).

The "Panel of Active archiving" interface object is now configured.

8.14.3 Configuring the Active audio archive module

The "Active audio archive" program module is designed to create a backup copy of audio archive recorded synchronously with a video archive. When the "Active audio archive" program module is in use the audio archive recorded synchronously with the video archive from selected cameras included into digital video monitoring system is copied to a storage selected while configuring the "Active

archiving” module (see *Selecting drives to store the archive of the “Active Archiving” module* section). Copying is performed synchronously with a video archive copying.

Configuration of the “Active audio archive” is performed using the “Active audio archive” system object. The “Active audio archive” object is created automatically while creating the “Active archiving” object (Figure 8.14-13).

Note. Deleting the “Active archiving” object the “Active audio archive” object is deleted automatically.

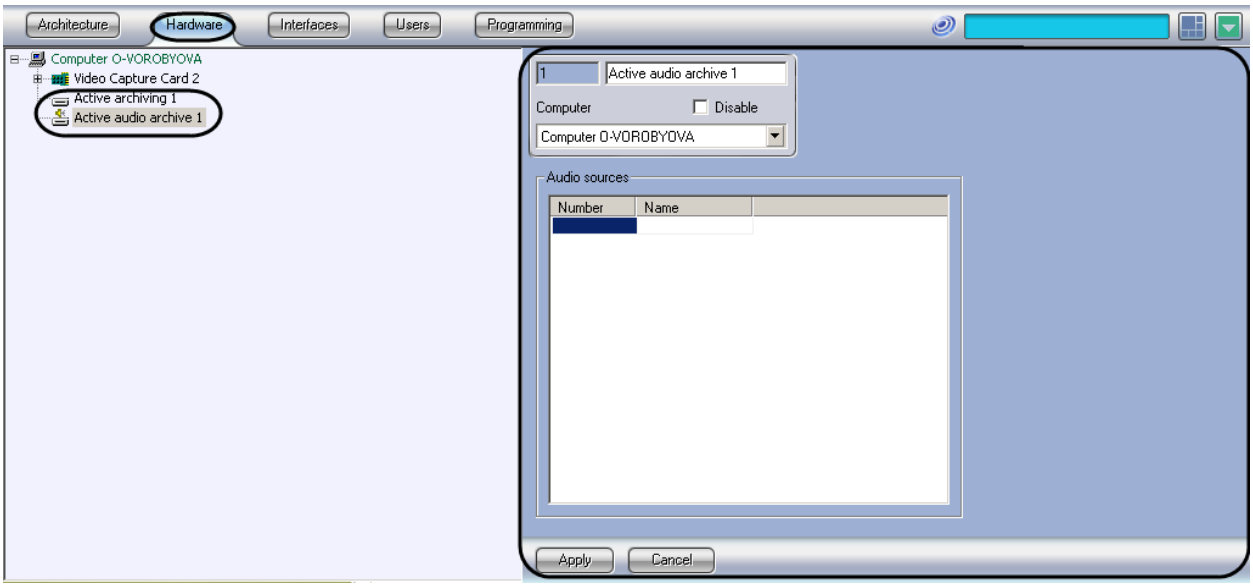


Figure 8.14-13 The Active audio archive object

To configure the “Active audio archive” do the following:

1. Go to the settings panel for the “Active audio archive” object (Figure 8.14-14).

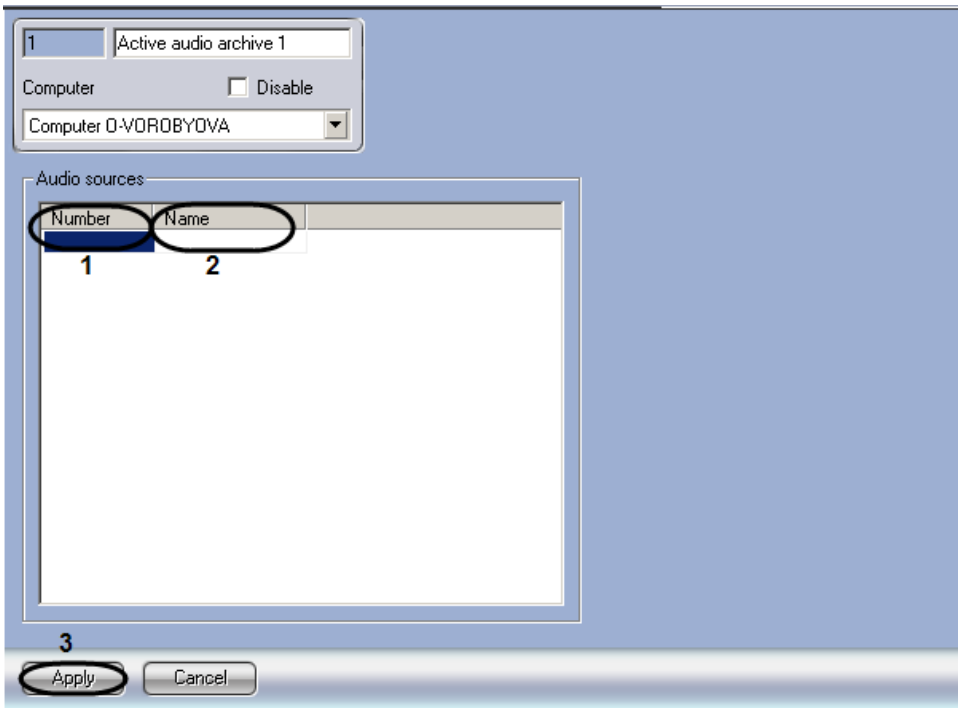


Figure 8.14-14 Configuring the Active audio archive object

1. In the “Number” drop-downlist, select the id of a microphone related to the camera the archive from which is to be moved to the backup archive (Figure 8.14-14, 1).

2. Left-click in the “Name” field. It will be automatically filled with the name of selected microphone (Figure 8.14-14, 2).

3. Repeat steps 2-3 for all required microphones.

4. Click the “Apply” button.

The “Active audio archive” module is now configured.

8.15 Replicating archive from unconnected servers using the removable storage

8.15.1 Order of archive replication from unconnected servers

It is possible to receive video and audio archive from unconnected Servers in the Intellect software using the removable storage. Records over a specified period are copied from the Source-Server to the Target-Server while replicating archive.

Archive replication is performed in the following order:

1. Configure the **Data replication service** object on the Target and Source;

2. Configure the Target objects tree for data replication;

3. Create a query file on the Target using the schedule.exe utility;

4. Copy the archive from the Source to a removable storage;

5. Restore the archive from a removable storage on the Target.

8.15.2 Configuring the Data replication service object

Data replication service is configured on the settings panel of the “Data replication service” object. This object is created under the “Computer” object in the “Hardware” tab of the “System settings” dialog box (Figure 8.15-1).

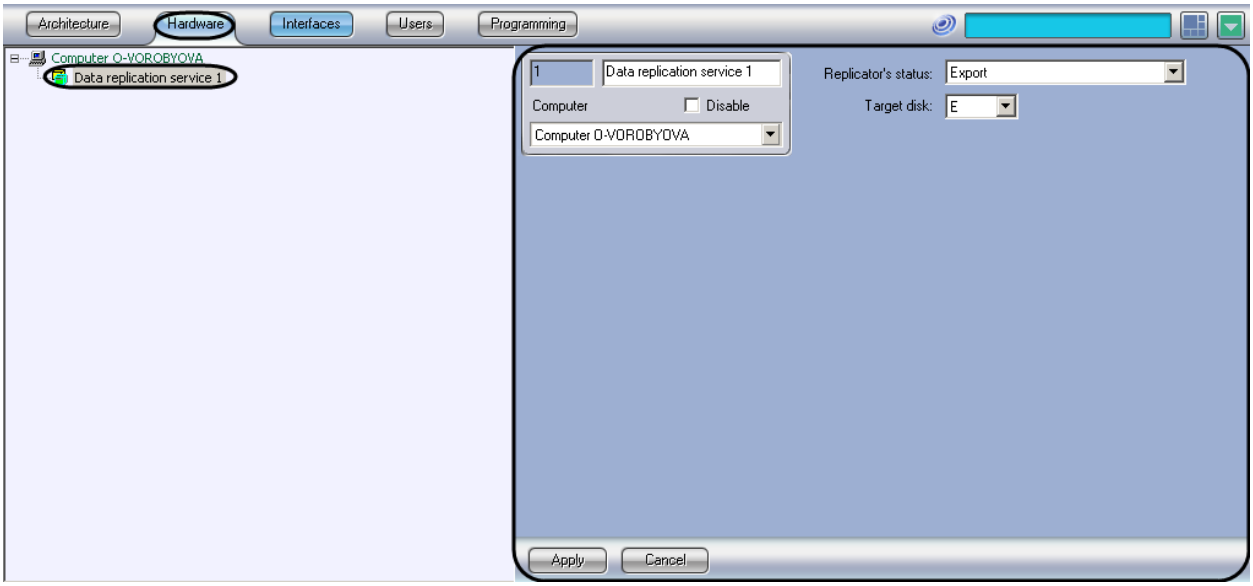


Figure 8.15-1 The Data replication service object

To configure the data replication service, do the following:

1. Go to the settings panel for the “Data replication service” object (Figure 8.15-2).

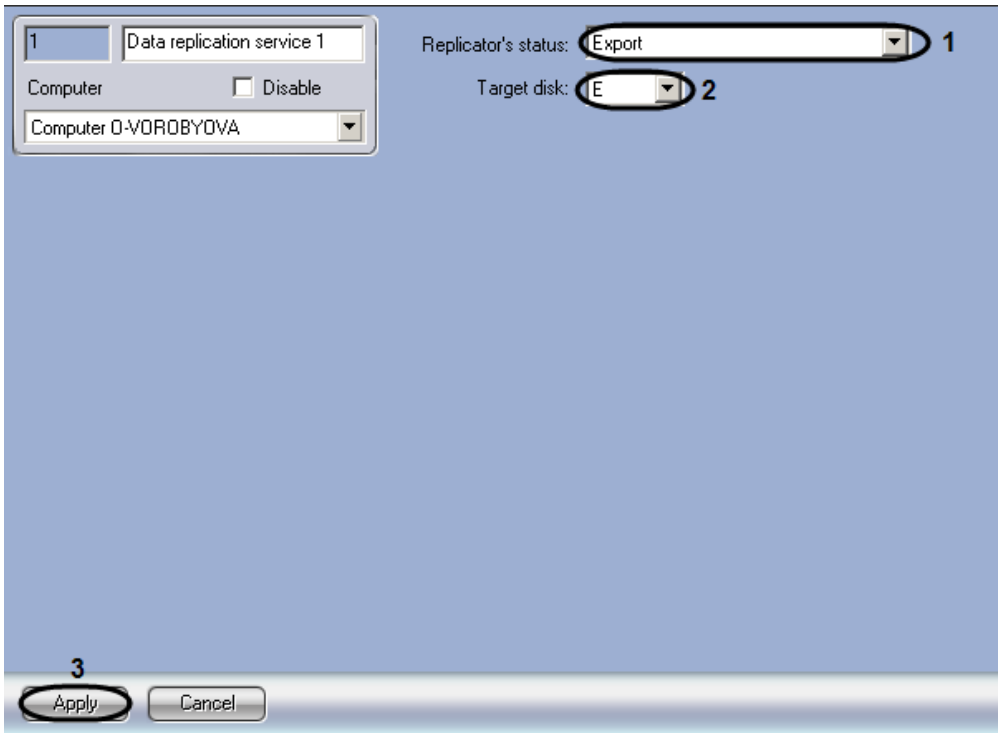


Figure 8.15-2 Configuration of the Data replication service object

2. In the “Replicator’s status” dropdown list select the “Export” value if the Server is an archive Source or the “Target” value if the Server is a target (Figure 8.15-2, 1).

3. If the Server is a Source, then in the “Target disk” dropdown list select the name of a removable storage used for archive transfer. If the Server is a Target, then in the “Target disk” dropdown list select a disk where the archive form a removable storage is to be copied (Figure 8.15-2, 2).

4. Click the “Apply” button (Figure 8.15-2, 3).

Configuration of the data replication service is completed.

8.15.3 Configuring the Target objects tree for data replication

For proper replication operation the following objects are to be created in the objects tree of the Target objects:

1. In the “Hardware” tab of the “System settings” dialog box create the “Computer” objects with the names corresponding to the names of Sources from which the archive records are to be copied (Figure 8.15-3).

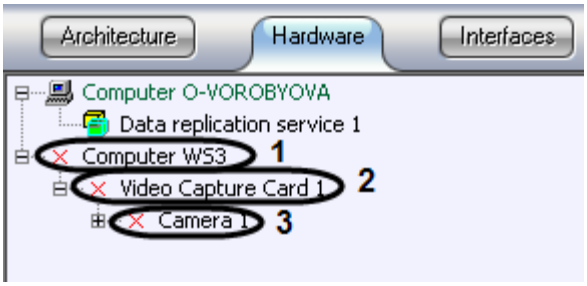


Figure 8.15-3 Configuration of Target objects tree

2. Under the “Computer” object create the “Video Capture Card” objects with the names that correspond to the same names on Sources (Figure 8.15-3, 2).

3. Under the “Video Capture Card” objects create the “Camera” objects with numbers corresponding to the camera numbers the archive records from which are to be copied from Sources (Figure 8.15-3, 3).

Note. The “Camera” and “Video Capture Card” objects will be disabled because there is no connection between Source and Target.

When replication is completed the archive is available in the interface of Video surveillance monitor on cameras that are in the query.

Configuration of the Target objects tree is completed.

8.15.4 Creating the query file

The query file specifies Sources, cameras and time periods for archive replication. This file is created on the Target. To create the query file the following conditions are to be met:

1. Users are created in the INTELLECT™ (see *User registration and removal* section).

Note. Users with the same name and password are to be ctreated for stable operation of the Data replication service.

2. Corresponding rights are assigned to users (see *Registration of users' rights* section).

3. At least one "Camera" object is created in the Target hardware tree.

The query file is created using the *schedule.exe* utility (see "*The shedule.exe utility for creating a replication query file*" section).

8.15.5 Copying the archive from the Source

To copy the archive from the Source, do the following:

1. Connect the removable storage with a query file to the Source.

2. The *replication.exe* file located in the root of removable storage is run automatically (Figure 8.15-4).

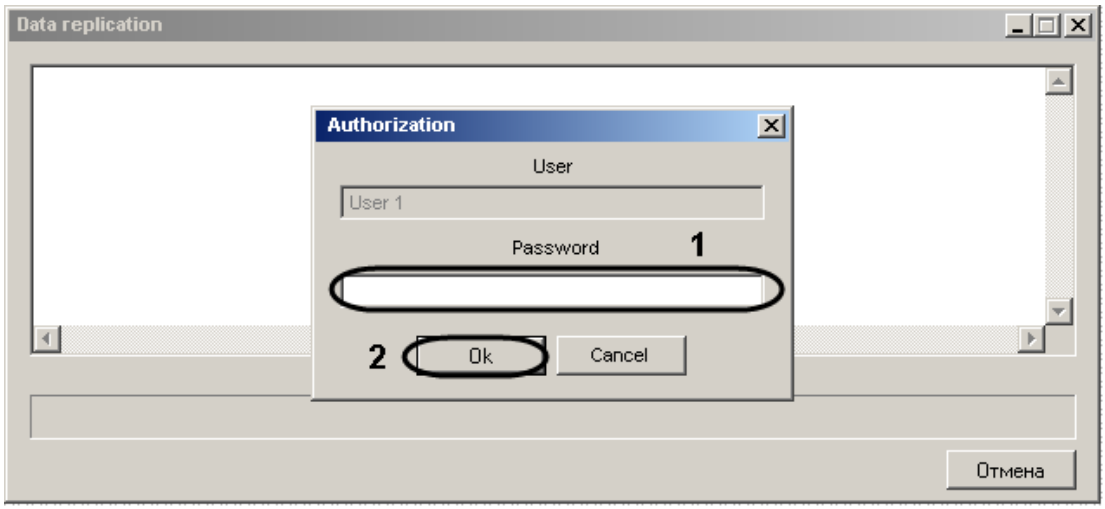


Figure 8.15-4 Access to the archive copying on the Source

Note. If the query file is not run automatically, then run it from the command prompt with the ***-pack*** *parameter (Figure 8.15-5).*

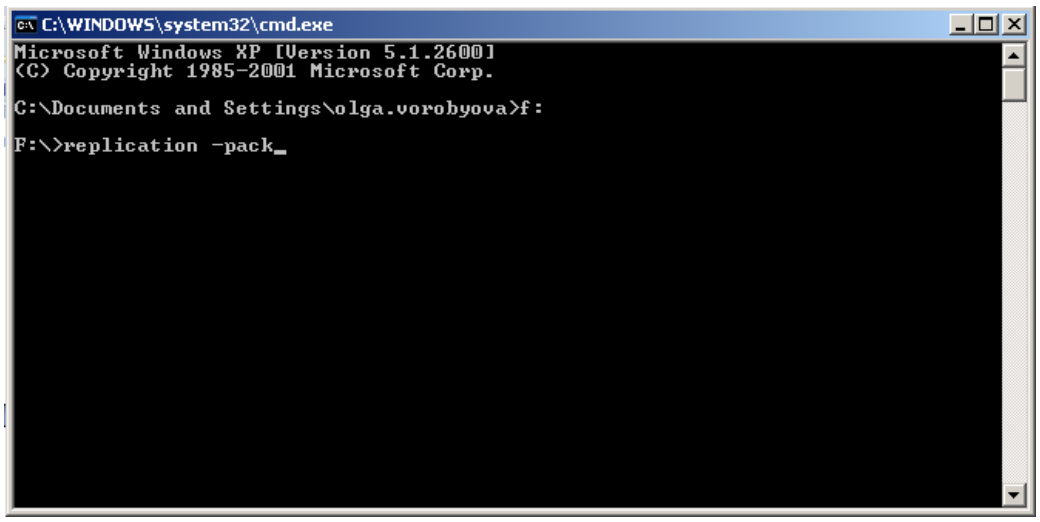


Figure 8.15-5 Running replication using the command prompt

3. In the “Authorization” dialog box type-in the password of user who makes the replication (Figure 8.15-6, 1).

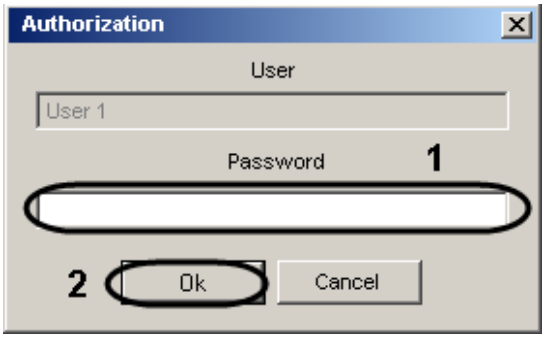


Figure 8.15-6 Entering the password for replication

4. Click the “OK” button (Figure 8.15-6, 2).

5. Wait when the data copying is complete (Figure 8.15-7).

Note. If there is no enough space for copying all required data, then there will be no copying.

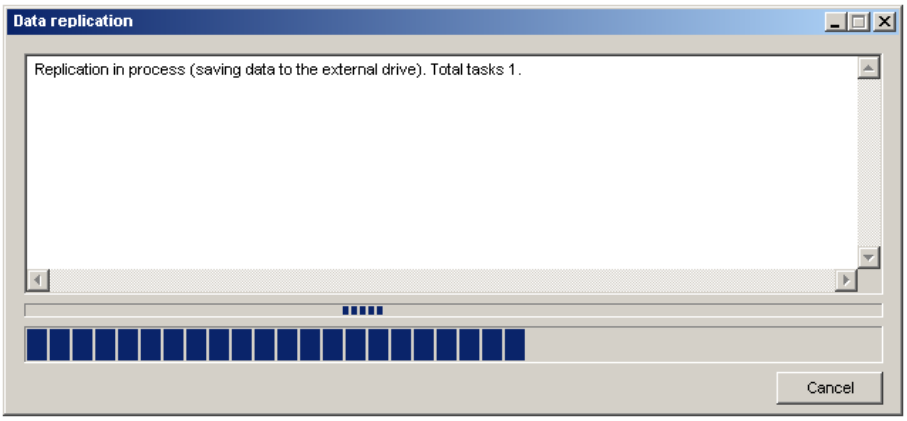


Figure 8.15-7 Archive copying

6. Click the “Exit” button.

Requested part of the archive is copied to a removable storage and located in the "IntellectBackup/Computer_name" directory. Files of log replication with the .LOG extension are located in the "IntellectBackup" directory.

Removable storage is automatically removed when the copying is complete.

Archive copying from the Source is completed.

8.15.6 Restoring the archive on the Target

When the archive is restored data is copied from the removable storage to the Target.

To restore the archive do the following:

1. Connect the removable storage to the Target.
2. Run the request file from the command prompt with the **–unpack –d:disk_with_archive** parameters (Figure 8.15-8).

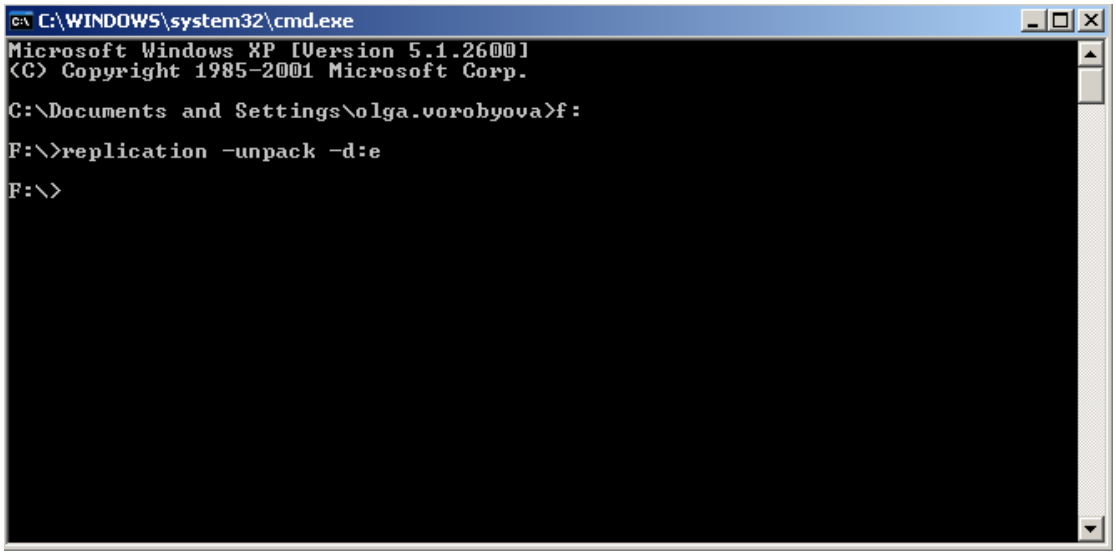


Figure 8.15-8 Running the archive restoring on Target

3. Wait when the data copying is complete.
4. Click **Exit** (Figure 8.15-9).

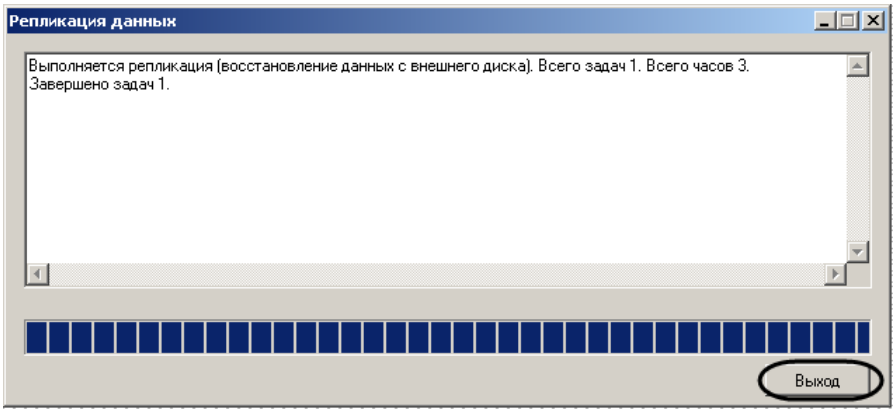


Figure 8.15-9 Completing the archive restore

The archive restoring on the Target is completed.

8.16 Configuring the Web-server module

8.16.1 General description of the Web-server module

The Web-server module is used for viewing the video surveillance information in a web browser using the TCP/IP communication protocol.

Web-server provides some of the functions of an HTTP server, video transfer gate and HTTP control commands.

Web-server provides the following HTTP server functionality:

1. Access control through authorization.
2. Working as a gate for transferring video data using HTTP protocol.
3. Video monitoring and camera control through the web browser using the TCP/IP environment.
4. Control of camera movement through the web browser using the TCP/IP environment.
5. Setting the layout of the video frames on the screen: 1, 4, 6, 9 windows per screen.
6. Viewing the archives stored on the videoserver for each camera through the video surveillance window.
7. Limiting access rights for viewing the video feed from the cameras, controlling the camera movement, and viewing recordings from the videoserver.
8. Displaying the video signal parameters (frame rate (fps) and frame size (kB) in the surveillance window.

Attention! Web-server displays only video in MJPEG format. When video is transferred to Web-server, video stream is recompressed and that is why traffic is increased.

Additionally, the Web-server acts as a Mobile-server providing video surveillance capabilities through PocketPCs and SmartPhones.

The Web-server interface looks like a video surveillance monitor and is built as an HTML page. This page is called the Web-server's home page. The surveillance monitor and control elements for the camera movement devices are driven by the Java applet.

Intellect software can be set up to require user authorization on entering the Web-server. Access to viewing and controlling the movement of the cameras through the Web-server is defined by the module settings.

8.16.2 System requirements

The Web-server module stable opration requires Java Runtime Environment version 1.6. 7 or higher (mentioned software is included into the Intellect PC installation package) and browser Internet Explorer version 8.0 and higher (this software is available free of charge).

8.16.3 Installation of Java Runtime Environment

The Web-server module working on videoservers and workstations of the Intellect-based surveillance system requires Java Runtime Environment. This software is available free of charge.

The option for Java Runtime Environment installation is included in the Intellect software installation procedure.

Java Runtime Environment should be manually installed on the remote workstations. The Java installation package is available for downloading from www.java.com. If the Web-server home page is accessed from a computer with no Java installed, the home page will contain a direct link to the Java Runtime Environment installation package ready for downloading.

Note. It is necessary to install Java Runtime Environment not in quiet» mode. Otherwise the Intellect may not respond displaying two possible messages:

1. *«Error applying transforms. Verify that the specified transform paths are valid». - alternate route s of this error are detailed on the site «http://www.java.com/ru/download/help/error_applying_transforms.xml ».*
2. *«Revocation information for the security certificate for this site is not available. Do you want to proceed? » - certificate installation query.*

8.16.4 Authorization on the Web-server home page

Access to the Web-server home page is restricted by an HTTP user authorization algorithm.

A user can be authorized by any of the passwords registered for the Intellect users. No additional authorization setup for Web-server HTTP server is required.

Access to viewing the video feed from the cameras and controlling the cameras, sensors and motion devices is restricted according to the Web-server-related settings of the videoserver.

8.16.5 Starting and setting up the Web-server module

Depending on its operative requirements, the Web-server module can be set up in the following optional stages:

1. Open the Hardware tab and select the Web-server object in the objects tree.

2. Check if the Web-server is on. This can be checked in the notification area of the Windows taskbar (Figure 8.16-1). By default, the Web-server is on. If the Web-server is off, turn it on before starting the setup procedure.

Figure 8.16-1. Web-server icon in the notification area of the Windows taskbar

3. Set up the interface for the video surveillance monitor of the Web-server by changing the Java applet parameters shown on the Web-server home page.

4. Set up the display of the data for traffic estimation on the Web-server video surveillance monitor by changing the Java applet parameters shown on the Web-server home page.

Set up the Web-server to act as a gate on another HTTP-server by changing the Java applet parameters shown on the Web-server home page.

8.16.6 Configuring the videoserver to connect Clients via the Web-server module

The videoserver configuration to connect Clients via the Web-server is performed on the Server in the “System settings” box. In most cases, the default videoserver settings can be used for proper Web-server operation.

To configure the Web-server module, do the following:

1. Create the “Web-server” object on the basis of the “Computer” system object;
2. Select and configure cameras for displaying on the Web-server home page;
3. Set the connection parameters of Clients to the Web-server.

8.16.6.1 *Creating the Web-server object*

To create the Web-server object, do the following:

1. Select the required “Computer” object in the “Hardware” tab of the “System settings” dialog box (Figure 8.16-2, 1).

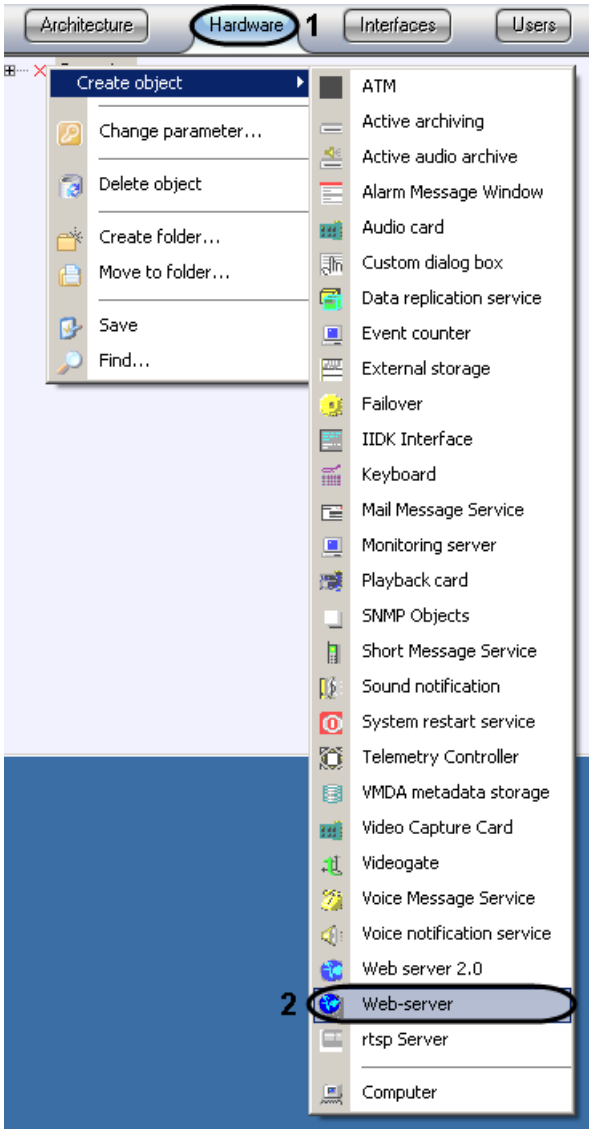


Figure 8.16-2 Creating the "Web-server" object

2. Right-click upon the selected "Computer" object and select "Create object" ⇨ "Web-server" in the context menu (Figure 8.16-2, 2).

3. Set the number and name of Web-server object and then click Apply button (Figure 8.16-3).

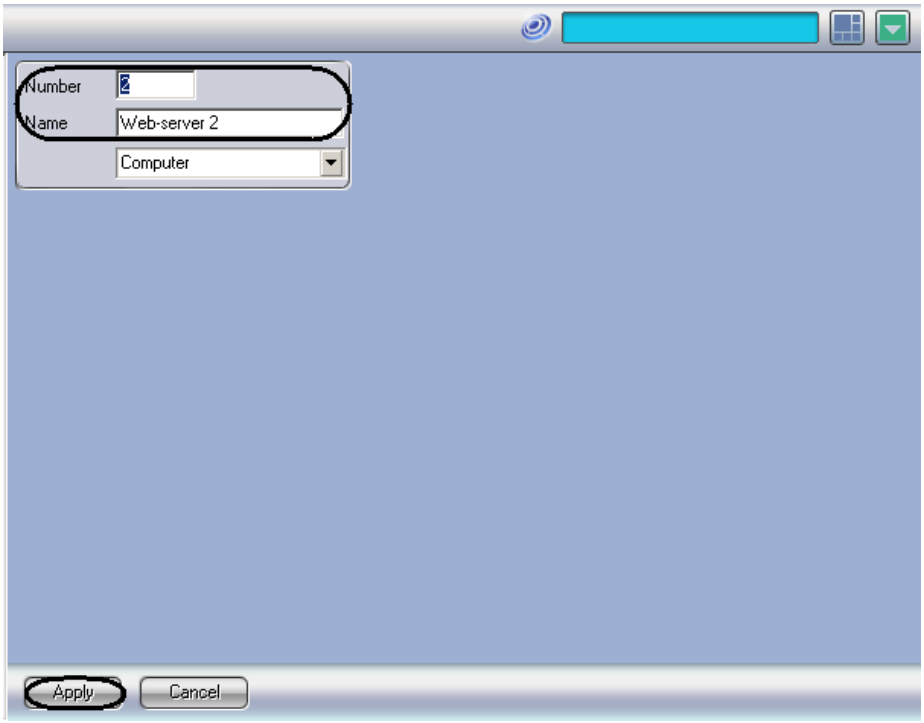


Figure 8.16-3 Setting up the name and number of the "Web-server" object

Note. As a result the settings panel for the "Web-server" object opens.

4. Repeat steps 1-3 for all required "Computer" and "Web-server" objects.

The "Web-server" object is now created.

8.16.6.2 *Selecting and configuring cameras*

To select cameras for displaying on the Web-server home page, do the following:

1. Go to the settings panel for the "Web-server" object (Figure 8.16-4).

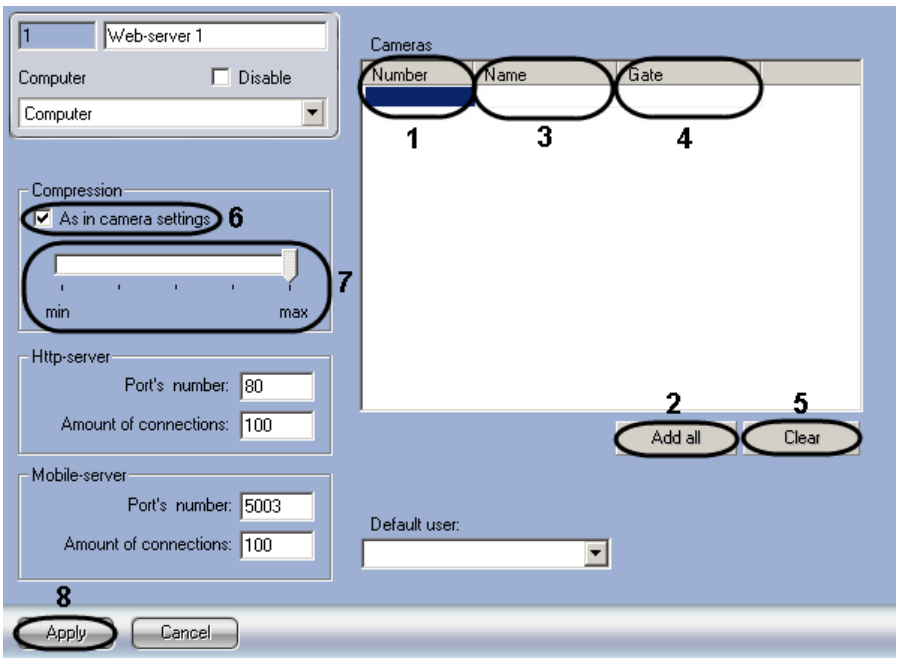


Figure 8.16-4 Selecting and configuring cameras for displaying on the Web-server home page

2. Select the number of the required camera in the dropdown list of the “Cameras” table (Figure 8.16-4, 1).

Note. To select all the cameras registered in the system, click the “Add all” button (Figure 8.16-4, 2).

3. As a result the name of the selected camera is automatically displayed in the “Cameras” table (Figure 8.16-4, 3).

4. If video that is displayed on the Web-server home page is received from the videogate, then select the “Videogate” object in the “Gate” dropdown list (Figure 8.16-4, 4).

5. Repeat steps 2-3 for all required cameras.

Note. To clear the “Cameras” table click the “Clear” button (Figure 8.16-4, 5).

6. By default, the compression level of video signal sent to the Web-server surveillance monitor is the same as it was before the signal was recorded to disk and transferred over the network (the “As in camera settings” checkbox is set) (Figure 8.16-4, 6).

7. To change the compression level of video signal, set the “As in camera setttings” checkbox unchecked and then set the “Compression” slider into the position corresponding to the required compression level (Figure 8.16-4, 7).The “Min” position of the slider corresponds to minimal compression level of video signal, the “Max” position - to maximum one.

Note. The compression level parameter for the signal transmission to remote workstations via the Web-server is inverse to the “Recording quality” parameter of the “Camera” object.

Increase of video signal’s compression level decreases the network traffic while connecting the Client to the Web-server. But video signal on the Server has to be recompressed in case of setting the compression level that results in greater load on Server’s central processor. The compression level is selected empirically.

8. To save the changes, click the “Apply” button (Figure 8.16-4, 8).

Cameras for displaying on the Web-server home page are now selected.

8.16.6.3 *Setting the parameters of connecting Clients to the Web-server*

To set the parameters of connecting Clients to the Web-server, do the following:

1. In the “Port’s number” field of the “Http-server” group specify the number of the port to connect to Http-server (Figure 8.16-5, 1).

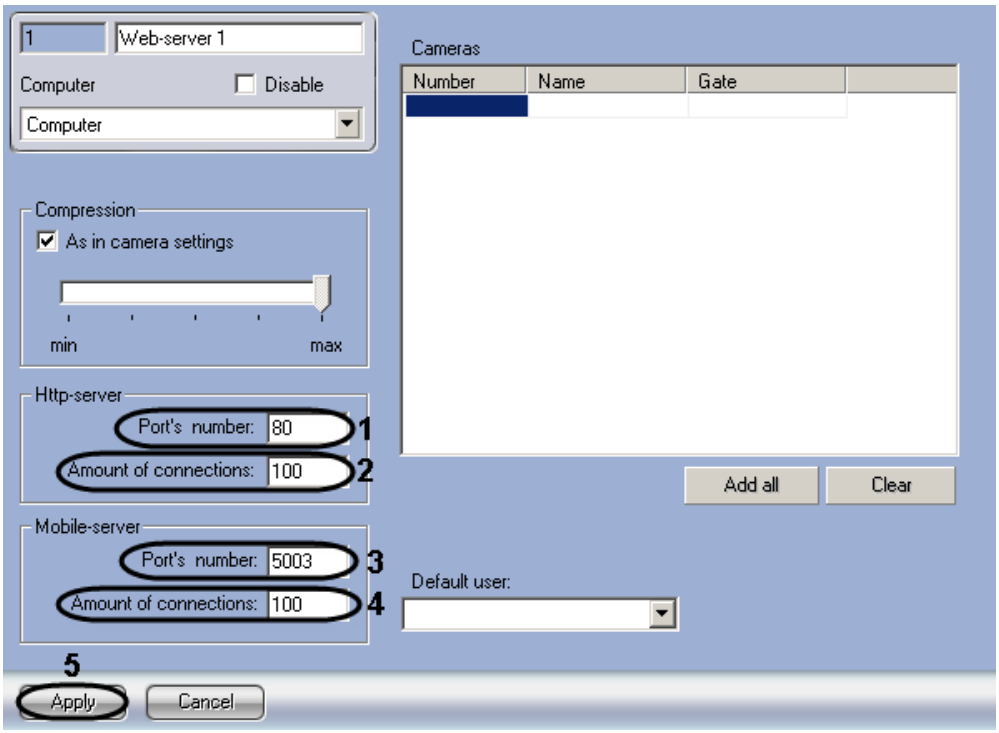


Figure 8.16-5 Setting the parameters of connecting Clients to the Web-server

2. In the “Amount of connections” field of the “Http-server” group specify the maximum permissible simultaneous connections to Web-server via Http protocol (Figure 8.16-5, 2). The less there are connections, the less Server load is. This parameter is selected experimentally.

Note. Connections are used to receive video (live or archive), to receive audio (live or archive), to send audio to INTELLECT™, to get data on configuration, to send commands to INTELLECT™, etc. The Client can use the same connection to perform several actions.

3. In the “Port’s number” of the “Mobile-server” group specify the port number to connect to the Mobile-server (Figure 8.16-5, 3).

4. In the “Amount of connections” field of the “Mobile-server” group specify the maximum permissible simultaneous connections to Mobile-server (Figure 8.16-5, 4).

5. To save all the changes, click the “Apply” button (Figure 8.16-5, 5).

The parameters of connecting Clients to the Web-server are now set.

8.16.6.4 *Setting the default user for the Web-server module*

Default user is the user with rights and authorities to conduct video surveillance from a Web browser.

Before setting the default user, make sure that the users are created and added to the rights in INTELLECT™ (see “Rights administration” section).

To set default user, do the following:

Go to the settings panel for the “Web-server” object (Figure 8.16-6).

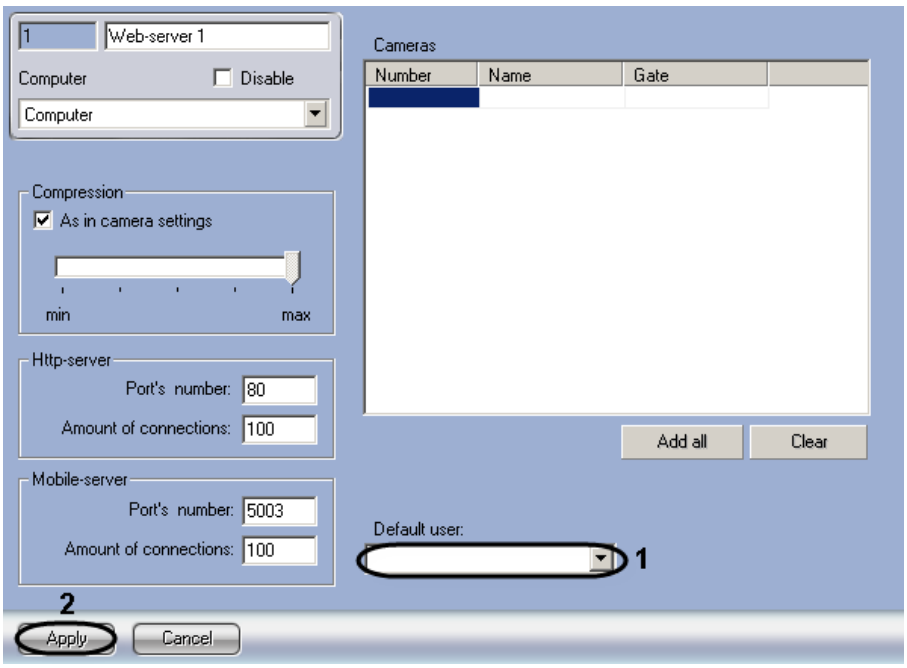


Figure 8.16-6 Setting the default user for the Web-server module

1. Select the default user in the “Default user” dropdown list (Figure 8.16-6, 1)
2. Click the “Apply” button (Figure 8.16-6, 2).

The default user for the Web-server module is now set.

8.16.7 Configuring the server for the clients connection via the Web-server 2.0 module

8.16.7.1 *Function of the Web-server 2.0 module*

The Web-server 2.0 module is designed for video surveillance on the side of client application for iPhone/iPad.

The Web-server 2.0 also provides the work with interactive map and macros.

The Web-server object are to be created and configured for correct operation of the Web-server 2.0 module (see “Configuring the videoserver to connect Clients via the Web-server module” section).

8.16.7.2 *Creating the Web-server 2.0 object*

In the Intellect software the “Web-server 2.0” object is based on the “Computer” object on the “**Hardware”** tab of the “System settings” dialog box (Figure 8.16-7).

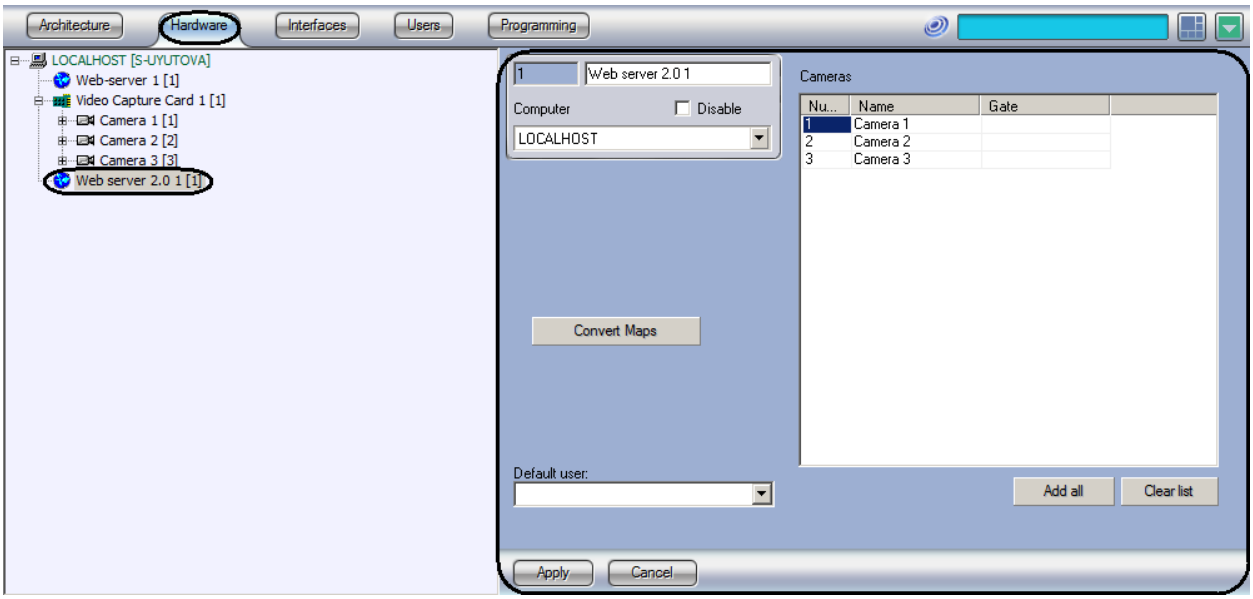


Figure 8.16-7 The "Web-server 2.0" object

8.16.7.3 *Selecting video cameras for the Web-server 2.0 module*

To select video cameras that are to be viewed and controlled via the Web-server 2.0 module, do the following:

Note. For correct operation of the "Web-server 2.0" module the same cameras are to be selected for the "Web-server" module.

1. Go to the settings panel for the "Web-server 2.0" object (Figure 8.16-8).

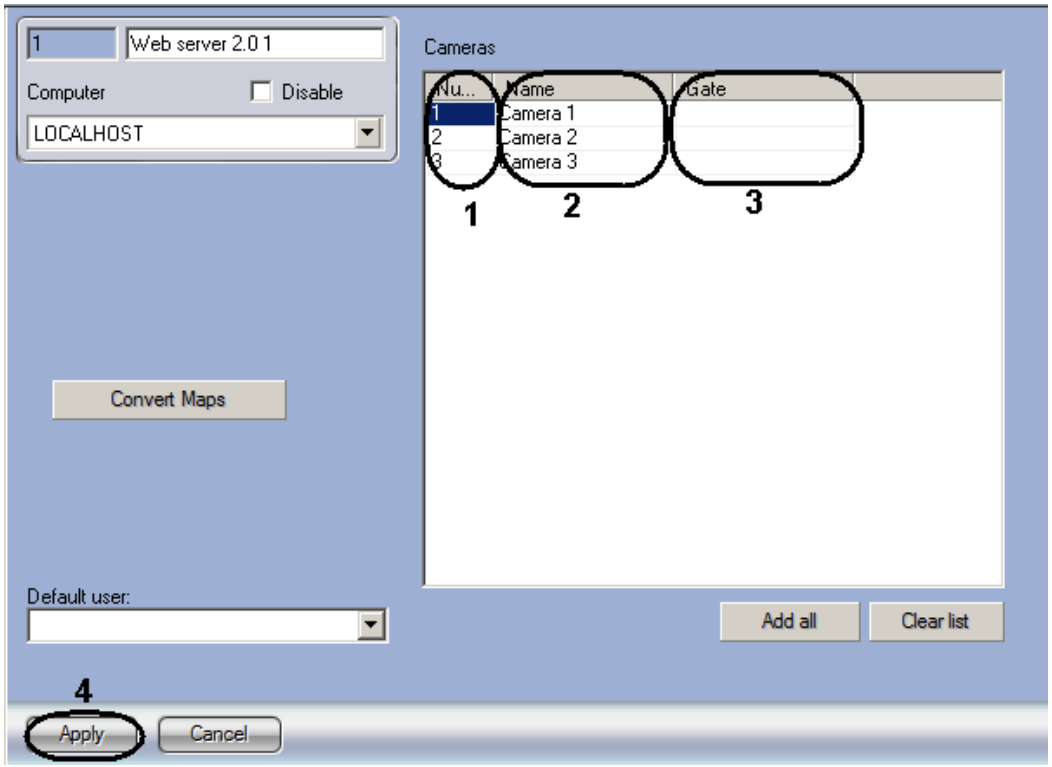


Figure 8.16-8 Selecting video cameras for the "Web-server 2.0" module

2. In the “Number” dropdown list, select the number of the required “Camera” object (Figure 8.16-8, 1). The “Name” field is filled automatically after the left click outside the dropdown list (Figure 8.16-8, 2).

3. If the video signal that is displayed by the client of the Web-server 2.0 goes from video gateway, then select the required “Videogate” object in the “Gate” dropdown list (Figure 8.16-8, 3).

Note. To add all created video cameras from the object tree to the list, click the «Add all» button (Figure 8.16-8, 4).

To remove all video cameras, click the “Clear list” button (Figure 8.16-8, 5).

4. To save configuration, click the “Apply” button (Figure 8.16-8, 6).

Cameras for the Web-server 2.0 module are now selected.

8.16.7.4 *Setting the default user for the Web-server 2.0 module*

A default user is a user with rights and authorities to conduct video surveillance from the client started on iPhone/iPad.

Ensure that required users are created and added to rights before assigning a default user (see the “Rights administration” section).

To assign a default user, do the following:

1. Go to the settings panel for the “Web-server 2.0” object (Figure 8.16-9).

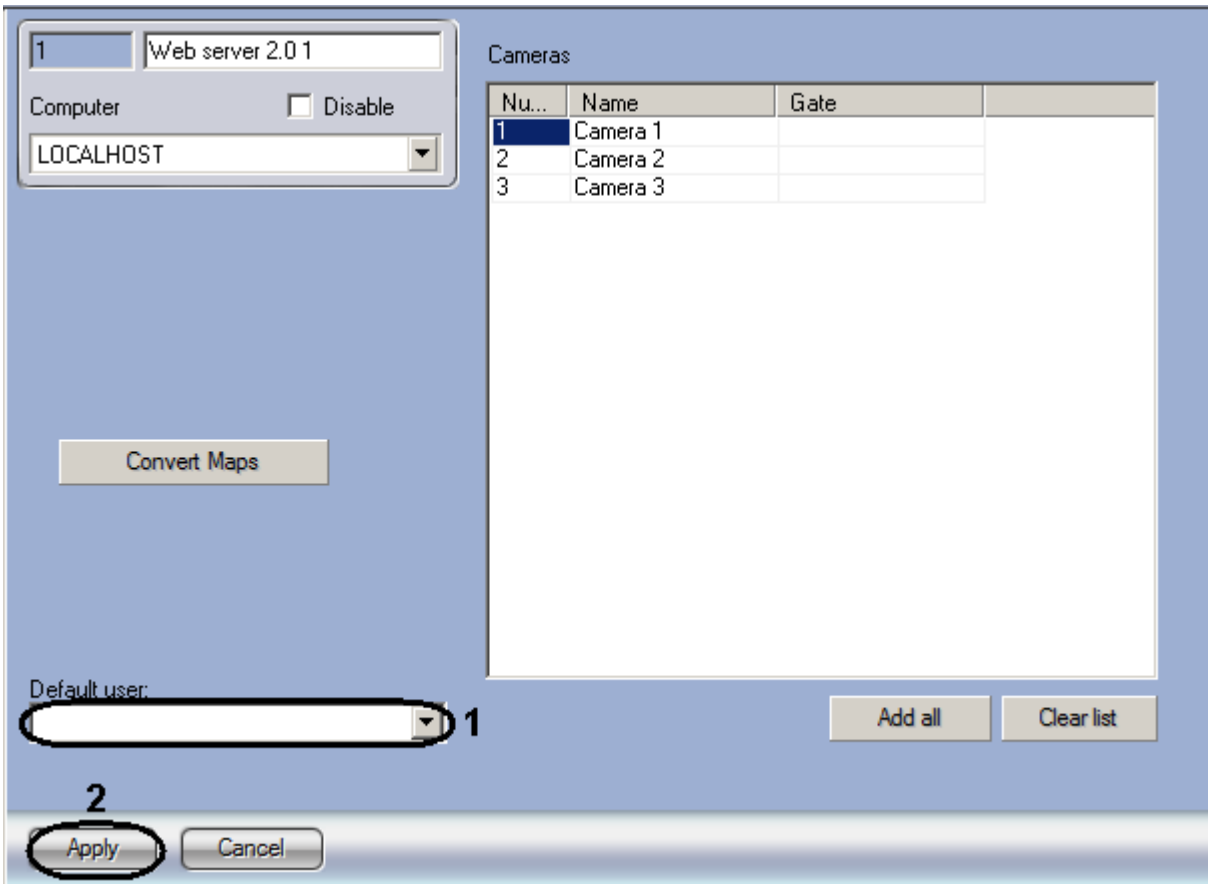


Figure 8.16-9 Setting the default user for the Web-server 2.0 module

1. Select the default user in the “Default user” dropdown list (Figure 8.16-9, 1).

2. Click the “Apply” button (Figure 8.16-9, 2).

The default user for the “Web-server 2.0” module is now set.

8.16.7.5 *Binding objects to maps*

In the Intellect software objects (cameras, sensors, relays, etc.) can be bound with to maps. Objects are to be created in the hardware tree and added to the map. Maps created in the Intellect software are to be converted to bind objects to map.

To convert maps, do the following:

1. Go to the settings panel for the “Web-server 2.0” object (Figure 8.16-10).

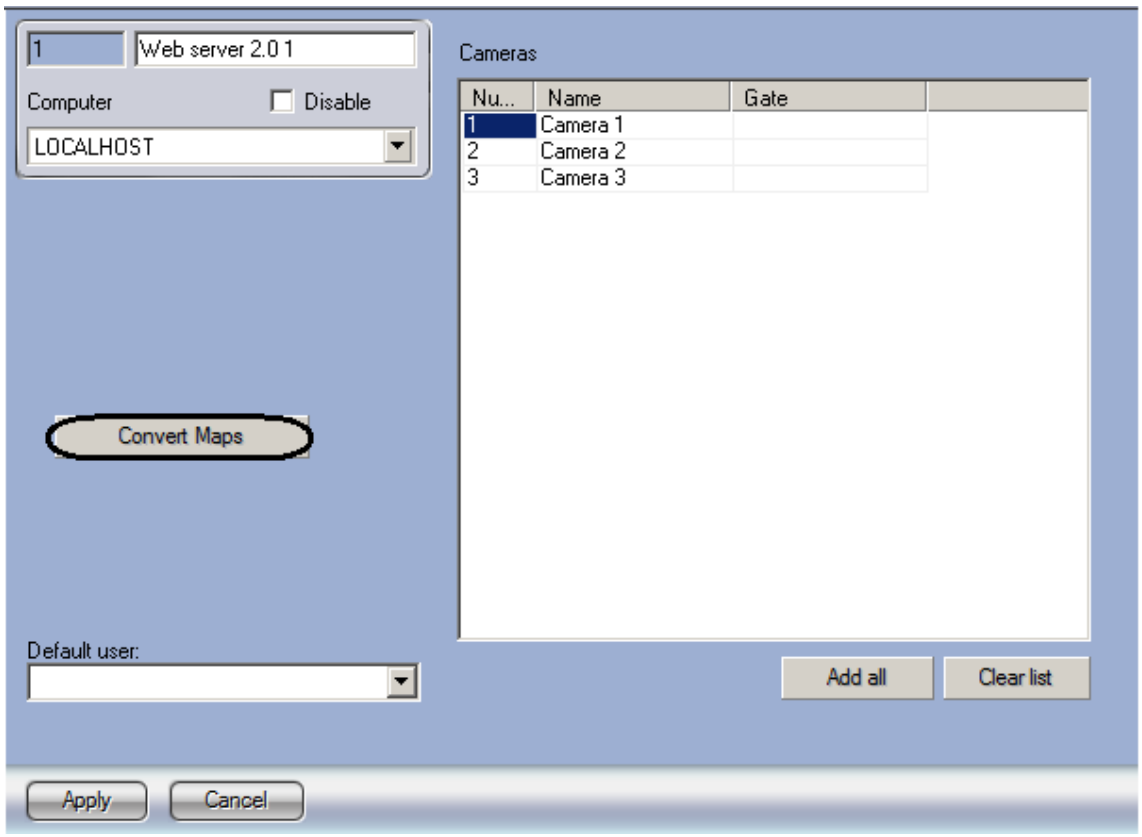


Figure 8.16-10 The settings panel for the "Web-server 2.0" object

2. Click the "Convert Maps" button (Figure 8.16-10).

3. The "Convert Maps" box appears (Figure 8.16-11).

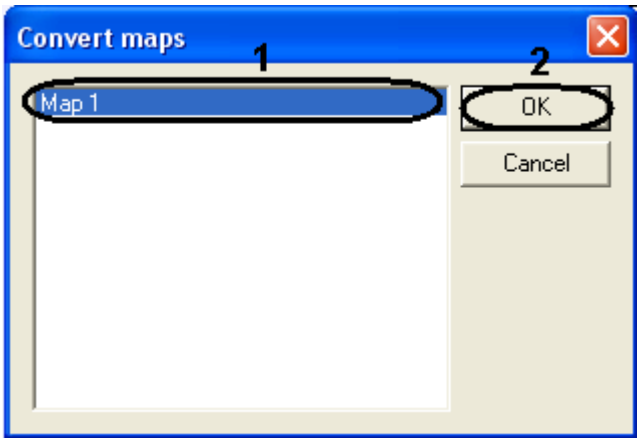


Figure 8.16-11 The "Convert maps" box

1. In the list, select maps that are to be converted (Figure 8.16-11, 1).

2. Click the "OK" button (Figure 8.16-11, 2).

Maps are now converted.

8.16.8 Web-server home page template and Java applet settings

The template for the Web-server home page is stored in the index.htm file located in the program folder of Intellect software, in the …\Modules\webroot subfolder. For example: C:\Program Files\Intellect\Modules\webroot.

The home page template holds the parameters of the page and of the Java applet displaying the surveillance windows.

By changing the Java applet parameters in the home page HTML-code, you can set the parameters of the video and control signal transmission through the gate (in case of using another HTTP-server), add or remove interface elements of the Web-server surveillance monitor, and enable showing the current frame size and frame rate for traffic estimation.

Each applet parameter description takes a separate line and consists of <param name=, followed by the quoted name of the parameter, and value=, followed by the quoted parameter value. The line ends with the > symbol.

The full line has the following format:

<param name=”Parameter name” value=”Parameter value”>.

Note. If a parameter is not specified in the index.htm template, the default value is used.

Table 8.16-1 shows the available Java applet parameters.

Table 8.16-1

Parameter name	Possible values	Default value	Description
General data			
Version	-	-	HTML file version (must be the same as the client version)
Gate transmission parameters for video signals and controls			
port	number	80	Port number for the applet to receive the video feed and send the controls. The parameter is enabled if the “port.from” parameter has the value "html".
port.from	html|	url by default, this line is not included in index.htm	Specifies the source of the video feed port number for the applet to use: html – “port” parameter of the index.html file; url – URL by which the user accesses the index.html page.
path.from	html|	url by default, this line is not included in index.htm	Specifies the source of the path to the index.html page: html – URL, specified in index.html; url – URL by which the user accesses the index.html page.
path	string	-	The path to index.html on the HTTP server, in case of a

Parameter name	Possible values	Default value	Description
		by default, this line is not included in index.htm	different HTTP server. The parameter is enabled if the “port.from” parameter has the value "html".
User interface display parameters			
layout.available	true|false	true	Enables (true) or disables (false) the windows layout panel on the surveillance monitor.
top.visible	true|false	true	Enables (true) or disables (false) the tools panel on the surveillance monitor.
layout.default	0|1|2|3	0	Specifies the default layout of surveillance windows when the Web-server home page opens. Possible values: 0 – one window 1 – four windows 2 – six windows 3 – nine windows
cam.default.id	number	1	The id of the camera whose window is displayed when the Web-server home page opens. This parameter is enabled, if the “layout.default” parameter has a value of 0.
messages	Text interface elements Visible text	see index.html file	The list of visible text elements of the interface: menu items, information strings in the surveillance window, etc. Only the visible text can be edited. IMPORTANT! The names of text elements are reserved. Editing them will result in their misinterpretation.
Parameters for displaying the data used in traffic estimation			
fs.fps	true|false	false by default, this line is not included in index.htm	Enables (true) or disables (false) the frame rate indication on the surveillance monitor.
fs.size	true|false	false by default, this line is not included in index.htm	Enables (true) or disables (false) the frame size indication on the surveillance monitor.

8.16.9 Setting up the surveillance monitor interface of the Web-server module

The interface of the surveillance monitor of the Web-server may be customized: removing the tools panel, choosing the default layout of the surveillance windows, changing the visible text on the menu item and service messages, etc.

Usually, the default interface settings provide quite a comfortable working environment. In case they need to be changed, do the following:

1. Using the text editor, for example Notebook, open the index.html file from the Intellect software program folder ...\Modules\webroot, for example, C:\Program Files\Intellect\Modules\webroot.

2. To remove the tool panel from the surveillance monitor, set the “top.visible” parameter to "false”: <param name="top.visible" value="false">.

3. To remove the layout selection panel from the surveillance monitor, set the “layout.available” parameter to "false”: <param name="layout.available" value="false">.

To make the tools panel visible at the same time, set the "top.visible" parameter to "true":

<param name="top.visible" value="true">.

4. By default, only one surveillance window is displayed when you open the Web-server home page. To open 4, 6, or 9 windows, set the “layout.default” parameter to 1, 2, or 3, respectively. For example, to display 9 windows:

<param name="layout.default" value="3">.

5. By default, the surveillance window from camera 1 is displayed when you open the Web-server home page. To display the window from another camera, set the “cam.default.id” parameter to the number of the required camera. For example, to display the window from camera 9:

<param name="cam.default.id" value="9">.

To use this setting, the parameter “layout.default” must be set to 0 (default):

<param name="layout.default" value="0">.

6. To change the visible text of the menu items in the surveillance windows or the texts of service messages, look in the “message” parameter for the text to be replaced and replace it with the required text.

For example, to replace the message text “Cable detached from the camera…” with the text “No connection to the camera”, make the following changes to the “messages” parameter:

replace

<param name="messages" value="name=AxxonSoft WebServer client*detach=Cable detached from the camera…*disable=Camera is off…* …….>

with

<param name="messages" value="name=AxxonSoft WebServer client*detach=No connection with the camera*disable=Camera is off…* …….>

When changing the texts in menu items and messages, do not use the following symbols: ‘ * ’, ‘ = ’, ‘ “ ‘.

7. Save changes to the index.htm file.

8.16.10 Setting up the display of the data for traffic estimation in the Web-server

Web-server operation uses network traffic. It’s important to estimate the traffic, because it must be paid for.

The volume of network traffic when using the Web-server depends on the following factors:

1. the number of cameras displayed on the surveillance monitor;
2. compression level of the video signal;
3. frame size of the video signal;
4. frame rate of the video signal.

The traffic volume can be monitored on the Web-server surveillance window. When set up, the current frame size and frame rate for each camera are shown in the surveillance windows. The traffic is approximately estimated by the following formula:

Traffic = {Viewing time} * {Number of cameras} * {Average frame size} * {Average frame rate}

Formula 4. Traffic estimation

By default, the traffic estimation data is not shown. To set up the Web-server module to display the traffic estimation data, do the following:

1. Using the text editor, for example Notebook, open the index.html file from the Intellect software program folder...Modules\webroot. For example, C:\Program Files\Intellect\Modules\webroot.
2. Add the following lines to the Java applet parameter list:

<param name="fs.size" value="true">

<param name="fs.fps" value="true">

3. Save changes to the index.htm file.

8.16.11 Setting up the Web-server module to act as a gate on a different HTTP-server

By default, the Web-server module is set up to work as an independent HTTP-server. If a different HTTP-server must be used to connect to the remote workstations, the Web-server should act as a gate only for that HTTP-server and additional parameters should be set up.

For example, to use the Web-server for video surveillance, the user must open the page http://www.*****.ru:8080/video/index.htm (asterisks “*****” represent the domain name of the site where the cameras can be accessed). To set up the Web-server to act as a gate, do the following:

1. Using the text editor, for example Notebook, open the index.html file from the Intellect software program folder...\Modules\webroot. For example, C:\Program Files\Intellect\Modules\webroot.

2. By default, Java applet receives the video signal from http://www.*****.ru address.

3. For Java applet to receive the signal from http://www.*****.ru:222/reverse/proxy/, add the following lines to the index.htm file:

<param name="port.from" value="html"> /add

<param name="path.from" value="html">

<param name="path" value="/reverse/proxy/">.

Set the “port” parameter to 222:

<param name="port" value="222">.

4. For Java applet to receive the signal from http://www.*****.ru:222, add the following line to the index.htm file:

<param name="port.from" value="html">.

Set the “port” parameter to 222:

<param name="port" value="222">.

5. For Java applet to receive the signal from http://www.*****.ru/reverse/proxy/, add the following lines to the index.htm file:

<param name="path.from" value="html">

<param name="path" value="/reverse/proxy/">.

6. Save changes to the index.htm file.

8.17 Configuring video transmission and reception using RTSP protocol

8.17.1 Configuring rtsp Server module

The “rtsp Server” object is used for transmitting video from Server to remote workplaces using the RTSP protocol. Use of the RTSP protocol allows viewing video from IP cameras and video archive on remote clients using video players that support this protocol.

Attention! Transmitted video stream is to be compressed using H.264, MPEG4 or MJPEG codecs.

When MJPEG codec is in use, video of height and/or width more than 2048 pixels is not supported.

To create and configure the “rtsp Server” object, do the following:

1. In the context menu of the “Computer” object select “Create object => rtsp Server”.
2. Specify the name and ID of the object in the opened panel (Figure 8.17-1).

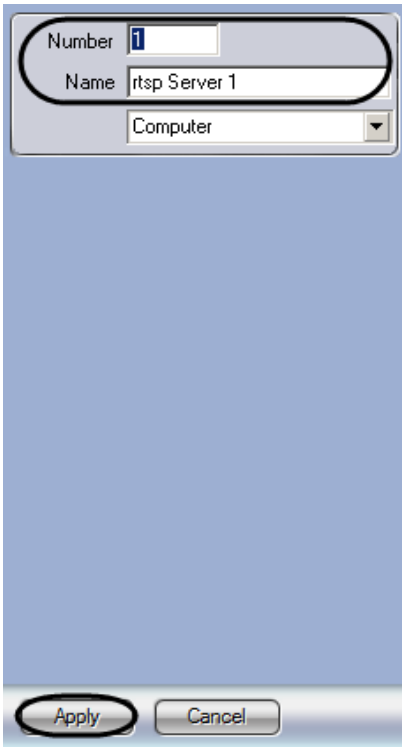


Figure 8.17-1 Creating the “rtsp Server” object

3. Click the “Apply” button to create the object (Figure 8.17-1).
4. Open the settings panel for the “rtsp Server” object (Figure 8.17-2). For this select the created object in the Intellect objects tree.

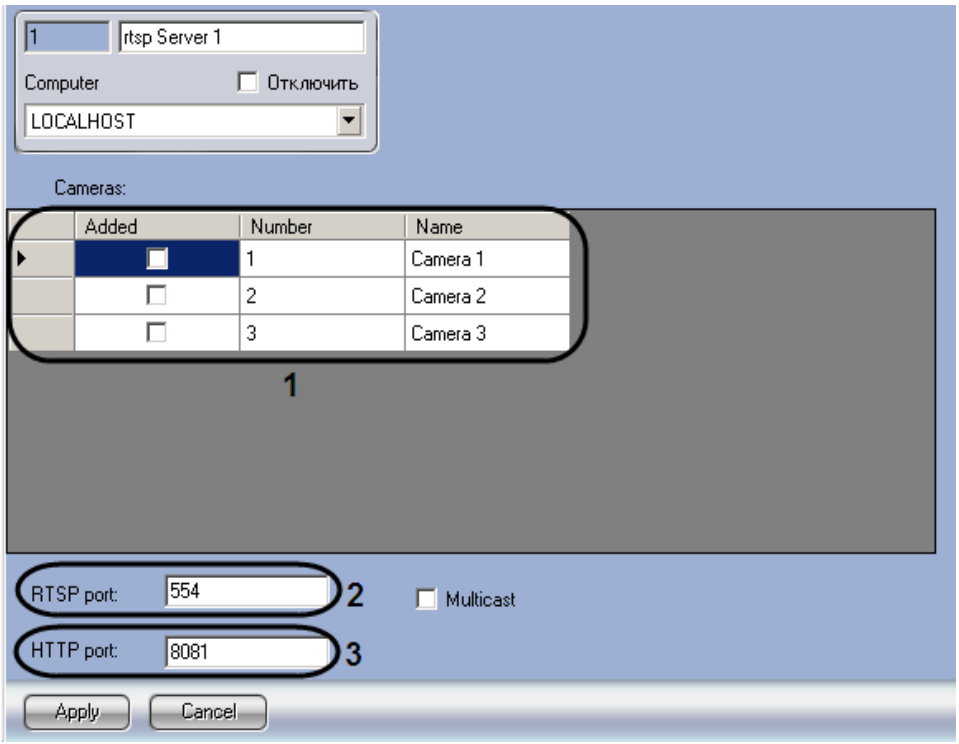


Figure 8.17-2 Settings panel for the “rtsp Server” object

5. In the “Cameras” table set the checkboxes next to video cameras video from which is to be displayed (Figure 8.17-2, 1).

Note. To select several cameras at the same time, mark lines in the table and then holding down the “Ctrl” key on the keyboard click the unchecked box in one of the marked lines (Figure 8.17-3).

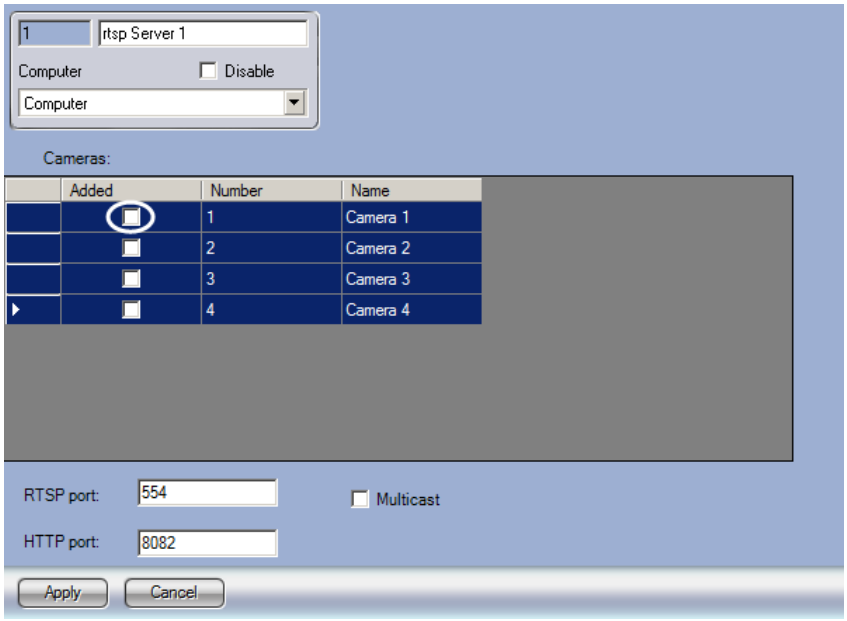


Figure 8.17-3 Simultaneous selection of several cameras for video transmission

As a result all selected lines will be set checked.

To uncheck several boxes at the same time, do the same, but click the checked box after the selection of the lines.

6. In the “RTSP port” field specify the port via which the video is transmitted (Figure 8.17-2, 2).
7. In the “HTTP port” field specify the port that is to be used for transmitting video via http-protocol.
8. To distribute transmitted signal among different rtsp-ports set the “Multicast” checkbox (Figure 8.17-4, 1). In the “Cameras” table the “Port” column is displayed. Every video camera is to have a data transmission port (Figure 8.17-4, 2).

Note. No more than one IP address is to be assigned to the Server for proper operation of the “Multicast” mode.

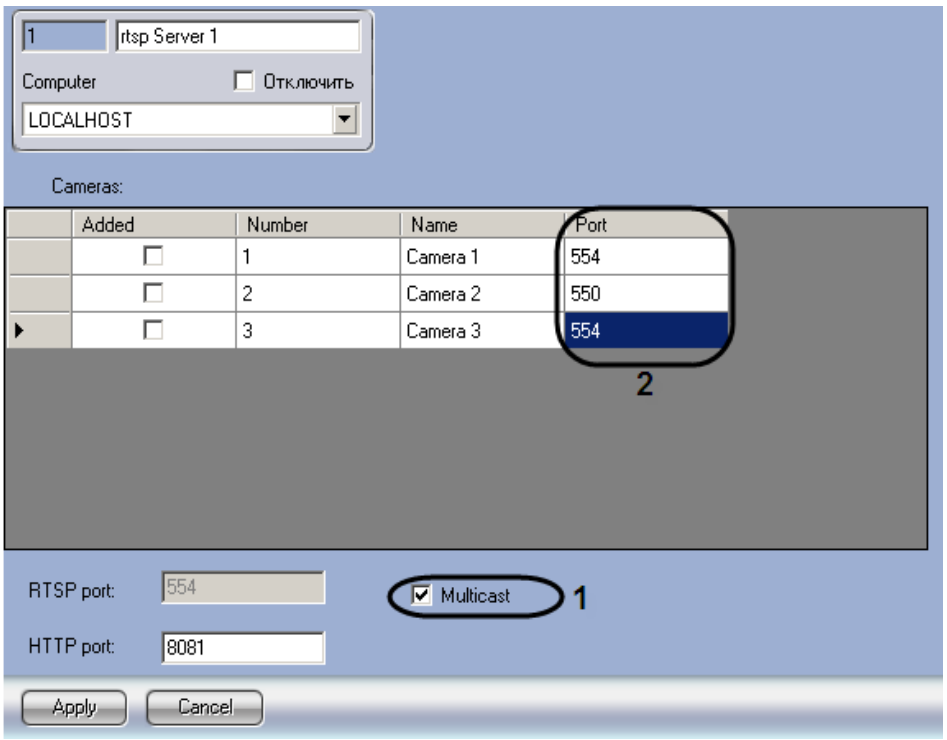


Figure 8.17-4 Activating the Multicast mode

Note. Use of the "Multicast" mode allows decreasing Server load due to reduction of transmitted data.

9. Click the "Apply" button to save the changes.

The "rtsp Server" object is now configured.

To connect to Server and display video in the video player that supports RTSP protocol, specify the address of data source in the format given in Table 8.17-1.

Table 8.17-1 Format of address specifying

Address	**Example**	**Description**
rtsp://Server IP address[:Port]**/**CameraN№	rtsp://192.168.0.3/1	Viewing video from Camera 1
rtsp:// ** Server IP address[:Port]/archive?id=** CameraN№ **&time_begin=**yyyy.mm.dd-hh:mm:ss**&&time_end=** yyyy.mm.dd-hh:mm:ss	rtsp://192.168.0.3:554/archive?id=1&time_begin=2011.11.11-11:11:11&&time_end=2011.11.11-11:12:00	Viewing video archive from Camera 1

Note. If 554 port is in use (default value,) it can be not specified in the address line.

Figure 8.17-5 shows the example of viewing video from the Server.

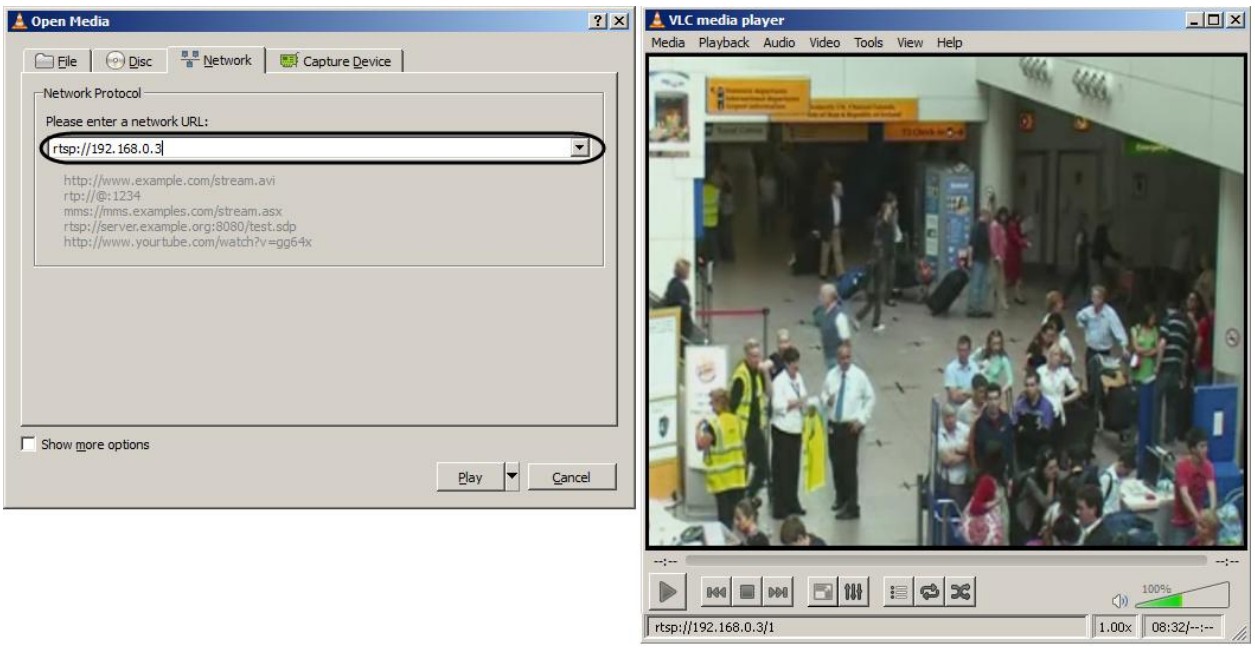


Figure 8.17-5 Viewing video stream from the Server

8.17.2 Configuring multimedia receipt using RTSP protocol

Attention! Functionality of RTSP grabber is given "AS IS", therefore there is no technical support for it.

To receive multimedia stream from a camera via RTSP protocol, the camera is to support this protocol. Information on RTSP support is in official reference documentation for the camera.

For proper operation of RTSP grabber functionality, make sure that no settings prevent data transmission via RTSP protocol.

To receive video via RTSP protocol, do the following:

1. Create the "Video Capture Card" object on the basis of the "Computer" object in the "Hardware" tab of the "System settings" dialog box (Figure 8.17-6, 1).

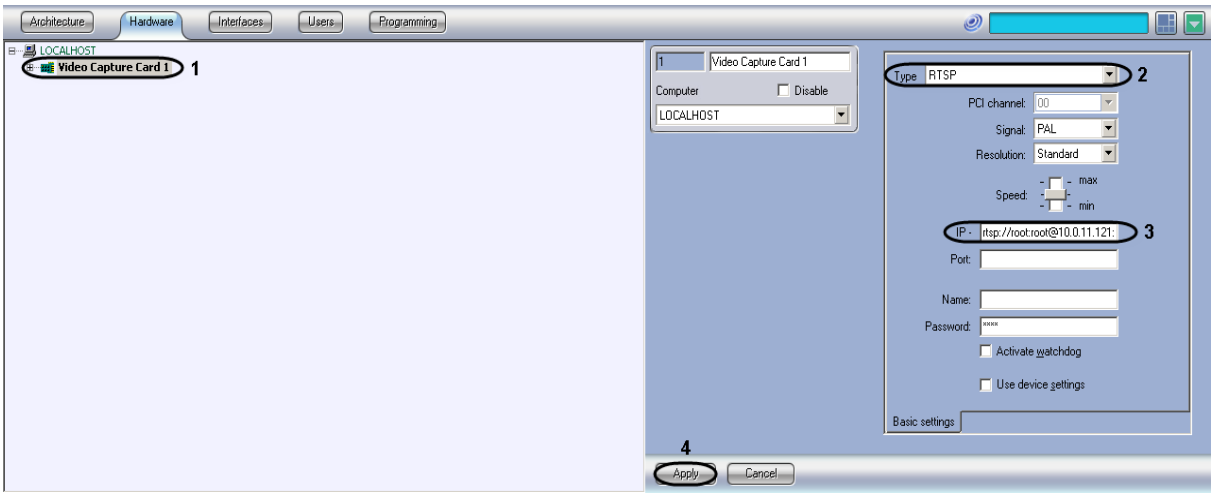


Figure 8.17-6 Configuring the video capture card for receiving video via RTSP protocol

2. Go to the settings panel for the created object (Figure 8.17-6).
3. Select the “RTSP” value in the “Type” dropdown list (Figure 8.17-6, 2).
4. Type-in the address of rtsp-stream in the “IP” field (Figure 8.17-6, 3). The length of address is not to be longer than 100 characters.
   The format of address depends on camera model and its firmware. It is specified in the technical documentation of the vendor. Generally it looks like this:

rtsp://[<username>:<password>@]<IP address of video source >:<port>/<path_to_stream>

Example 1. For Axis 210A camera the address of rtsp-sream looks like this: rtsp://root:password@10.0.11.121:554/mpeg4/media.amp

Example 2. The address to access rtsp-streamdelivered by rtsp Server of INTELLECT, looks like rtsp://192.168.0.3:554/1. When rtsp Server operates in the Multicast mode, it cannot be accessed via RTSP grabber.

5. Click the “Apply” button to save the settings of the “Video Capture Card” object (Figure 8.17-6, 4).
6. Create the “Camera” object on the basis of the “Video Capture Card” object (Figure 8.17-7).

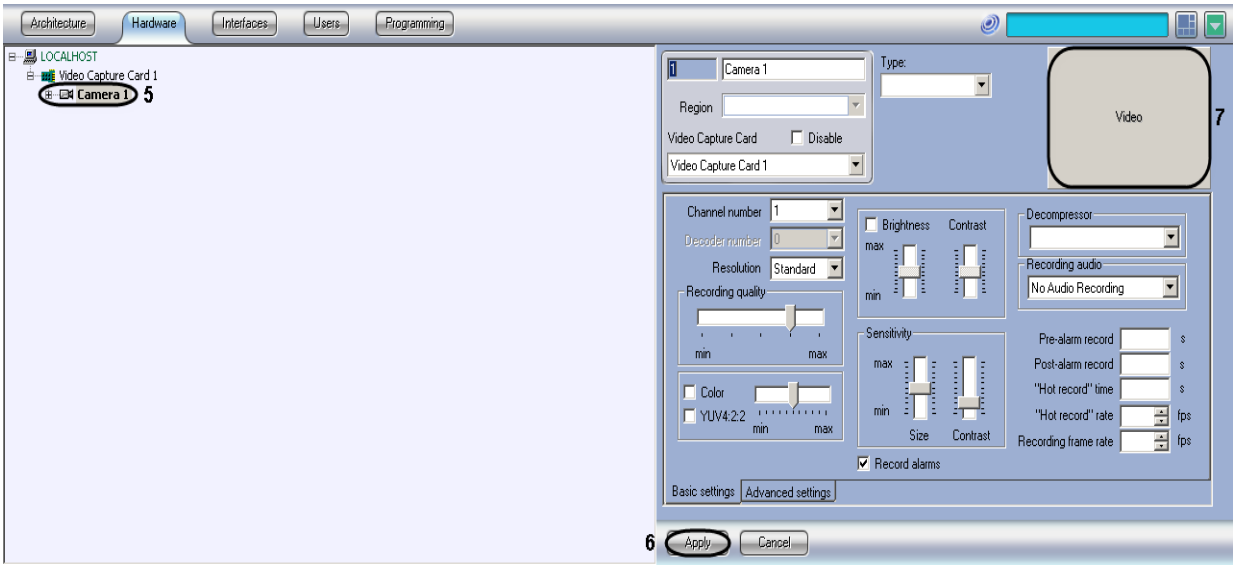


Figure 8.17-7 The “Camera” object

7. Configure the created “Camera” object (Figure 8.17-7, 5).
8. Click the “Apply” button (Figure 8.17-7, 6).
9. Click the “Video” button to check if the video is available (Figure 8.17-7, 7).

If the configuration is correct, video received via RTSP protocol is displayed in the viewing area. Further actions with received video stream are performed using the created “Camera” object.

Video-streaming via RTSP protocol is now configured.

To receive audio stream from a camera, create and configure the “Audio card” and “Microphone” objects for audio received via RTSP protocol. For this select the “RTSP” type of the Audio card (Figure 8.17-8 and “Registration of audio cards and microphones in INTELLECT™ software” section).

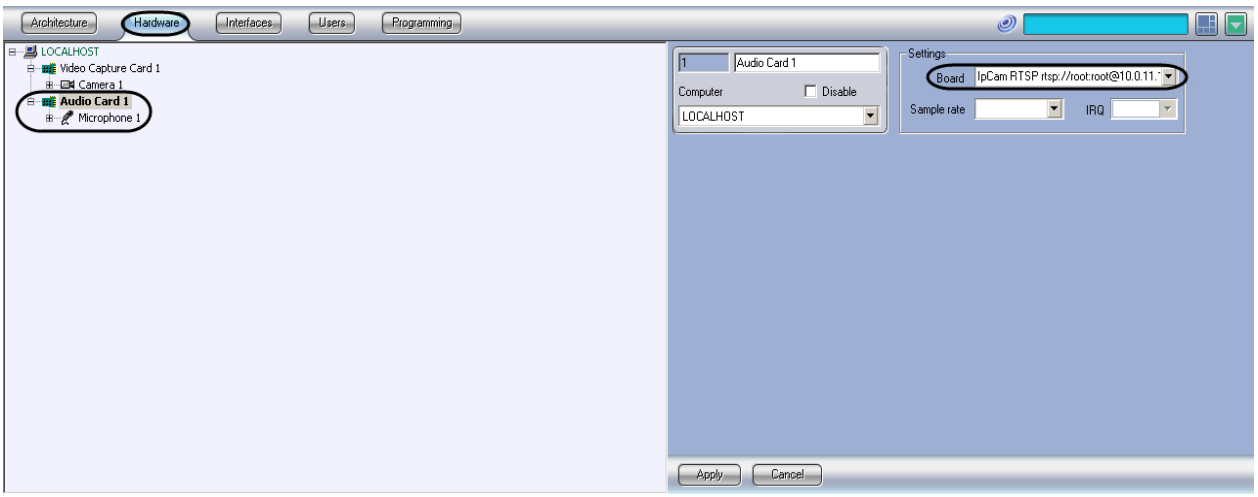


Figure 8.17-8 Configuring the “Audio card” for audio stream received via RTSP protocol

Further actions with received audio stream are performed using the created “Microphone” object.

8.18 Counting the system events

8.18.1 General Information

The Events Counter system object is designed for counting the specified types of events on the specified objects. Unlike other objects in the Hardware tab, this object is not a hardware component, and fulfils auxiliary functions in programming the Intellect system. It is most commonly used together with other system components, since it does not have a separate interface box for data input/output.

The counter notifies the system about the collected statistical data using the “Data Collected (SIGNAL_POINT)" message. Two notification modes are available: for a specified period of time and for a specified number of events. In the first case, the notification is issued upon expiration of a set time period after the start of counting. In the second case, the notification is issued when a certain amount of events has been counted.

An option for conditional count reset is available. Two reset modes are available: for a specified period of time and for a specified number of events. In the first case, the counter is reset upon expiration of a set time period after the start of counting. In the second case, the counter is reset when a certain amount of events has been counted. After resetting the statistic, the counter issues the “Counters have been reset (COUNTERS_FLUSHED)” message.

The start time for counting can be set manually, or automatically according to the last change of the Events Counter settings.

Besides, one Events Counter object allows setting a separate counter for each event.

8.18.2 Event Counter setup

The Events Counter is set up in the following steps.

Creating the Event Counter

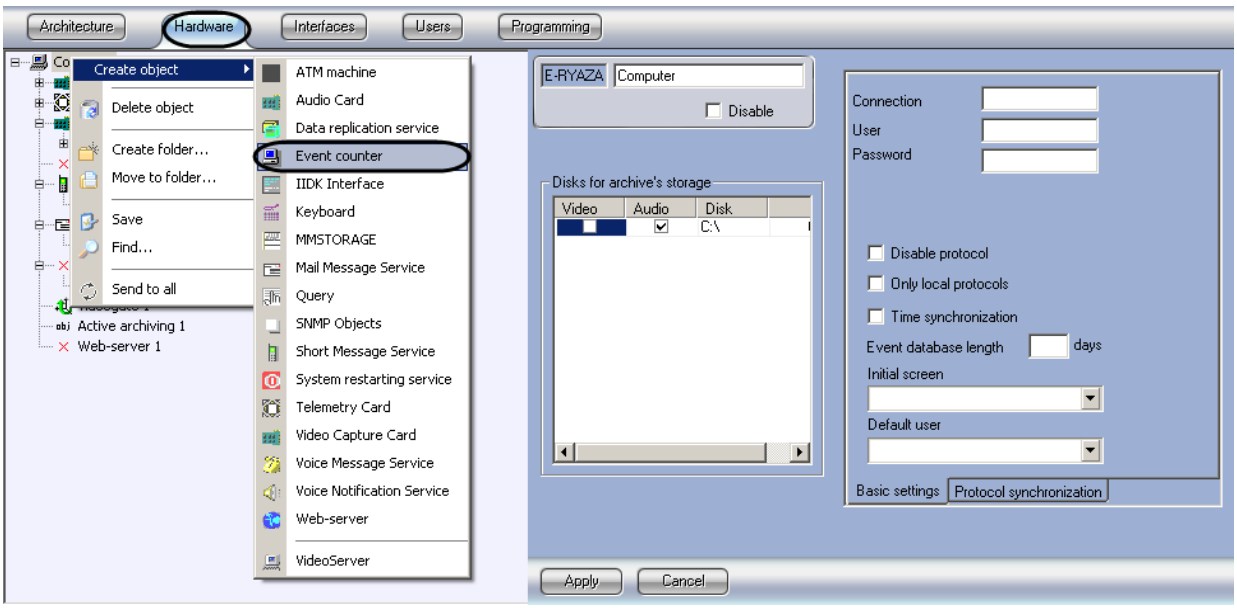


Figure 8.18-1. The Events Counter creation

In the Hardware tab, right-click the computer where the counter is to be created. In the drop-down menu, select Create Objects, then Events Counter. Enter the number and name of the counter and click Apply.

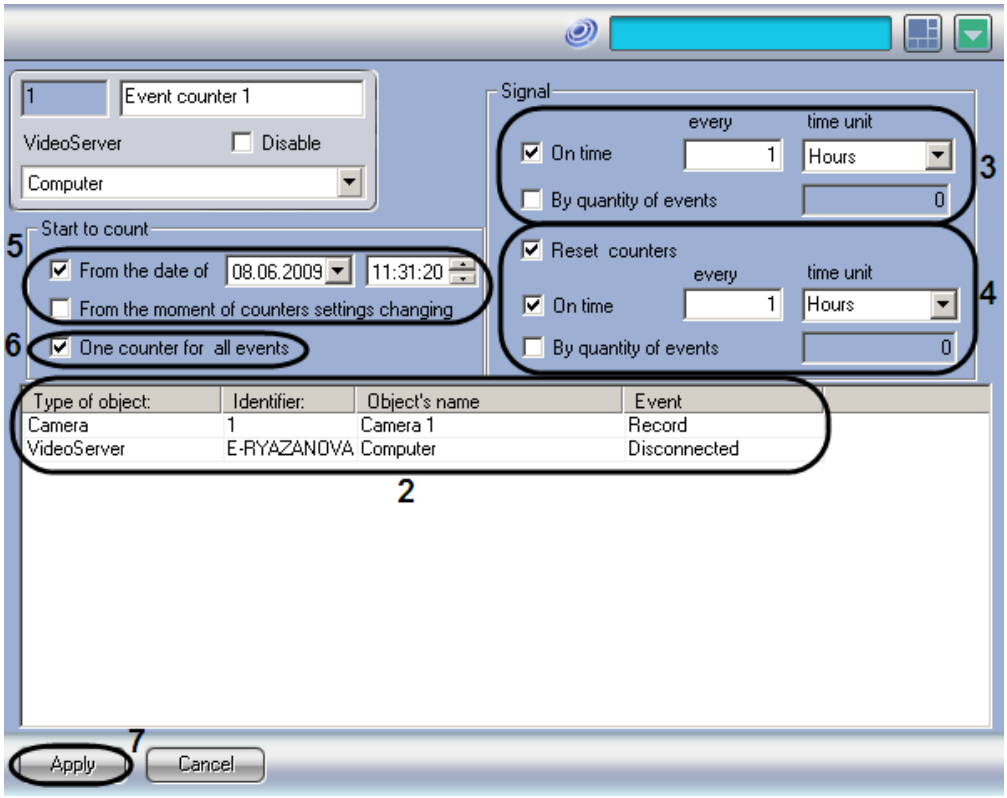


Figure 8.18-2. The Events Counter setup

Objects and events selection

Select an object type in the Object Type column, and an ID in the ID column (Figure 395-2). Then, select an event in the Event column for the created object. Repeat these steps for all required objects and events.

Notification setup

Select the notification mode and set the notification parameters.

Reset setup

Enable the counter reset option, if necessary. Select the reset mode and set the reset parameters.

Start time setup

Select the time setting mode and enter the date and time, if necessary.

Setting up the individual counters for events

Check or uncheck the option for individual events counting, if necessary.

Saving the settings

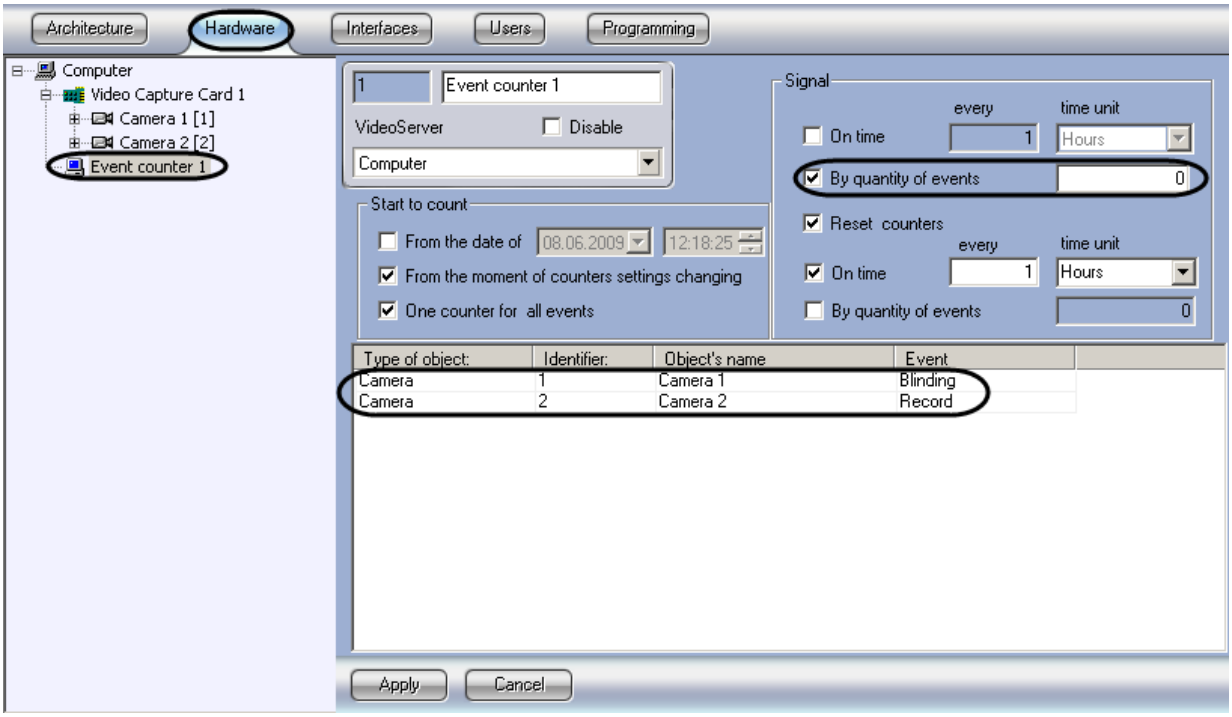
Click Apply to save the settings.

The Events counter has been set up.

8.18.3 Data output and counter control

The Events Counter object has no separate interface object for data input/output, thus it is used together with other objects. Usually, macros are used to control the counters.

Figure 8.18-3 shows an example of using a counter in a macro.



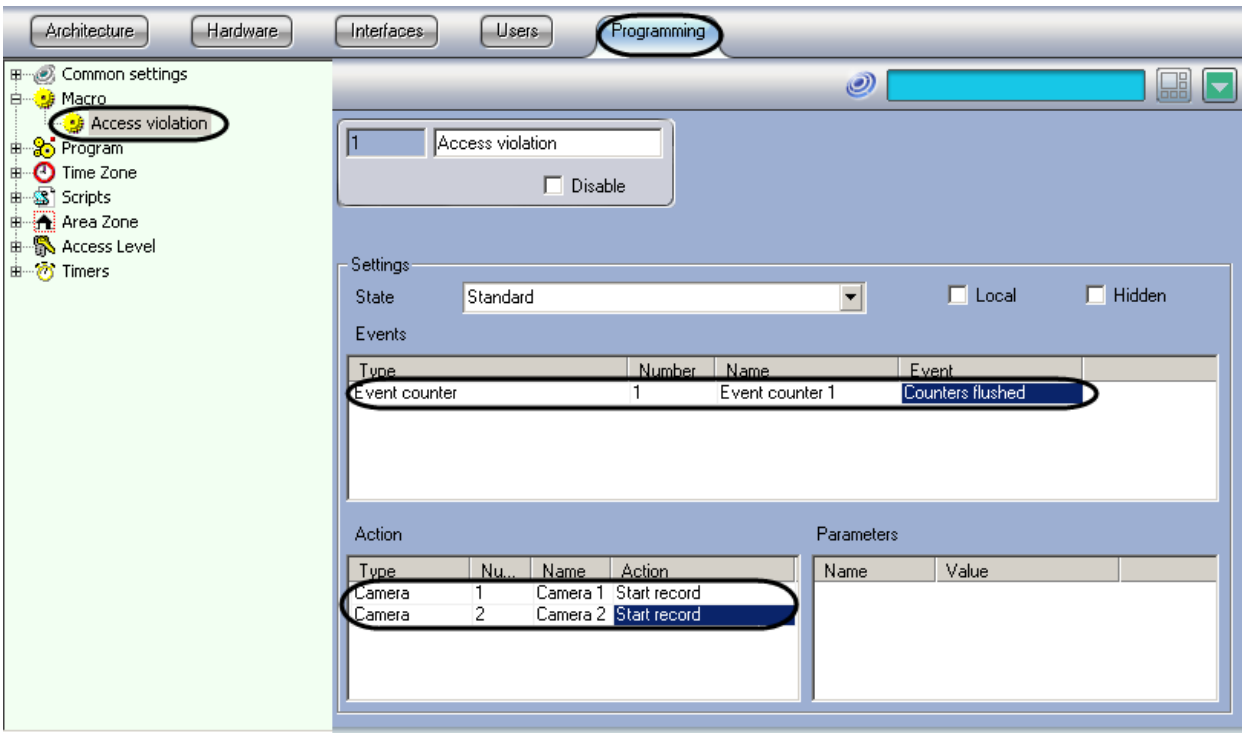


Figure 8.18-3. An example of the counter usage

The counter issues a notification (sends a “SIGNAL_POINT (Data collected)” message in any of the following cases: camera 1 blocked, camera 2 blocked, camera 1 connection lost, unauthorized access attempt, the number of access attempts exceeded the limit. If the Access Abuse Control macro is active at the moment of the counter notification, video recording automatically starts on cameras 1 and 2.

Note. The macros are described in detail in the Creating and Using Macros section.

8.19 Configuring the Event Viewer

8.19.1 Configuring the “Event Viewer” interface object

8.19.1.1 *Order of configuring the “Event Viewer” interface object*

The “Event viewer” object is a child-object of the “Screen” interface object and is used for displaying information about registered events in the interface box. Events may be registered both locally and on the computers in the distributed system.

Note. Events transmission among computers is set in the “Architecture” tab in the “Systems settings” dialog box (see the “Configuring the interaction of distributed system components” section).

The “Event viewer” interface object is created and configured in the “Interfaces” tab of the “System settings” dialog box (Figure 8.19-1).

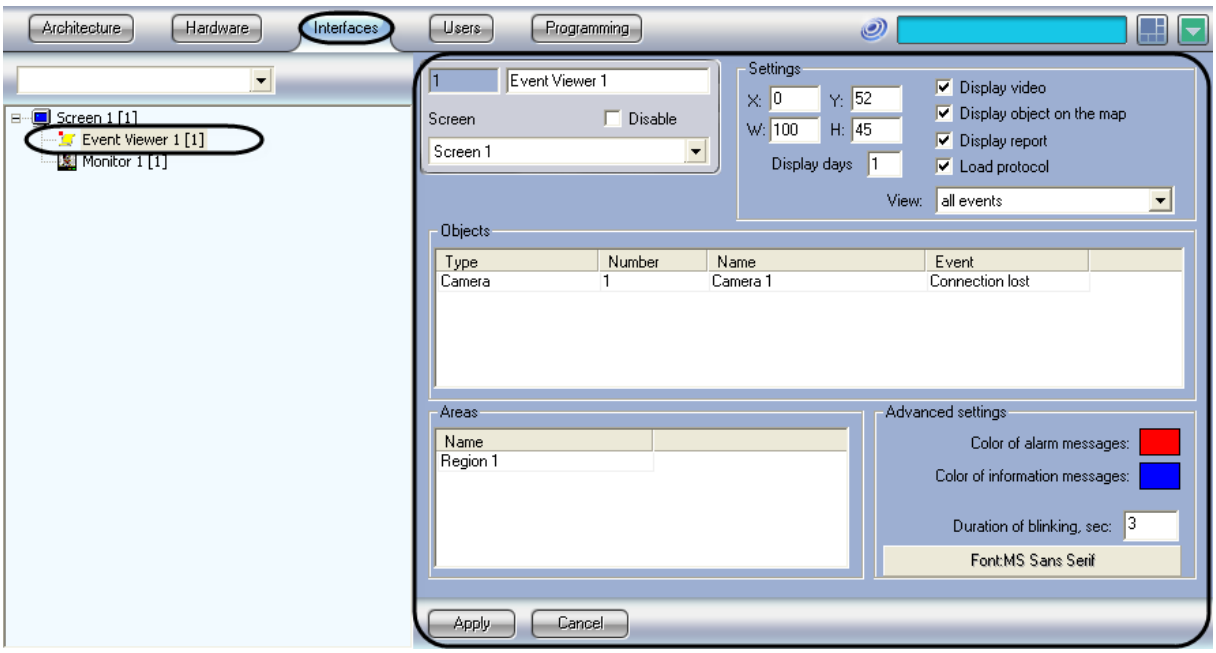


Figure 8.19-1 Configuring the "Event Viewer" object

To configure the "Event viewer" interface object, do the following:

1. Choose the events, information on which should be logged to the "Events viewer" interface object in case of its registration in the system.

2. Set the parameters of the event viewer.

3. Configure the displaying of the "Event viewer" interface box.

8.19.1.2 *Selecting events*

To select the events that are to be logged in the "Events viewer" interface object, do the following:

1. In the drop-down list of the "Type" column in the "Objects" tab select the type of an object for which the required event may be logged (Figure 8.19-2, 1). If the field is empty, the "Events viewer" will display all the events for all the objects in the system.

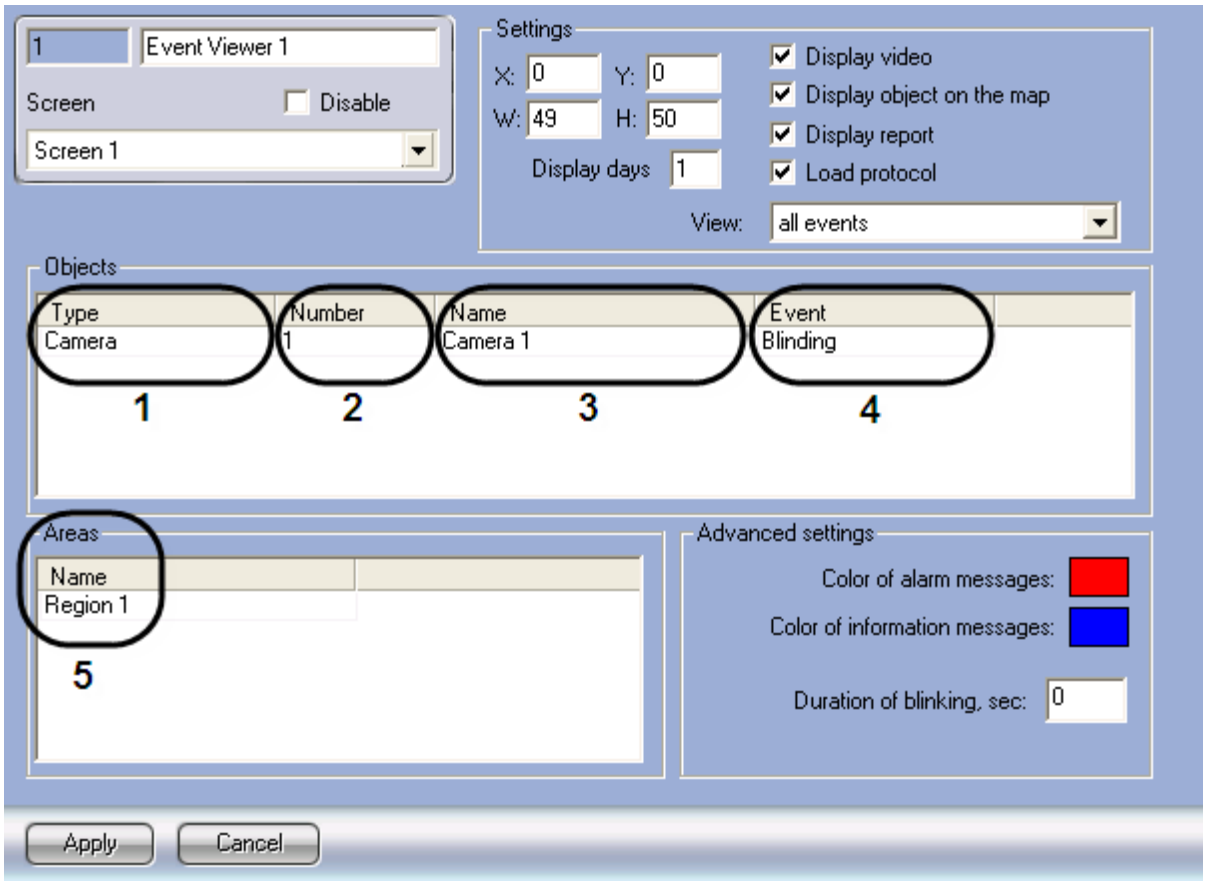


Figure 8.19-2 Event selection for logging in the Events viewer

Note. Activation of the drop-down list in the "Objects" tab and in the "Areas" list is made by LMC upon the corresponding cell. Detailed description of actions with tabs and lists is in the Objects settings panel.

2. In the drop-down list of the "Number" column in the "Objects" tab specify the ID for an object of the type selected in step 1(Figure 8.19-2, 2). If the field is empty, the interface "Events viewer" will log all the events of the specified type.

3. Object name is set automatically on the basis of the values selected in step 1-2 and displayed in the "Number" column of the "Objects" tab (Figure 8.19-2, 3). You can not edit the "Name" column.

4. In the drop-down list of the "Event" column of the "Objects" tab specify the required event for the selected object in step 1-2 (Figure 8.19-2, 4). If the field is empty, the interface «Events viewer» will log all the events of the specified type.

5. In the "Areas" table select the region which object's events are to be logged (Figure 8.19-2, 5). If the objects are identified (see step 2) or no region is set, then the events are logged without object's belonging to any region.

6. Repeat steps 1-5 for all required objects and regions.

7. Click the "Apply" button to save all the changes.

Events for logging to the "Events viewer" interface object are now selected.

8.19.1.3 *Event viewer parameters*

To set the event viewer parameters, do the following:

1. In the “Display days” field set the number of days to display the events in the “Event viewer” interface box (Figure 8.19-3, 1).

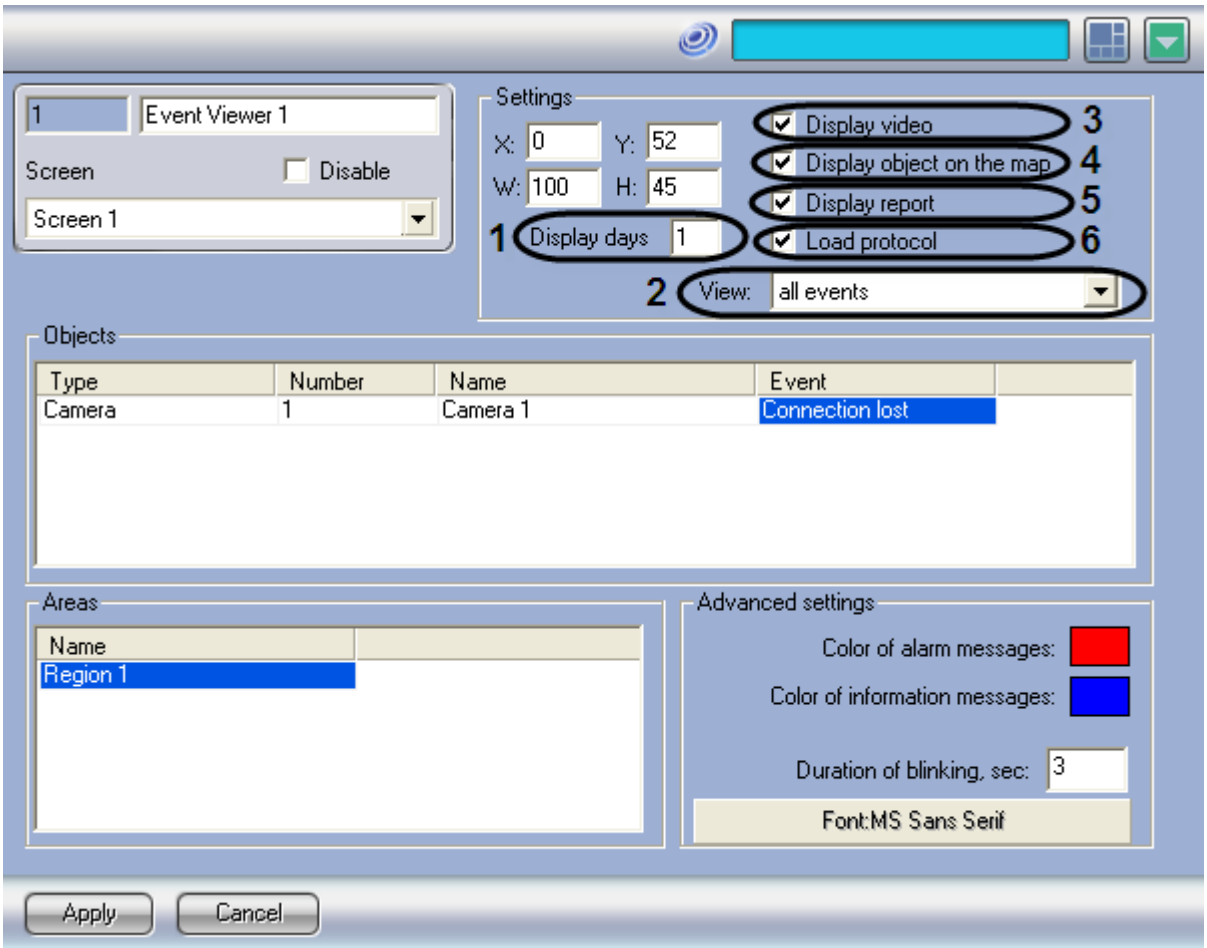


Figure 8.19-3 Setting the “Event Viewer” parameters

2. If it is necessary to display only one latest event or all latest events in “Event Viewer” interface box, select “One latest” or “All events” in the “View:” list (Figure 8.19-3, 2).

Note1. If the “All events” item is selected and the event is repeated for the object, there is time changing of present event recording and a new recording line is not created in the “Event Viewer” interface box.

Note2. By default all events are displayed in the “Event Viewer” interface box.

3. Set the “Display video” checkbox to enable viewing the video recordings from the “Event Viewer” interface box (Figure 8.19-3, 3). Viewing the events of the “Record to disk” type of the “Camera” objects is only possible.

4. Set the “Display object on the map” checkbox to enable viewing the logged events on the map (Figure 8.19-3, 4).

5. Set the “Display report” checkbox to enable creating a printed report about events in the “Event Viewer” interface box for a specified time period (Figure 8.19-3, 5).

6. If the last 1000 logged events are to be displayed in the “Event Viewer” interface box, then set the “Load protocol” checkbox (Figure 8.19-3, 6).

Note. When the “Load protocol” checkbox is set, the system loads last events without any filters i.e. the events of those objects that have been deleted without giving a source (the name of a deleted object is not displayed)can be displayed. Such operation of the “Event Viewer” allows the extra control over system objects.

7. Click the “Apply” button to save all the changes.

Event Viewer parameters are now set.

8.19.1.4 *Parameters of displaying the “Event Viewer” interface box*

To configure displaying the “Event viewer” interface box, do the following:

1. Set the X (horizontally indented from screen’s left border) and Y (vertically indented from screen’s upper border) coordinates of the upper left corner of the “Event Viewer” interface box (Figure 8.19-4, 1). Coordinates are set as a percentage of the corresponding screen dimensions horizontally and vertically as follows.

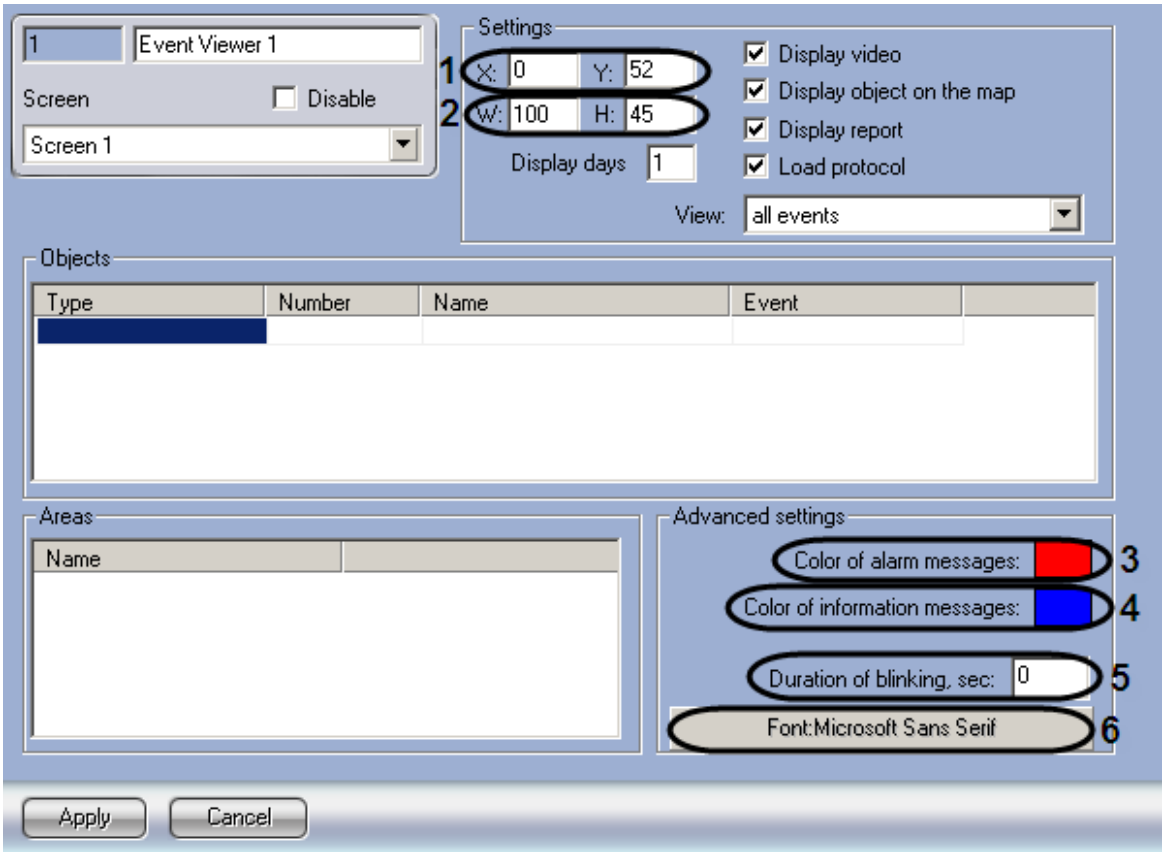


Figure 8.19-4 Parameters of displaying the “Event viewer” interface box

2. Set the dimensions of the “Event Viewer” interface box: window’s width «W» and window’s height «H» (Figure 8.19-4, 2). Dimensions are set as a percentage of the corresponding screen dimensions horizontally and vertically as follows.

3. Set the color of alarm messages in the “Event Viewer” interface box (Figure 8.19-4, 3).For this double-click upon the “Color of alarm messages” field. Standard Windows dialog box will open, select the required color and click “OK”.

4. Specify the color of information messages in the “Event Viewer” interface box (Figure 8.19-4, 4). For this double-click upon the “Color of information messages” field. Standard “Color” Windows dialog box will open, select the required color and click “OK”.

5. Enter the duration of blinking for alarm messages in seconds in the “Duration of blinking, sec” field of the “Event Viewer” interface box (Figure 8.19-4, 5).

6. Set the font of messages displayed in the “Event Viewer” interface box. For this click the “Font: current font” button (Figure 8.19-4, 6). Standard “Font” Windows dialog box will open, set the font and click “OK”.

7. Click the “Apply” button to save all the changes.

Parameters of displaying the “Event viewer” interface box are now set.

8.19.1.5 *Configuring the “Event Viewer” database*

The “Event Viewer” database is used for storing data about events registered in the system. The “Event Viewer” database is configured by means of the settings panel of the “Computer” system object (Figure 8.19-5).

To configure the “Event Viewer” database, do the following:

1. To disable events recording to the “Event Viewer” database, set the “Disable protocol” checkbox (Figure 8.19-5, 1). This setting is relevant only for the Server corresponding to the “Computer” object.
2. Set the “Only local protocols” checkbox in case when only events registered on this computer are be logged to the database (Figure 8.19-5, 2). This setting is relevant only for the Server corresponding to the “Computer” object.

3. In the “Event database length” field specify the time period for storing the event archive in the “Event Viewer” database (Figure 8.19-5, 3). This setting is relevant only for the Server corresponding to the “Computer” object. To specify the time period for storing the event archive for all Servers in the distributed system, use the common settings in the “Programming” tab (see “Settings panel of the Common settings object” section). The value of the “Events archive length” parameter on the settings panel of the “Computer” object has the higher priority.

4. Click the “Apply” button to save all the changes (Figure 8.19-5, 4).

Note. Steps 1 and 3 are for configuring events viewing in the system of distributed configuration.

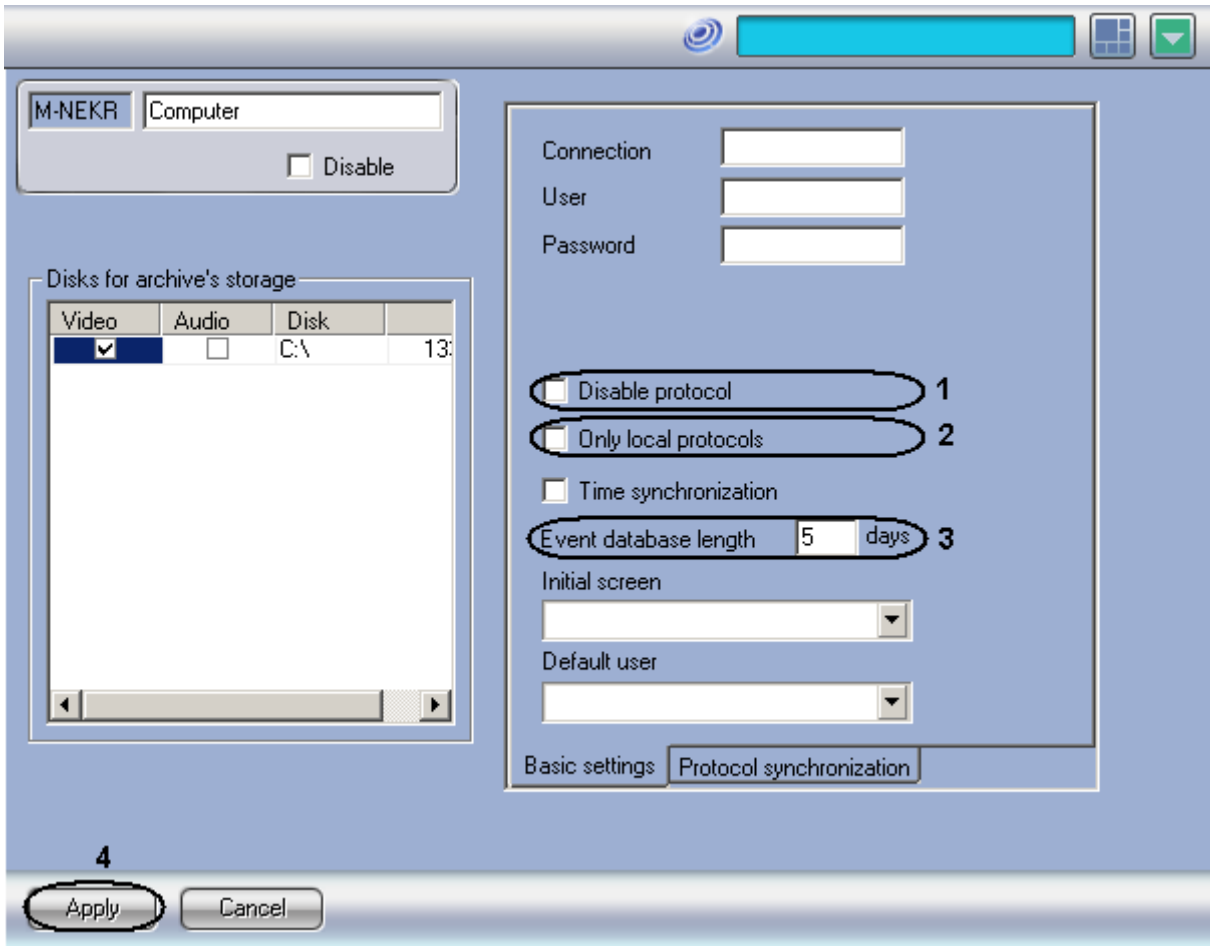


Figure 8.19-5 Configuring the "Event Viewer" database

The "Event Viewer" database is now configured.

Note. The tweaki.exe utility can also be used to configure events viewing (see the "The settings panel for the Intellect section").

8.19.1.6 *Configuring the "Event Viewer" databases synchronization*

8.19.1.6.1 General information on the "Event Viewer" databases synchronization

Information on registered events in the system is stored in the "Event Viewer" database in INTELLECT™. The local copy of distributed database is stored on each Server. Synchronization of local copies of "Event Viewer" databases is to be configured to provide the data replication.

Start of "Event Viewer" database synchronization is performed via programming resources, for example, via macros.

8.19.1.6.2 Configuring the "Event Viewer" databases synchronization

Synchronization of the "Event Viewer" databases is configured on the settings panel of the "Computer" object in the "Protocol synchronization" tab (Figure 8.19-6).

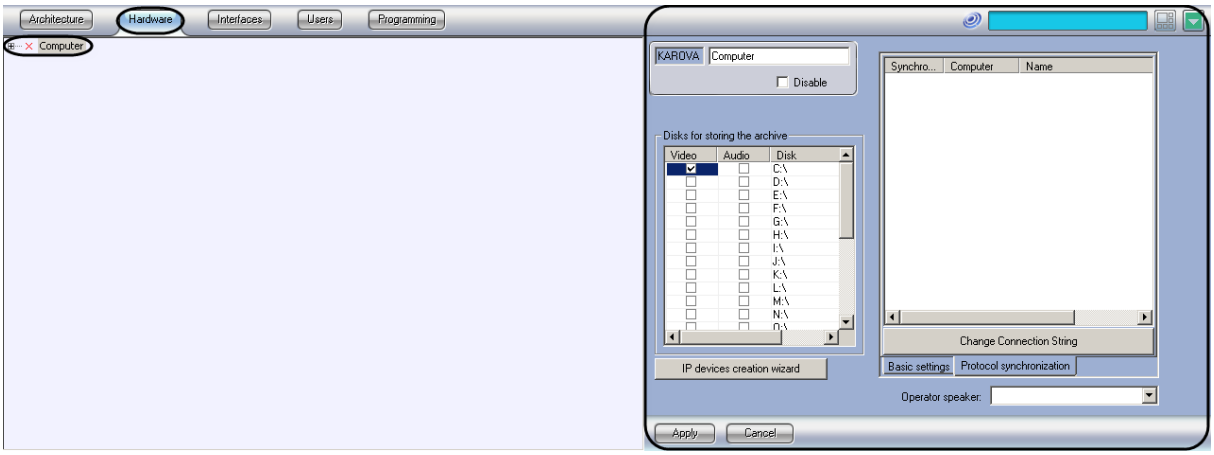


Figure 8.19-6 The settings panel of the "Computer" object

To configure the synchronization, do the following:

1. Go to the "Protocol synchronization" tab (Figure 8.19-7, 1).

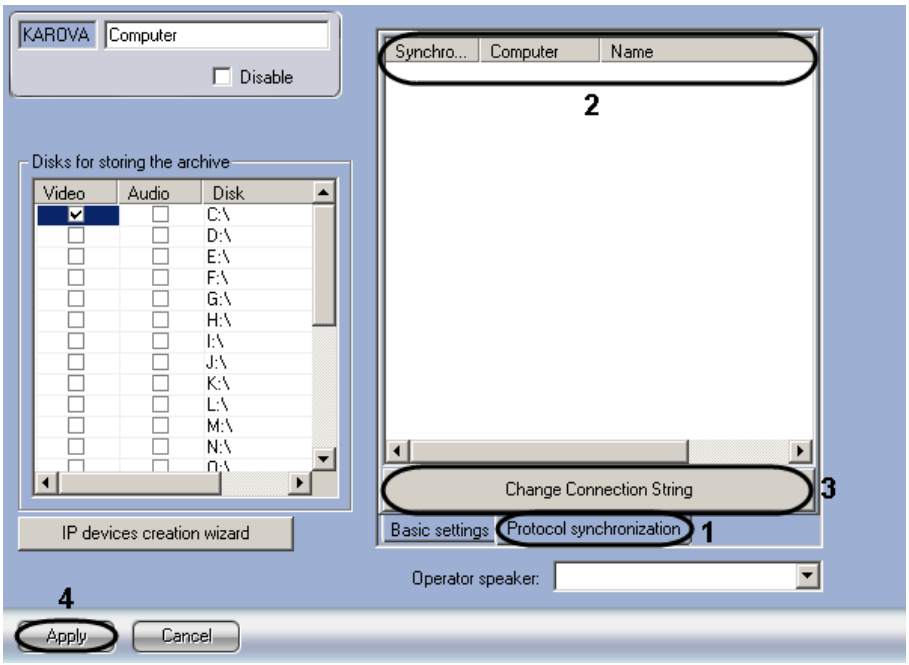


Figure 8.19-7 Configuring the "Event log" databases synchronization

2. In the "Synchronize" column set checkboxes next to those computers with which the synchronization of the "Event Viewer" databases is to be performed on the Server (Figure 8.19-7, 2).

3. Set the connection string in the "Event Viewer" database on remote computers:

   3.1. Select the cell corresponding to the required computer in the line of the table.

   3.2. Click the "Change Connection String" button (Figure 8.19-7, 3).

   3.3. In the opened "Data communication channel" box configure the connection to the "Event Viewer" database located on the selected computer.

Connection configuration is performed via Windows standard tools and is described on the Microsoft reference web-site (http://msdn.microsoft.com/).

3.4. Repeat 3.1 – 3.3 steps for all required computers.

4. Click the “Apply” button to save the settings (Figure 8.19-7, 4).

Synchronization of the “Event Viewer” databases is now configured.

8.19.1.6.3 Example of macro to start the “Event Viewer” databases synchronization

On the WS3 computer the synchronization of the “Event Viewer” databases is to be performed when Timer 1 is triggered.

Set the macro parameters using one of the following ways (Figure 8.19-8, Table 8.19-1):

Table 8.19-1

Event		Action	
Object	**Event**	**Object**	**Action**
Timer 1 (1)	Timer triggered (2)	WS3 computer (3)	Receive protocol (4)

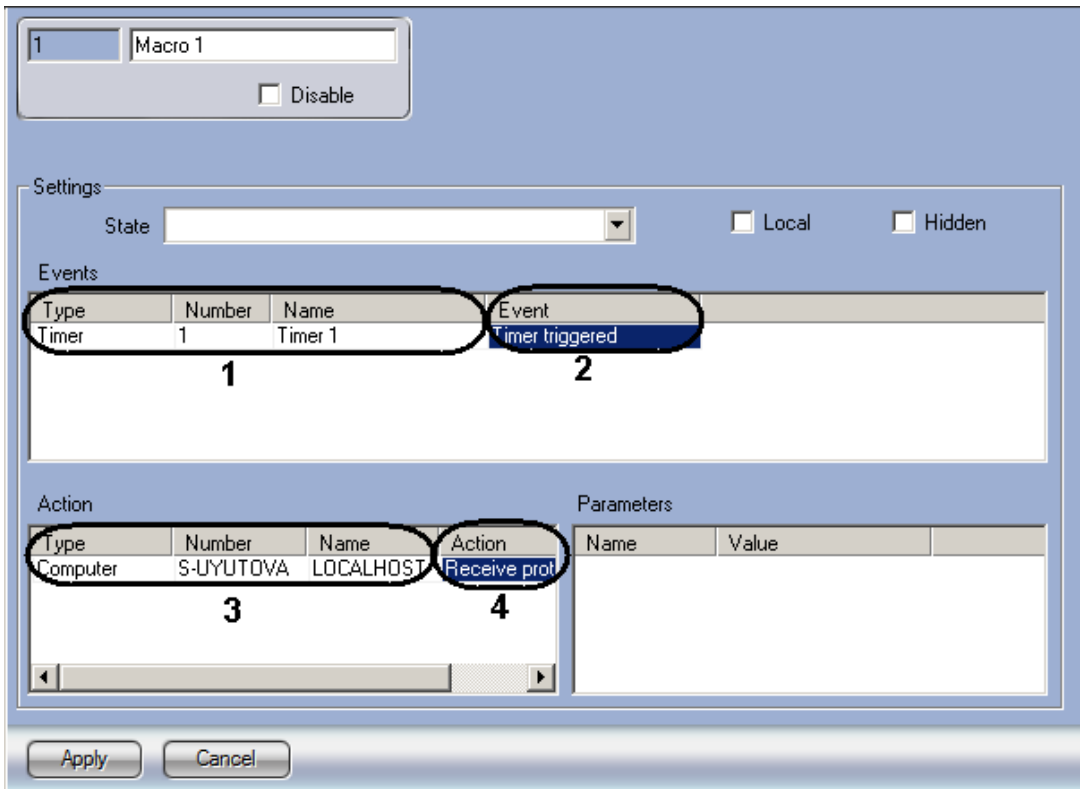


Figure 8.19-8 Settings of the “Macro” object

8.19.2 Configuring the “Operator protocol” interface object

The “Operator protocol” object is for processing events from security system objects and searching in an event archive.

The “Operator protocol” object performs the following features:

1. Displaying the events registered by the security system objects in the interface box.
2. Assigning a status (type) to a registered event.
3. Adding a comment to an event.
4. Recording events to an archive.
5. Searching events in an archive.
6. Viewing video of an event.
7. Escalating non-processed events to an operator protocol of a higher level.

8.19.2.1 *Creating the "Operator protocol" object*

To create the "Operator protocol" object, do the following:

1. Select the "Interfaces" tab in the "System Settings" dialog box (Figure 8.19-9, 1).

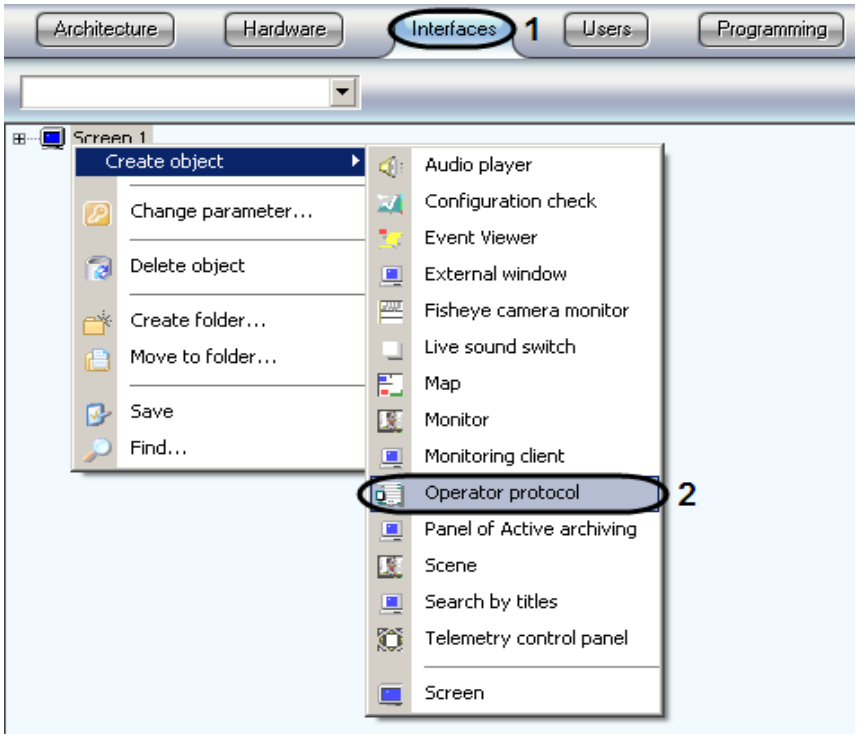


Figure 8.19-9 Creating the "Operator protocol" object

2. In the context menu of the "Screen" object on which the created object is to be based, select the "Operator protocol" item in the "Create object" submenu (Figure 8.19-9, 2).
3. Set the number and name of the created object (Figure 8.19-10, 3).

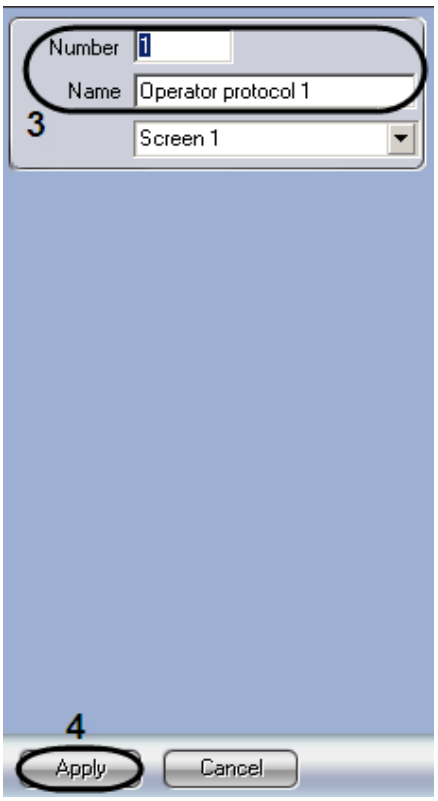


Figure 8.19-10 Specifying the number and name of the "Operator protocol" object

4. To create an object, click the "Apply" button (Figure 8.19-10, 4).

As a result the settings panel for the "Operator protocol" is displayed.

8.19.2.2 *Configuring the "Operator protocol" object*

To configure the "Operator protocol" object, do the following on the settings panel of the object:

1. Configure displaying of the "Operator protocol" interface box.
   1.1. Set the X (horizontally indented from screen's left border) and Y (vertically indented from screen's upper border) coordinates of the upper left corner of the "Operator protocol" interface box. Coordinates are set as a percentage of the corresponding screen dimensions horizontally and vertically as follows (Figure 8.19-11, 1).
   1.2. Set the dimensions of the "Operator protocol" interface box: window's width «W» and window's height «H». Dimensions are set as a percentage of the corresponding screen dimensions horizontally and vertically as follows (Figure 8.19-11, 2).
   1.3. Set the "Allow moving" checkbox if the layout and size of the "Operator protocol" interface box are to be changed manually (Figure 8.19-11, 3).
2. In the "Chief's interface" drop-down list, select the "Operator protocol" object to which events are to be transmitted at the end of a set time period (Figure 8.19-11, 4).
3. In the "Map" drop-down list, select the pre-created "Map" object for event monitoring (Figure 8.19-11, 5).
4. In the "Monitor" list, select the pre-created "Monitor" object for viewing video of events (Figure 8.19-11, 6). Selected monitor can be used only for viewing an archive after the first call from the "Operator protocol" box.

5. In the “Wait for the operator’s response” field specify the time period at the end of which an event will have the “Non-processed event” type or it will be escalated (Figure 8.19-11, 7).
6. If new events are to be added to the end of the current events list, set the “New events at the end” checkbox (Figure 8.19-11, 8).
7. In the “Keep ___ events” field, set the maximum of events displayed in the “Operator protocol” interface box (Figure 8.19-11, 9).

Attention! The number of events displayed in the “Operator protocol” interface box influences the main memory capacity. If 100 non-processed events are displayed in the interface box, then the “Operator protocol” module can use up to 200 Mb of main memory. When the value of the “Keep ___ events” parameter is increased, the main memory capacity is also increased.

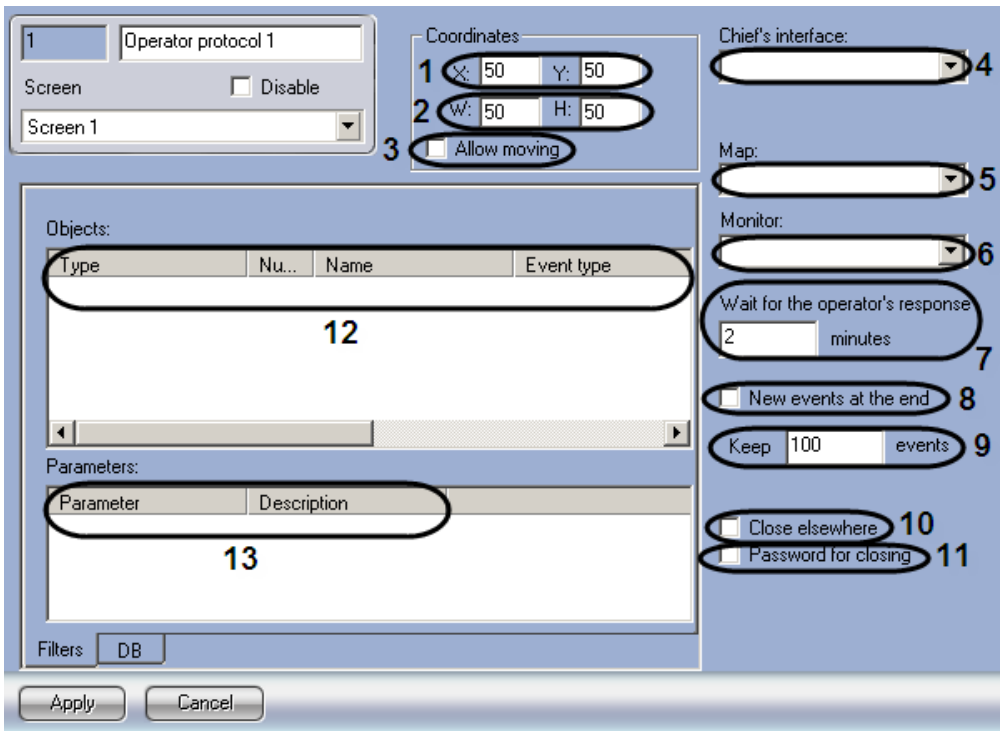


Figure 8.19-11 The settings panel of the “Operator protocol” object

8. If after processing an event in one of operator protocols it is to be removed from other operator protocols, set the “Close elsewhere” checkbox (Figure 8.19-11, 10).
9. If the processing of all events is to be confirmed with a password, set the “Password for closing” checkbox (Figure 8.19-11, 11).
10. In the “Objects” table, specify the objects the events from which are to be received and processed (Figure 8.19-11, 12).
    10.1. In the list of the “Type” column, select the object type.
    10.2. In the list of the “Number” column, select the object id. The object name will be set automatically. If the object number is not specified, then events from all objects of selected type will be transmitted to the protocol.
    10.3. In the list of the “Event type” column, select events that are to be displayed in the protocol box. If the event type is not specified, then all events registered by the selected object will be transmitted to the protocol. Only alarm and informative events are in this drop-down list.

Note. In the "param_dic" field, advanced settings of an event are specified. These settings are to be displayed in the "Operator protocol" interface box. Use the "Parameters" table to fill in this field (see step 12).

10.4 If the processing of an event is to be confirmed with a password, select the "Yes" value in the "Request password" drop-down list. If there is no need to confirm the processing with a password, select the "No" value in this drop-down list.

Note. If the processing of all events is to be confirmed with a password, set the "Password for closing" checkbox (Figure 8.19-11, 11).

10.5 In the "Region" drop-down list, select the "Section" object corresponding to the object.

11. Repeat actions described in step 10 for all required objects. To add a line, go to the last line of the table and click the "↓" key.

Note. To remove the lines from the table, use the "Ctrl + Del" key combination.

12. In the "Parameters" table, specify additional settings for an object event. These settings are to be displayed in the "Operator protocol" interface box (Figure 8.19-11, 13).
    12.1. In the "Parameter" field, set the parameter name. To specify the parameters, use a debug box or a ddi file.
    12.2. In the "Description" field, set a short description of the parameter.
13. In the "DB" tab, configure the connection to the database server (Figure 8.19-12, 5).

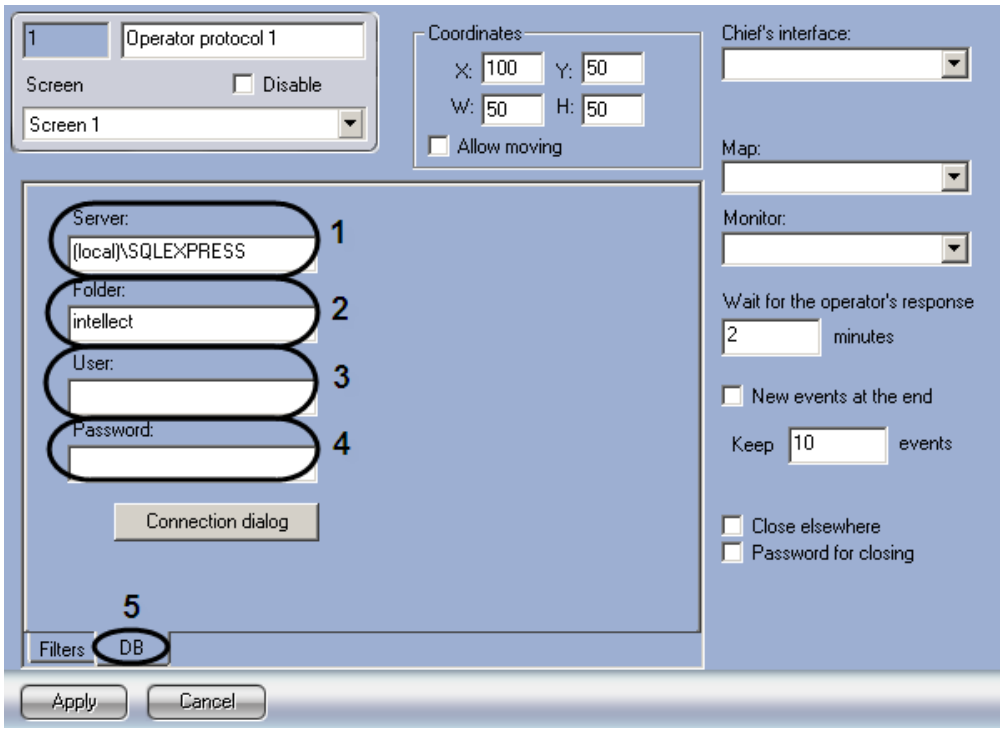


Figure 8.19-12 The settings panel for the "Operator protocol" object. The "DB" tab

Note. Parameters, set at INTELLECT ™ software installation, are used by default to connect to the database server.

14.1 In the “Server” field, set the name of the database server to connect to (Figure 8.19-12, 1).

14.2 In the “Folder” field, set the name of the database to store events (Figure 8.19-12, 2).

14.3 In the “User” field, set the username for the authorization on the database server (Figure 8.19-12, 3).

14.4 In the “Password” field, set the password for the authorization on the database server (Figure 8.19-12, 4).

15. To save the settings, click the “Apply” button.

The “Operator protocol” object is now configured.

8.19.2.3 *Configuring the database server connection in an online mode*

To configure the database server connection in an online mode, do the following:

1. Go to the “DB” tab on the settings panel of the “Operator protocol” object (Figure 8.19-13, 1).

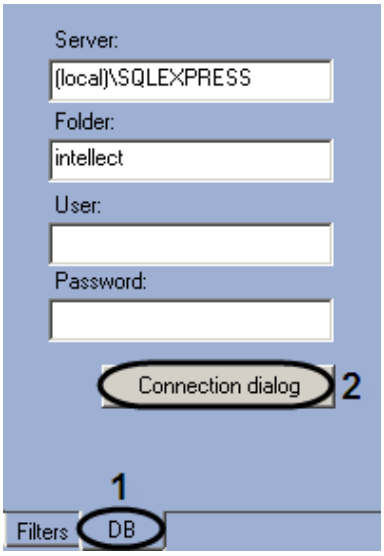


Figure 8.19-13 Going to the database server connection in an online mode

2. Click the “Connecting dialog” button (Figure 8.19-13, 2).

The “SQL Server Login” dialog box will be displayed (Figure 8.19-14).

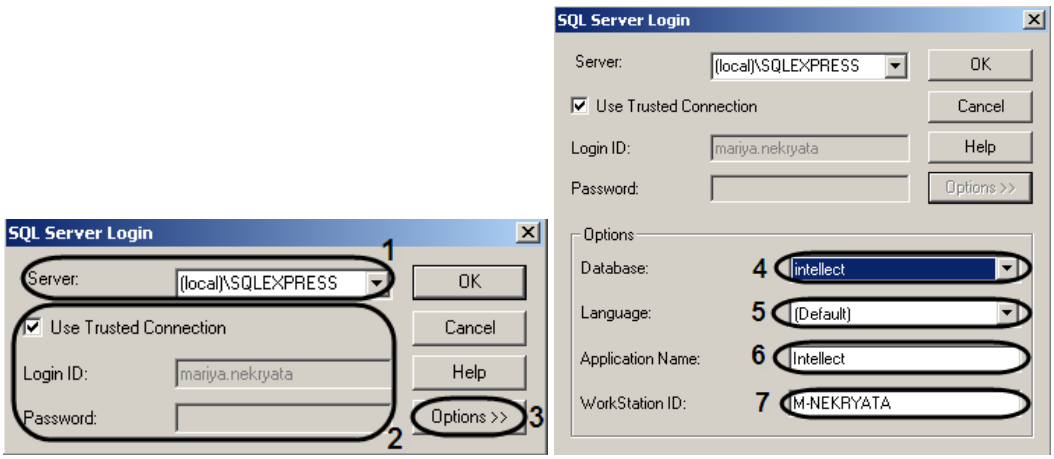


Figure 8.19-14 The "SQL Server Login" dialog box

3. In the "Server" list, specify the SQL Server to connect to (Figure 8.19-14, 1).

Note. If the required SQL Server is in the"Server" list, then there is no need to further configure the connection.

4. If you need to specify the login and password to authorize the SQL Server, then set the "Use Trusted Connection" checkbox unchecked (Figure 8.19-14, 2). As a result the "Login ID" and "Password" fields are available for editing.

Note. If the "Use Trusted Connection" checkbox is set, then the authorization on the SQL Server will be provided using Windows account information.

5. To set advanced connection options, click the "Options >>" button (Figure 8.19-14, 3).

   5.1. In the "Database" drop-down list, select the database to store events (Figure 8.19-14, 4).
   5.2. In the "Language" list, select the language of SQL system messages (Figure 8.19-14Figure 8.19-14, 5).
   5.3. In the "Application Name" field, set the application name ("Intellect" by default) (Figure 8.19-14, 6).
   5.4. In the "WorkStation ID" field, set the computer name ("WindowsID" by default) (Figure 8.19-14, 7).

To save the settings, click "OK".

Note. To view the supplemental information about the "SQL Server Login" dialog box, click the "Help" button.

The database server connection is now configured.

8.20 Configuring the interactive map for object state indication and controlling the objects

8.20.1 General information on the structure of the interactive map of the guarded location

The interactive map of the Intellect system uses graphical diagrams of the guarded territory to navigate among the surveillance system components. The interactive map allows controlling the

objects from the context menus of the graphical symbols on the map showing the states of the corresponding objects.

The interactive map can be comprised of a set of plans (layers) made of photographs, maps, diagrams, drawings in BMP format. The size and resolution of the images is not limited.

Note A. We recommend creating the images in third-party graphical software packages (Microsoft Paint, Adobe Photoshop, etc), as the standard delivery configuration of Intellect software does not include tools for image editing.

Note B. A plan (map layer) may be an image in BMP format.

There are no limitations on the image size and resolution, so a large image may not fit into the screen, or the objects shown on it may look indiskernible.

8.20.2 Configuring the interactive map

8.20.2.1 *Setup procedure*

To configure interactive map do the following:

1. Create and set the “Map” interface object
2. Create and set objects Layer on the basis of interface object Map
3. Attach required objects to the Layers of interactive map.
4. Place the object symbols of the assigned objects on the map’s layers.

Set up the links between the layers, to be used for interactive card navigation.

8.20.2.2 *Setting up the location of the map on the screen*

To register the interactive map in the Intellect system, create the “Map” interface object.

When setting up the Map object, specify the position of the map on the screen.

To register the map and specify its position on the screen, do the following:

1. Open the Interfaces tab of the System Settings window.
2. Create a Map object under the Screen object in the tree, or choose an existing Map object (Figure 8.20-1).

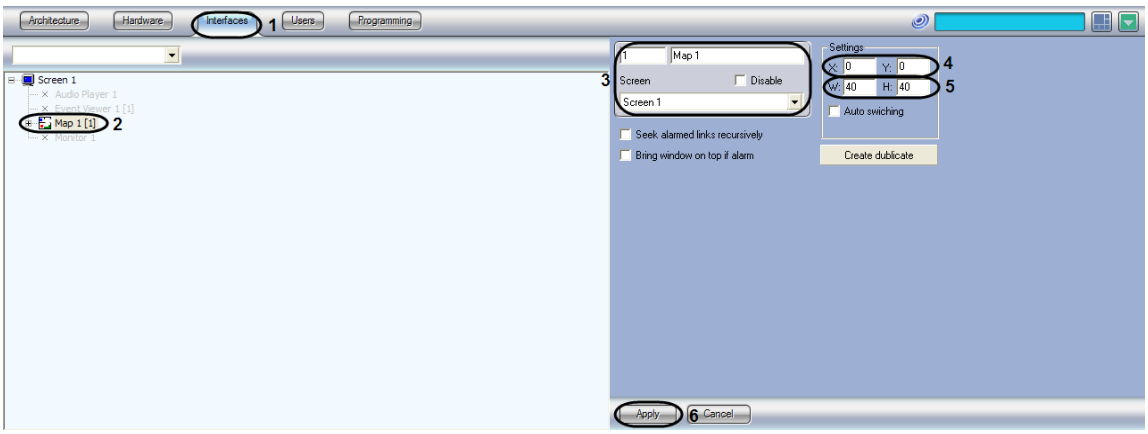


Figure 8.20-1 The Map object settings panel

3. Specify an id and name for the Map object, and choose the Screen object to become the parent of the map.

4. Set the coordinates X and Y of the upper left corner of the Map window, as a percentage of the corresponding screen dimensions.

5. Specify the width (W) and height (H) of the Map window, as a percentage of the corresponding dimensions of the screen.

6. Press the Apply button to save all changes made to the settings.

This completes the setup of the map position on the screen.

8.20.2.3 *Creating the layers of the interactive map*

You can locate several graphical plans of guarded objects on one interactive Map. Each graphical plan is represented by a “Layer” object.

To create and set up the “Layer” object, do the following:

1. Go to the “Interfaces” tab of the “System settings” dialog box (Figure 8.20-2, 1).

2. Create a “Layer” object on the base of the “Map” object or select the existing “Layer” object in the objects tree if the “Interfaces” tab of the “System settings” dialog box (Figure 8.20-2, 2).

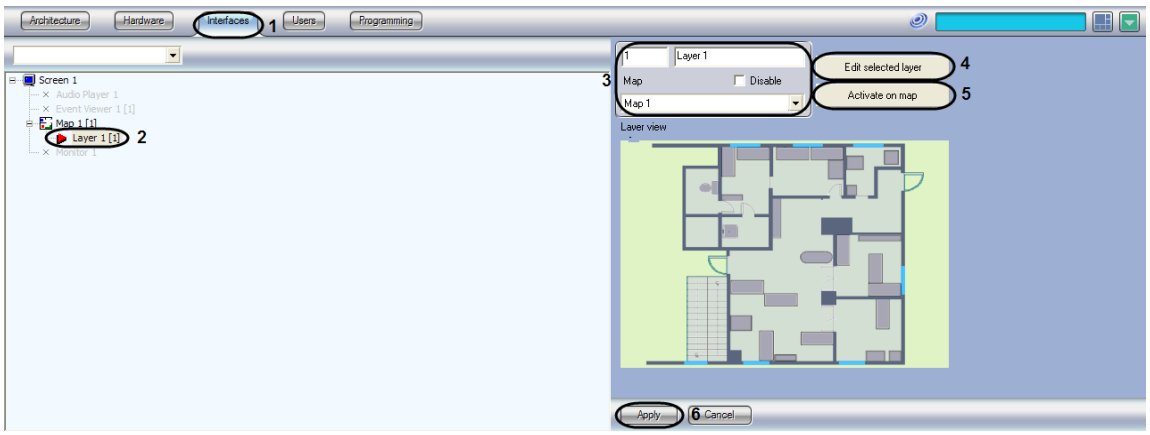


Figure 8.20-2 The Layer object settings panel

3. Specify the id and name for the “Layer” object, and select the “Map” object to become the parent of the layer (Figure 8.20-2, 3).

4. To edit the image represented by the Layer, click the “Edit selected layer” button (Figure 8.20-2, 4). The “Map editor” utility will open allowing the graphical image to be edited.

Note. When the “Map editor” utility is started, then the “System settings” dialog box is inactive. Close the “Map editor”utility to continue working with the “System settings” dialog box.

You cannot start the “Map editor” utility for several layers.

5. To display this layer on top of all other layers, click the “Activate on map” button (Figure 8.20-2, 5).

6. To save all the changes click the “Apply” button (Figure 8.20-2, 6).

After a new layer is created and set up, a graphical image of the area is to be attached to it.

Note. The graphical area plan should be saved as a BMP image file.

To attach the image, do the following:

1. Move to the settings panel of the “Layer” object.

2. Open the “Map editor” application.

Note. The “Map editor” application allows selecting the plan of guarded area, creating the symbols for devices and placing them on the map, as well as other settings.

To open the “Map editor”, click the “Edit selected layer” button on the settings panel of the “Layer” object (Figure 8.20-3).

Figure 8.20-3 The “Edit selected layer” button on the settings panel of the “Layer” object

3. In the main menu of the “Map editor”, select “Map” ⇒ “General settings” (Figure 8.20-4).

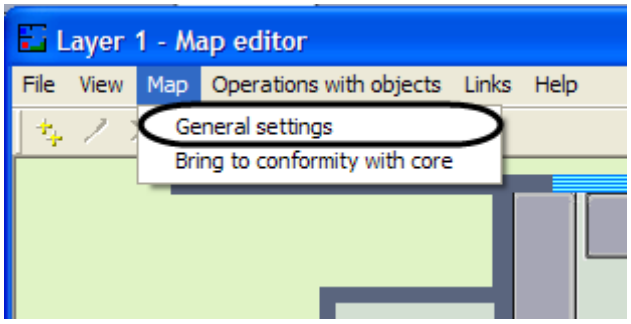


Figure 8.20-4 The “General settings” menu item of the “Map editor”

A dialog box, allowing selecting the image file for the layer, will open (Figure 8.20-5).

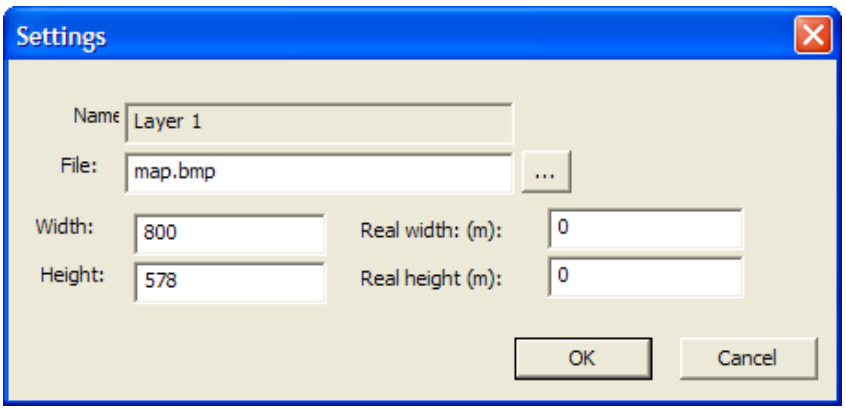


Figure 8.20-5 Settings dialog box for the image being attached to the layer

This dialog box can also be accessed from the "Set background" item of the context menu of the map area (Figure 8.20-6).

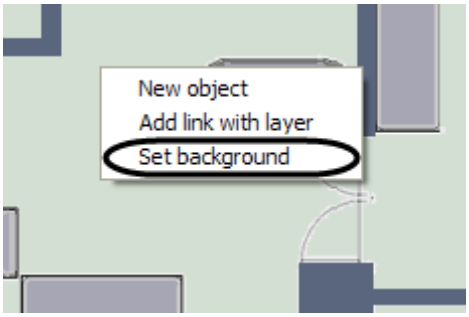


Figure 8.20-6 Selecting the "Set background" item

4. Press the ... button in the "Settings" dialog box (Figure 8.20-7).

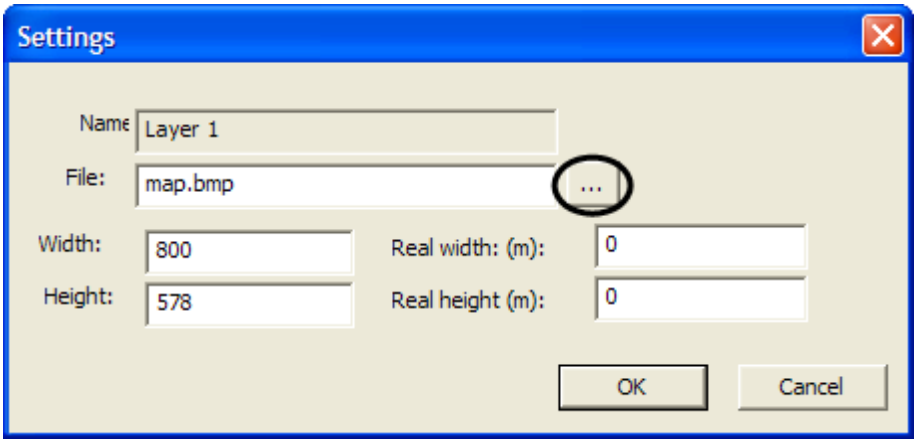


Figure 8.20-7 Browsing for the file to attach

A standard dialog box, allowing to select the image file for the layer, will open (Figure 8.20-8).

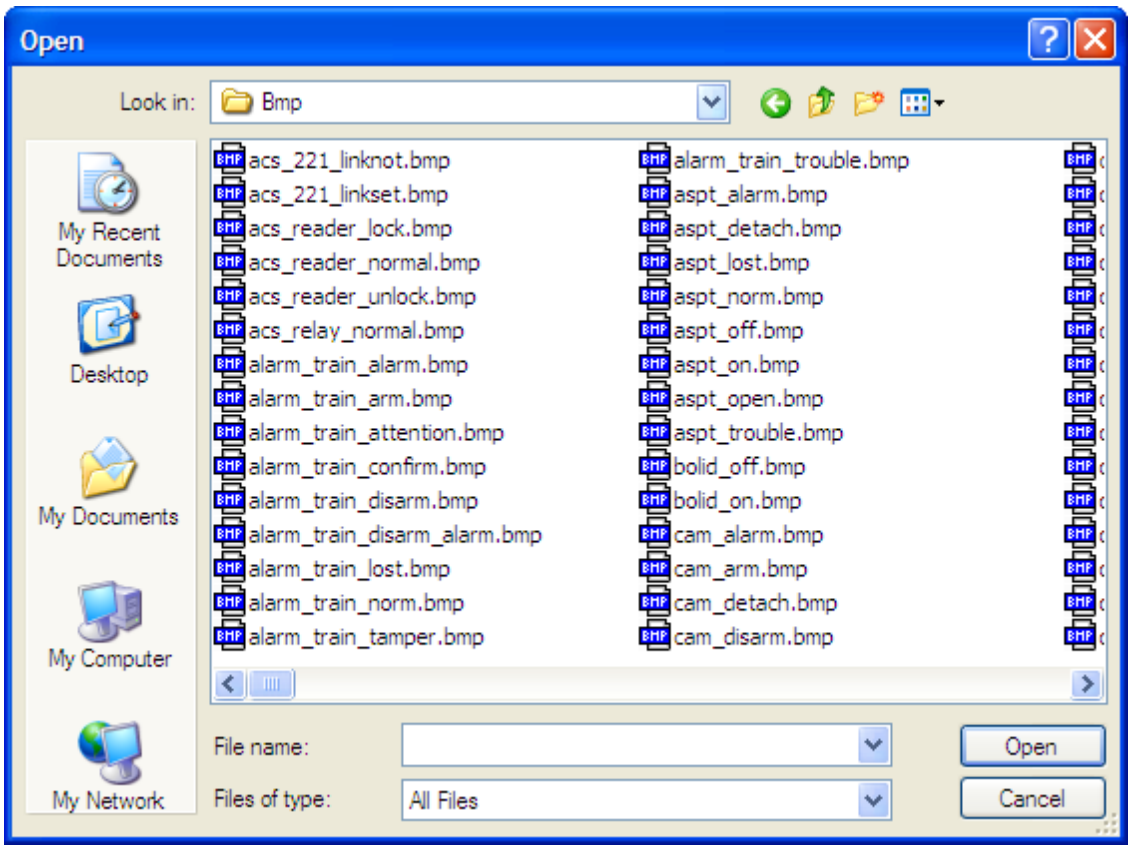


Figure 8.20-8 Standard dialog box allowing to choose the file to be used as a guarded area plan

Open the BMP file and click the “Open” button.

When the layer file is selected, it is copied to the “Bmp” folder in INTELLECT™ installation folder.

Attention! For proper operation of the interactive map in the distributed configuration, the “Bmp” folders are to be synchronized at all computers in the distributed system. Folders are synchronized manually – by copying their contents.

5. Specify the resolution of the image in pixels (Figure 8.20-10).

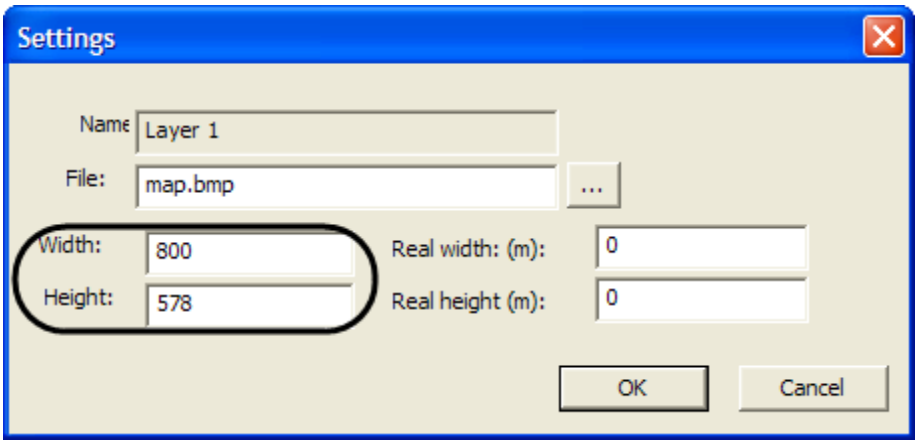


Figure 8.20-9 Image size in pixels

The values specified in the “Width” and “Height” fields are to match actual resolution of the image file.

6. Specify the dimensions of the real area represented by the image, in meters (Figure 8.20-10).

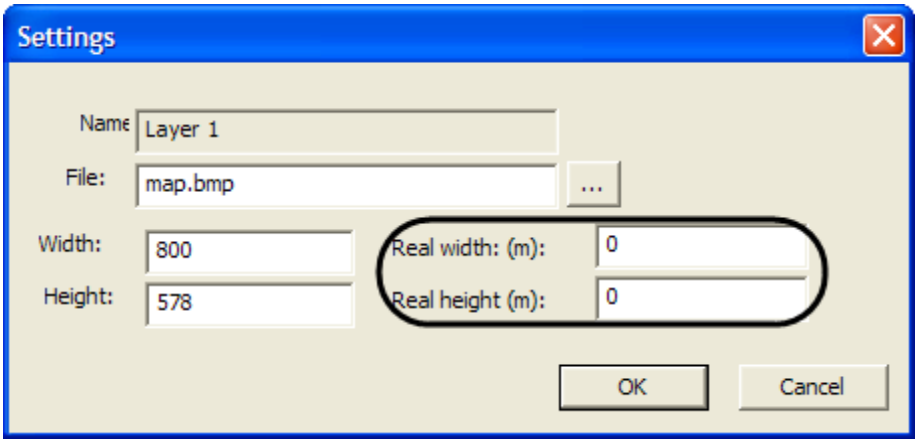


Figure 8.20-10 Area width and height

7. To apply all changes click the “OK” button.

The “Map editor” will display the new graphical plan of the guarded area.

8.20.2.4 *Attachment of objects to the layers of interactive map*

Attachment of objects to the layers of interactive map is performed with the use of «Map reader» utility (Figure 407.1-1).

Note. To open utility window «Map reader »click Edit layer button in the settings panel of object «Layer» (See. Creating layers of interactive map).

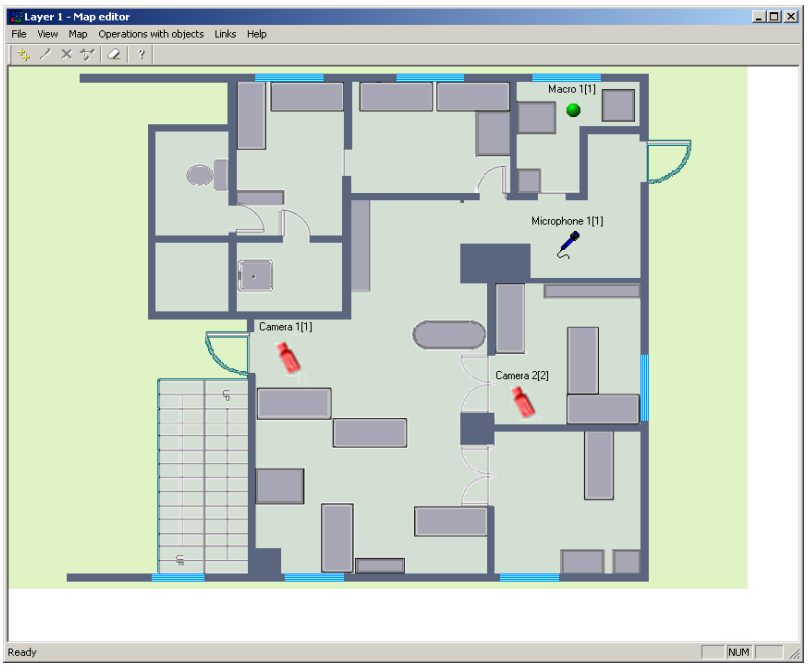


Figure 8.20-11. Map reader

To attach objects to the layers of interactive map do the following:

1. Activate dialog window «New object» of Map editor utility with one of the three possible ways (Figure 8.20-11):

2. Execute instruction of the main menu «Objects operations» ⇨ «New object».

3. Click button « » on the tools panel.

4. Execute instruction of the context menu «New object» (is activate with the right mouse click upon any graphical area).

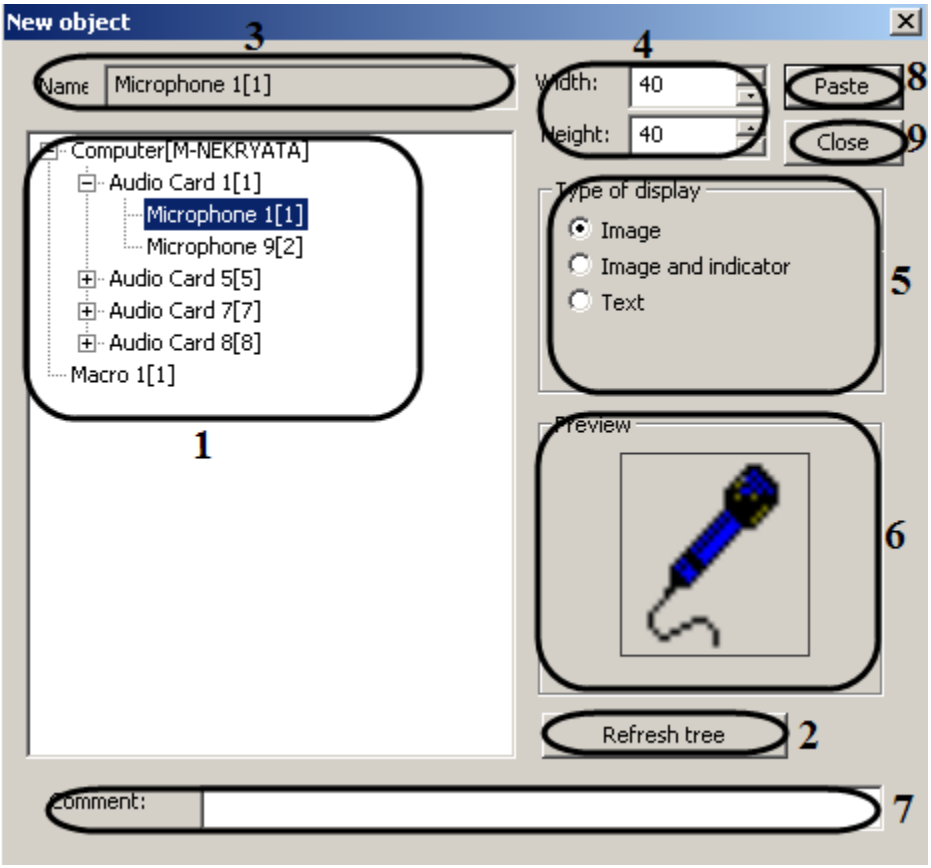


Figure 8.20-12. Adding new object

5. Select the required object in the objects tree of the “New object” dialog box (Figure 8.20-12, 1)

Note. In case when objects tree is to be refreshed, click the “Refresh tree” button (Figure 8.20-12, 2).

6. In result of operation in the field «Name», name of the selected object is automatically displayed (Figure 8.20-12, 3).

7. Set the dimensions of object’s symbol: fields «Width» (symbol’s width) and «Height» (symbol’s height) – See. Figure 8.20-12, 4. Symbol’s dimensions are expressed in pixels.

Note. When value o is set in the fields «Width» and «Height», object’s symbol is displayed in its original size.

8. Select type of symbol's display with the help of switch «Type of display» (Figure 8.20-12, 5, Table 8.20-1)

Table 8.20-1

Position of switch «Type of display»	Type of object's symbol display	Usage
«Image»	Object's schematic view	Objects of main configuration
«Image and indicator»	Object's schematic view and indicator of object's state	Objects SCADA
«Text»	Object's name	Objects SCADA
«Line»	Objects'images in the form of straight line	SCADA objects

Note. Object's symbol is automatically displayed in the field «Preview» in accordance with selected type of display (Figure 8.20-12, 6)

9. Set additional information about the object if necessary in the field «Comment» (Figure 8.20-12, 7).

10. Click «Paste» button to attach object to the layer of interactive map (Figure 8.20-12, 8).

11. Repeat steps2-7 for all the required objects.

12. Click «Close» button to close «New object» dialog window (Figure 8.20-12, 9).

Attachment of objects to the layers of interactive map is over.

8.20.2.5 *Operations with objects in the "Map editor" utility*

The "Map editor" utility enables to carry out the following operations with the objects, added to the layer (Table 8.20-2).

Table 8.20-2

Description of operation	Call for operation			Note
	In the "Operations with objects" main menu	In the context menu	On the toolbar	
Deletes the selected object	Delete object	Delete	The button	-
Copies the selected object. The copy is placed above the original	Copy object	Make a copy	The button	-
Edits additional data and type of displaying the sign for the selected object	Edit object	Edit	The button	Is implemented by the "Edit object" dialog box
Set the displaying of the selected objects on the Map only in alarmed state (when there is no alarm, the objects are hidden)	Hide the selected	Hide	-	-
Cancels the hiding of the selected objects	Show the selected	Unhide	-	-
Edits the font for the selected object's name	Set the font	-	-	Is implemented by the "Font" standard Windows dialog box
Restores the deleted	Restores the title	-	-	-

Description of operation	Call for operation			Note
	In the “Operations with objects” main menu	In the context menu	On the toolbar	
name of the selected object	object			
Edits the size of the selected object	Objects’ sizes	-	-	Is implemented by the “Object size” dialog box
Edits the position of the selected object	Object’s position	Object’s position	-	Is implemented by the “Object position” dialog box or with the help of the mouse
Selects objects of one group	-	Selects all the identical	-	For example: all the “Camera” objects are selected
Selects all the identical objects within a group	-	Selects all the identical	-	For example: all the “Sensor” objects of the “Gerkon” type are selected

Edit map utility enables to carry out the operations with a group of objects. For selecting the several objects it is necessary to hold the «Ctrl» key on the keyboard.

Note. Operation Object position with a group of objects is not performed.

Editing the additional data and type of object’s displaying is done in the following way:

1. Select an object that is to be edited. Green-pointed frame will appear around the image in result.

2. Call for Edit object dialog window of Edit map utility by one of the three ways (Figure 8.20-13):

    a. Carry out the command of the main menu «Operations with objects » -> «Edit object»;

    b. Click « » button on the toolbar;

    c. Carry out the Edit command of the context menu (is called by clicking the right mouse button over the object’s image).

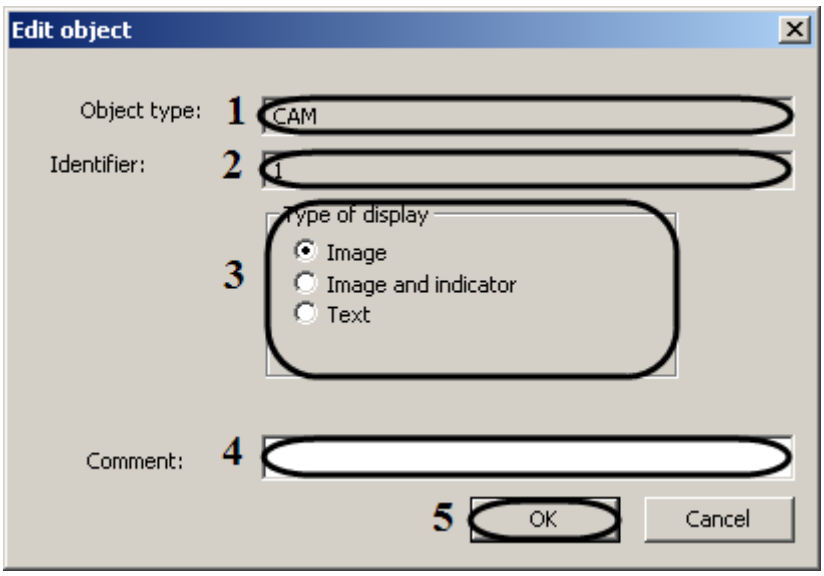


Figure 8.20-13 Edit object dialog window

3. The type of the selected object is automatically displayed in the field «Object's type» (Figure 8.20-13).

4. Identification number of the selected number is automatically displayed in the field «Identifier» (Figure 8.20-13)

5. Change the type of object's displaying with the help of the switch Displaying type when necessary (Figure 8.20-13, Table 8.20-3)

Table 8.20-3

The switch position	Type of object's displaying	Note
«Image»	Schematic object's image	Basic configuration objects
«Image and indicator»	Schematic image and identifier of object's state	Objects SCADA
«Text»	Object's name	objects SCADA
«Line »	Object's image in the form of straight line	objects SCADA

6. Change object's additional data in the field Commentary when necessary(Figure 8.20-14)

7. To save the changes click «OK» (Figure 8.20-14)

Editing the additional data and type of object's displaying is completed.

Editing the font of object's name is done in the following way:

8. Select object's name which font should be edited. Green-pointed frame will appear around the image in result.

9. Call for a standard Windows dialog window «Font» of the «Map edit» utility by main menu command «Operations with objects» > «Set the font»

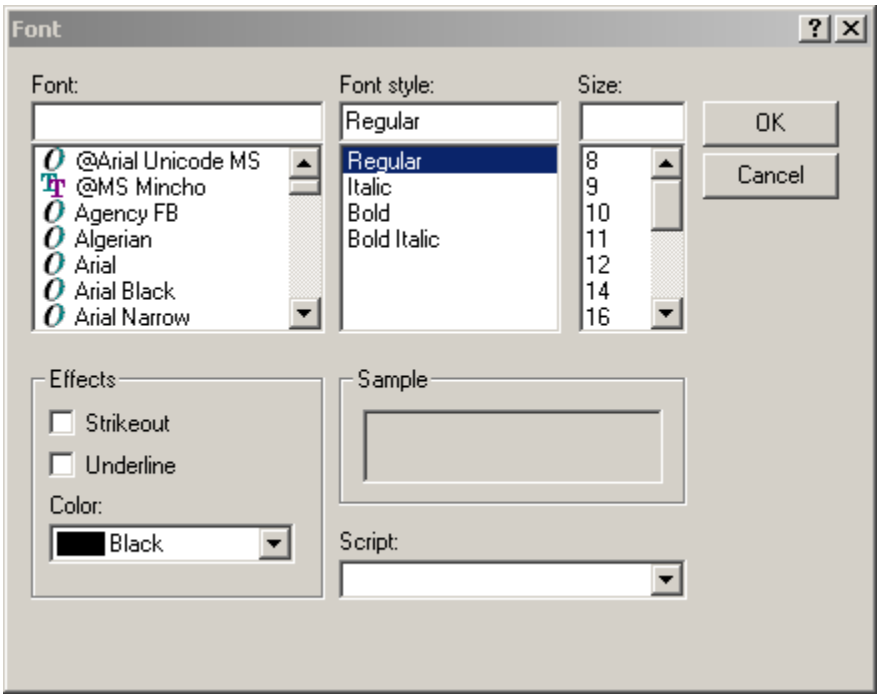


Figure 8.20-14 Font standard dialog window

10. In the opened dialog window set the required font parameters (Figure 8.20-14)

11. Click Ok to save the changes (Figure 8.20-14)

Editing the font is over.

Editing the object's size is done in the following way:

1. Select the object which size should be edited. Green-pointed frame will appear around the image in result.

2. Call for a «Object's size» dialog window of «Edit map» utility by the main menu command «Operations with objects» > «Object's size».

3. Enter the size of the image:fields Width(sign's width) and Height(sign's height)– Figure 8.20-15, 1, 2. Sign's size is expressed in pixels.

Note. If 0 value is entered in the fields Width and Height , object's sign will be displayed in original size.

4. Click Ok to save the changes (Figure 8.20-15, 3)

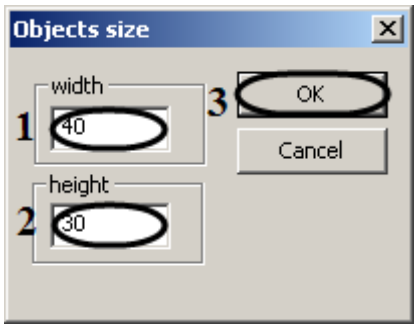


Figure 8.20-15 Objects sizes dialog window

Editing the object's size is completed.

Editing the object's position with the help of Position of object dialog window is done in the following way:

2.1. Select object, which position should be edited.

2.2. Call for a dialog window Position of object Of Map Edit utility by one of the two ways:

1. Carry out the command of the main menu «Operations with objects » > «Object's position »;
2. Carry out the command of the context menu « Object's position » (is called by clicking the right mouse over the object's image).

2.3. Enter the coordinates of object's center: fields «X» (horizontal indent from the left border of graphic plan) and «Z» (horizontal indent from the bottom border of graphic plan) – Figure 8.20-16. To set the coordinates in pixels the switch should be set to In pixels position. (Figure 8.20-16), to set the coordinates in meters – the switch should be set to In meters position (Figure 8.20-16).

Note. The switch position In Meters is actual in case, when set the real parameters of the guarded object, to which this layer corresponds. (see. «Layers creation of interactive map).

The switch position In Meters is used when shot module is set up. In this case real coordinates of the pint where the shot has occurred are displayed on the map.

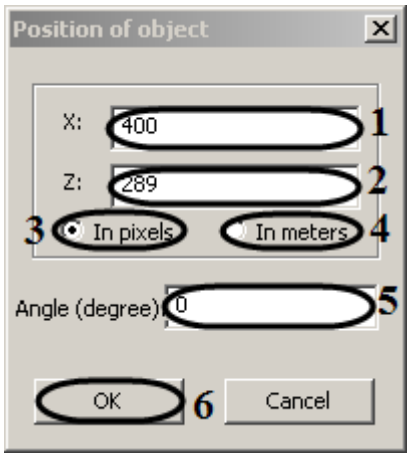


Figure 8.20-16 Object's position dialog window

2.4. Enter the angle in degrees of object's image turn on the Angle (degree) field. The angle is set counterclockwise from contour line (Figure 8.20-16).

2.5. To save the applied changes click OK (Figure 8.20-16)

*Note. In case when at least one coordinate oversteps the bounds of the map, message window will be displayed (*Figure 8.20-17*). Click OK and then repeat step 3.*

Figure 8.20-17 Message window

Editing the object's position with the help of Object's position dialog window is completed.

Map edit utility also enables to edit the object's position with the help of the mouse.

To set the position of the symbol, click and hold the mouse on the symbol. Then drag the symbol to the desired location (Figure 8.20-18) and release the mouse.

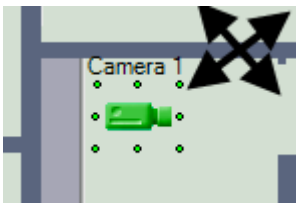


Figure 8.20-18. Dragging the object over the map using the mouse

To rotate the symbol, click and release the mouse on the symbol. The symbol will be enclosed in a frame made of green dots. Click and hold the mouse on one of the corner dots. A bended arrow will appear. Move the mouse in the desired direction to rotate the symbol and release the mouse (Figure 8.20-19).

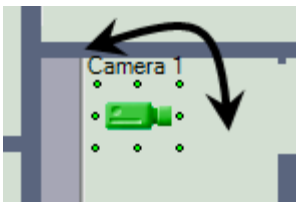


Figure 8.20-19. Rotating the object over the map using the mouse

8.20.2.6 *Linking the layers of the interactive map*

Intellect system allows creating multilevel maps comprised of several layers.

In case of multiple layers, the links should be established between the layers. These links help move to other layers for operative control and viewing of the device objects located on them.

The links are created in the Map Editor. To run the Map Editor, click Edit Selected Layer in the settings panel of the Layer object. When a link is established, a special symbol appears on the map. Clicking on this symbol takes the operator from the current layer to another layer.

Note. The link symbols also notify the operator about alarms coming from devices located on the linked layer.

To create a new link from the current layer to another, do the following:

1. Select Links in the Map Editor main menu, then select Add Link with Layer (Figure 8.20-20).

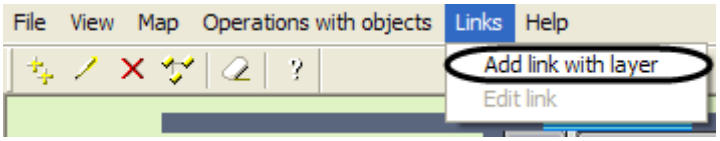


Figure 8.20-20. Menu item for adding a link to another layer

The Link with Layer window opens, allowing to choose the layer to link to.

There is another way of opening the Link with Layer window. In the Map Editor, click anywhere on the layer map. The context menu will open. Select Add Link with Layer from this menu (Figure 8.20-21).

Figure 8.20-21. Opening the Link with Layer window from the map context menu

2. In the Link with Layer window, select the layer to link the current layer to (Figure 8.20-22).

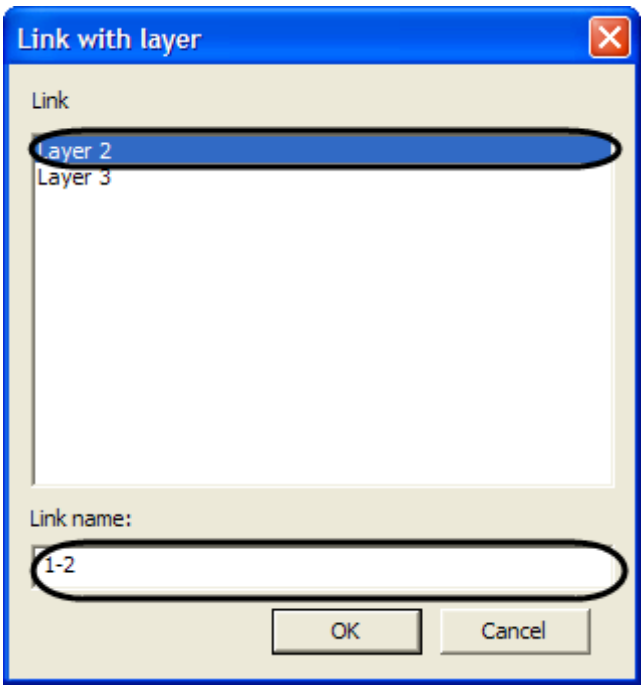


Figure 8.20-22. Link with Layer window

Enter the name for this link in the Link Name field (Figure 8.20-23).

3. Click the OK button to create the link.

A symbol will appear on the map representing the link. This symbol is shown in red color (Figure 8.20-23).

Figure 8.20-23. The link symbol

8.20.3 Setting up the display of the alarm signals on multilevel maps

The rules for transition to the layers with alarmed devices can be set up for multilevel maps.

The following ways of displaying the layer with an alarmed device exist in the system:

1. When an alarm occurs, the Map window opens above all other active windows showing the layer containing the alarmed device.

2. The link symbols recursively lead to the layer containing the alarmed device.

To open the Map window above all other windows, set the Bring Window on Top if Alarm checkbox in the settings panel of the Map object (Figure 8.20-24). The Map window will now open on top of other windows in case of alarm registration.

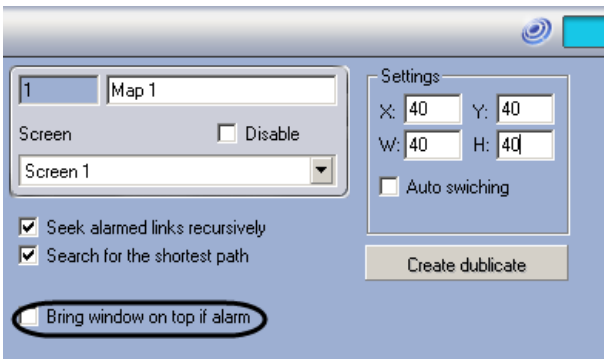


Figure 8.20-24. The Bring Window on Top upon Alarm checkbox

To make it possible to move from the current layer to any other layer, the links should be established in the multilevel maps. If the links recursively connect all layers of the map, they can be used for recursive transition to the alarmed layer. To enable this option, check the Seek Alarmed Links Recursively checkbox in the settings panel of the Map object (Figure 8.20-25).

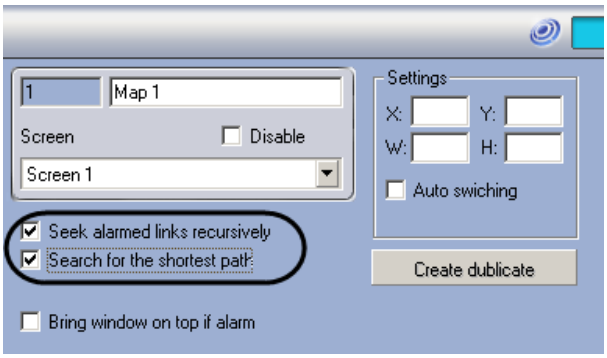


Figure 8.20-25. Setting the Seek Alarmed Links Recursively and the Seek Shortest Path checkboxs

When the recursive search is on, the blinking links on each layer eventually lead the operator to the alarmed layer. If the Seek Shortest Path checkbox is checked, shortest path to the alarmed layer will be chosen.

Example 1: The 1st layer contains the link to the 2nd layer, and the 2nd layer contains the link to the 3rd layer. The 1st layer is currently active. An alarm is triggered on the 3rd layer. If the recursive search is on, the link from the 1st to the 2nd layer will blink, and the link from the 2nd to the 3rd layer will blink. If the recursive search is off, only the link from the 2nd to the 3rd layer will blink, not allowing the operator to see the alarm if the 1st layer is active.

Example 2: The 1st layer contains the links to the 2nd and 3d layer, and the 2nd layer contains the link to the 3d layer (i.e. there are to ways to reach the 3d layer from the 1st layer: directly or via the 2nd layer). Let's the 1st layer is currently active. An alarm comes from the 3d layer. If both checkboxes are checked, only the link to the 3d layer will blink on the 1st layer. If the Seek Shortest Path checkbox is unchecked, both links (to the 2nd and 3d layers) will blink.

8.21 Configuring the user interface

8.21.1 The user interface in the Intellect software

In the course of setting-up the video surveillance/audio monitoring system, the personal user interface is configured and personal (role-dependent) rights are assigned to each Operator for using the system functions and managing the system resources.

The user interface of the Intellect-based video surveillance system is built under the “Screen” hierarchical object.

The “Screen” object groups and sets the position of the UI components on the Operator’s workstation monitor.

The “Screen” object represents the whole visible area of the computer monitor showing all the interface components according to their settings.

The “Screen” object includes the following interface components:

1. Audio player;
2. External window;
3. Map;
4. Monitor;
5. Telemetry control panel;
6. Panel of Active archiving;
7. Search by titles;
8. Event Viewer;
9. Operator protocol.

The following windows are created on the base of the “Computer” object and pop up on the “Screen”:

1. Alarm Message Window.
2. Alarm Notification Window.

8.21.2 Creating the screens

Screen creation is an important stage of the surveillance system design as it is the main working instrument of the Operator.

The screen is created in the “Interfaces” tab and includes the following stages:

1. Creating objects (interface components) on the base of the “Screen” object in the “Interfaces” tab (see “General information on configuring video subsystem ” section).

2. Placing the interface components on the screen in relation to each other (see “Placing the interface components on the screen” section).

8.21.3 Placing the interface components on the screen

To place an interface component on the screen, its position (Figure 8.21-1, 1) and window size (Figure 8.21-1, 2) are to be specified. To enable the user to move the windows across the screen, set the “Allow moving” checkbox (Figure 8.21-1, 3).

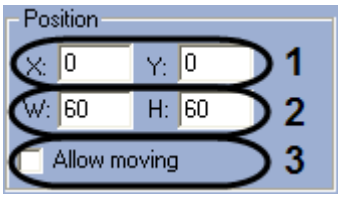


Figure 8.21-1. Basic placing parameters

When several monitors are connected to a computer, coordinates of an object depend on placing monitors to one another. Figure 8.21-2 shows how coordinates of the object depend on monitor position. The number of current monitor is selected in the “Monitor” drop-down list on the settings panle for the interface object.

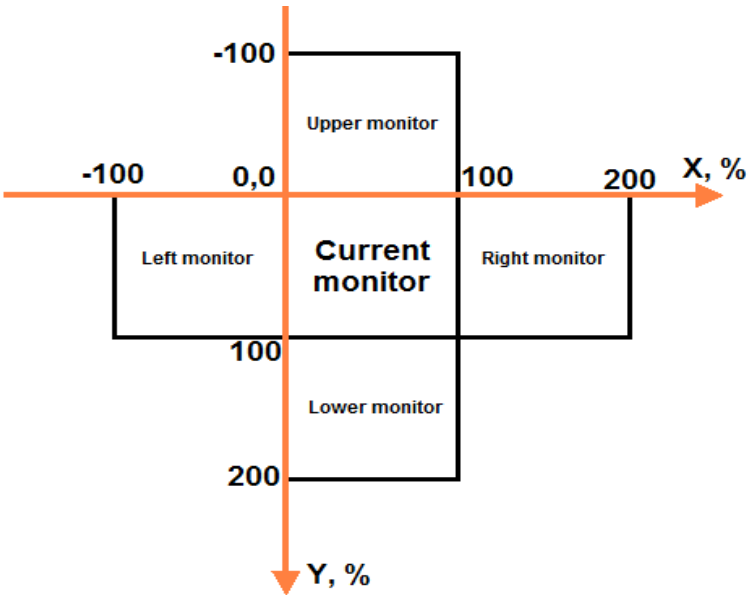


Figure 8.21-2 Coordinates of objects when several monitors are in use

Note. To enter “-“ sign in “X” or “Y” field, copy it from a text file and use the paste command in a required field.

The size of some components (Telemetry control panel, etc.) is fixed. In this case the corresponding fields are not shown.

Note. The “Telemetry control panel” can also be shown semi-transparent (see “Settings panel of the Telemetry control panel” section).

Popup windows (Alarm Message and Operator’s query) have no placing settings. They are displayed on top of other windows and can be moved to any place on the screen using the mouse.

8.21.4 Assigning the screens to the operator workstations

To configure the access of several operator workstations to the same interfaces, the corresponding screens are to be assigned to these workstations.

The screens can be assigned to workstations on the settings panel of the “Screen” object. Figure 8.21-3 shows the configuration of two objects: Screen 1 and Screen 2. Screen 1 will be available for both workstations, while Screen 2 will be available only for the Y-GAVRILYCH workstation.

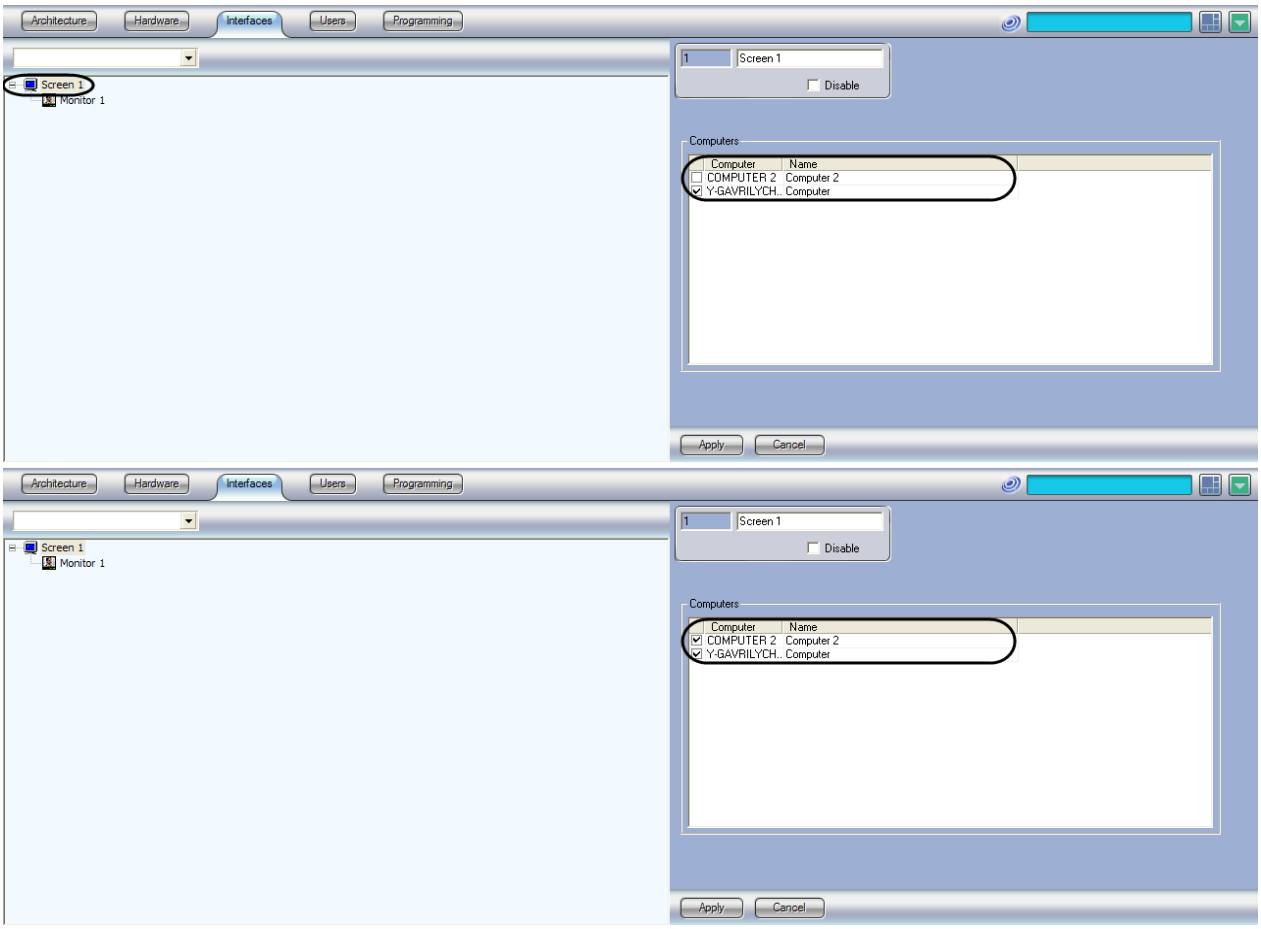


Figure 8.21-3. Assigning the screens to workstations

8.21.5 Examples of the user interface configuration

Figure 8.21-4 shows an example of the user interface components placed on the screen. Corresponding coordinates are given in the Table 8.21-1.

Table 8.21-1

	Interface component	X, %	Y, %	W, %	H, %
1	Monitor	0	0	50	50
2	Panel of Active archiving	54	0	53	51
3	Search by titles	0	50	35	47
4	Event Viewer	66	50	50	50

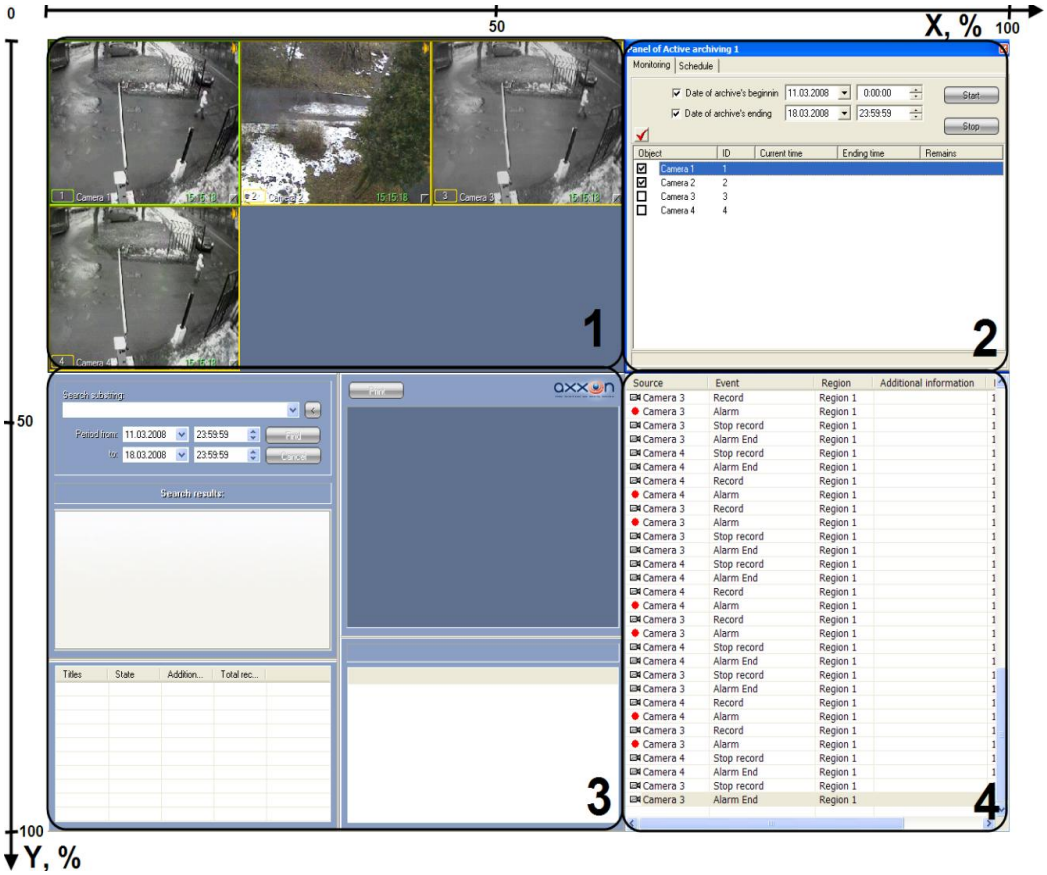


Figure 8.21-4. An example of the interface components placing

8.22 Rights administration

8.22.1 The users‘ rights

The following user categories are available in the surveillance system based on the Intellect software:

1. Administrator.
2. Operator who may optionally be granted some rights for administration, control and viewing.

The administrator has full control over the set up and usage of all components of the system.

Any other registered user of the system is an operator who may optionally be granted the rights for administration, controlling and viewing of particular components of the system.

To register an operator, a user account is created which holds this user’s rights for administration, control and viewing. A password is assigned to each user at the time of registration, used for authorization at system start-up and exit. An operator may be optionally forbidden to shut the system down.

8.22.2 User registration and removal

8.22.2.1 *General information about user registration in Intellect software*

The registration procedure depends on the user category.

To register an administrator, an administrator password should be specified. An administrator password gives access to administrative functions of all system components. Only one administrator password may be registered in the system.

No account is created for the administrator, so the administrator password cannot be used for authorization on system start-up. The administrator password is used to access the System Settings window and the settings panels of system objects, to change the current user and to shut the system down.

To register operators, the corresponding accounts should be created. A Person system object is created for each operator account. Each operator has his (her) own user account which holds all the data about the rights and authorization password.

The account also indicates to which department the operator belongs. A Department system object is created for each department of the company.

The Department and Person objects form a hierarchy of two levels.

8.22.2.2 *User registration*

The following user registration procedure is recommended for setting up the system:

1. Administrator password registration .

Note.You must register the administrator password prior to registering the operators and granting the rights to them. This is a mandatory system requirement.

2. Registering departments by creating the Department objects.

Registering operators by creating the Person objects.

8.22.2.3 *Administrator password registration*

The administrator password gives access to administrative functions of all system components. Only one administrator password can be registered in the system. The administrator password is to be registered on the administration server when the system is configured.

To register the administrator password, do the following:

1. Go to the “Programming” tab in the “System settings” dialog box (Figure 8.22-1, 1).

2. Select the “Common settings” object in the objects tree of the “Programming” tab (Figure 8.22-1, 2). The settings panel for this object opens on the right of the “System settings” box.

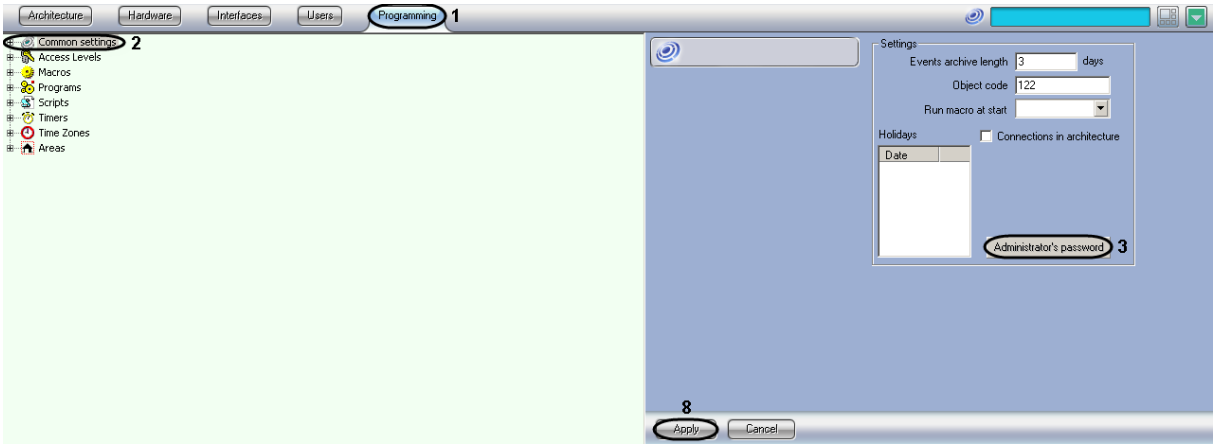


Figure 8.22-1 The settings panel of the "Common settings" object

3. Click the "Administrator's password" button (Figure 8.22-1, 3).

4. The "Set password" box appears (Figure 8.22-2).

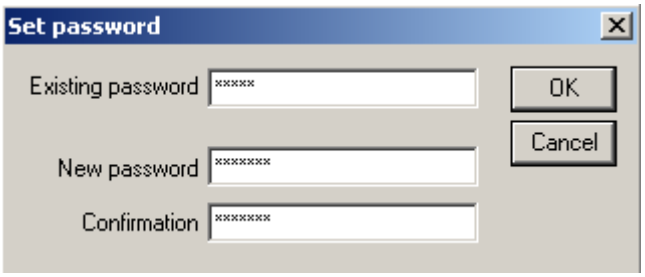


Figure 8.22-2 The "Set password" box for setting the administrator's password

5. Specify the existing administrator's password in the "Existing password" field. If there is no administrator's password, this field is left empty (Figure 8.22-2).

6. Type-in the sequence of letters and figures, that will be used as administrator's password in the "New password" field (Figure 8.22-2).

7. Retype-in the new administrator's password in the "Confirmation" field (Figure 8.22-2).
8. Click the "OK" button (Figure 8.22-2). The "Set password" box is closed.

9. Click the "Apply" button in the "System settings" box (Figure 8.22-1, 8).

The administrator's password is now registered.

When the administrator's password is registered one with restricted access rights can access the "System settings" dialog box:

1. Call the Main control panel.
2. Press the "Ctrl" key on the keyboard.
3. Select the "System settings" item in the menu (Figure 8.22-3).

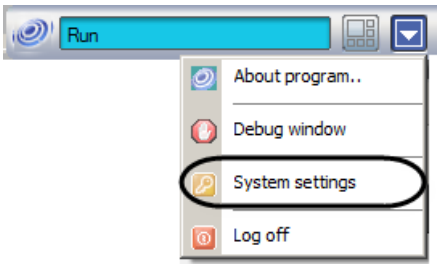


Figure 8.22-3 The "System settings" dialog box

4. Type-in the administrator's password and click the "OK" button (Figure 8.22-4).

Figure 8.22-4 The box for setting the administrator's password

8.22.2.4 *Department registration*

To register departments, the Department objects should be created. The Department account consists of the department name and the list of its employees.

A separate account is created for each department. To register a department account, do the following:

1. Open the "Users" tab in the "System Settings" window (Figure 8.22-5, 1).

2. Create a "Department" object in the objects tree of the Users tab (Figure 8.22-5, 2).

The settings panel for this object opens on the right of the "System settings" box (Figure 8.22-5).

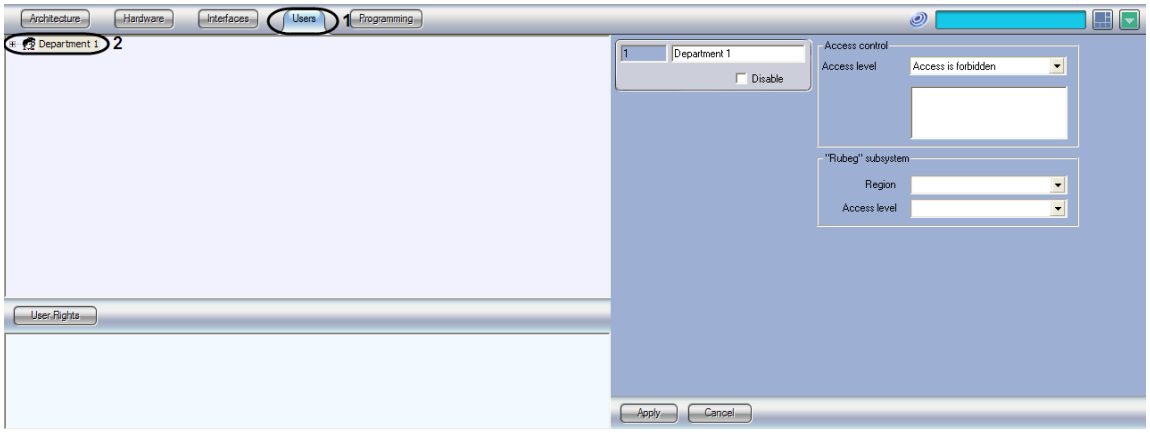


Figure 8.22-5 Department account registration

This completes registration of the department account.

Note. Settings on the settings panel of the "Department" object are used to configure the access control system (see "Configuring Access control module" manual).

8.22.2.5 *Registration of operator accounts*

To register operator accounts, the "User" objects are to be created.

An individual account is to be created for each operator. To register an operator account, do the following:

1. Open the “Users” tab in the “System Settings” dialog box.

2. Create a “User” object under the “Department” object in the objects tree.

The created object appears in the objects tree, and the settings panel for this object opens on the right side of the “System Setting” dialog box.

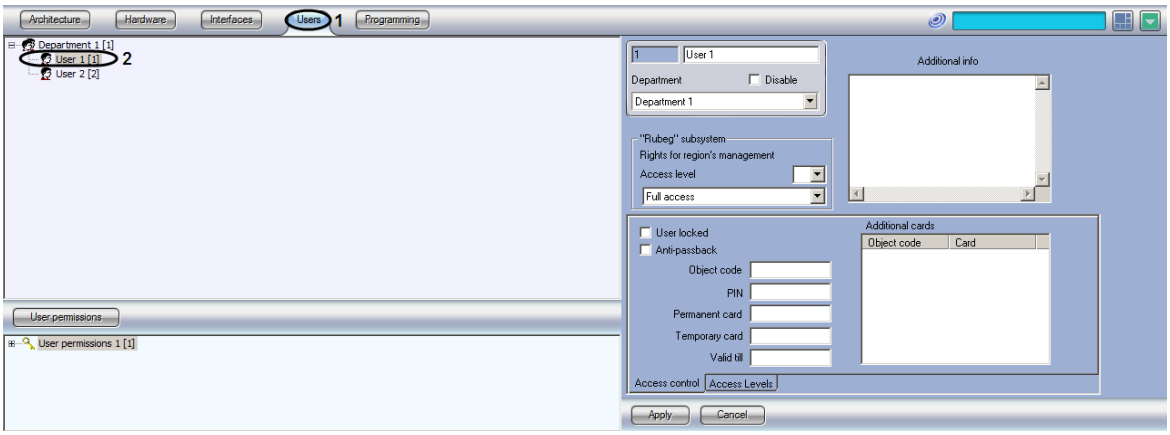


Figure 8.22-6. Registration of an operator account

The operator account is now registered.

Note. The settings on the settings panel of the “User” object are used to configure the access control system (see the “Configuring the “Access mode” module” document).

8.22.2.6 *Removing user accounts*

The removal procedure depends on the user category.

To remove operator accounts, delete the corresponding “User” objects from the objects tree of the “Users” tab.

To remove the administrator account, remove the administrator password. The administrator password is removed in the same way as it is created. To remove the administrator password, specify the current Administrator password in the “Old Password” field and then clear the “New Password” and “Confirmation” fields in the “Set Password” box (Figure 8.22-7).

Figure 8.22-7. Removing the administrator password

8.22.3 Registration of users' rights

8.22.3.1 *Registration of operator rights*

To register the rights for an operator account, do the following:

1. Open the Users tab in the System Settings window.

2. Create a User Rights object. If no User Rights objects have been created, click the User Rights button in the lower part of the window to create one (Figure 8.22-8).

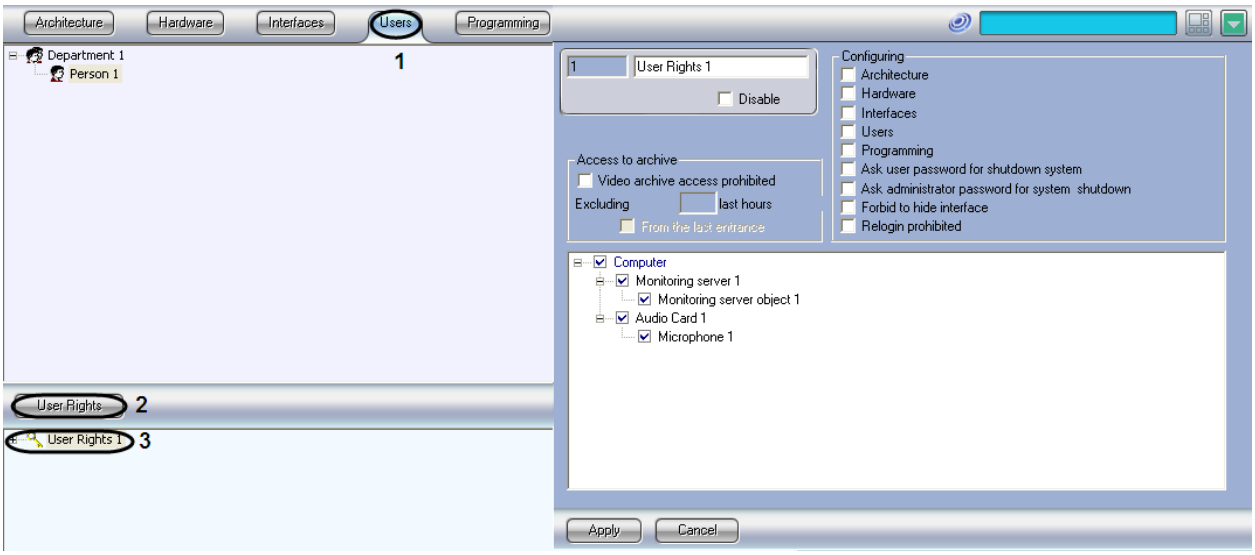


Figure 8.22-8. Registration of operator rights

If at least one registered rights object exists, which is shown in the objects tree below the User Rights button, the new rights object can be created from the context menu of the existing object.

3. The object appears in the objects tree under the User Rights button, and the settings panel for this object opens on the right side of the System Setting window.

This completes registration of the operator rights.

8.22.3.2 *General information on the limits to the administrative functions*

The administrative functions include:

1. Creation or removal of system objects;

2. Editing the settings of the system objects;

3. Moving the system objects across the objects tree.

By default, the operator has access to all administrative, control and viewing functions of all system objects. Administration of specific objects and groups of objects can be forbidden for an operator.

When an operator receives administration rights for an object, he (she) also receives the control and viewing rights for that object.

The objects are grouped according to the tabs of the System Settings window.

If an operator has no rights for a System Settings window tab, he (she) cannot open this tab for viewing or editing its objects. The forbidden tabs are greyed out in the System Settings window (Figure 8.22-9).

Figure 8.22-9 shows a tabs panel of the System Settings window where the Architecture, Hardware, Interfaces and Users tabs are allowed for editing by the current operator, while the objects in the Programming tab cannot be edited by the current operator.

Figure 8.22-9. Example of the tabs panel of the System Settings window

If an operator is forbidden to access any of the tabs, he (she) cannot open the System Settings window altogether, and cannot use any of the administrative functions.

Note. Lack of administrative rights for the System Settings tabs does not imply any limitation on control or viewing of the corresponding objects.

8.22.3.3 *Limiting access to the tabs of the System Settings window*

By default, the operator has no access to the administrative functions of the system objects in the System Settings tabs.

An operator can be granted administrative rights to the system objects of one or more tabs. In this case the operator will be able to open the System Settings window.

To allow an operator to administer objects in one or more tabs, do the following:

1. Open the Users tab in the System Settings window.
2. Open the required User Rights object in the objects tree under the User Rights button.
3. The settings panel for this object opens at the right side of the System Settings window (Figure 8.22-10).

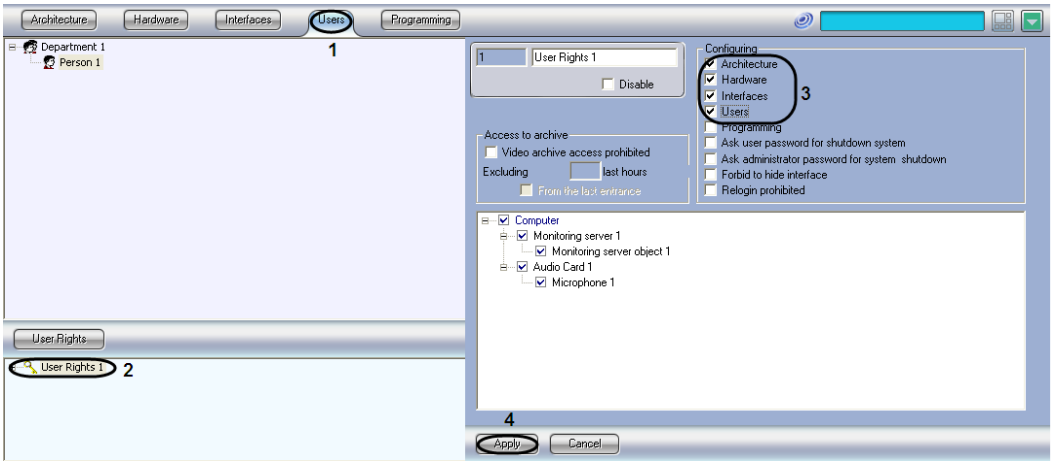


Figure 8.22-10. The settings panel of the User Rights object

The first 5 checkboxes of the Configuring group correspond to the tabs of the System Settings window.

Check the checkboxes for the tabs that the operator will be allowed to access.

4. Press the Apply button.

This completes the setup of the operator access to the System Settings tabs.

8.22.3.4 *Limiting access to the administration of the system objects, control and viewing functions*

By default, an operator is forbidden to administer any objects. If an operator is granted access to one or more tabs of the System Settings window, he (she) automatically receives the rights to administer, control and view all system objects on these tabs.

When the operator has the rights for control functions, he (she) can use the buttons, menu items and other interface elements allowing to control the corresponding objects (cameras, microphones, telemetry, event viewer, etc).

Viewing functions allow the operator to view the interface components (user screens, surveillance monitors, active archiving window, microphone indicators, etc.).

By default, administrator functions may be completely forbidden for an operator, but operator can have a full access to operator and control functions of the objects with the given functions. It is possible to ban the operator to administer one or several objects, limit the list of available functions of object control and also limit monitor opportunities.

To limit operator access to the administration of certain objects of Intellect program software do the following:

1. Open the Users tab in the System Settings window.

2. Open the required User Rights object in the objects tree under the User Rights button.

The settings panel for this object opens at the right side of the System Settings window (Figure 8.22-11).

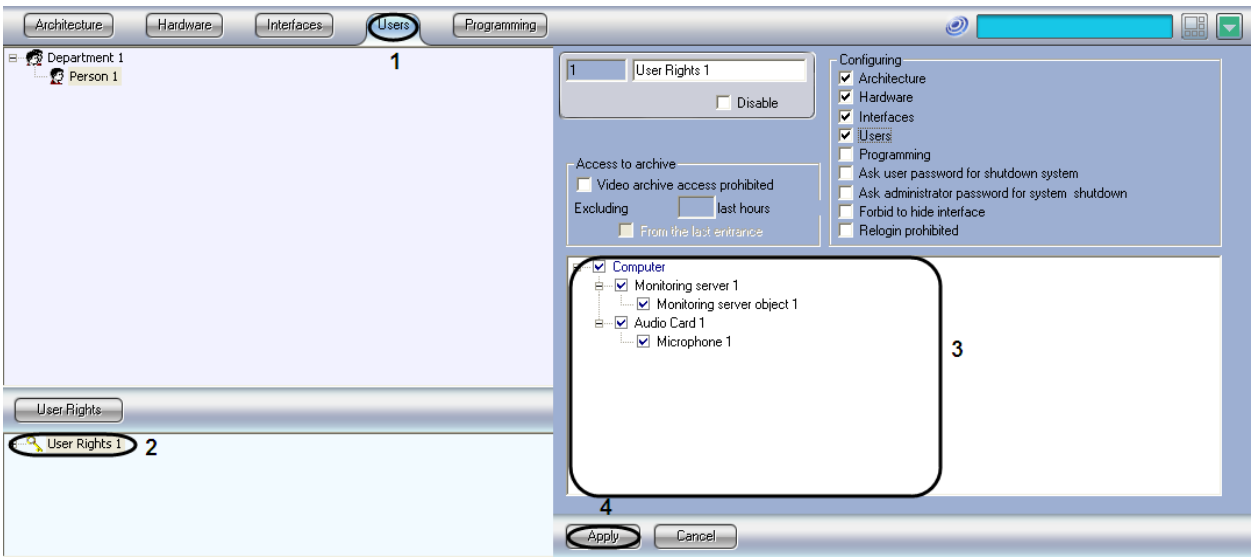


Figure 8.22-11. The settings panel of the User Rights object

The tree in the lower part of the settings panel represent the rights of the current operator. Checkboxes to the left of the objects indicate and allow changing the administrative, control or viewing rights for these objects. The components of the tree represent the system objects which the current user can administer according to his (her) rights' settings. Name of marks corresponds to object names, which administration, control and monitoring may be accessible to Operator with proper rights (Figure 8.22-11, 3).

3. Correspondence of mark type to Operator rights is given in Table 8.22-1.

Table 8.22-1

Type of mark	Right to administer	Right to control the object	Right to monitor the object
A blue mark	Yes	Yes	Yes
A green mark	No	Yes	Yes
An M mark	No	No	Yes
A cross mark	No	No	No

Setting up the administration of the system objects, control and viewing functions is completed.

8.22.3.5 *Limiting access to shutting the system down*

To eliminate unauthorized shutdown of the surveillance system, the shutdown function can be protected by a password. The following options for system shutdown are available:

1. Shutdown by the password of any registered operator.
2. Shutdown by the password of the current authorized user only.
3. Shutdown by the administrator password.
4. An operator cannot shut the system down.

If the operator is forbidden from shutting the system down, the Run menu of the Main Control Panel does not contain the Shut Down option. This menu item appears only after opening the administrator password window and entering the valid administrator password. To shut the system down, the password should be entered once more. Thus, it is recommended to use the option for shutdown by the administrator password, as well.

By default, the system is set for shutdown by any registered operator's password, regardless of the current authorized user.

To change the shutdown option, do the following:

1. Open the Users tab in the System Settings window.

2. Open the required User Rights object in the objects tree under the User Rights button.

The settings panel for this object opens at the right side of the System Settings window (Figure 8.22-12).

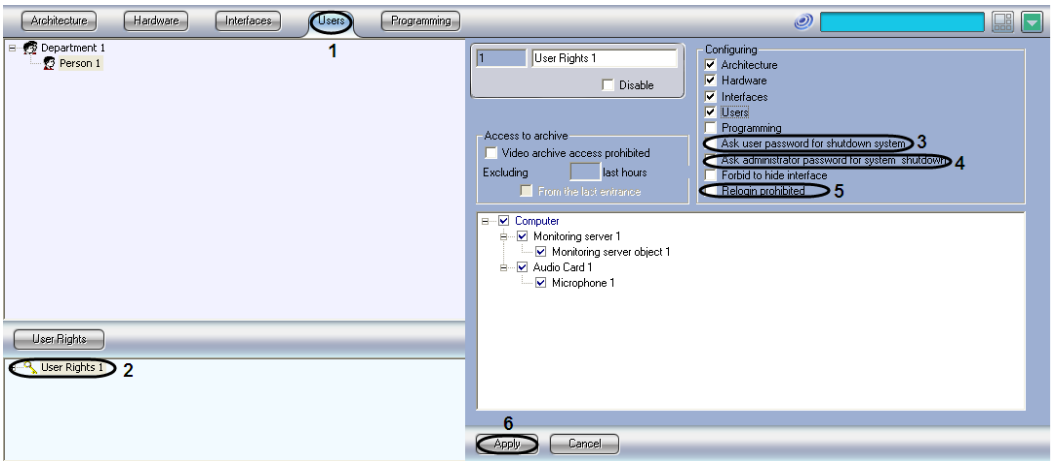


Figure 8.22-12. The settings panel of the User Rights object

3. To enable system shutdown by the current operator's password only, check the Ask User Password for Shutdown System checkbox.

4. To enable system shutdown by the administrator password only, check the Ask Administrator Password for System Shutdown checkbox.

5. To forbid the current operator from shutting the system down, check the Ask Administrator Password for System Shutdown and the Forbid to Relogin checkboxes.

6. To revert to the default shutdown option, deselect all the related checkboxes: Ask User Password for Shutdown System, Ask Administrator Password for System Shutdown, Forbid to Relogin.

7. Press the Apply button.

This completes the setup of the system shutdown options.

8.22.3.6 *Limiting the rights to hide the interface components*

Hiding all interface components can be forbidden. In this case the Hide All button in the Main Control Panel becomes disabled, and at least one Screen object allowed for the current user will stay open.

By default, the operator is allowed to hide all interface components. To forbid the operator to hide all interface components, do the following:

1. Open the Users tab in the System Settings window.

2. Open the required User Rights object in the objects tree under the User Rights button.

The settings panel for this object opens at the right side of the System Settings window (Figure 8.22-13).

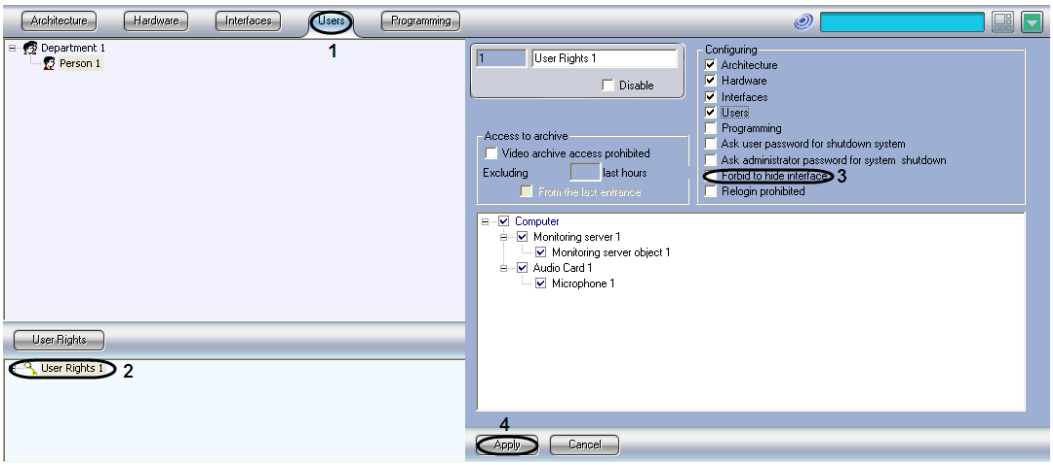


Figure 8.22-13. The settings panel of the User Rights object

3. Check the Forbid to Hide Interface checkbox.

4. Press the Apply button.

This completes the process of forbidding the hiding of all interface components.

8.22.3.7 *Limiting access to video and audio archives*

The operator can be forbidden to play the video recordings (from the videoserver, active archive or Archiver) in the surveillance monitor.

In this case, the button for entering the archive on the surveillance monitor will not be displayed, and the functions for viewing, exporting and frame printing will be unavailable.

By default, the operators are allowed to play the archives. To forbid the operator to play the video archives, do the following:

1. Open the Users tab in the System Settings window.

2. Open the required User Rights object in the objects tree under the User Rights button.

The settings panel for this object opens at the right side of the System Settings window (Figure 8.22-14).

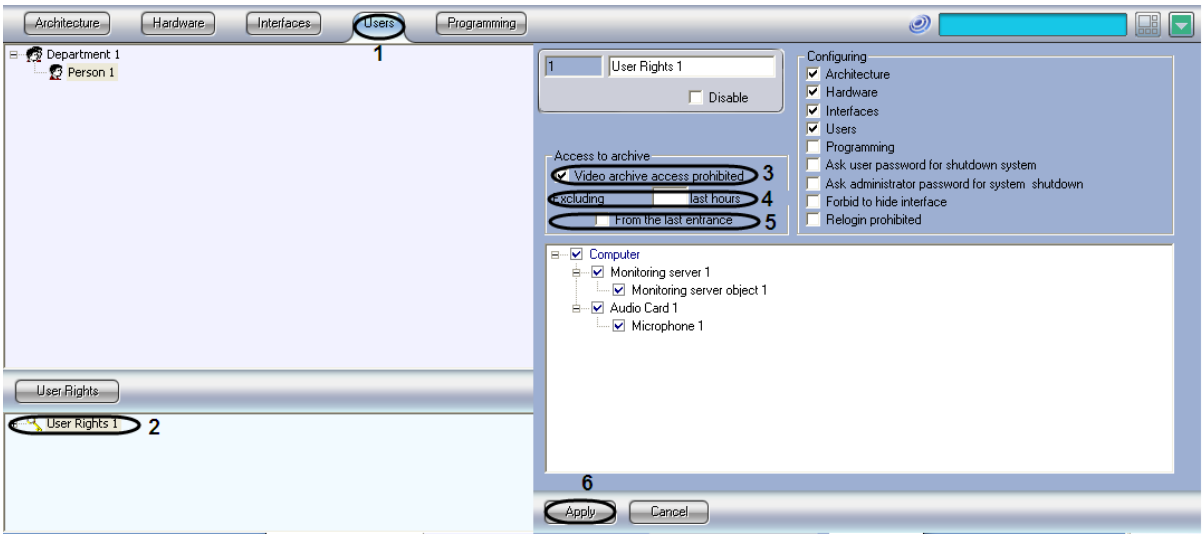


Figure 8.22-14 The settings panel of the User Rights object

3. Check the Video archive access prohibited checkbox (Figure 8.22-14,3).

4. Enter the number of hours, available for viewing in the field «Excluding last hours» (Figure 8.22-14, 4).

Note. The number of video archive last hours, available for viewing should be whole.

5. In case of starting the hours counting from the moment of the last entrance to the system, set the checkbox «From the last entrance» (Figure 8.22-14, 5). If the counting of hours from the current time is to be set– the checkbox « From the last entrance » should not be checked.

Note. In case when the checkbox « From the last entrance » is set and the number of hours, available for viewing is stated, the last hours are counted before the moment of registration.

6. Click the “Apply” button (Figure 8.22-14, 6).

Forbidding the operator from playing the archives is completed.

8.22.3.7.1 Limiting access to archive playback

To limit access for Operator to playback the archive, do the following:

1. Go to the “Users” tab in the “System Settings” dialog box (Figure 8.22-15, 1).
2. In the objects tree that is below the “User permissions” button in the the “Users” tab, select an object with the same name as the permissions to be changed (Figure 8.22-15, 2).

The settings panel for the “User permissions” object is displayed in the right part of the “System Settings” dialog box.

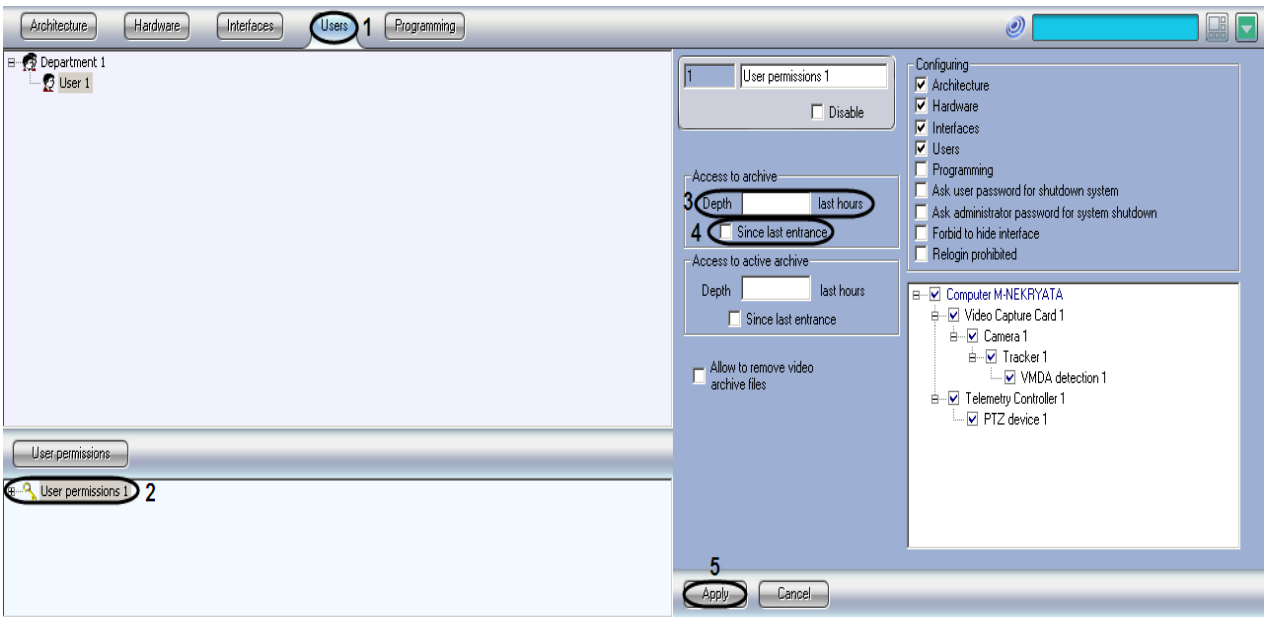


Figure 8.22-15 The settings panel for the "User permissions" object

3. Specify the number of hours for viewing in the "Depth ___ last hours" field (Figure 8.22-15, 3).

Note 1. The number of last video archive hours for viewing is to be whole.

Note 2. Input the "0" value in the "Depth ___ last hours" field todisable access to the archive.

4. If the hours since the last entrance to the system are counted, set the "Since last entrance" checkbox (Figure 8.22-15, 4). If the hours are to be counted since the current moment, then leave the the "Since last entrance" box unchecked.

Note. If the "Since last entrance" box is checked and the number of hours for viewing is specified, then last hours are counted till the registration moment.

5. Click the "Apply" button (Figure 8.22-15, 5).

The access to archive playback is now limited.

8.22.3.7.2 Limiting access to active archive playback

To limit access for Operator to playback the active archive, do the following:

1. Go to the "Users" tab in the "System Settings" dialog box (Figure 8.22-16, 1).
2. In the objects tree that is below the "User permissions" button in the the "Users" tab, select an object with the same name as the permissions to be changed (Figure 8.22-16, 2).

The settings panel for the "User permissions" object is displayed in the right part of the "System Settings" dialog box.

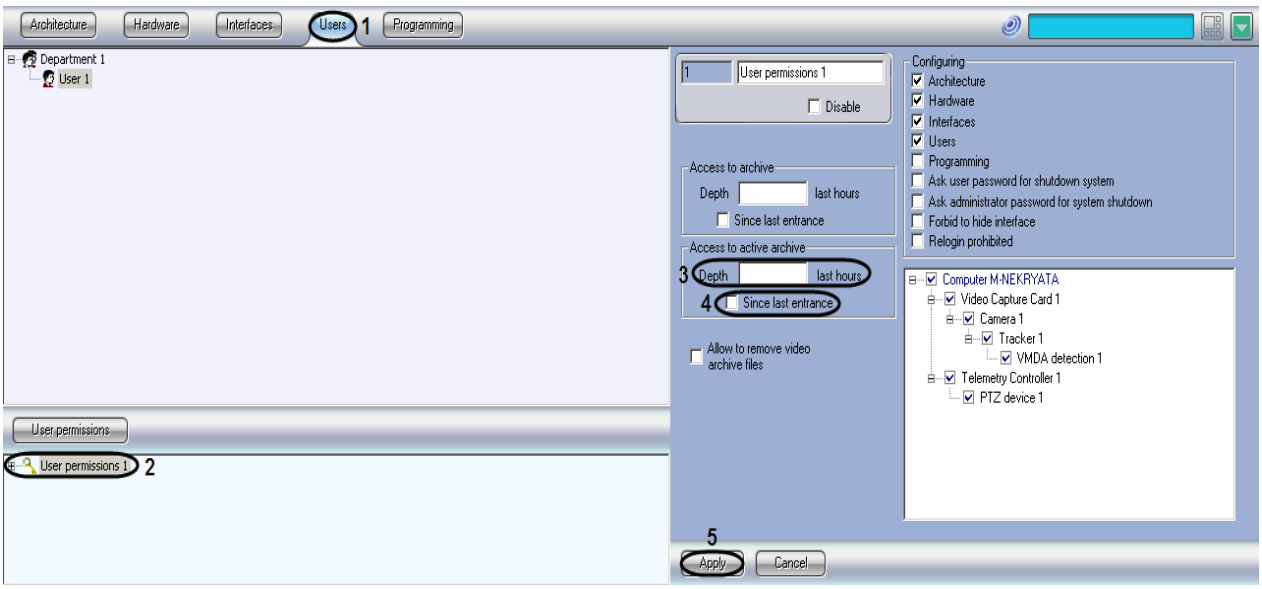


Figure 8.22-16 The settings panel for the "User permissions" object

3. Specify the number of hours for viewing in the "Depth ___ last hours" field (Figure 8.22-16, 3).

Note 1. The number of last video archive hours for viewing is to be whole.

Note 2. Input the "0" value in the "Depth ___ last hours" field todisable access to the active archive.

4. If the hours since the last entrance to the system are counted, set the "Since last entrance" checkbox (Figure 8.22-16, 4). If the hours are to be counted since the current moment, then leave the the "Since last entrance" box unchecked.

Note. If the "Since last entrance" box is checked and the number of hours for viewing is specified, then last hours are counted till the registration moment.

5. Click the "Apply" button (Figure 8.22-16, 5).

The access to active archive playback is now limited.

8.22.3.7.3 Permission to remove archive video files

To allow the Operator to remove archive (both main and active) video files, do the following:

1. Go to the "Users" tab in the "System Settings" dialog box (Figure 8.22-17, 1).
2. In the objects tree that is below the "User permissions" button in the the "Users" tab, select an object with the same name as the permissions to be changed (Figure 8.22-17, 2).

The settings panel for the "User permissions" object is displayed in the right part of the "System Settings" dialog box.

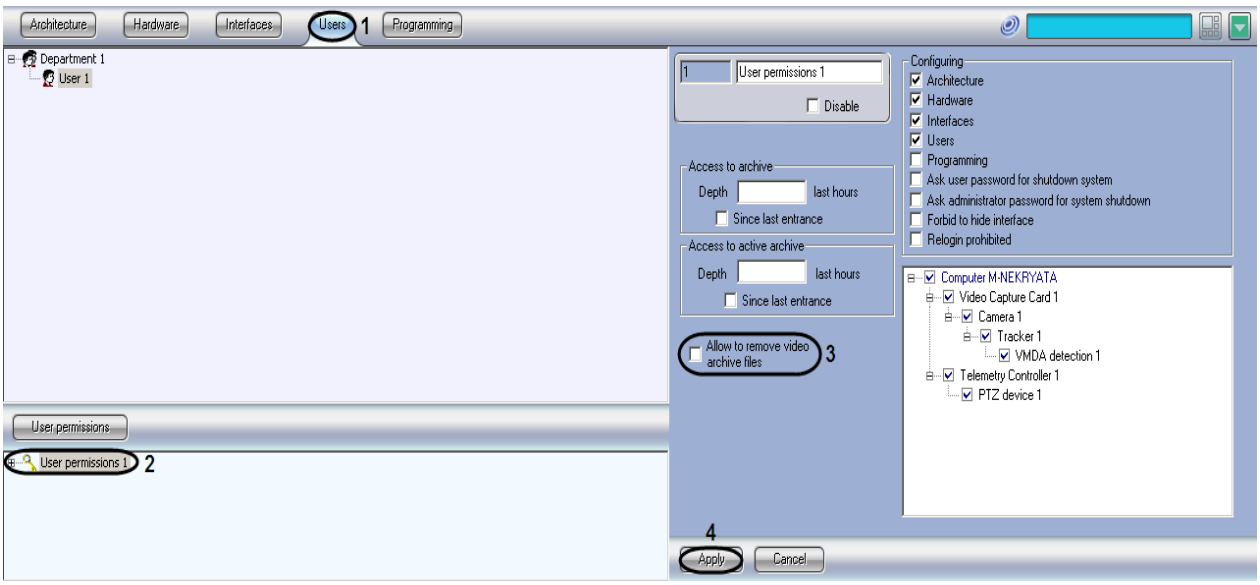


Figure 8.22-17 Prohibition to remove video archive files

1. To allow an Operator remove video archive files, set the “Allow to remove video archive files” checkbox (Figure 8.22-17, 3). If the Operator is not allowed to remove video archive files, leave this box unchecked.
2. To save the changes in INTELLECT ™ software, click the “Apply” button (Figure 8.22-17, 4).

An Operator now can remove video archive files.

8.22.4 Assigning the rights and password to operators for authorization in the Intellect

User accounts are stored separately from operator accounts in INTELLECT™ software. The same rights may be assigned to several operators. But the operator may be assigned only single rights.

To assign the rights and password to the operator for authorization in INTELLECT™, do the following:

1. Go to the “Users” tab in the “System settings” dialog box (Figure 8.22-18, 1).
2. Select an object, corresponding to the rights account that have to be assigned to the operator, in the objects tree under the “User permissions” button (Figure 8.22-18, 2).
3. Call the context menu by right-clicking upon the selected “User permissions” object (Figure 8.22-18, 3). Select the “Add to rights” command in the menu.

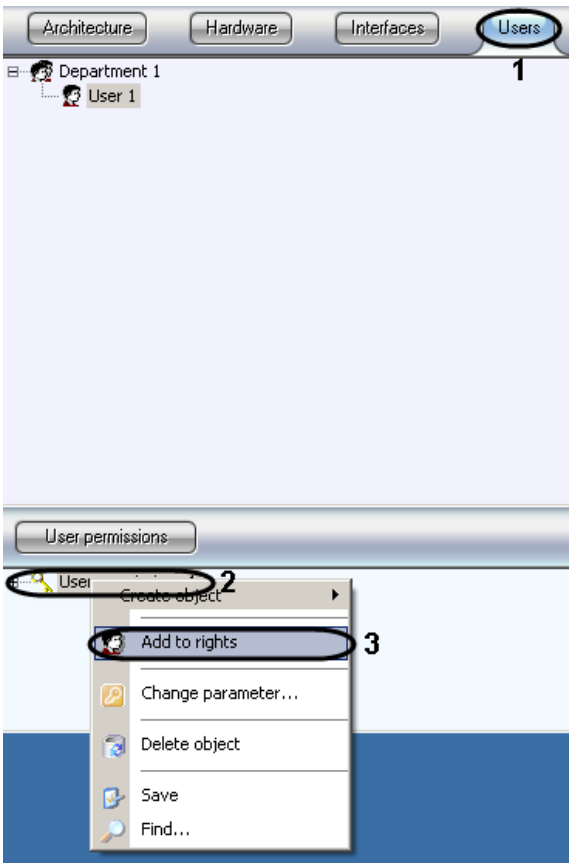


Figure 8.22-18 Assigning access rights to the operator

4. The “Add user” dialog box is displayed (Figure 8.22-19).

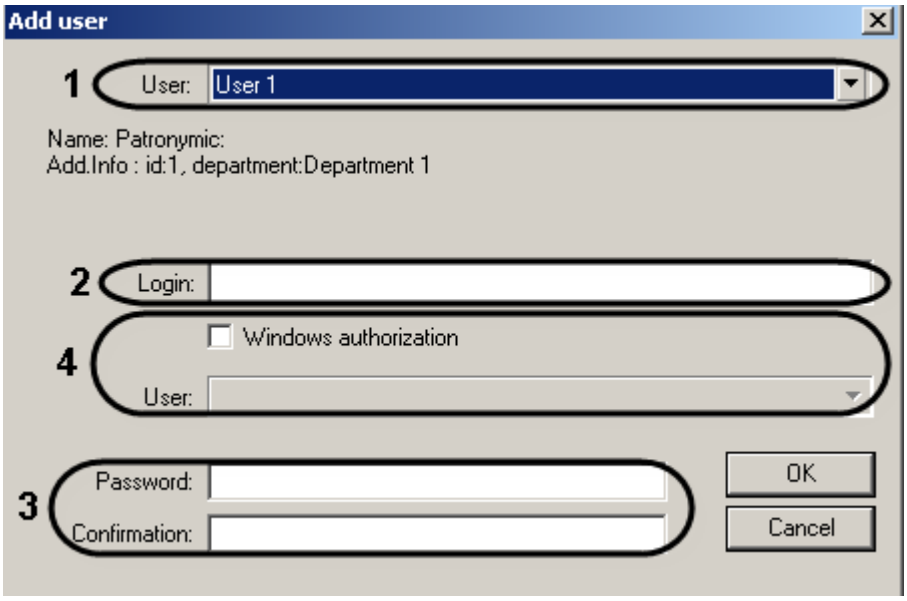


Figure 8.22-19 The “Add user” dialog box

5. Select the account name registered for operator in the “User” list (Figure 8.22-19, 1).
6. In the “Login” field specify the login that will be assigned to the operator for authorization in INTELLECT™ (Figure 8.22-19, 2).
7. In the “Password” field specify the password that will be assigned to the operator for authorization in INTELLECT™ (Figure 8.22-19, 3).

Note. If the password has not been specified, then access rights will not be assigned to the operator.

8. Respecify the password in the “Confirmation” field (Figure 8.22-19, 3).
9. If the Windows account is to be used for user authorization in INTELLECT™, then set the “Windows authorization” checkbox checked and select the name of account in the “User” list (Figure 8.22-19, 4).

Note. When this way of authorization is selected, no other data is to be specified in the login and password fieldswhen INTELLECT™ is started and shut down. To start INTELLECT™ when password is requested, click the “Register” button. To shutdown INTELLECT™, click the “Log off” button.

If user permissions are used to login from Web server, then do not use the “Windows authorization” way of authorization.

10. Click the “OK” button (Figure 8.22-19).
11. The object of the same name as the user account registered for the operator will be displayed in the child branch of the “User permissions” object (Figure 8.22-20).

Figure 8.22-20 Example of displaying the “User” object in the “User permissions” child branch

This completes the process of assigning the rights and passwords to the operator for authorization in INTELLECT™.

8.22.5 Setting up the default user

To allow starting the system without specifying the password, default user is to be set up. The administrative, controlling and viewing functions will be limited according to the rights of the default user.

The user is to be registered in the system before becoming the default user.

To set the default user, do the following:

1. Go to the “Hardware” tab in the “System settings” dialog box (Figure 8.22-21, 1).
2. Select the “Computer” object, representing the workstation the default user will be assigned to (Figure 8.22-21, 2).

The settings panel for this object opens on the right of the “System settings” dialog box.

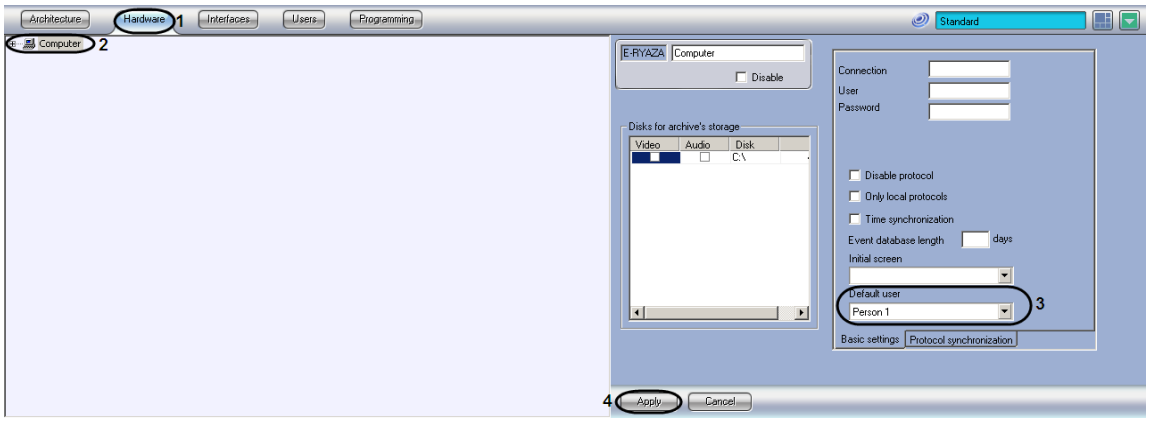


Figure 8.22-21 Setting up the default user

3. Select the user account in the “Default user” list (Figure 8.22-21, 3).

4. Click the “Apply” button (Figure 8.22-21, 4).

The administrative, controlling and viewing functions will then be limited according to the rights of the default user.

8.23 Creating and using macros

8.23.1 About macros

A macro in the Intellect system is a system object, designed to maintain logic interaction among other system objects. The Macro object settings define the conditions and the corresponding actions. The Macro objects are used for automatic controlling of the surveillance system.

8.23.2 Creating macros

To create a macro, do the following:

a. Create the Macro object.
   a. Choose the Macro object in the objects tree of the Programming tab (Figure 8.23-1).

   b. Specify the name of the Macro object.

   c. Press the Apply button.

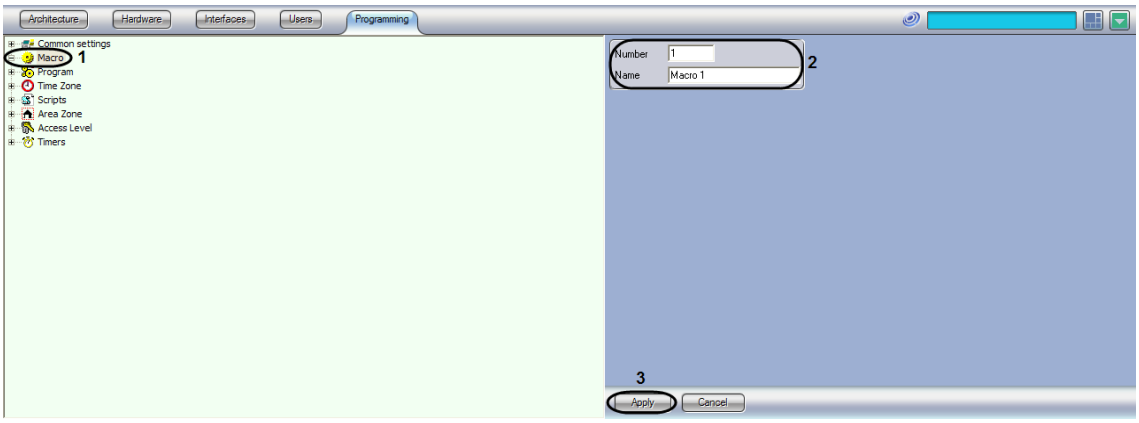


Figure 8.23-1. Creating the Macro object

After the Macro object is created, its settings panel opens (Figure 8.23-2).

Figure 8.23-2. The Macro object is created

b. Specify the parameter values (Figure 8.23-3). Table 17 gives the description of the parameters.

Table 8.23-1

№	Name	Field type	Description	Format	Default value	Value range
Settings group						
1	State	Select from drop-down list, or type in	The message to display during macro execution. A Standard value is selected, no message is displayed.	-	Empty	A list of available messages plus Standard.
2	Local	Checkbox	If the checkbox is checked, the macro can be executed on the local computer only.	-	No	Checked - local only. Unchecked – any computer.
3	Hidden	Checkbox	If the checkbox is checked, the macro cannot be executed manually.	-	No	Checked – execute. Unchecked – don't execute.
4	Events table					
	Type	Drop-down list	Defines the object to be the source of the event that will trigger this macro.	-	Empty	All active device and module objects
5	Number	Drop-down list	Defines the number of the object to be the source of the event that will trigger this macro.	-	Empty	The numbers of all active device and module objects. If the Computer object is selected in the Type column, enter its name here.
6	Name	Enters automatically on right-click	Information type	-	Empty	Enters automatically according to the Type and Number

№	Name	Field type	Description	Format	Default value	Value range
						values
7	Event	Drop-down list	Event type	-	Empty	The list of registered event types
8	Actions table					
	Type	Drop-down list	Defines the object to be the source of the event that will trigger this macro.	-	Empty	All active devices and module objects
9	Number	Drop-down list	Defines the number of the object to be the source of the event that will trigger this macro.	-	Empty	The numbers of all active devices and module objects. If the Computer object is selected in the Type column, enter its name here.
10	Name	Automatically	Displays name of the selected object	Name of objects, registered in the system and of specified type	Empty	A line of any characters. The number of characters is from 1 to 60.
Parameters table (is set, when parameter should be set to perform action, selected in Actions table)						
12	Name	Automatically	Displays name of action's parameter	Latin alphabet, digits and characters	Empty	Depends on the action, selected in Actions table
13	Value	Entering of the text into the field	Set the value of action's parameter	Latin alphabet, digits and characters	Empty	A line of any characters. The number of characters is from 1 to 250.

Note. As action's parameter «Play sound file» may be used only files of WAV format. Otherwise action«Play sound file» is not carried out.

Note.Compressed sound in WAV format may be played back incorrectly, that's why it is strongly recommended to play back only PCM WAV files. Maximum values of frequency and depth of files digitization for playing back are determined by technical characteristics of digital to analog converter of the installed video card.

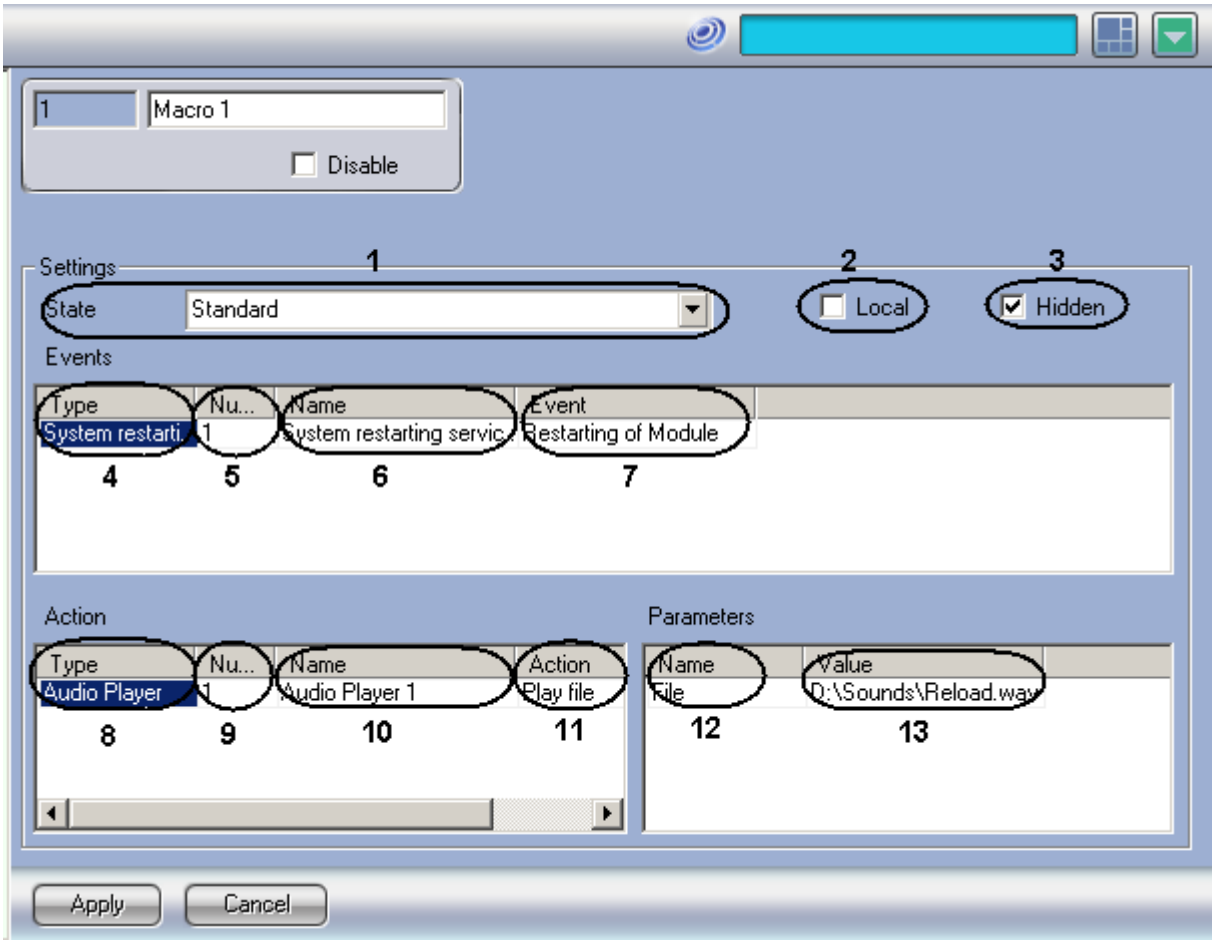


Figure 8.23-3. The Macro object is set up

c. Click the Apply button to save the settings.

8.23.3 Examples of macros

Macros are used to automate the actions of the operator. They inform the operator or administrator about software failures, automate the backup process, etc.

Let's consider the macro that generates the voice message and sends it to the specified telephone number. The message should be sent on a condition – the 'write to disk' error. To create the macro for sending the voice message, do the following:

Create a Macro object in the objects tree of the Programming tab (Figure 8.23-4).

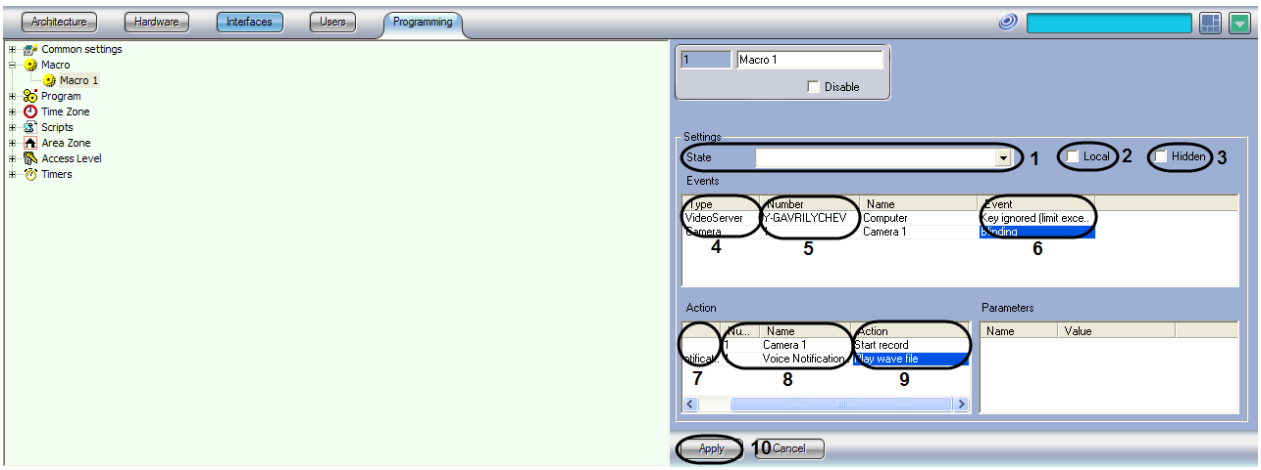


Figure 8.23-4. Setting up the macro

1. Specify the State parameter.
2. Check the Local checkbox if the macro should be sent from the local computer only, if necessary.
3. Check the Hidden checkbox if the macro should be sent automatically, if necessary.
4. If the manual start of macros from the main control panel of PC Intellect should be forbidden, set the Hidden checkbox.
5. Select the number of the object to be the source of the event generating the message.
6. Select the name of the event to activate sending of the message.
7. Choose the Voice Message object in the Type column.
8. Choose the number of the Voice Message object to be sent by the macro.
9. Choose Send Message in the Action column.
10. Press the Apply button.

If the Hidden checkbox is not checked (Figure 8.23-5), the macro will need manual activation, which is done by clicking the Run button in the Main control menu and by selecting the macro in the list.

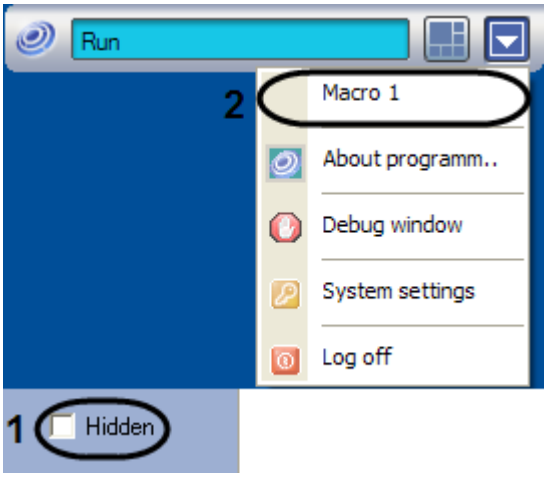


Figure 8.23-5. Manual macro activation

Manual activation of the macro is indicated by the tick next to the macro name in the Run menu (Figure 8.23-6).

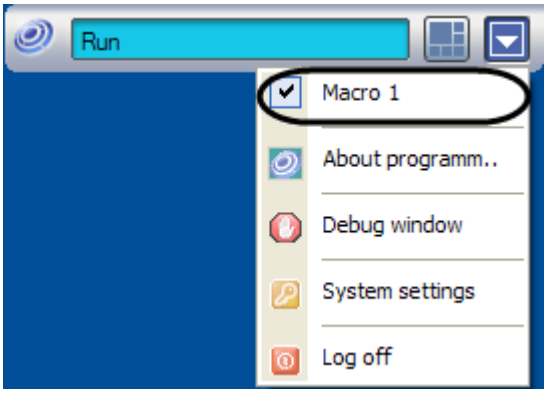


Figure 8.23-6. Manual activation of the macro

8.24 Creating and using time zones

8.24.1 About time zones

A time zone is comprised of a set of any number of time intervals during a day (24 hours) defined for several days (1 to 366), and the time intervals during specific dates.

The “Time Zone” object is used in conjunction with the “Macro” object and for setting up other system objects.

8.24.2 Creating and configuring time zones

To create a “Time Zone” object, do the following:

1. Open the “Programming” tab (Figure 8.24-1, 1).
2. Create the “Time Zone” object under the “Time Zones” node in the objects tree (Figure 8.24-1, 2).
3. Specify the number and name of the time zone into the corresponding fields of the settings panel (Figure 8.24-1, 3).
4. Click the “Apply” button (Figure 8.24-1, 4).

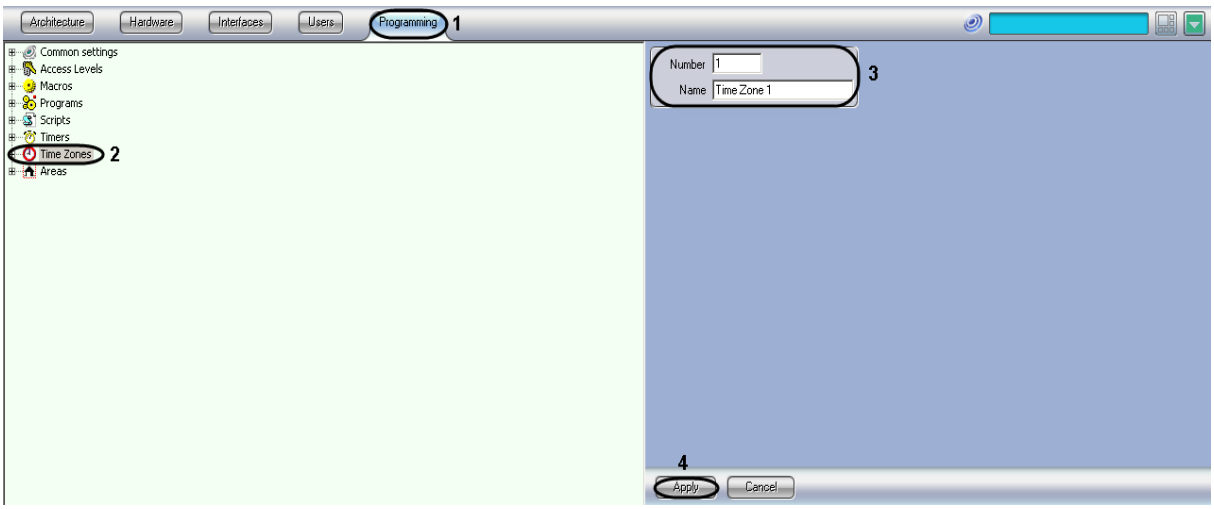


Figure 8.24-1 Creating the "Time Zone" object

The "Time Zone" object will appear in the objects tree (Figure 8.24-2).

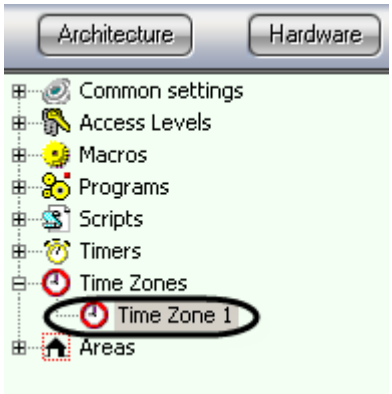


Figure 8.24-2 The "Time Zone" object

To configure the "Time Zone" object, specify the values of the following parameters (Figure 8.24-3 and Table 8.24-1).

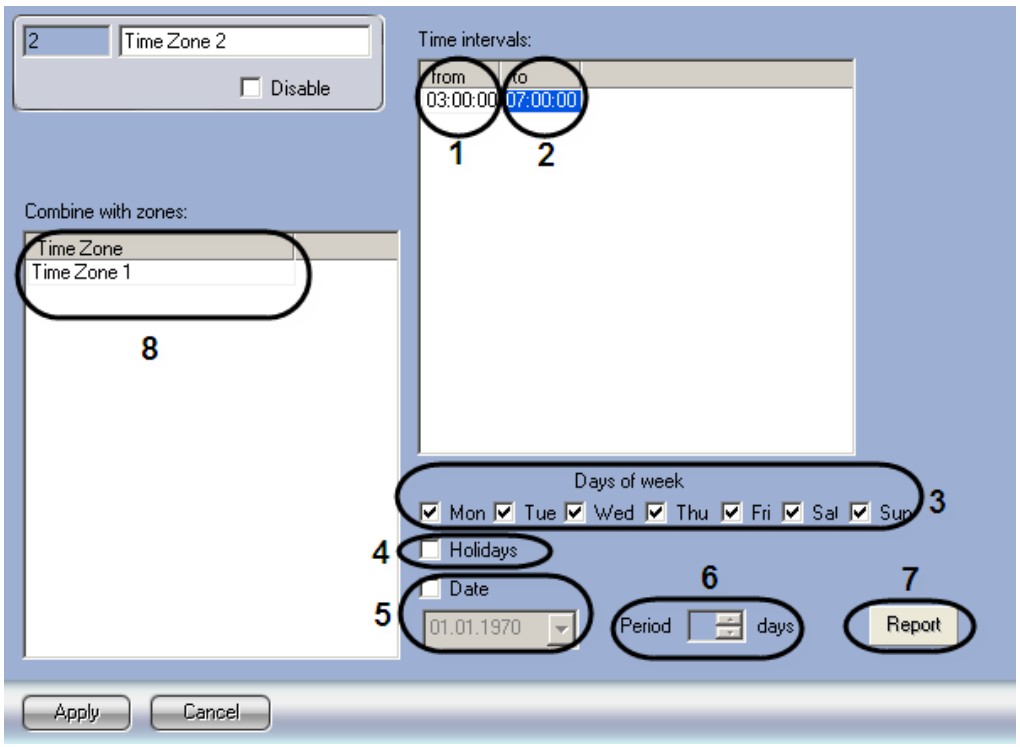


Figure 8.24-3 Configuring the "Time Zone" object

Table 8.24-1

No	Parameter name		Field type	Description	Format	Default value	Value range
The "Time intervals" group							
1	The "from" column		Enter the value	Exact time of starting the macro execution	HH:MM:SS	00:00:00	00:00:00 to 23:59:59
2	The "to" column		Enter the value	Exact time of ending the macro execution	HH:MM:SS	00:00:00	00:00:00 to 23:59:59
The "Days of week" group							
3	Checkboxes: Mon Tue Wed Thu Fri Sat Sun		Checkbox	Adds days to the timetable. The days of the week are added individually y for each time interval.	-	No	Checked – the day of the week is included in the timetable. Not checked – the day of the week is not included in the timetable.
The "Holidays" group*							
4	Holidays		Checkbox	Adds holidays to the timetable. The holidays are added individually for each time interval.	-	No	Checked – the list of holidays is included in the timetable. Not checked – the list of holidays is not included in the timetable.
The "Date" group							
5	Date	Check-box	Checkbox	Enables the "Period__days" field. If set, the "Days of week" group is disabled. The days are added individually for each time interval.	-	No	Checked – enable the "Period__days" field. Not checked – disable the "Period__days" field.
		Field	Enter the value	Specifies the exact date. The days are added individually for each	DD.MM.YYYY	Current date	00.00.0000 to 31.12.1999

No	Parameter name	Field type	Description	Format	Default value	Value range
			time interval.			
6	Period	Enter the value	Sets the cyclicity in N-days, time zone triggers from the specified date (i.e. time zone responses every N-day)	Numeric value	Disabled	0 to 100. Cyclicity is set individually for every time interval
7	The “Report” button	-	Displays the box with the table of time zone activity	-	-	-
The “Combine with zones” table						
8	The “Time zone” dropdown list	Selected from the list	Sets the time zone with which the given time zone is to be combined	Names of the registered “Time zone” objects	-	Depends on the number of registered “Time zone” objects

* The “Holidays” checkbox adds the list of the days specified in the “Common settings” object in the “Programming” tab.

If the moment of time interval beginning is set later than the moment of ending, then time zone will cover the present day (from the time interval beginning) and part of the following day (to the time interval ending) on conditions that the Time zone is set for the present and following day. If the Time zone is set only for the present day, then the Time zone will end at 0:00:00.

Note. Time zone combination can be used for correction of the main time zone into specia days, for example, days before holidays.The date of a special day and time interval, that should be added to the interval of the main zone, should be set on the settings panel of the additional time zone. (Figure 8.24-4).

Attention! The duaration of additional time zone usage in days is not set on the settings panel. So, time zones combining is to be disabled right after its application.

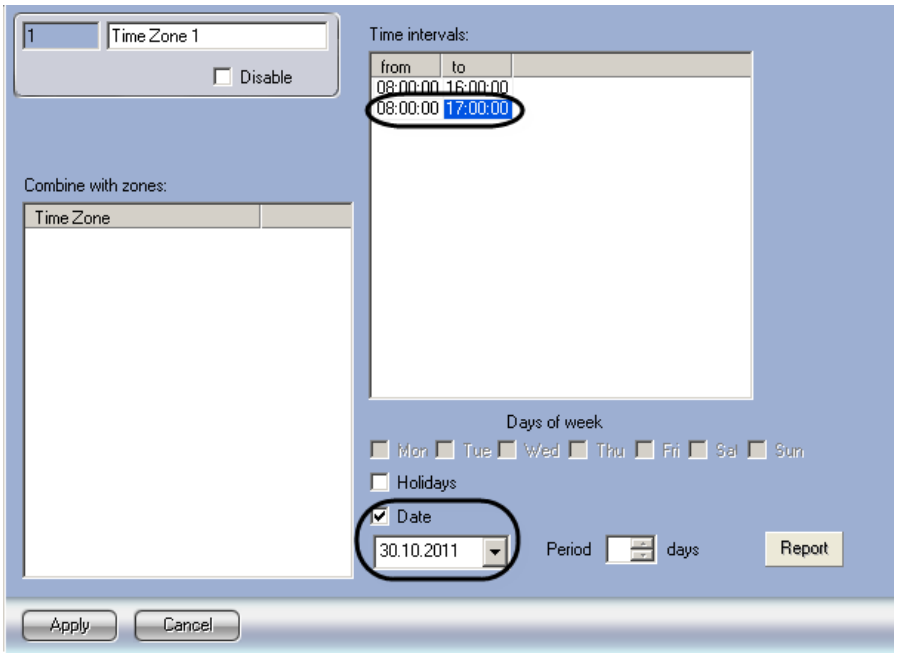


Figure 8.24-4 Additional time zone settings panel

To create the list of holidays, do the following:

1. Open the “Programming” tab (Figure 8.24-5, 1).

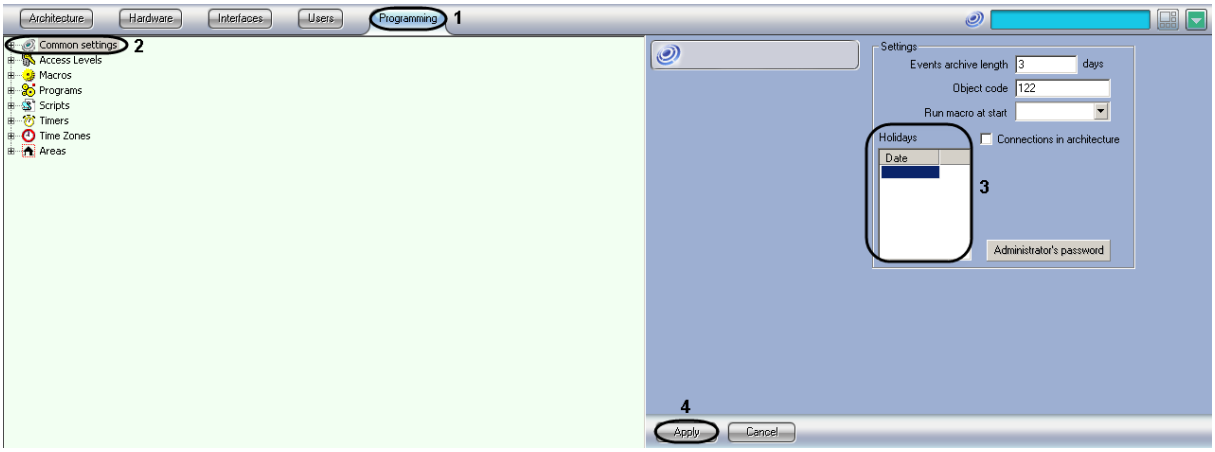


Figure 8.24-5 Creating the list of holidays

2. Select the “Common settings” object (Figure 8.24-5, 2).

3. Specify the holiday date in the following format: DD.MM.YYYY (Figure 8.24-5, 3).

4. Click the “Apply” button (Figure 8.24-5, 4).

8.24.3 Viewing time-zones states

In INTELLECT™ one can view time-zones states by all specified time intervals.

To view time-zones states, do the following:

1. Click the “Report” button on the settings panel of the “Time Zone” object (Figure 8.24-3, 7).

The “Time-zones activity calculation” box appears (Figure 8.24-6).

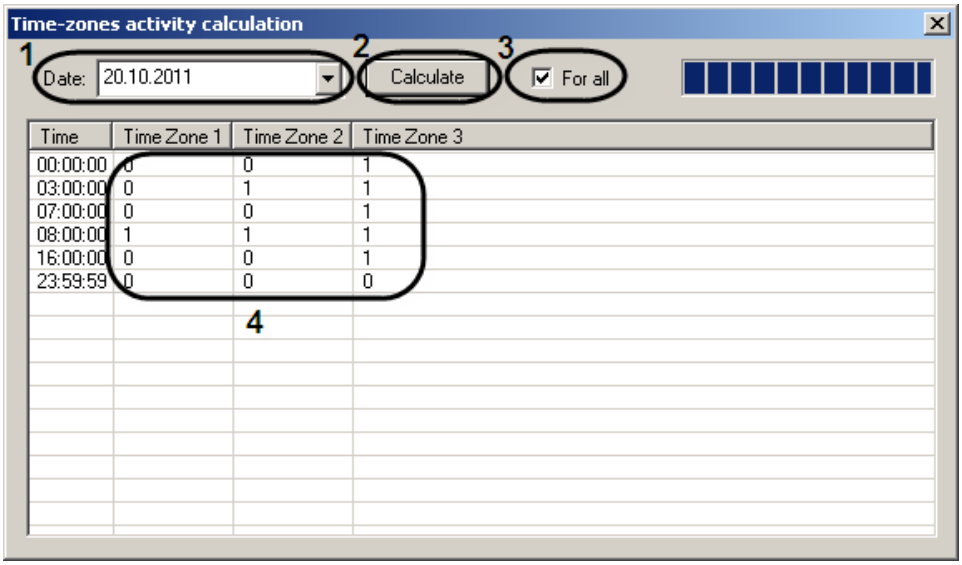


Figure 8.24-6 The “Time-zones activity calculation” box

2. Select the required date in the “Date” list (Figure 8.24-6, 1).
3. If the data on all time zones created in the system is to be displayed, then set the “For all” checkbox (Figure 8.24-6, 3).

4. Click the “Calculate” button (Figure 8.24-6, 2).

As a result the table with active time zones (marked “1”) and inactive time zones (marked “0”) is created (Figure 8.24-6, 4).

8.24.4 Examples of time zones usage

Example 1. Consider two micros which work together and allow recording a video within the time zone limits (Table 8.24-2).

Set the events and actions values in Macro setting window that is given in the table.

Table 8.24-2

№	Event	Action
1	Time Zone 1 begin (Figure 8.24-7, 1)	Start recording from Camera 1 (Figure 8.24-7, 2)
2	Time Zone 1 end (Figure 8.24-8, 1)	Stop recording from Camera 1 (Figure 8.24-8, 2)

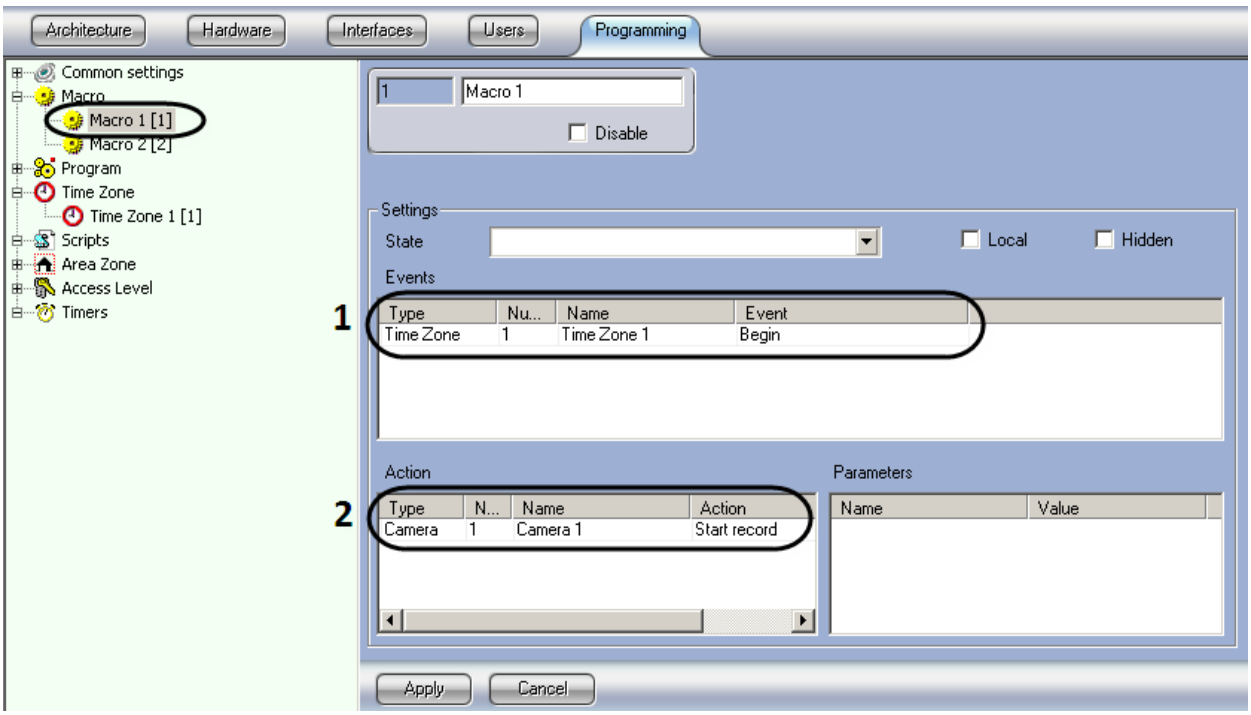


Figure 8.24-7 Example of a macro with a time zone. Time zone begining

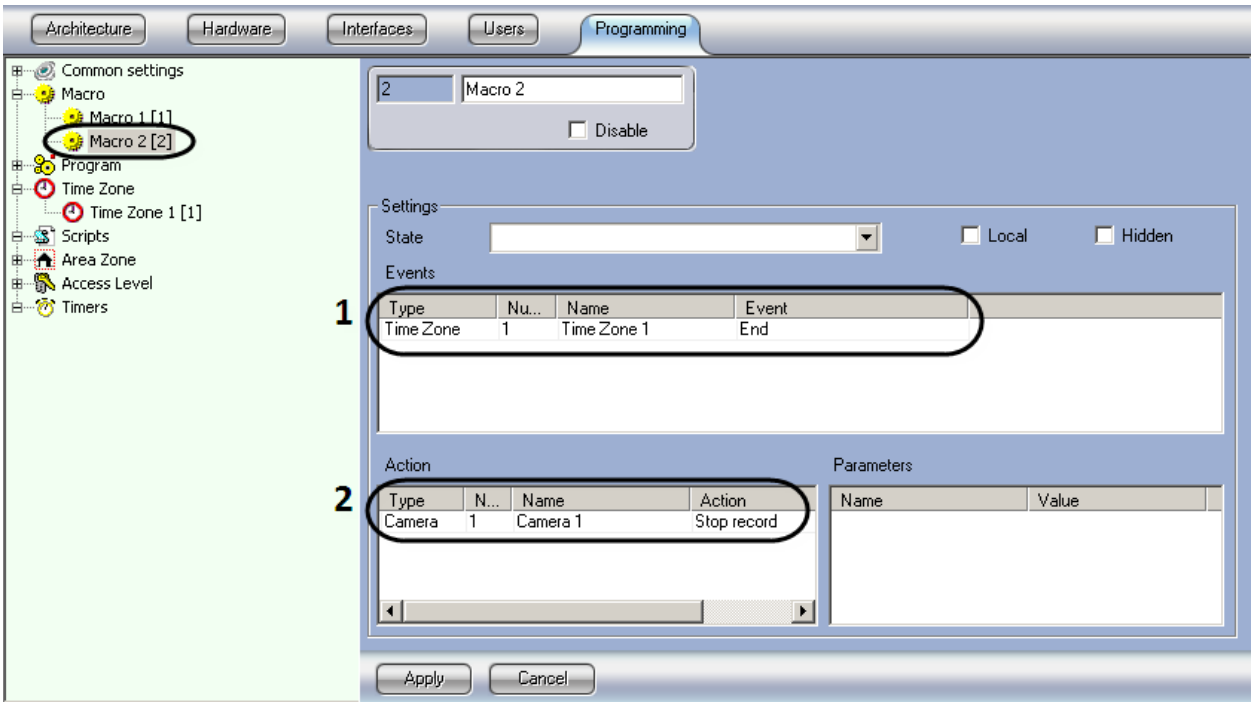


Figure 8.24-8 Example of a macro with a time zone. Time zone ending

Example 2. Time zones can be used for the Active archiving. Consider an example of scheduling the archiving of the video feed from a camera at a specific time.

To configure the “Active archiving” object, do the following:

1. Open the “Hardware” tab (Figure 8.24-9, 1).

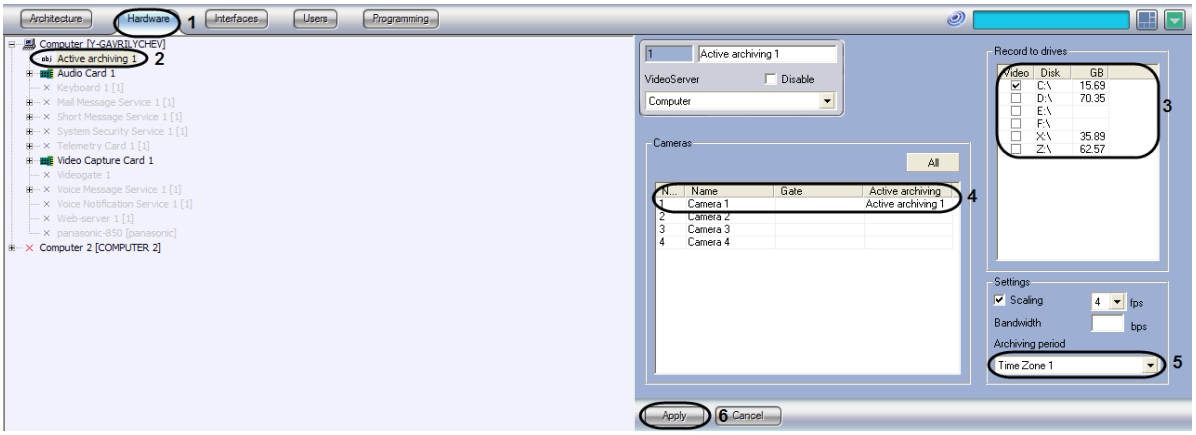


Figure 8.24-9 Example of the “Active archiving” object with a time zone

2. Select the “Active archiving” object (Figure 8.24-9, 2).

3. Select the disk to record the video to (Figure 8.24-9, 3).

4. Specify the camera to record from (Figure 8.24-9, 4).

5. Select the “Time Zone 1” value in the “Archiving period” list (Figure 8.24-9, 5).

6. Click the “Apply” button (Figure 8.24-9, 6).

8.25 Creating and using the Timer object

8.25.1 General Information

The Timer object sets a time point upon reaching which an action (a macro) is executed. Thus, the Timer object is used together with the Macro object and for other objects setup.

8.25.2 The Timer object creation and setup

To create a Timer object, do the following:

1. Open the “Programming” tab (Figure 8.25-1).
2. Create a Timer object under the Timers object in the objects tree.
3. Enter the number and name for the Timer object in the corresponding field of the settings panel.
4. Click the “Apply” button.

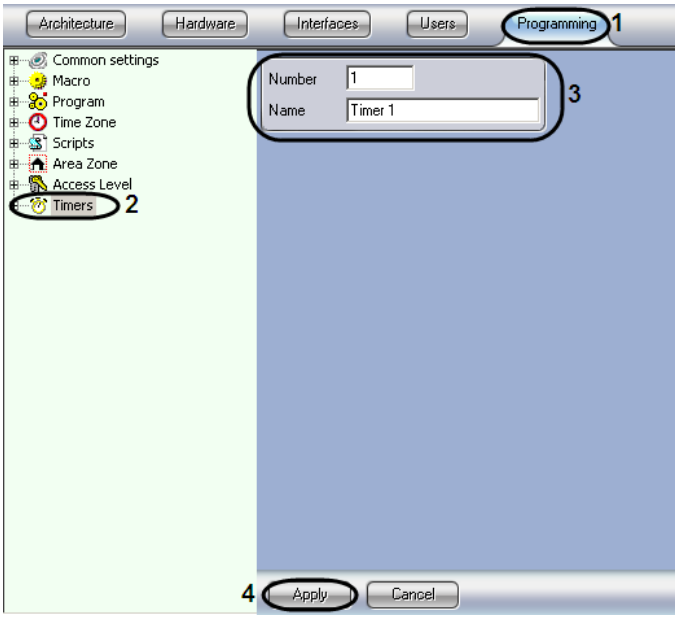


Figure 8.25-1. Creating a Timer object

The “Timer” object will appear in the objects tree (Figure 8.25-2).

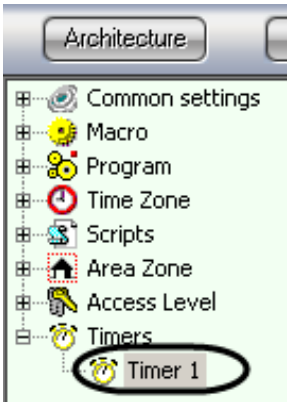


Figure 8.25-2. The Timer object has been created

To set up the Timer object, do the following:

a. Select the Timer object in the objects tree (Figure 8.25-3).

b. Set the time point using one of the following methods:

1. select the day of the week from the drop-down list (Figure 8.25-3, 2) and the exact time (hour, minute, second) in the corresponding fields (Figure 8.25-3, 5);

2. select the exact date (year, month, day) from the corresponding fields (Figure 8.25-3, 4) and the exact time (hour, minute, second) in the corresponding fields (Figure 8.25-3, 5).

c. Check the Holidays checkbox to take into account the holidays set in the Common settings (Figure 8.25-3, 3).

d. Click the “Apply” button.

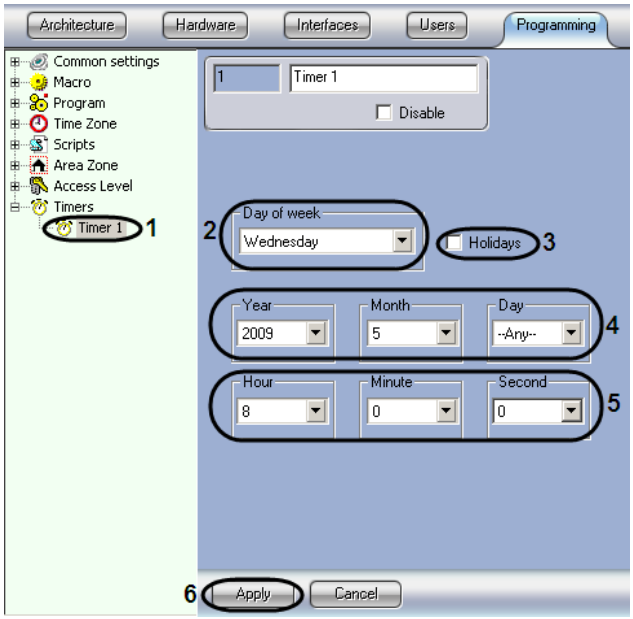


Figure 8.25-3. The Timer object setup

To create the list of holidays, do the following:

1. Open the “Programming” tab (Figure 8.25-4).

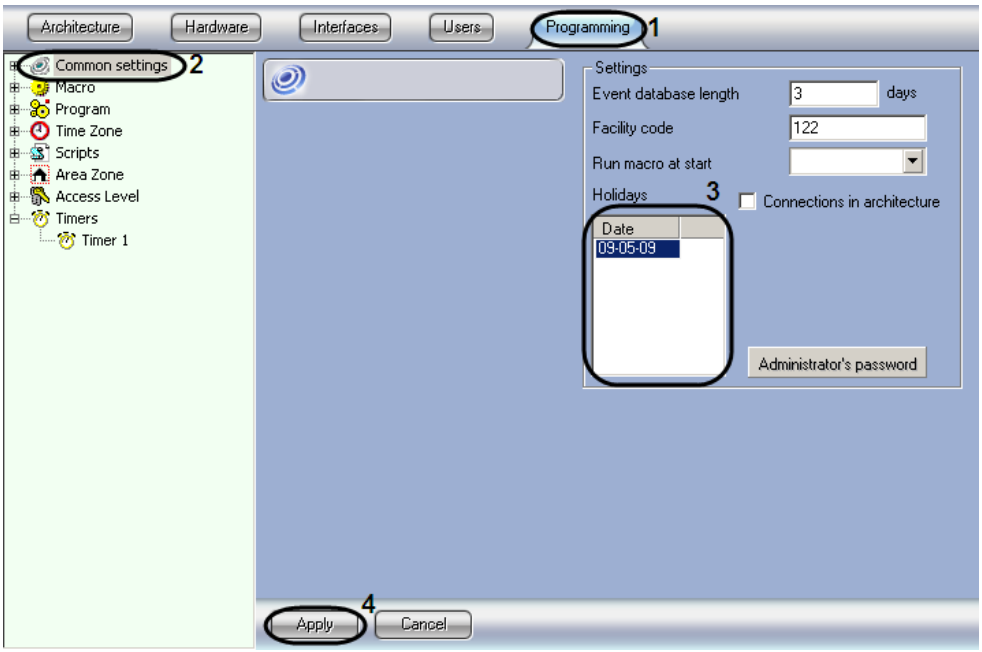


Figure 8.25-4. Creating the Holidays list

2. Select the “Common settings” object.

3. Enter a holiday date in the DD.MM.YYYY format.

4. Click the “Apply” button.

8.25.3 Examples of Timer object usage

Example 1. Consider a macro that activate an arming mode in selected camera when the timer triggers (Table 8.25-1, Figure 8.25-5).

Table 8.25-1

No	Event	Action
1	The timer triggered (Figure 8.25-5, 1).	Activate an arming mode (Figure 8.25-5, 2)

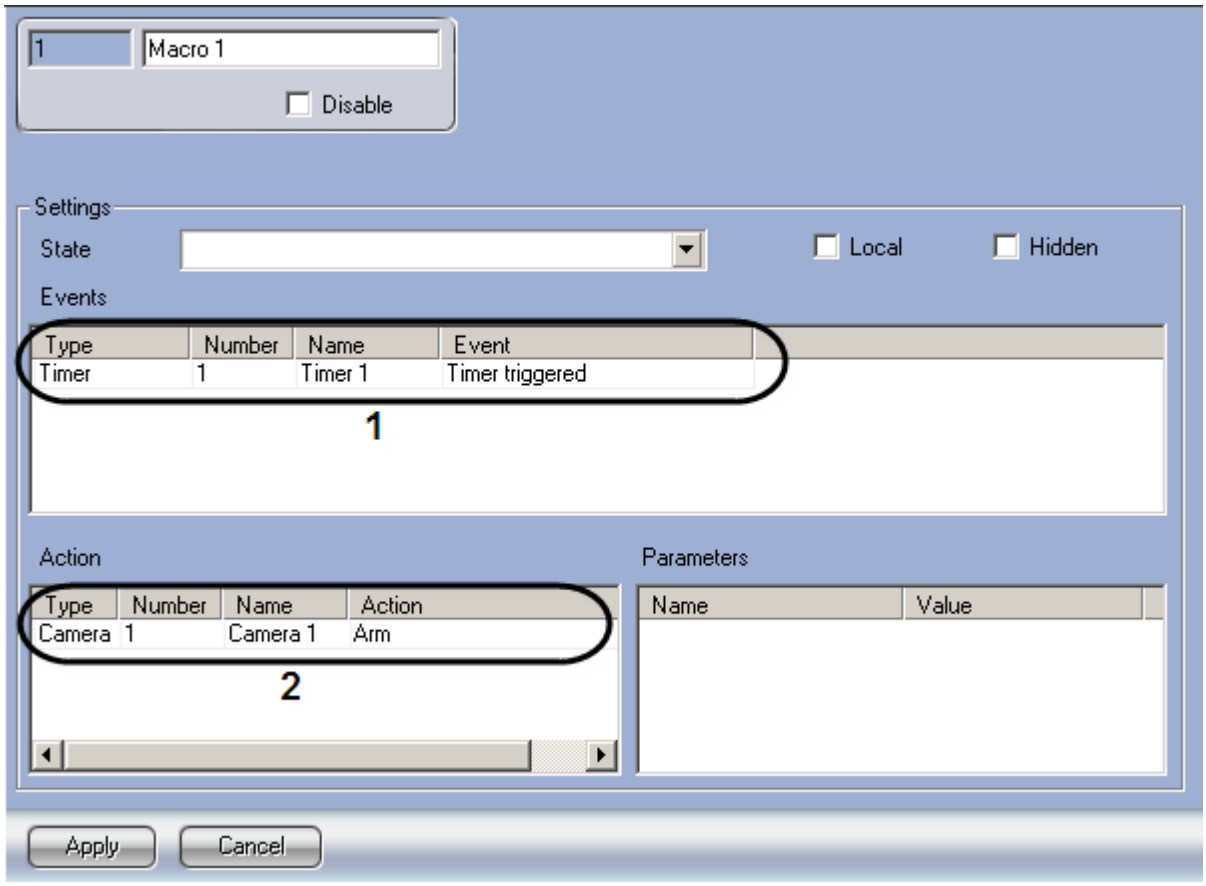


Figure 8.25-5. An example of a macro using the timer

Example 2. Consider macros that allow to set the timer with trigger period of several seconds (Table 8.25-2).

Table 8.25-2

Macro	Event	Action	Parameters
1		Start counter of Timer 1 (Figure 8.25-6, 1)	Trigger value is 5 seconds (Figure 8.25-6, 2)
2	The timer 1 triggered (Figure 8.25-7, 1)	Macro 1 execution (Figure 8.25-7, 2)	

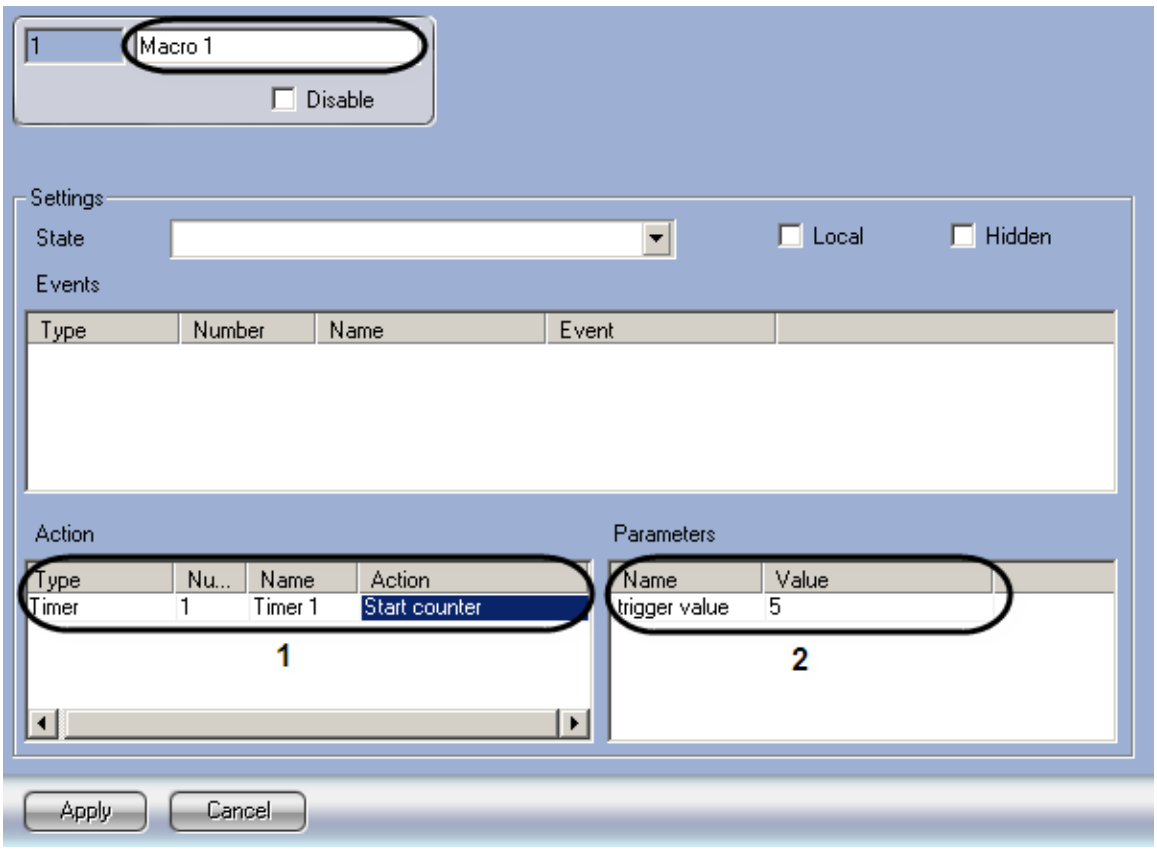


Figure 8.25-6 "Macro 1" object setting window

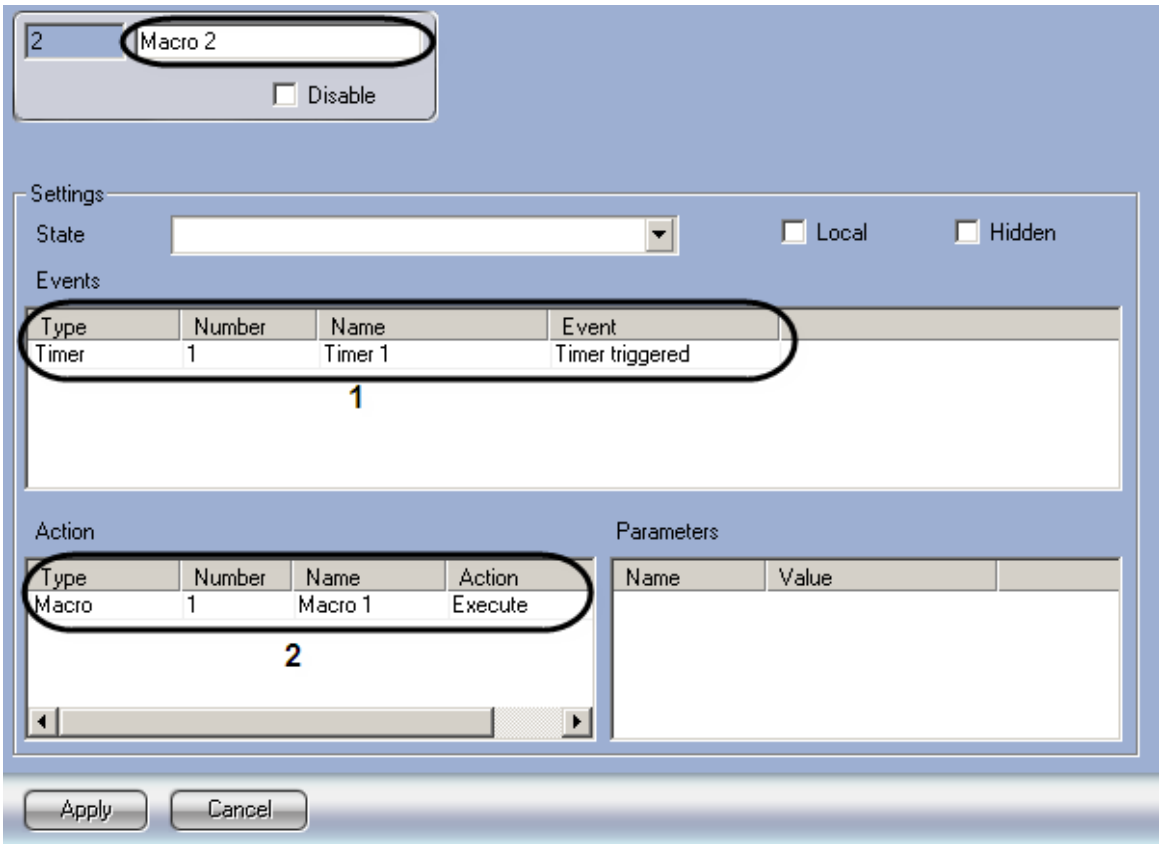


Figure 8.25-7 "Macro 2" object setting window

Note 1. Timer will trigger every 5 seconds after starting the macro (Macro 1) in menu of Intellect PC main setting board.

Note2. To stop the timer set "Disable " check box in "Timer 1" object setting window.

8.26 Subdivision of the guarded location into areas and regions

8.26.1 About areas and regions

If the Intellect system is used to guard the large territory of complex topology (buildings, groups of buildings), we recommend to divide the whole territory into smaller zones. This allows to group relevant devices by location and makes it easier to view and control them, as well as to analyze the reports.

There are two levels of division: area and region. The region is the smallest element. The area is a set of regions grouped by location or by function. For example, a guarded territory can be divided in this way: the building is the whole territory; the floors make the areas, while the rooms become the regions.

We recommend dividing the guarded territory into areas and regions at the time of designing the video surveillance system, before the actual system configuration.

8.26.2 Creating areas

The areas are represented by "Areas" objects created in the "Programming" tab. The "Areas" object has no parameters of its own and is used to group the "Region" objects only. Figure 8.26-1 shows the process of creating an "Areas" object.

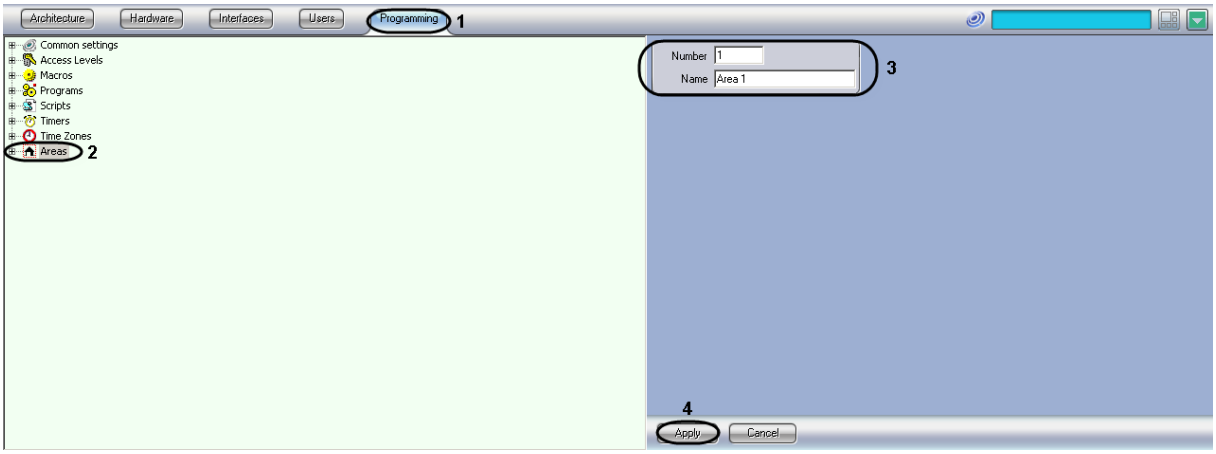


Figure 8.26-1. Creating the "Areas" object

8.26.3 Creating regions

To create a region, do the following:

1. Create a "Region" object.

    1.1. Select "Create object" => "Region" in the context menu of the "Area" object (Figure 8.26-2).

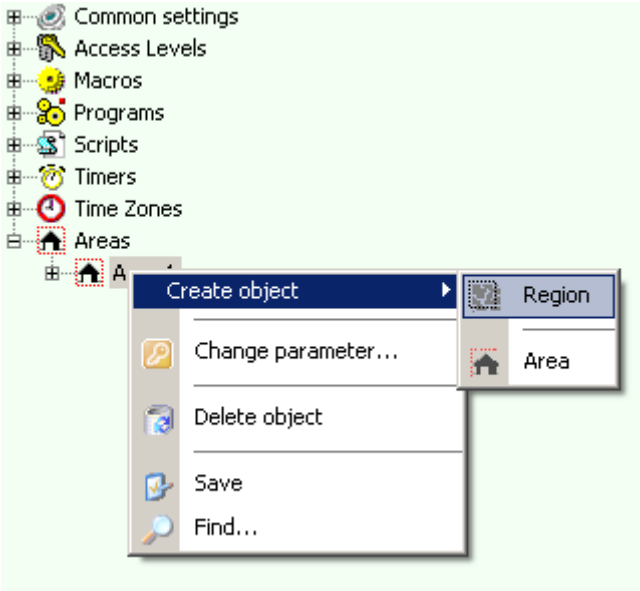


Figure 8.26-2 Context menu of the "Area" object

1.2. Type-in the number and name of the object in the corresponding fields (Figure 8.26-3, 1).

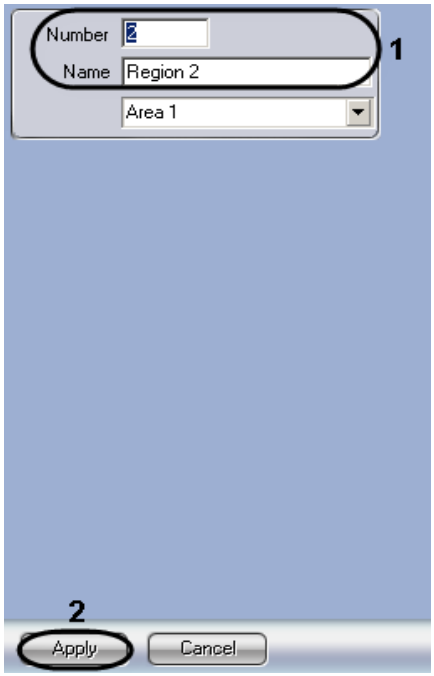


Figure 8.26-3 Number and name of the "Region" object

1.3.Click the "Apply" button (Figure 8.26-3, 2).

Note. As a result the settings panel for the "Region" object appears (Figure 8.26-4).

2. Configure the created "Region" object.

2.1. Type-in general description of the Region in the "Description" field (Figure 8.26-4, 1).

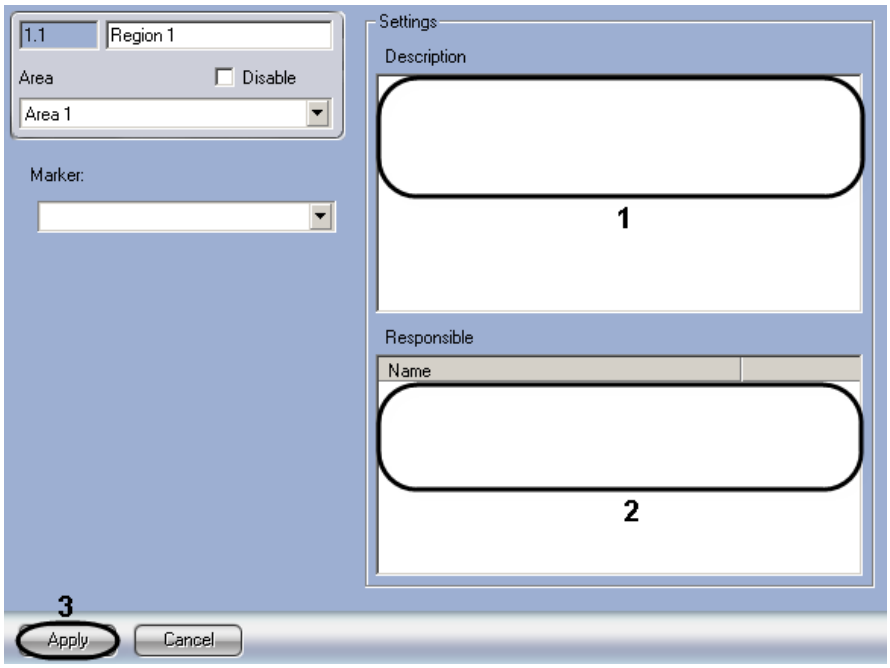


Figure 8.26-4 The settings panel of the "Region" object

2.2. In the "Name" list of the "Responsible" table select the user responsible for this region (Figure 8.26-4, 2).

Note. The "Name" list consists of the usernames registered in the system (see "User registration and removal" section).

2.3. To save the changes click the "Apply" button (Figure 8.26-4, 3).

3. Create links between the " Region" object and objects in the "Hardware" tab that are to be included into the Region. For this select the name of the created "Region" object on the settings panel of the object selected in the "Region" list (see "Examples of using areas and regions" section).

The Region is now created.

8.26.4 Creating rules of states transition

To create a rule of states transition, do the following:

1. Create a "Rule of states transition" object.

1.1. Select "Create object" => "Rule of states transition" in the context menu of the "Region" object (Figure 8.26-5).

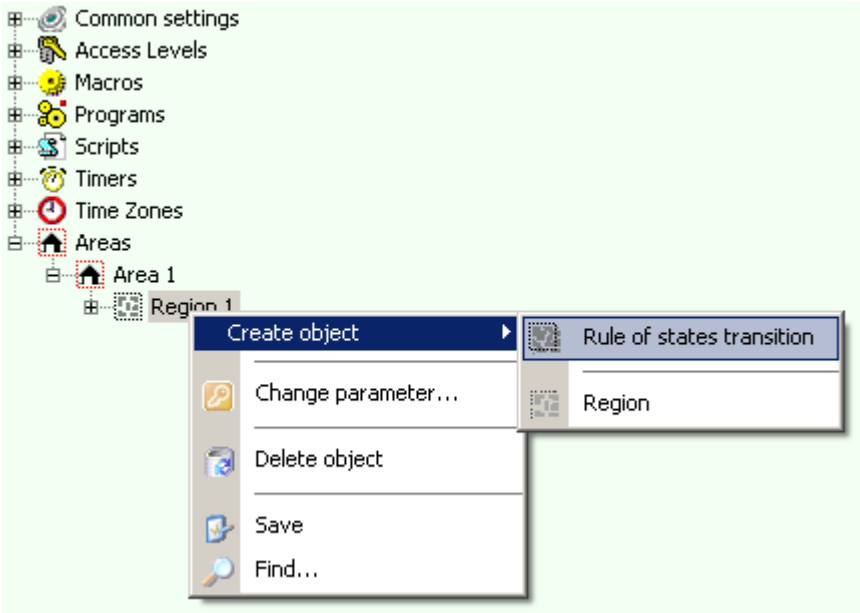


Figure 8.26-5 Context menu of the "Region" object

1.2. Type-in the number and name of the object in the corresponding fields (Figure 8.26-6, 1).

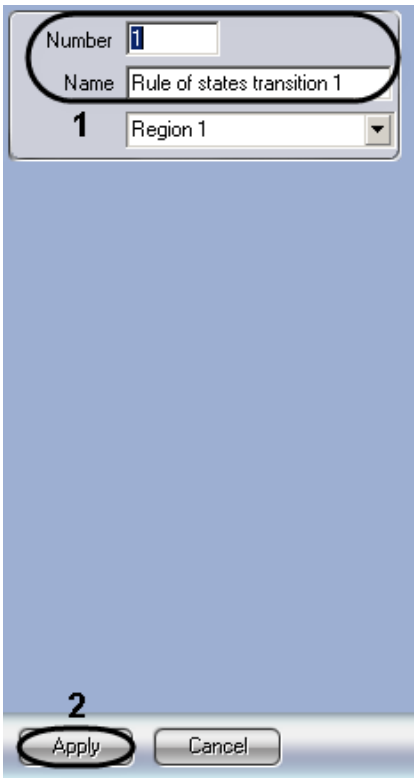


Figure 8.26-6 Number and name of the "Rule of states transition" object

1.3. Click the "Apply" button (Figure 8.26-6, 2).

Note. As a result the settings panel for the "Rule of states transition" object appears (Figure 8.26-7).

2. Set the condition of rule activation on the settings panel of the "Rule of states transition" object.

2.1. Select the object type in the “Type” list of the “Object’s states” table (Figure 8.26-7, 1) and in the “State” list (Figure 8.26-7, 2) specify the state of this object at which the Region state is to be changed.

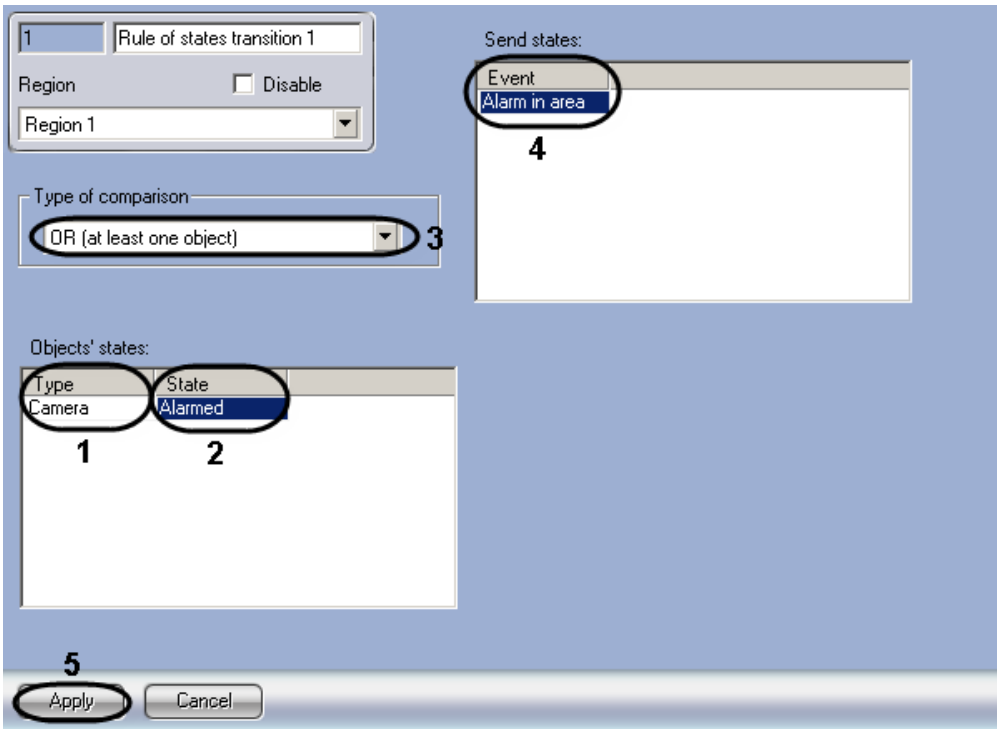


Figure 8.26-7 The settings panel of the “Rule of states transition” object

Note. Repeat step 2.1 for all required object types.

2.2. If the state of the “Region” is to be changed when all objects of types added to the “Object’s states” table are in these states, select the “AND (all objects)” value in the “Type of comparison” list (Figure 8.26-7, 3).
2.3. If the state of the “Region” is to be changed when at least one object of type added to the “Object’s states” table is in this state, select the “OR (at least one object)” value in the “Type of comparison” list (Figure 8.26-7, 3).
2.4. In the “Event” list of the “Send states:” table select the event generated by the “Region” object when the rule condition is met (Figure 8.26-7, 4).
2.5. To save the changes click the “Apply” button (Figure 8.26-7, 5).

The Rule of states transition is now created.

8.26.5 Examples of using areas and regions

Example 1. The regions created in the system are used to group the system objects, representing the devices by their location on the secure territory.

To include a device into a Region, select an appropriate region in the “Region” field of the settings panel of the corresponding object (Figure 8.26-8).

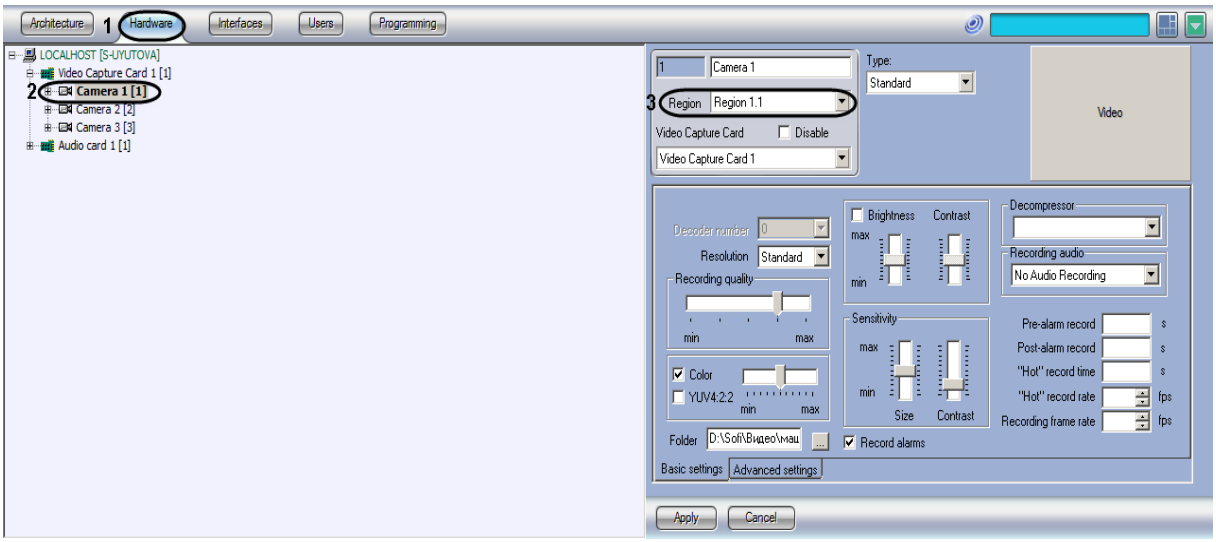


Figure 8.26-8 An example of using the “Region” object

Example 2. Arming all cameras included into Region 1 when Macro 2 is run. Parameters of macro (Macro 1) essential for this operation are given in Table 8.26-1.

Table 8.26-1 Macro 1 parameters

Event	Action	Parameters
Macro 2 is executed (Figure 8.26-9, 1)	The “Control objects” action of Region 1 is executed (Figure 8.26-9, 2)	Reaction type = «ARM» Object type = «CAM» (Figure 8.26-9, 3)

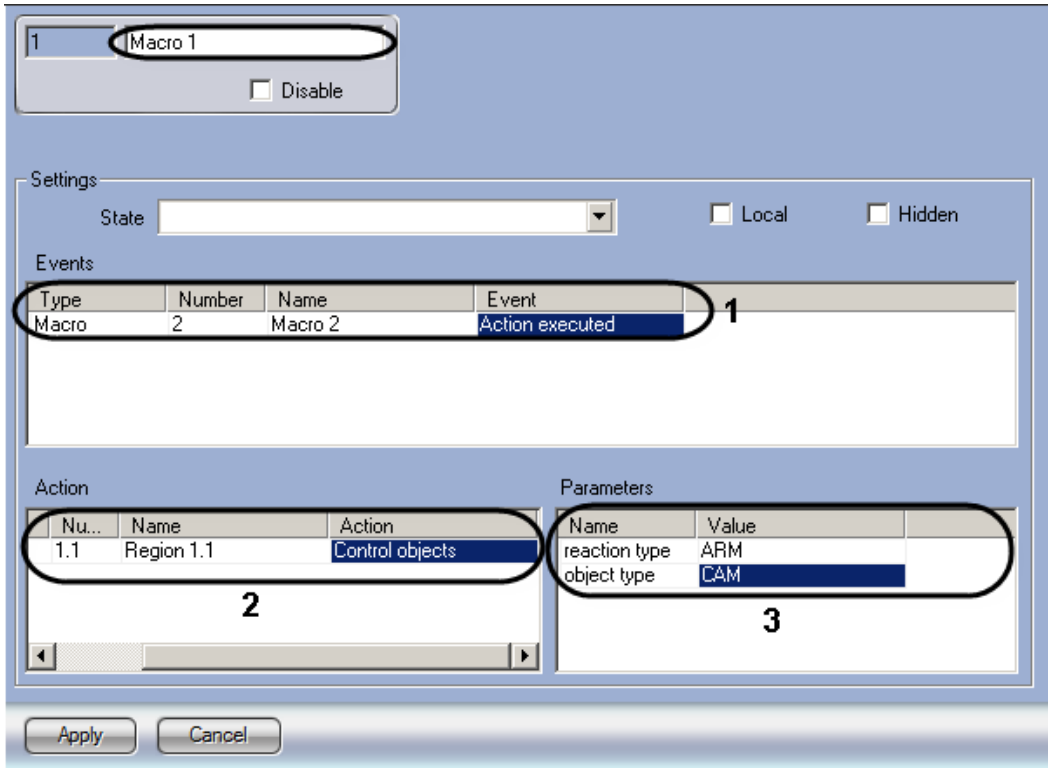


Figure 8.26-9 The setting panel for the "Macro 1" object

Example 3. INTELLECT™ allows displaying reports about devices grouped in Regions.

Figure 8.26-10 shows the "Event Viewer" object configuration to display a report on the "Alarm in area" event on any of the devices in Region 1.

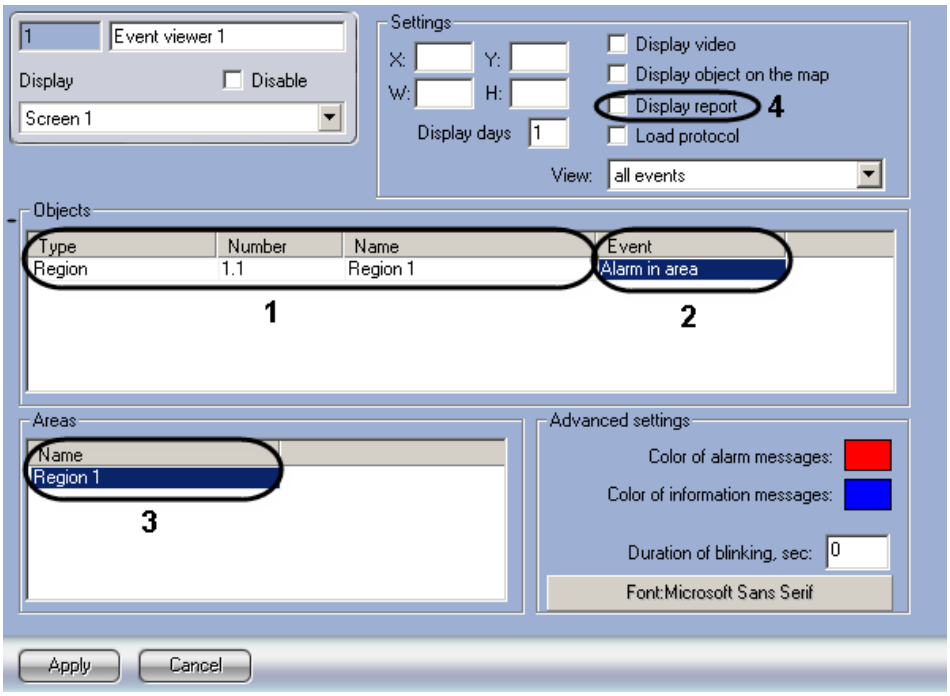


Figure 8.26-10 An example of the "Event Viewer" object set up for report generation

9 The Report System

9.1 General information

The Report system of the Intellect software package is designed for the following purposes:

1. Creating and printing the reports on the events registered in the surveillance system and on the actions taken in response to these events.

2. Viewing the video archive starting from the time of the event registered in the report.

The Report system supports the following functionality:

1. Selecting the objects (or groups of objects) from those available for reporting (objects include hardware and software modules).

2. Selecting the events to be included in the report for each object selected.

3. Creating the report templates.

4. Creating the screen reports.

5. Creating the printed reports.

6. Exporting the printed report to a file.

7. Viewing the video archive from the screen report using the surveillance window or converter.exe utility.

8. Handling the cameras of the ATM-Intellect system (automatic banking machine surveillance system) using the X.25 protocol.

9.2 Starting and shutting-down the Report system

9.2.1 Starting the Report system

The Report system can be started in the following ways:

1. Using the Windows Start button: Click the Start button, then select Programs, then Intellect, then Report system (Figure 9.2-1).

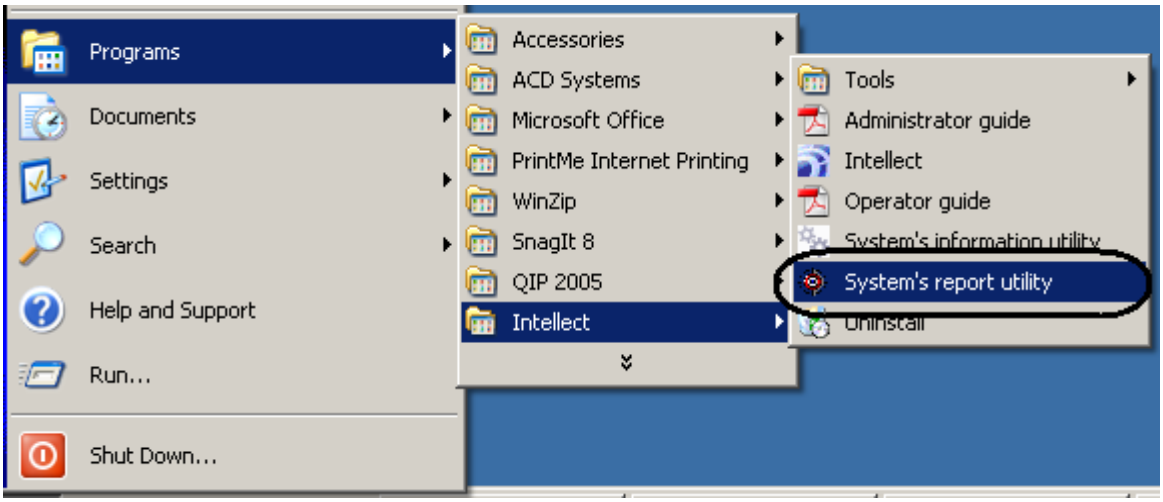


Figure 9.2-1. Starting the Report system using the Start button

2. Using the program folder of the Intellect software: open the Report folder in the program folder of the Intellect system, then double-click the report.exe file (Figure 9.2-2).

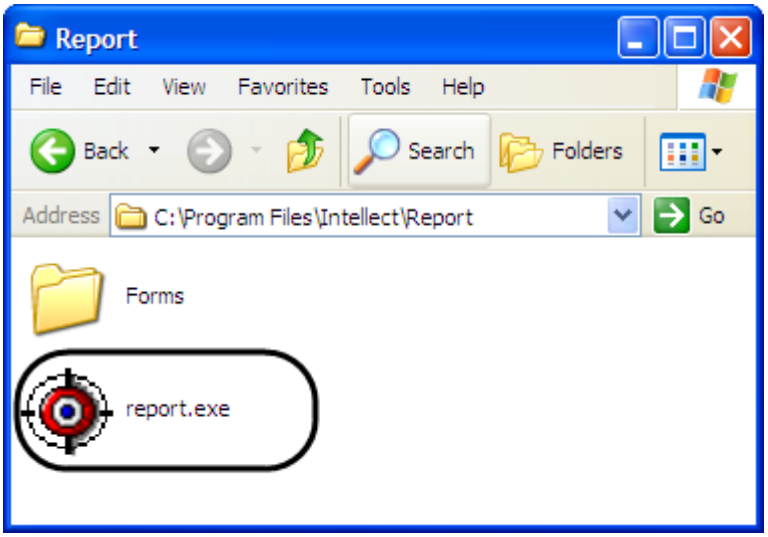


Figure 9.2-2. Starting the Report system from the Intellect program folder

The Report system will start.

The notification window will appear, indicating that the system configuration is being read from the database (Figure 9.2-3).

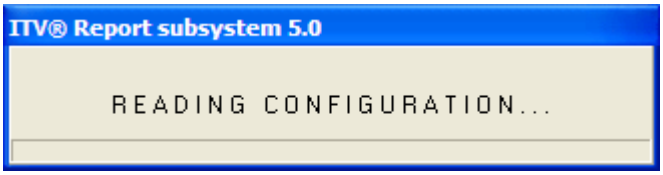


Figure 9.2-3. Starting up of the Report System

9.2.2 Shutting-down the Report system

The Report system is shut down using the standard Windows procedure for applications shutdown. Click the Shutdown button in the top right corner of the window (Figure 9.2-4).

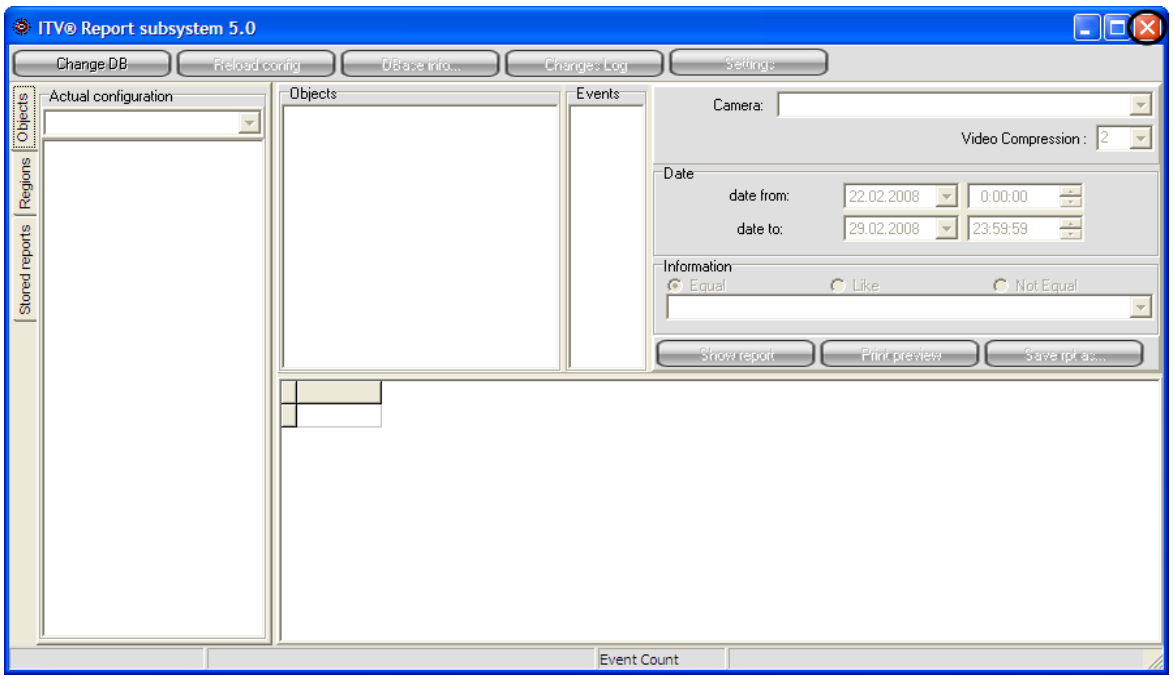


Figure 9.2-4. Shutting-down the Report system

The Report system window will shutdown.

9.3 The Report window

The Report system window contains the following sections: the main control panel, the report creation panel, and the report view panel.

Figure 9.3-1 shows an example of the Report window.

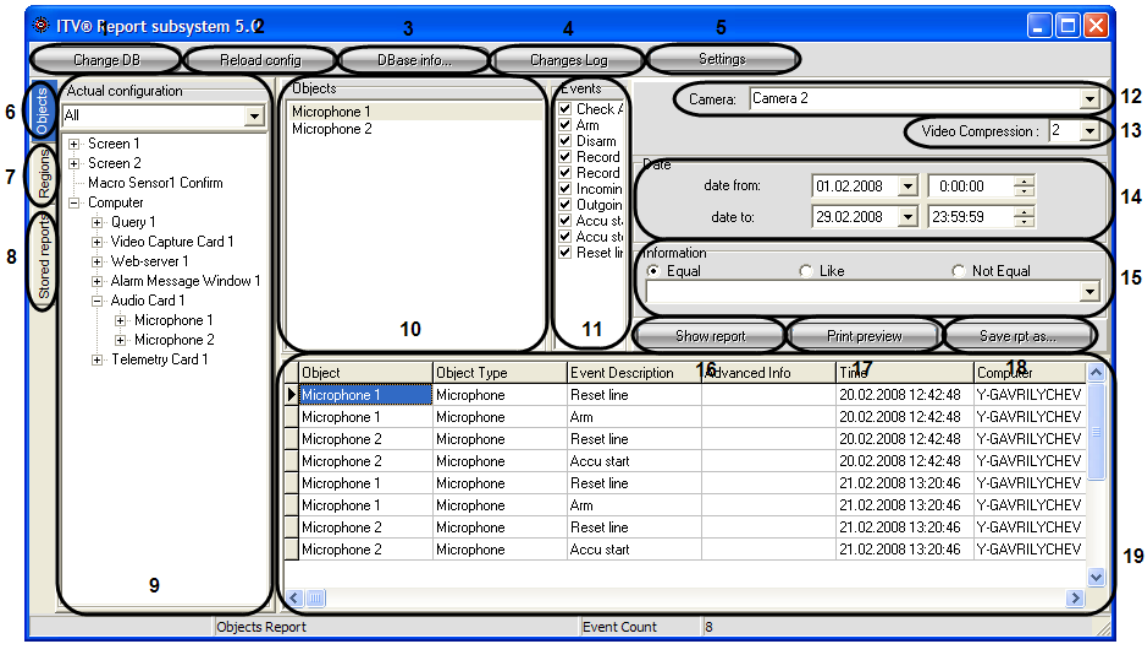


Figure 9.3-1. An example window of the Report system

The Report window includes the following interface elements (numbered according to the screenshot on Figure 9.3-1):

a. The Change DB button allows changing the current configuration database of the Intellect system.

b. The Reload Config button reloads the system configuration and registered events from the current database.

c. The DBase Info button opens the Base Info window containing the following information about the events archive: the dates of the first and last registered event, the archive depth and the total number of events in the database.

d. The Changes Log button allows viewing the information on the changes made to the Intellect configuration.

e. The Settings button opens the OptionsForm window allowing to introduce new Events Log parameter settings.

f. The Object button opens the Actual Configuration tab allowing to select the objects to become the sources of the events to be included in the report.

g. The Regions button opens the Regions tab allowing to select the objects in the chosen region. The reports are then created on these objects.

h. The Shared Reports button opens the tab for selecting the existing report templates. A report template is a list of objects and events to be included in the report.

i. The Actual Configuration tab allows selecting the objects to become the sources of the events to be included in the reports.

This tab opens when the Objects button is clicked (Figure 9.3-2).

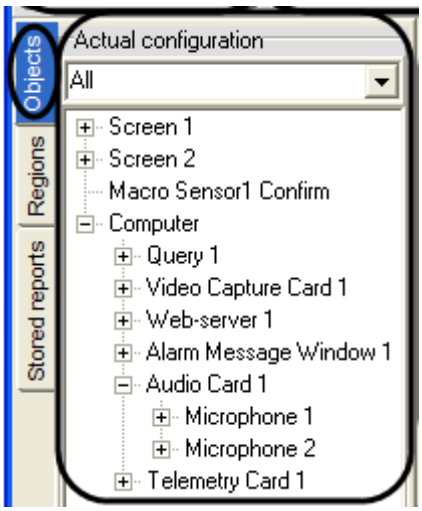


Figure 9.3-2. Actual Configuration tab

The Regions button opens the Regions tab allowing to select the objects in the chosen region. The reports are then created based on these objects (Figure 9.3-3).

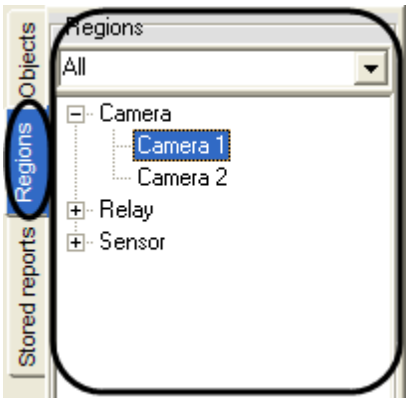


Figure 9.3-3. The Regions tab

The Shared Reports button opens the tab showing the list of all existing report templates. A report template is a list of objects and events to be included in the report (Figure 9.3-4).

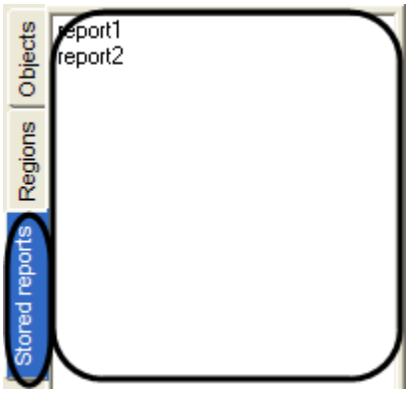


Figure 9.3-4. The list of report templates

j. The list of selected objects to create the reports for.

k. The list of available events for the object selected in step 10. Select the events to be included in the report. By default, all events of the chosen object are selected.

l. The Camera list allows selecting which camera's video recording will play on starting the playback for any event in the report. The list includes all cameras in the surveillance system.

m. The Video Compression list allows setting the compression level of the video played in the Report system.

n. The Date group allows specifying the time interval for the report.

o. The Information group allows setting the string criteria to be searched for in the Advanced Info column of the report (see p. 19). The Information field group contains the following fields:

a. Text field. Enter the character string to be searched for.

b. Equal radio-button. When selected, the system looks for exact case-sensitive matches only.

c. Like radio-button. When selected, the system looks for the rows where the Advanced Info column contains the search string, case-sensitive.

d. Not Equal radio-button. When selected, the system looks for the rows where the Advanced Info column does not match the search string, case-sensitive.

p. The Show Report button. Creates the screen form of the report (see the Creating and using the screen report section).

q. The Print Preview button. Creates the printed report (see the Creating and using the printed report section).

Note. If the screen report has not been created before the printed report is activated, the screen report is automatically created.

r. The Save Rpt As button. Saves the report template, i.e. the list of objects (see p. 10) and corresponding events (see p.11).

s. The screen report panel. Shows the screen report. The panel includes the following columns:

1. Object – the name of the object where the event occurred.
2. Object type – the type of the object where the event occurred.
3. Event Description – the name of the event registered by the system.
4. Advanced Info – additional information on the event.
5. Time – date and time when the event started.
6. Computer - the name of the computer that registered the event.

9.3.1 The OptionsForm window

The OptionsForm settings window allows specifying additional parameters for the Report system: archive viewing mode, database connection, etc. To open the OptionsForm window, click the Settings button in the Report window (see the Report Window section).

Figure 9.3-5 shows the OptionsForm window.

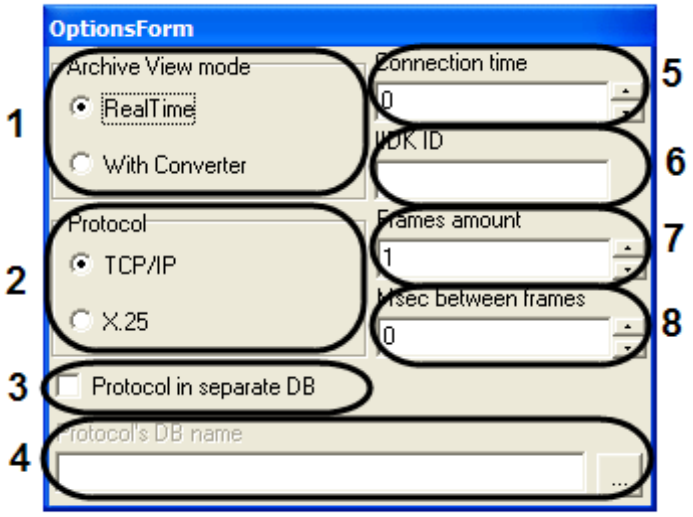


Figure 9.3-5. OptionsForm window

The OptionsForm window includes the following interface elements (numbered according to the screenshot in Figure 9.3-5):

a. Archive View Mode group allows selecting the mode of playing the recordings from the video archive in the Report system:

a. The RealTime radio-button activates the playback via the viewing window of the Intellect system.

Note. This option is available if the Intellect software is currently running on the server where the archive is stored.

b. The With Converter radio-button activates the playback via the Converter.exe program.

b. The Protocol group allows to select the data exchange protocol for the connection with the videoserver:

1. TCP/IP protocol;
2. X.25 protocol .

NOTE. This protocol is used in the ATM-Intellect system (banking machine surveillance system).

c. The Protocol in Separate DB checkbox allows connecting a separate event database.

NOTE. This checkbox should be checked if the table with the registered events (the PROTOCOL table) is stored in a separate database outside of the Intellect system.

d. The Protocol's DB Name field allows to select the name of the database.

To select the database, click the "...” button. The Data Link Properties window will open. Specify the database type, its pathname and access parameters (similar to changing the current database of the Report system).

NOTE. This field is enabled if the Protocol In Separate DB checkbox is checked.

e. The Connection Time field sets the waiting time for the connection with the videoserver.

f. The IIDK_ID field sets the id of the IIDK Interface object in the system settings. This object is used to receive the video feed from surveillance cameras of the ATM-Intellect system via the X.25 protocol.

g. The Frames Amount field sets the total number of frames requested from the videoserver when working via the X.25 protocol.

h. The Msec Between Frames field sets the time delay between the frames received from the banking machine archive. This parameter helps decrease the traffic in the communications channels working via the X.25 protocol.

9.4 Connecting to databases

The Report system can be connected to another database of the Intellect system. It can also be connected to the events database, if such database exists.

9.4.1 Connecting to the main database of the Intellect system

By default, the Report system loads the data from the main database of the Intellect system on the local computer. However, the database used by the Report system can be changed.

To change the main database used in the Report system, click the Change DB button in the Report window (Figure 9.4-1).

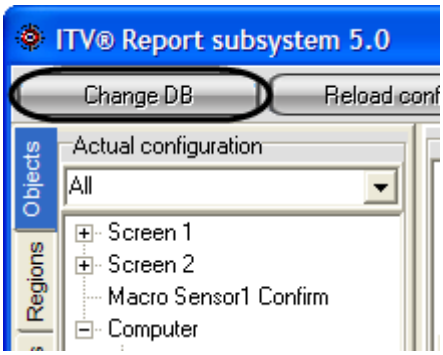


Figure 9.4-1. The Change DB button allowing to connect to the Intellect database

The Data Link Properties window will open allowing to select the name and access parameters of the database to connect to (Figure 9.4-2).

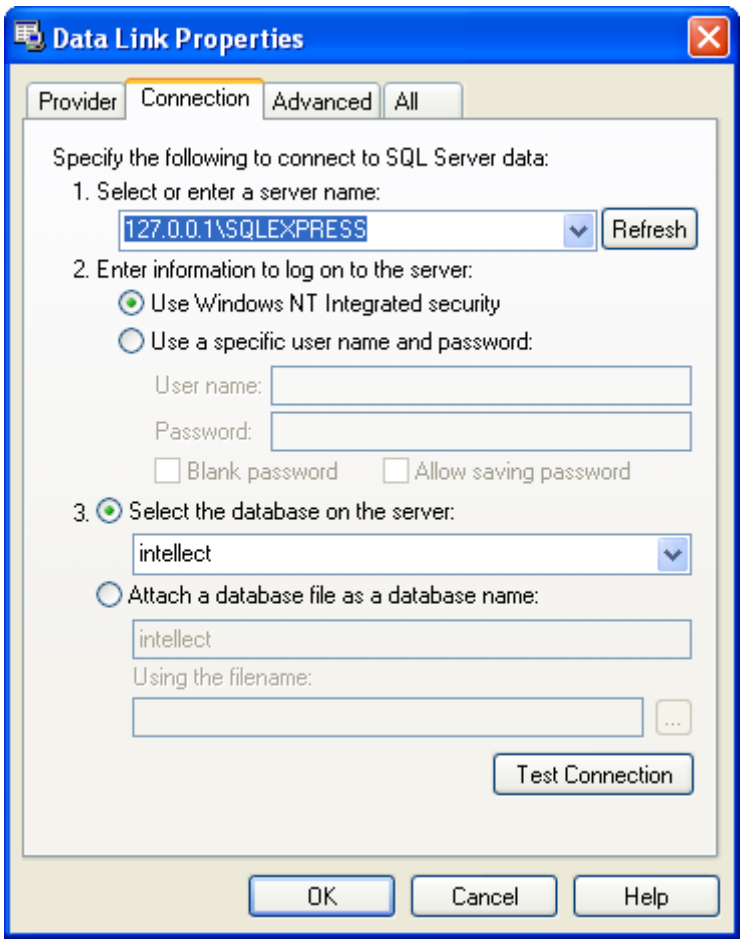


Figure 9.4-2. The Data Link Properties window

The Intellect system uses two types of database: SQL and Access. The connection procedure for each database type is described below.

9.4.1.1 *Selecting an Access database and setting up the connection*

This section describes the connection to an Access database as the main Intellect database.

To connect to an Access database, open the Data Link Properties window. To set the main database in the Access format, do the following:

a. Select the Microsoft Jet 4.0 OLE DB Provider line in the Provider tab and click the Next button or move to the Connection tab (Figure 9.4-3).

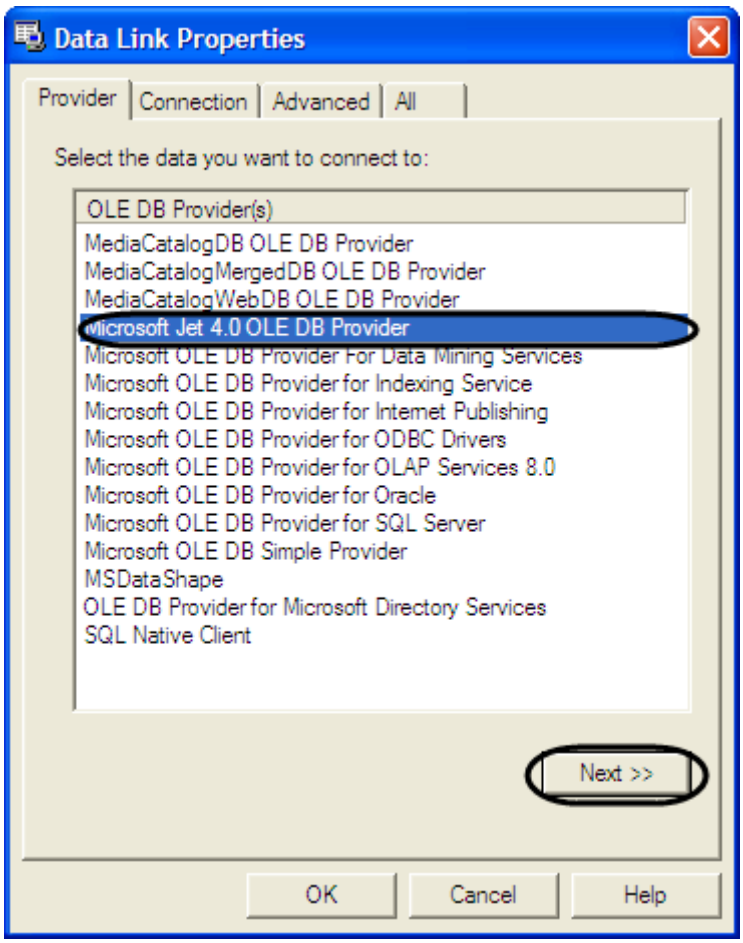


Figure 9.4-3. Selecting the Microsoft Jet 4.0 OLE DB Provider option

b. Select or enter the pathname of the database file in the Select or Enter a Database Name field of the Connection tab. To enter the pathname, do one of the following:

a. manually enter the pathname (Figure 9.4-4);

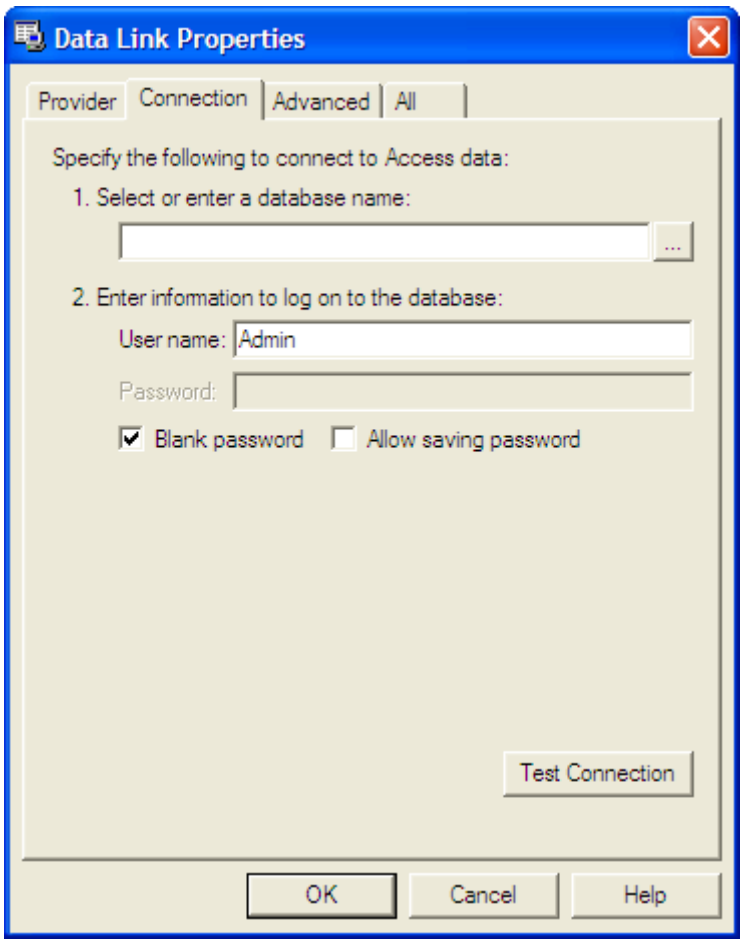


Figure 9.4-4. Selecting the pathname of the main database file

b. Click the "…" button to open the standard dialog box for file selection (Figure 9.4-5).

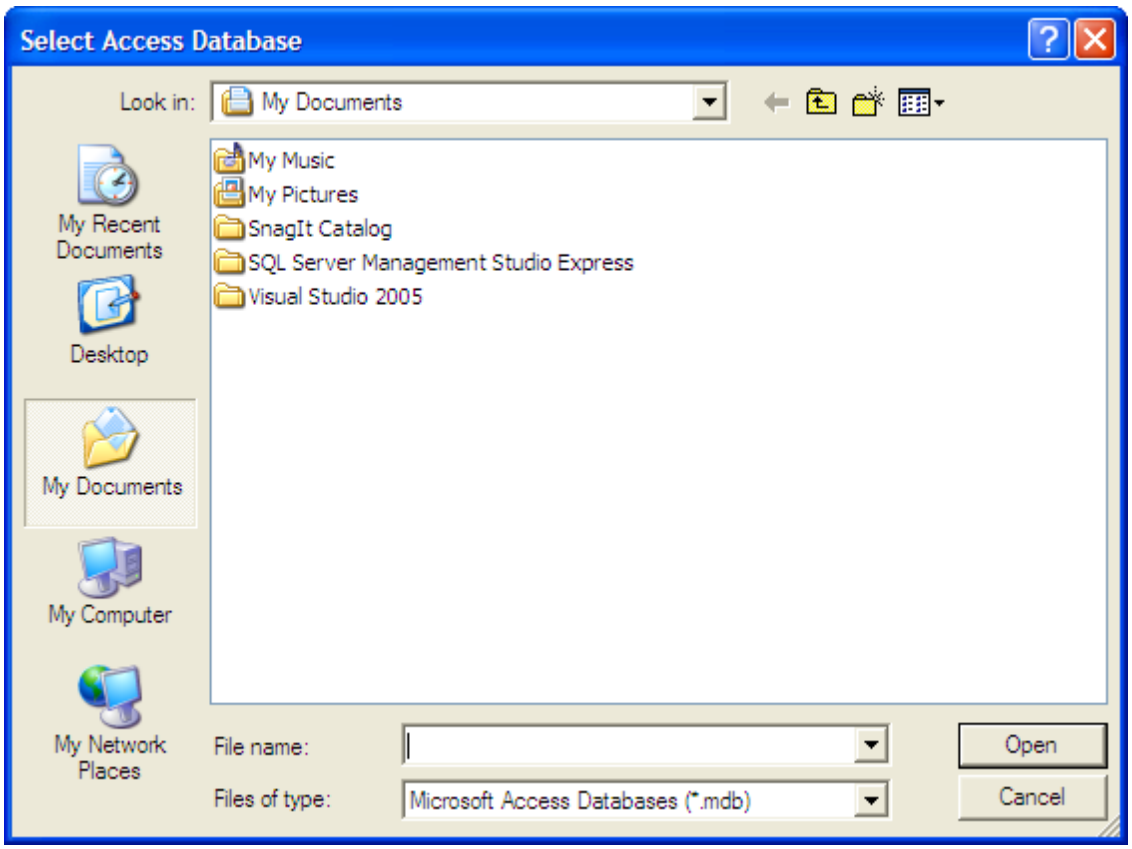


Figure 9.4-5. Selecting the database file in the file selection dialog box

c. To connect to the main Access database located on the remote computer, the pathname should have the following format:

1. \\<IP address (or name) of the computer⇨\\Intellect\Data\intellect.mdb (Figure 9.4-6).

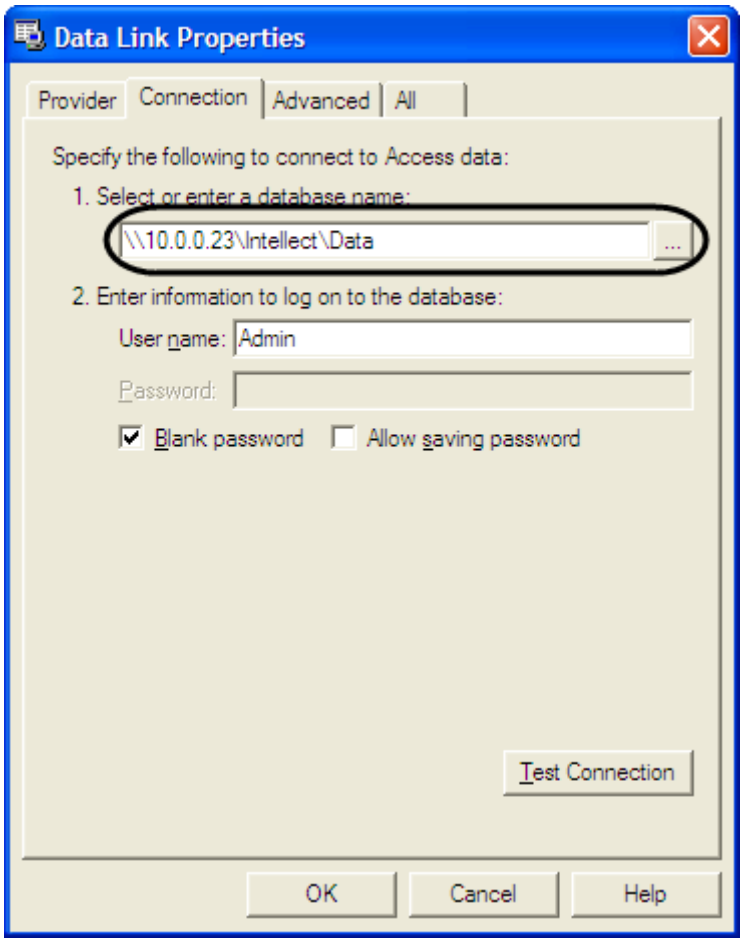


Figure 9.4-6. Connecting to an Access database on a remote computer

d. Test the connection to the database. To do this, click the Test Connection button (Figure 9.4-7).

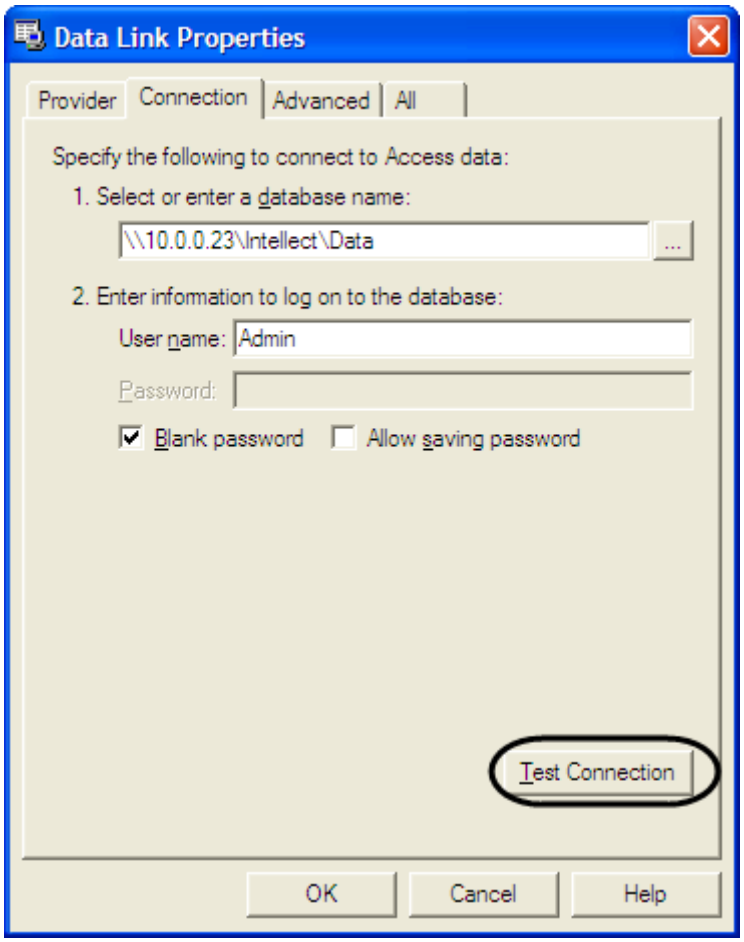


Figure 9.4-7. Testing the connection to the Access database

e. The information box with the text “Test connection succeeded” will appear in case of successful connection (Figure 9.4-8).

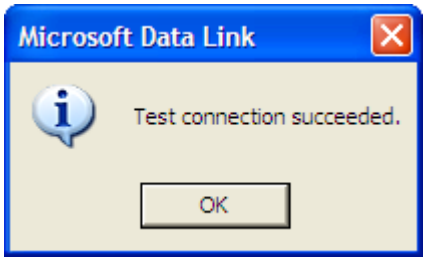


Figure 9.4-8. Test connection succeeded

f. An information box with the error description will appear in case of a connection error.

Example: If an invalid database address has been supplied, the following warning will open:

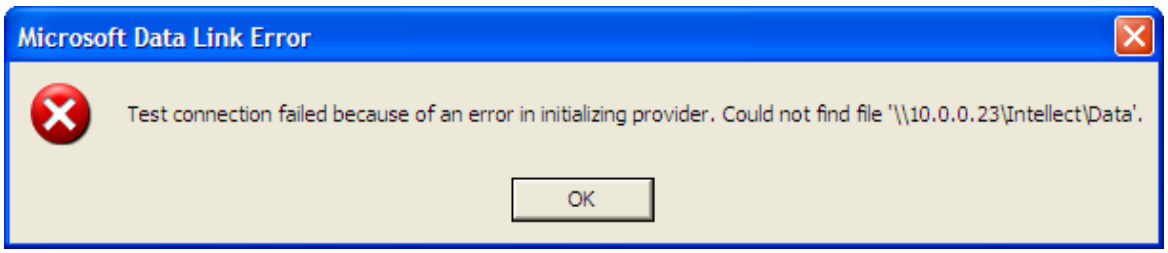


Figure 9.4-9. Database connection error due to invalid address

NOTE. In case of connection error, check the connection parameters in the Provider and Connection tabs.

g. In case of a successful test, confirm the database change by clicking the OK button (Figure 9.4-10).

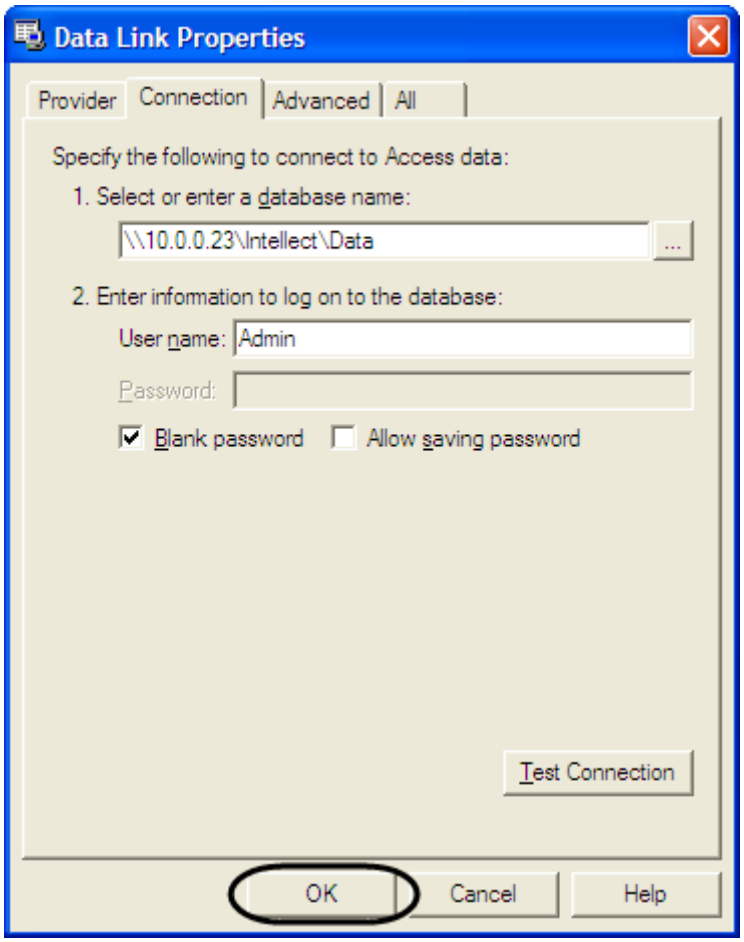


Figure 9.4-10. Confirming the changes

This completes the selection of the main database in Access format. The information from the selected database is now loaded into the Report system.

9.4.1.2 *Selecting an SQL database and setting up its parameters*

This section describes the connection to a Microsoft SQL database as the main Intellect database.

To connect a Microsoft SQL database, open the Data Link Properties window. To set the main database in Microsoft SQL format, do the following:

a. Select the Microsoft OLE DB Provider for SQL Server line in the Provider tab and click the Next button or move to the Connection tab (Figure 9.4-11).

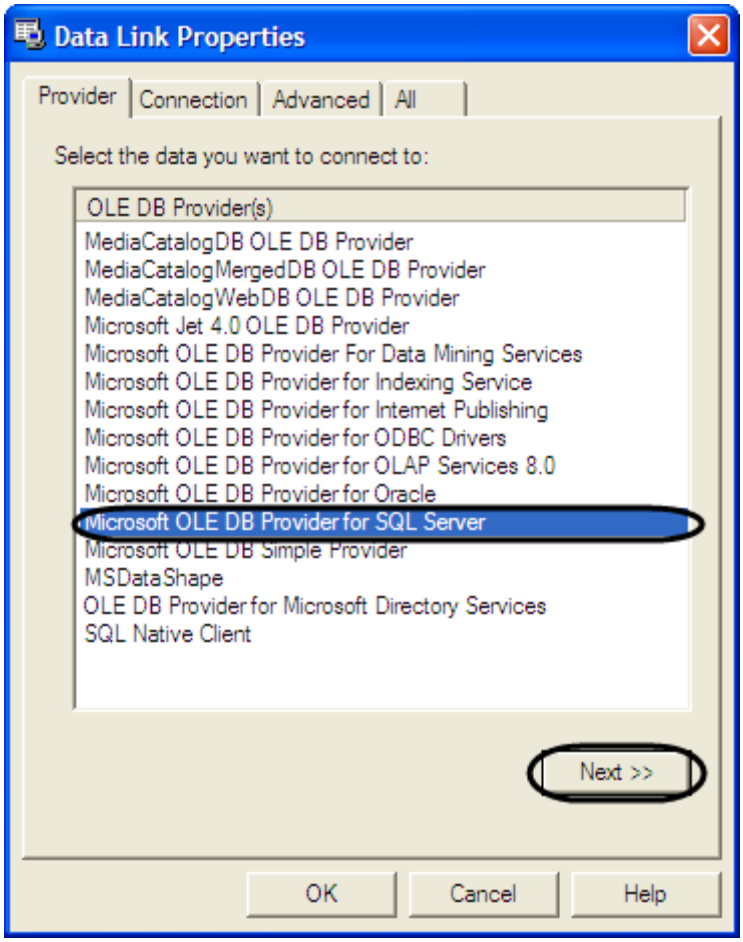


Figure 9.4-11. Selecting the Microsoft OLE DB Provider for SQL Server option

b. Specify the name of the database SQL server in the Connection tab. This can be done using the Select or Enter a Server Name field (Figure 9.4-12).

To enter the SQL server name, do one of the following:

a. manually enter the name of the SQL server of the main Intellect database in the Select or Enter a Server Name field (Figure 9.4-12).

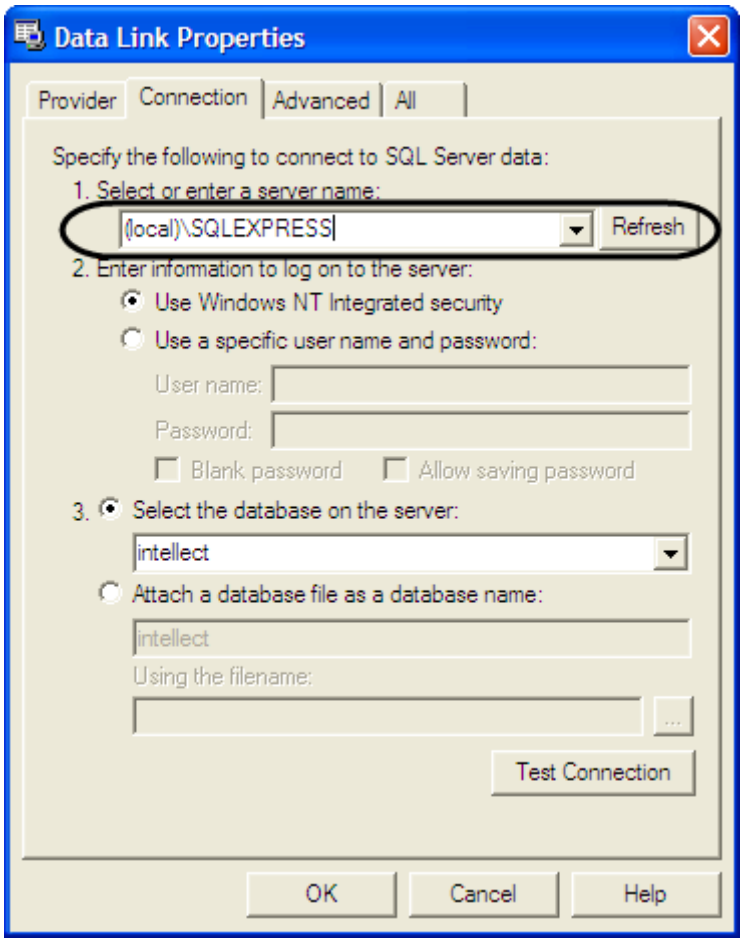


Figure 9.4-12. Entering the name of the SQL server

b. select the SQL server in the drop-down list of all available SQL servers. The list opens by clicking the button (Figure 9.4-13).

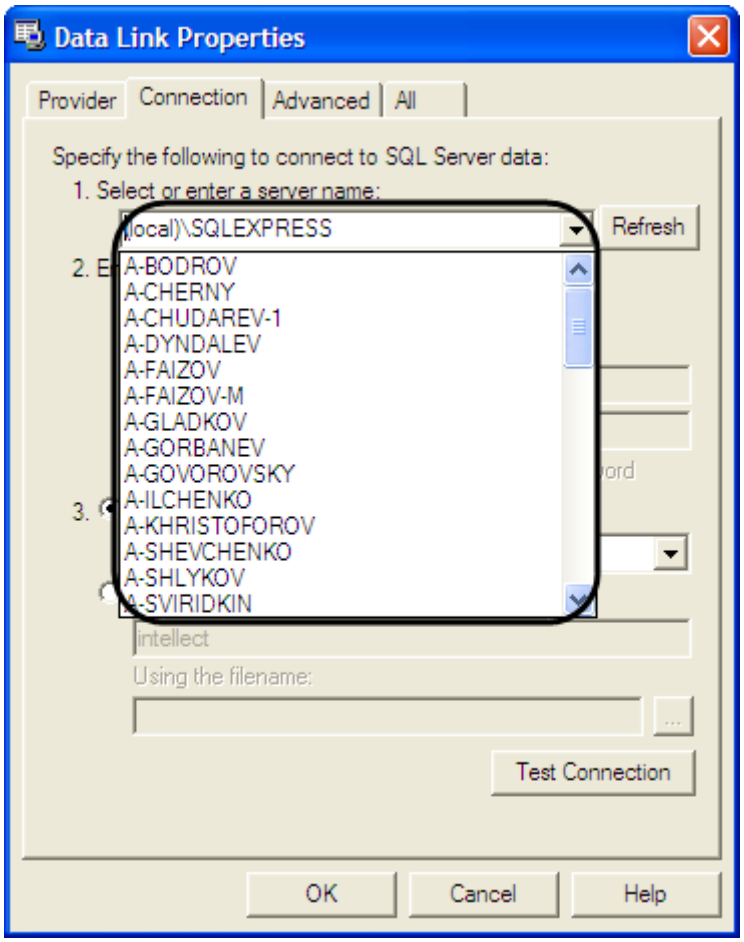


Figure 9.4-13. Selecting the SQL server from the list of available servers

NOTE 1. By default, the local server is selected named <local>\SQLEXPRESS.

NOTE 2. To refresh the list of available servers, click the Refresh button next to the list field.

c. Specify the authorization parameters for logging onto the SQL server. The following options are available (Figure 9.4-14):

The Use Windows NT Integrated Security radio-button. The Windows login information is used for authorization on the SQL server.

NOTE. Used mostly to connect to the local SQL server.

1. The Use Specific User name and Password radio-button. The specific user name and password are used to connect to the SQL server.

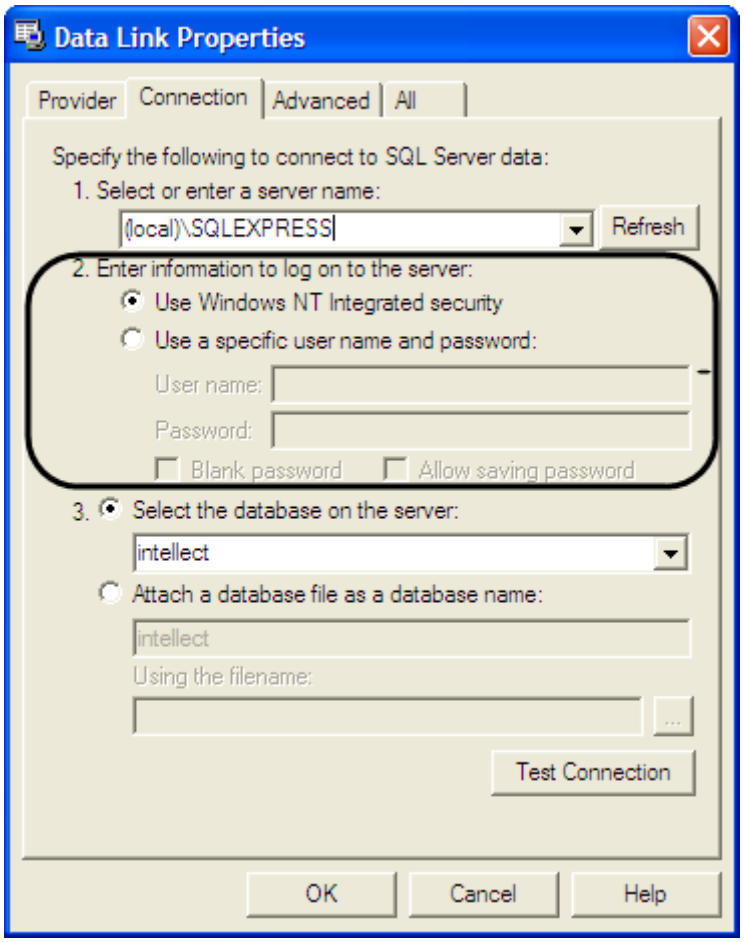


Figure 9.4-14. Selecting the SQL server authorization parameters

2. When the Use Specific User name and Password radio-button is selected, enter the information into the following fields: User Name and Password.

NOTE. By default, the following information is set up during Intellect software installation: user name "sa", password "axxonsoft" (see the Intellect Software Installation section).

Note. By default while installing the Intellect complex, the user(login) «sa» and one of the following passwords(see. Installing the Intellect complex) are set for authorization on SQL server

1. *AxxonSoft - when installed on OS Windows XP;*
2. *Administrator password SQL Server (is registered while installing SQL Server) – when installed on OS Windows Server 2003, Windows Vista, Windows Server 2008.*

When the Use Specific User name and Password radio-button is selected, the Blank Password and Allow Saving Password checkboxes become enabled (Figure 9.4-15).

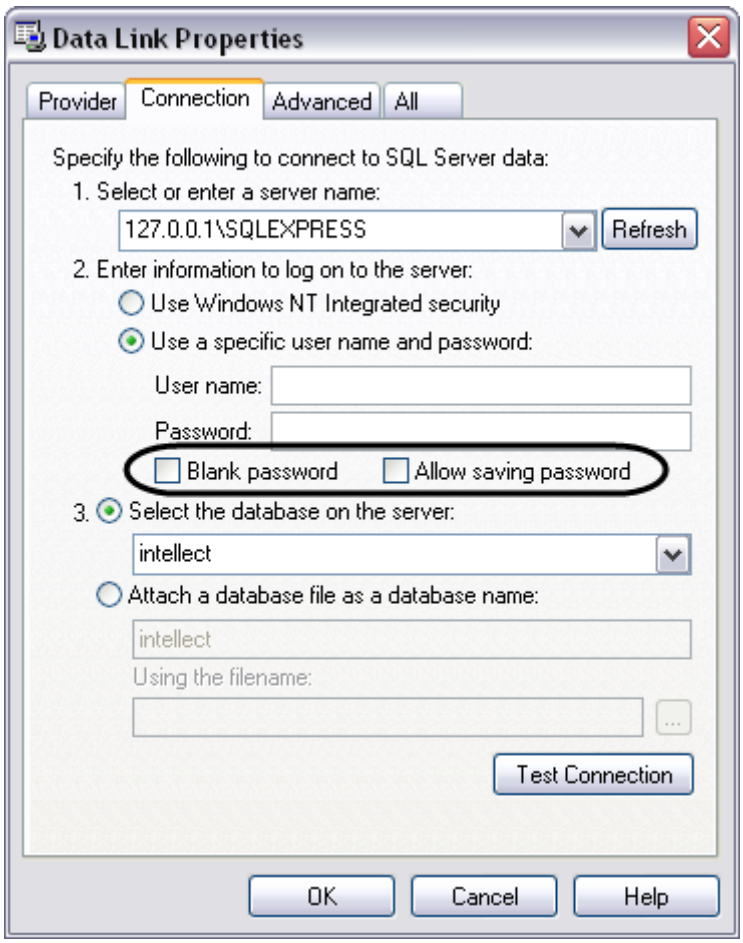


Figure 9.4-15. Selecting the SQL server authorization parameters

The Blank Password checkbox allows to enable connection to the SQL server with no password.

The Allow Saving Password button saves the password for the next connection to the SQL server.

d. Select the database to be used as main in the Select the Database on the Server drop-down list. To open the list of available databases on the SQL server, click the button (Figure 9.4-16).

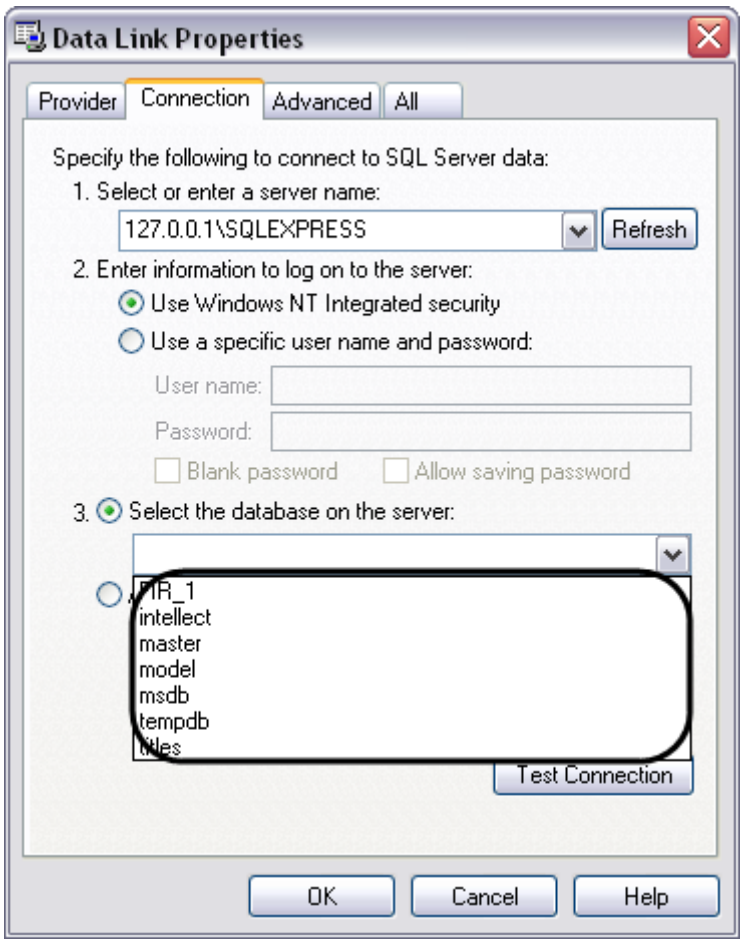


Figure 9.4-16. Selecting the database on the SQL server

NOTE. If necessary, the name of the database to connect to can be entered in the Attach Database File as Database Name field, or in the Using the Filename field (Figure 9.4-17).

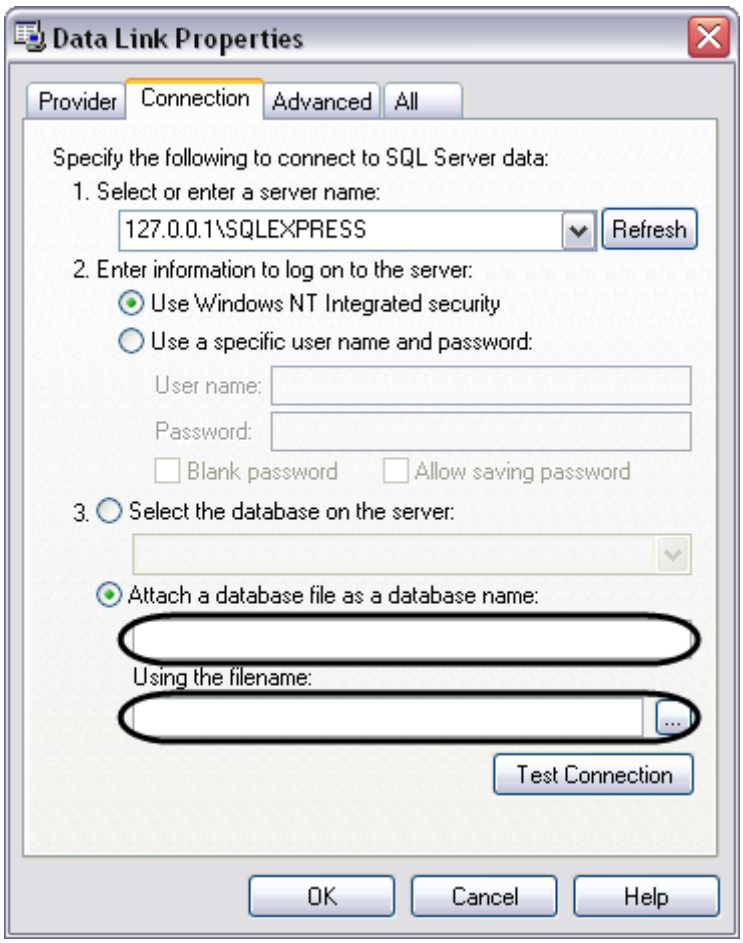


Figure 9.4-17. Additional ways of database selection

e. Test the connection to the SQL server by clicking the Test Connection button (Figure 9.4-18).

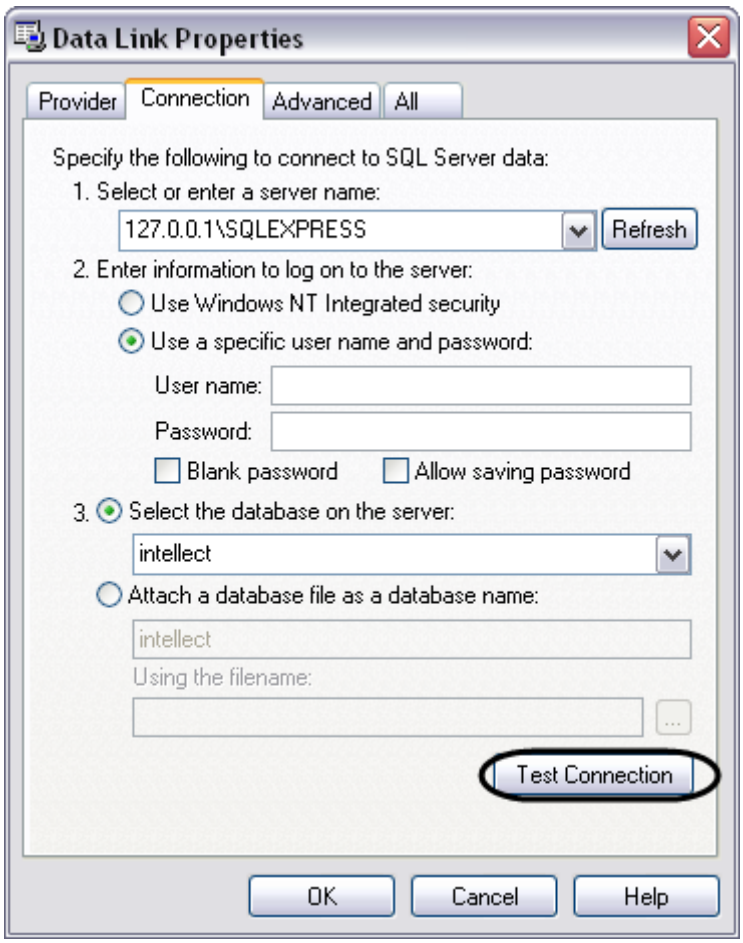


Figure 9.4-18. Testing the connection to the database on the SQL server

The information box showing the message "Test connection succeeded" will appear in case of successful connection (Figure 9.4-19).

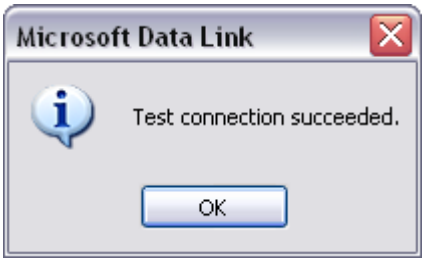


Figure 9.4-19. Test connection succeeded

An information box with the error description will appear in case of connection error.

NOTE. In case of connection errors, check the connection parameters in the Provider and Connection tabs.

f. In case of a successful test, confirm the database change by clicking the OK button (Figure 9.4-20).

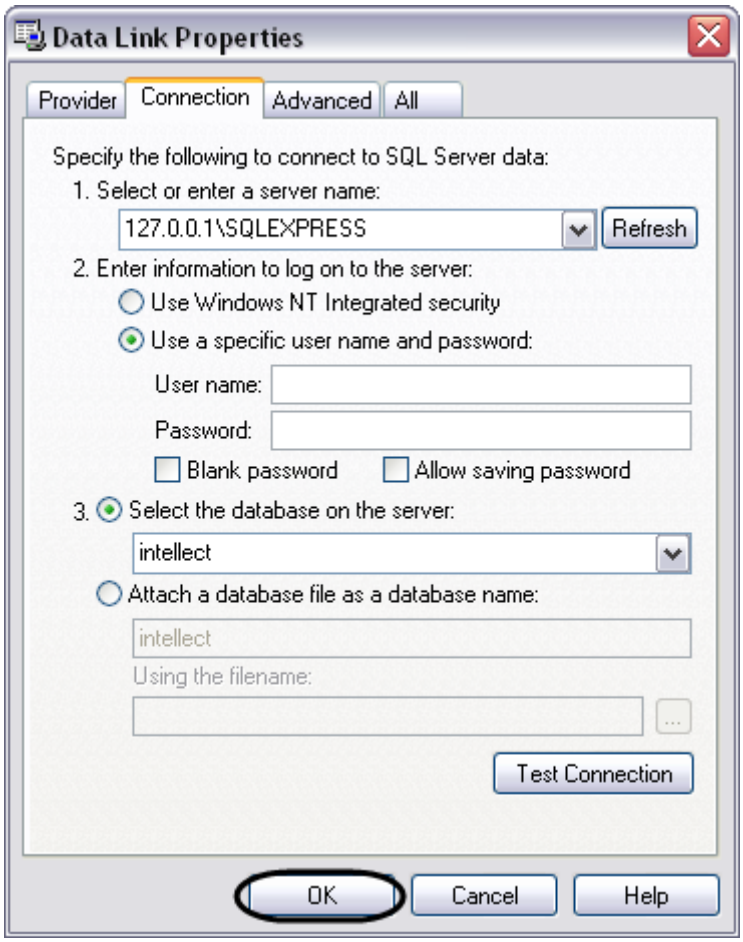


Figure 9.4-20. Confirming the changes

This completes the selection of the main database in Microsoft SQL format. The information from the selected database is now loaded into the Report system.

9.4.2 Connecting to the Events Log (PROTOCOL table)

By default, the information on registered events is stored in the PROTOCOL table in the main database. However, there is an option to set up the events to be logged into a separate events database, that is, the PROTOCOL table to be separate from the main database. The creation of the separate events database is described in the corresponding sections.

To connect the events database to the Report system, do the following:

1. Click the Settings button in the main Report system window to open the OptionsForm window (Figure 9.4-21).

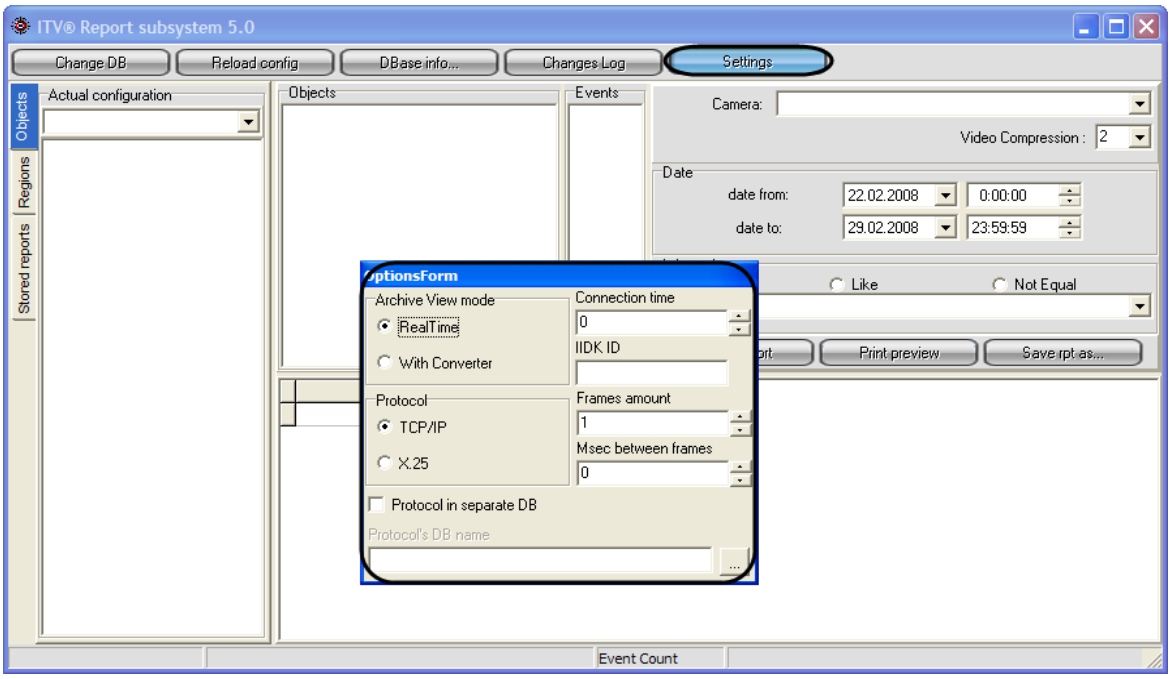


Figure 9.4-21. Opening the OptionsForm window

2. Check the Protocol in Separate DB checkbox to enable connection to a separate event database.

Specify the name of the database in the Protocol's DB Name field.

3. To select the events database, click the button (Figure 9.4-22). The Data Link Properties window will open. Specify the type of events database, its pathname and access parameters (similar to changing the main database of the Report system).

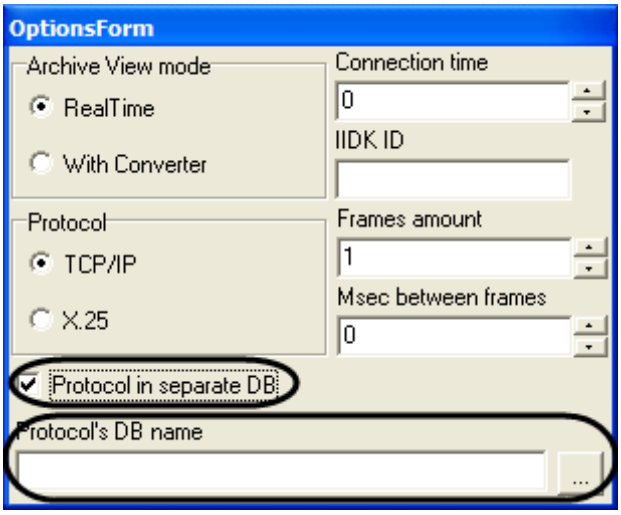


Figure 9.4-22. Selecting the events database

4. Press the Escape key on the keyboard to close the OptionsForm window.

This completes the selection of the events database in the Report system. The information from the selected database is now loaded into the Report system.

9.5 Manual loading of the configuration and registered events from the database

The system configuration and registered events are loaded from the database into the Report system in the following cases: Report system start-up, connection to the database, changing the database.

The configuration and events database can be loaded manually, as well. To reload the configuration and events database, click the Reload Config button on the main control panel of the Report window (Figure 9.5-1).

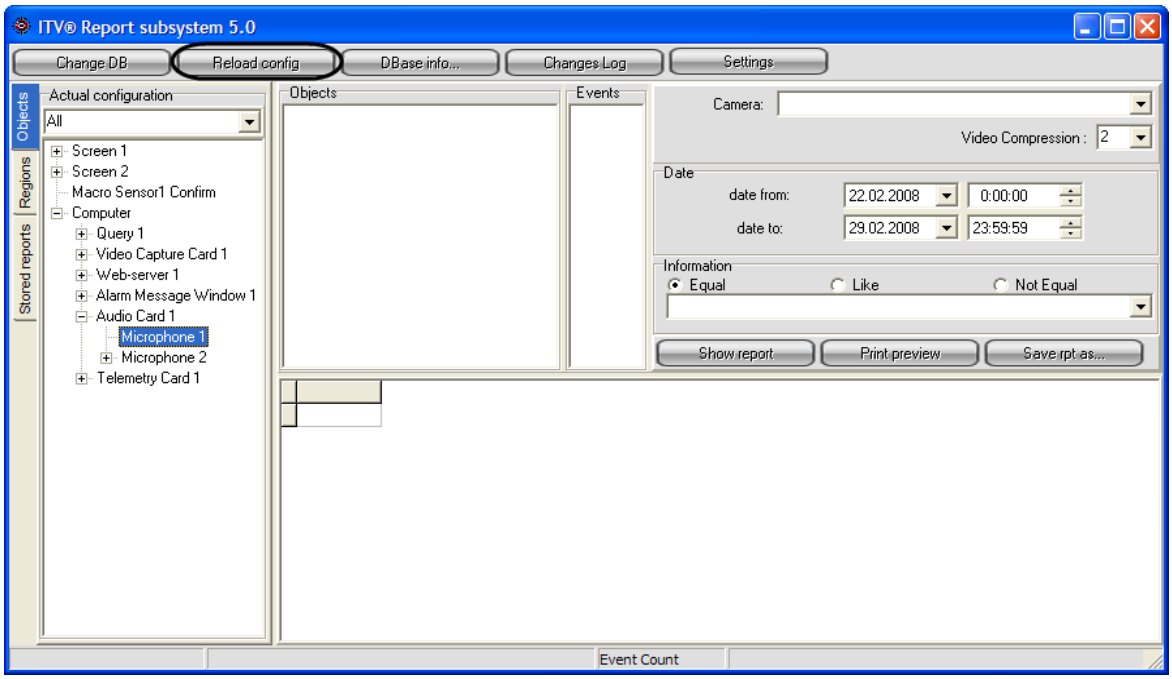


Figure 9.5-1. The Reload Config button reloads the configuration and events data

The objects tree, the regions list, the report templates list, and the registered events list will be refreshed according to the new system configuration.

9.6 Viewing the general information on the events in the database

To view the general information on the events stored in the current database, click the DBase Info button on the main control panel (Figure 9.6-1).

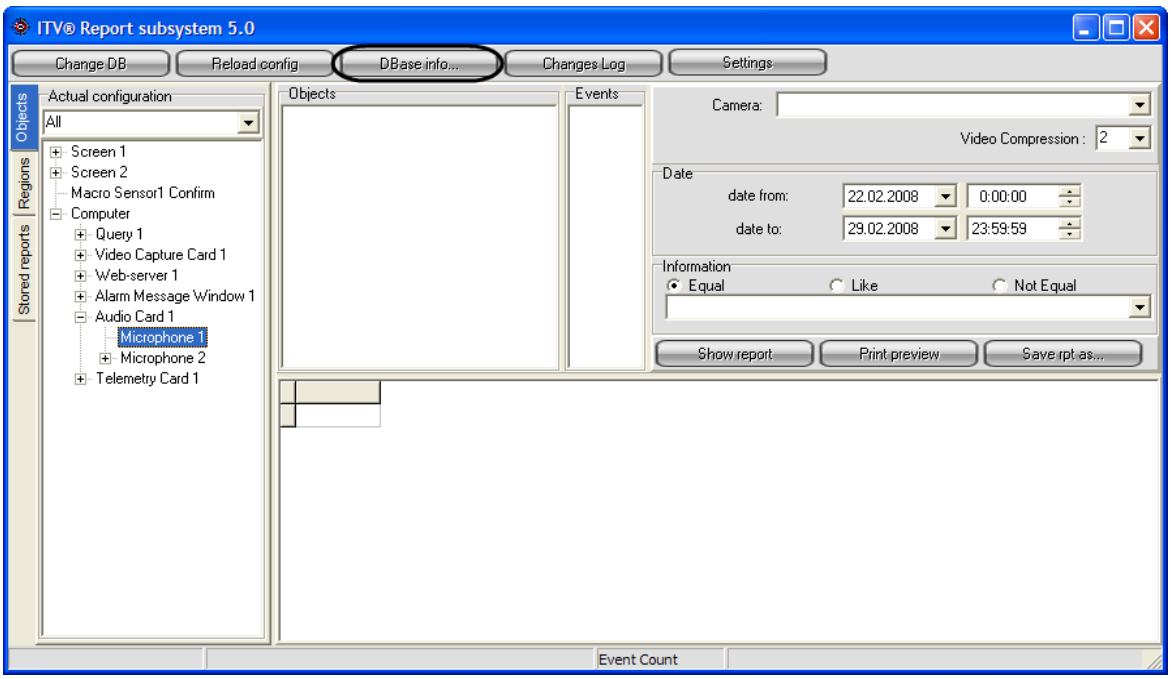


Figure 9.6-1. The DBase Info button

The Base Info information box will open showing the general information about the database (Figure 9.6-2).

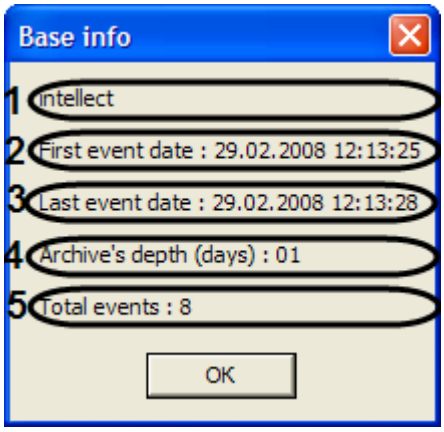


Figure 9.6-2. The Base Info window

The following information is displayed:

a. The name of the current database.

b. The date of the first registered event in the current database.

c. The date of the last registered event in the current database.

d. The number of days between the first and the last event.

e. Total number of events in the database.

9.7 Creating the log of changes made to the system configuration

The Report system allows viewing the log of all changes made to the system configuration.

To view the configuration changes, click the “Changes Log” button on the main control panel (Figure 9.7-1).

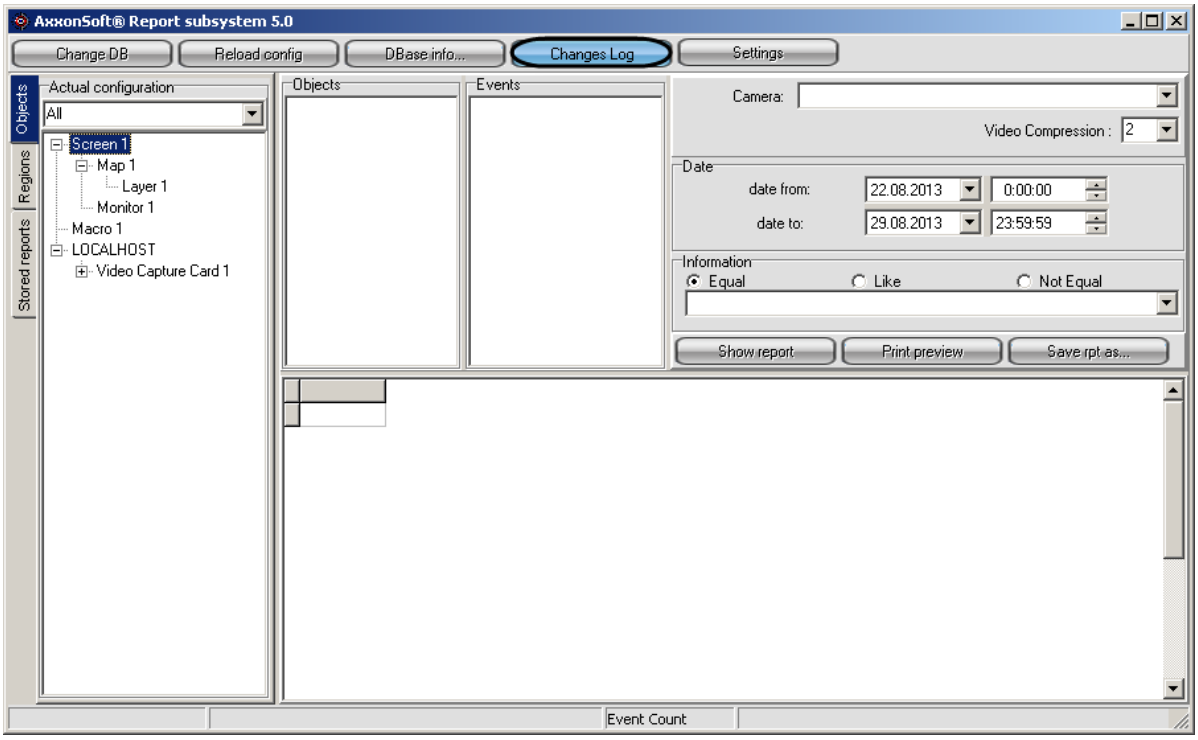


Figure 9.7-1 The “Changes Log” button

The screen report section of the window will show the list of changes made to the system configuration (Figure 9.7-2).

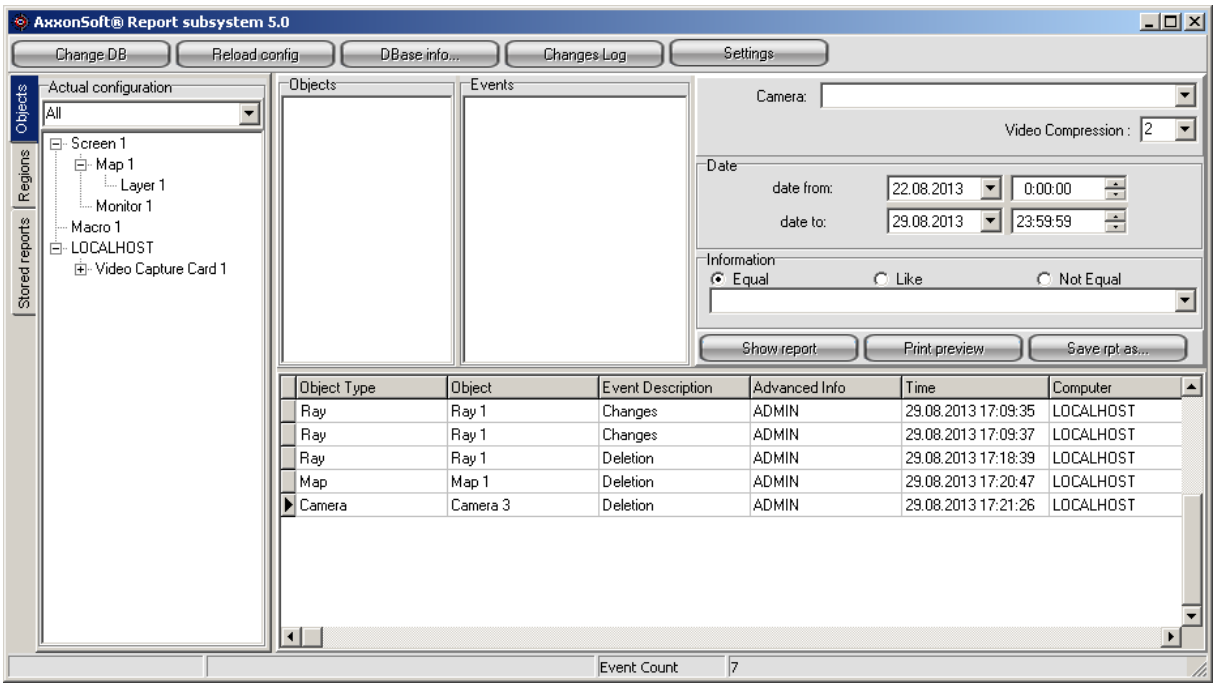


Figure 9.7-2 Viewing the changes log

The changes log includes the following columns:

1. Object Type —the type of the object that has been changed.
2. Object — the name of the object that has been changed.
3. Event Description — the type of the change made to the object.
4. Advanced Info — additional information on the change.
5. Time — date and time of change.
6. Computer — the name of the computer where the change has been made.

9.8 Using the report templates in the Report system

The report templates can be created in the Report system. The templates help automate the process of creating the screen and printed reports for a selected list of objects for particular time periods.

A report template comprises of a list of objects and events related to these objects. When the template is created, the list of objects and events is formed. To create a particular screen or printed report based on this template, only the time interval should be specified.

9.8.1 Recommendations for template creation

We do not recommend including too many objects in a template. If the template includes too many objects, the request on all events related to these objects, will take a very long time to execute, or will fail.

We recommend creating smaller templates that group the objects according to different regions of the guarded area.

We do not recommend including more than 200 objects in one template.

9.8.2 Creating a report template

To create a report template, the object list should be formed. This can be done using the Objects and Regions tabs, and the Objects panel. The list of events for each object can be formed using the Events panel.

The Figure 9.8-1 shows the stages of template creation.

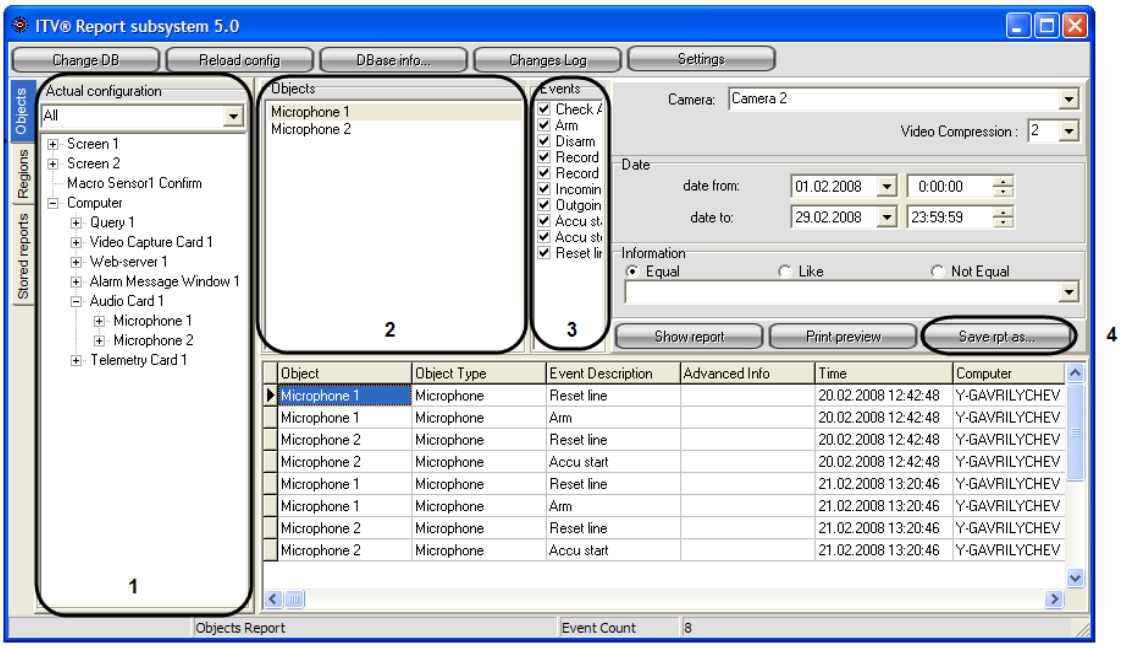


Figure 9.8-1. Creating the report template

To create the template, do the following:

a. Click the Objects tab, then choose the complete objects tree or just one object type (ex., Camera) in the Actual Configuration drop-down list.

To select objects in regions, click the Regions tab and choose the required region type in the Regions drop-down list.

b. Place the required objects into the Objects panel. Select an object in the objects tree (Actual Configuration panel of the Objects tab or Regions panel of the Regions tab) and do one of the following:

1. double-click the object;
2. select the object and press Enter on the keyboard;
3. drag the object to the Objects panel.

NOTE. Only the objects with their own events can be placed onto the Object panel and thus included in the report. For example, the Sound Card object does not have any events of its own, so it cannot be included in the report template.

To remove the object from the report list, select the object in the Objects panel and press Delete on the keyboard.

c. Select the events in the Events panel, to be included in the report for each object in the Objects panel.

By default, all events for selected objects are included. To remove particular events from the report, select an object in the Object panel and uncheck the checkboxes next to the events in the Events panel, which should not be included in the report template.

To simplify editing of the events list for similar objects, a common list can be created for a group of objects. Select a group of objects in the Objects panel and edit the list of events. This list will relate to each of the selected objects (Figure 9.8-2).

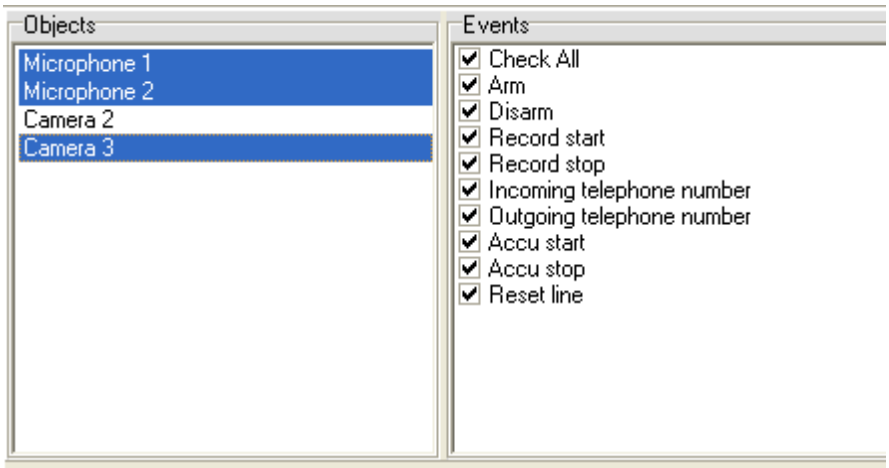


Figure 9.8-2. Common events list for a group of objects

NOTE. If no events are selected in the Events panel for an object, then ALL events for this object will be included in the report.

d. Click the Save Rpt As button. The Please Input Report Name dialog box will appear, allowing to specify the name of the report template (Figure 9.8-3).

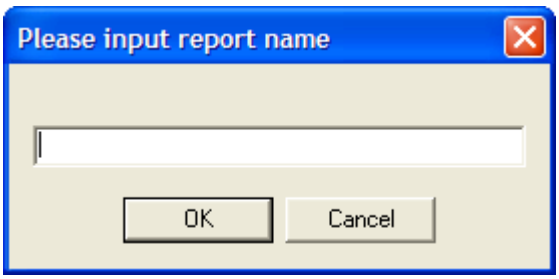


Figure 9.8-3. Report name dialog box

Type in the template name and click OK.

This completes the creation of the report template.

The template will appear in the objects tree of the Shared Reports tab. To view the template, use the Objects and Events panels. These panels are populated automatically upon template selection in the Shared Reports objects tree. These panels allow editing the events list and removing the objects from the list. The changes will be saved in the template (Figure 9.8-4).

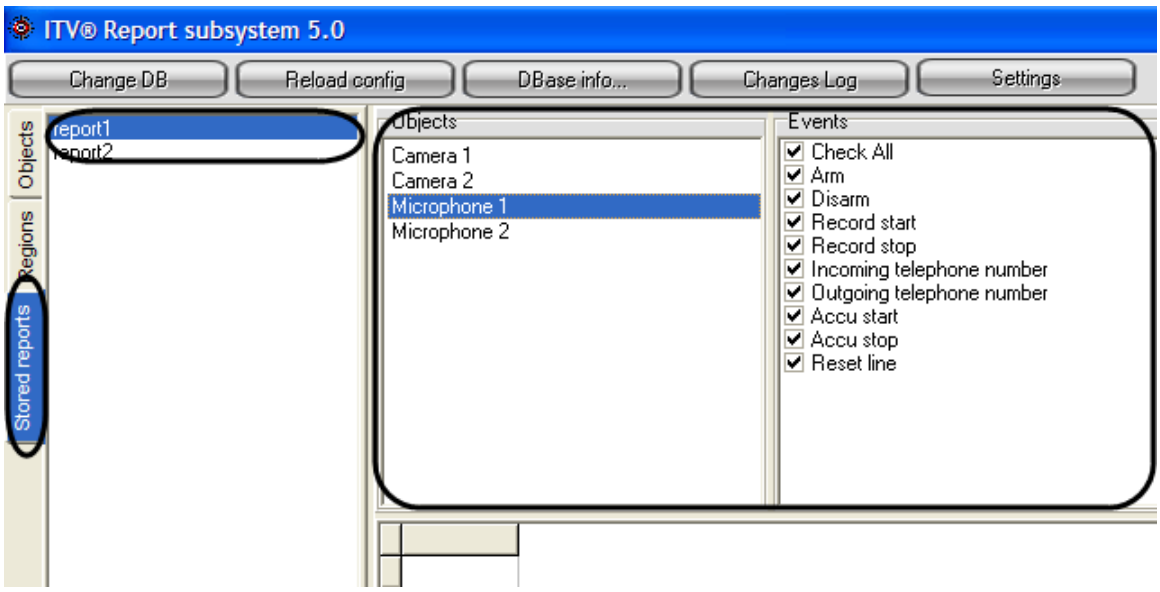


Figure 9.8-4. The Shared Reports tab

9.8.3 Deleting the report templates

To delete the template, do the following:

1. Open the Shared Reports tab;
2. Select the template to be deleted;
3. Press Ctrl+Delete on the keyboard;
4. Click Yes in the confirmation dialog box (Figure 9.8-5).

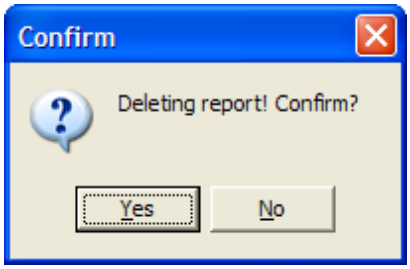


Figure 9.8-5. Template deletion confirmation dialog box

This completes deletion of the report template.

9.9 Using screen and printed reports

The screen and printed reports can be created in the Report system.

A screen or printed report is a table showing the dates of the registered events, the videoservers that generated the event, and other relevant information.

The screen report allows viewing the information on the objects and events in the Report window. The screen report allows playing the recordings from the videoserver for each of the records in the report. The video archive can be played from the screen report using the surveillance window or converter.exe utility.

NOTE. The playing of the recording in the surveillance window is possible if the Intellect software is running on the videoserver.

The printed report is used for printing the report or exporting it into one of the common file formats. When the printed report is created, all information about the selected objects and events is displayed in a separate window.

9.9.1 Creating a screen report

The screen report provides the means for convenient viewing of the registered events and playback of the video recordings from the videoserver archive.

Figure 9.9-1 shows the stages of the screen report creation.

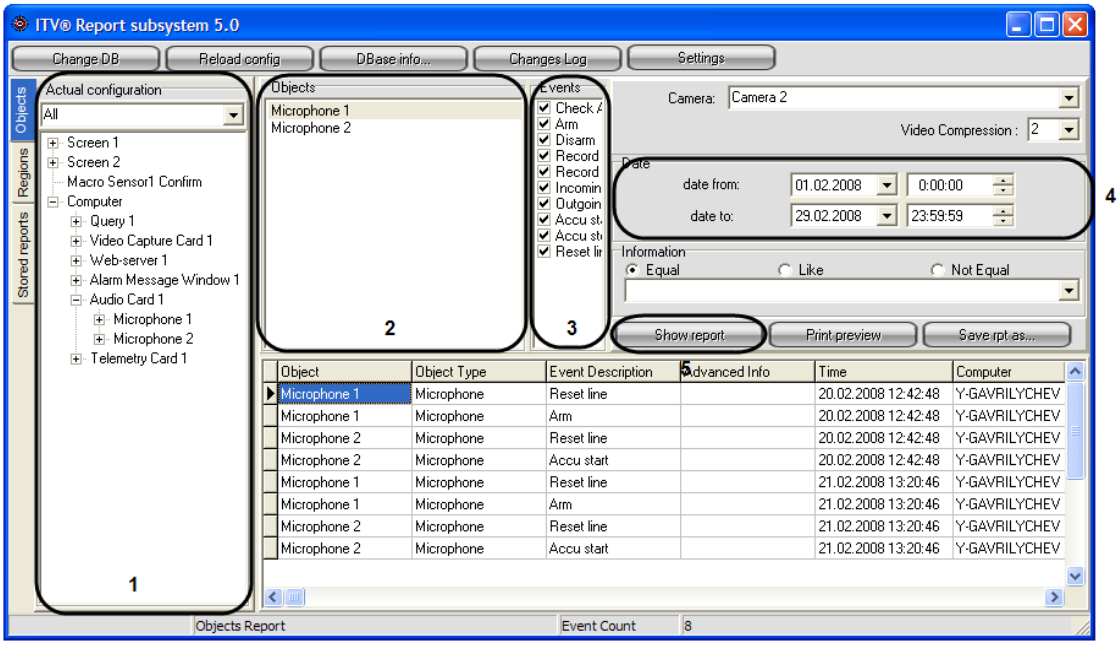


Figure 9.9-1. Creating the screen report

To create the screen report, do the following:

a. Click the Objects tab, then choose the complete objects tree or just one object type (ex., Camera) in the Actual Configuration drop-down list.

To select objects in regions, click the Regions tab and choose the required region type in the Regions drop-down list.

b. Place the required objects into the Objects panel. Select an object in the objects tree (Actual Configuration panel of the Objects tab or Regions panel of the Regions tab) and do one of the following:

1. double-click the object;
2. select the object and press Enter on the keyboard;
3. drag the object to the Objects panel.

NOTE. Only the objects with their own events can be placed onto the Object panel and thus included in the report. For example, the Sound Card object does not have any events of its own, so it cannot be included in the report template.

To remove the object from the report list, select the object in the Objects panel and press Delete on the keyboard.

c. Select the events in the Events panel, to be included in the report for each object in the Objects panel.

By default, all events for selected objects are included. To remove particular events from the report, select an object in the Object panel and uncheck the checkboxes next to the events in the Events panel, which should not be included in the report template.

To simplify the editing of the events list for similar objects, a common list can be created for a group of objects. Select a group of objects in the Objects panel and edit the list of events. This list will relate to each of the selected objects (Figure 9.9-2).

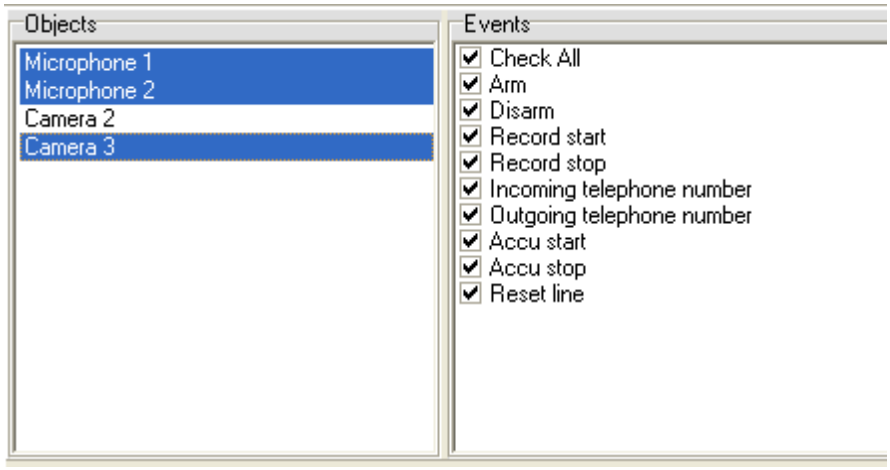


Figure 9.9-2. Common events list for a group of objects

NOTE. If no events are selected in the Events panel for an object, then ALL events for this object will be included in the report.

d. Specify the time period to create the report for, in the Date group of fields.

e. Click the Show Report button to create the screen report.

NOTE. Clicking the Show Report button is equivalent to pressing F5 on the keyboard.

This completes the creation of the screen report. The screen report will be displayed in the lower part of the Report window.

9.9.1.1 *Creating a screen report from the report template*

The report templates can be created in the Report system. The templates help automate the process of creating the screen and printed reports on a selected list of objects for particular time periods.

A report template comprises of a list of objects and events related to these objects. When the template is created, a list of objects and events is formed. To create a particular screen or printed report based on this template, only the time period should be specified.

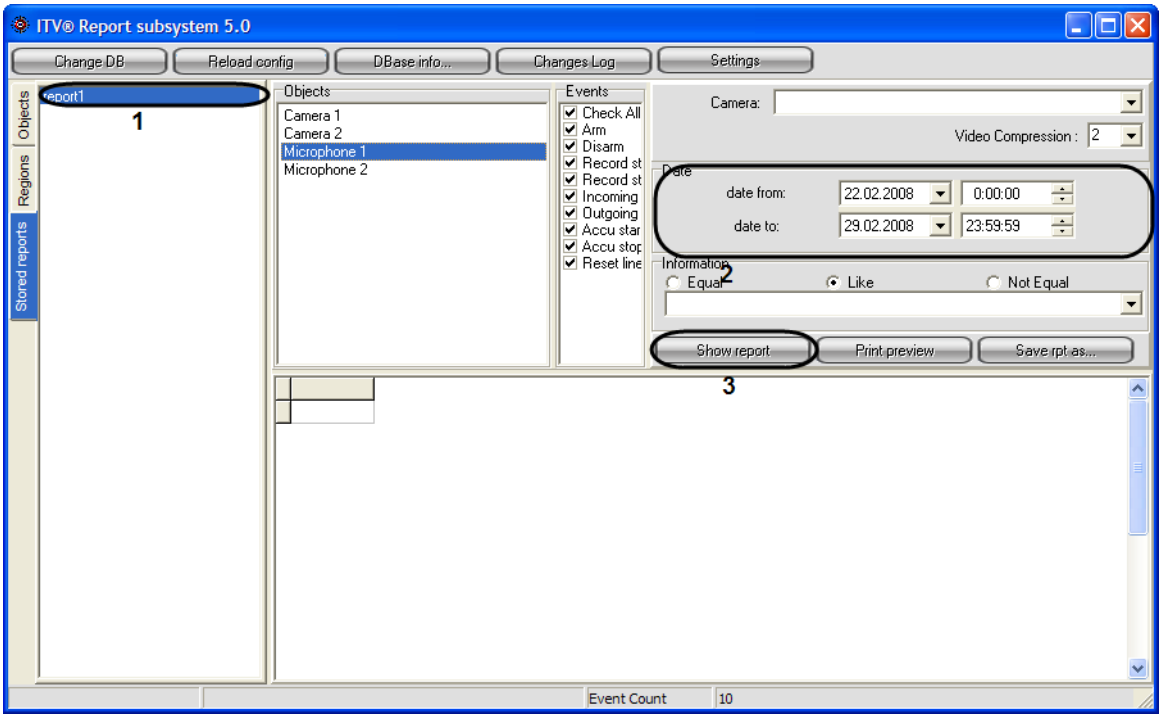


Figure 9.9-3. Creating a screen report from the template

To create a screen report from the template, do the following:

1. Click the Shared Reports tab and select the required report template from the list.
2. Specify the time period to create the report for, in the Date group of fields.
3. Click the Show Report button to create the screen report.

NOTE. Clicking the Show Report button is equivalent to pressing F5 on the keyboard.

This completes the creation of the screen report from the template. The screen report will be displayed in the lower part of the Report window.

9.9.2 Creating a printed report

The printed report allows convenient viewing of the report in a separate window or printing the report on paper.

Figure 9.9-4 shows the stages of creation of the printed report.

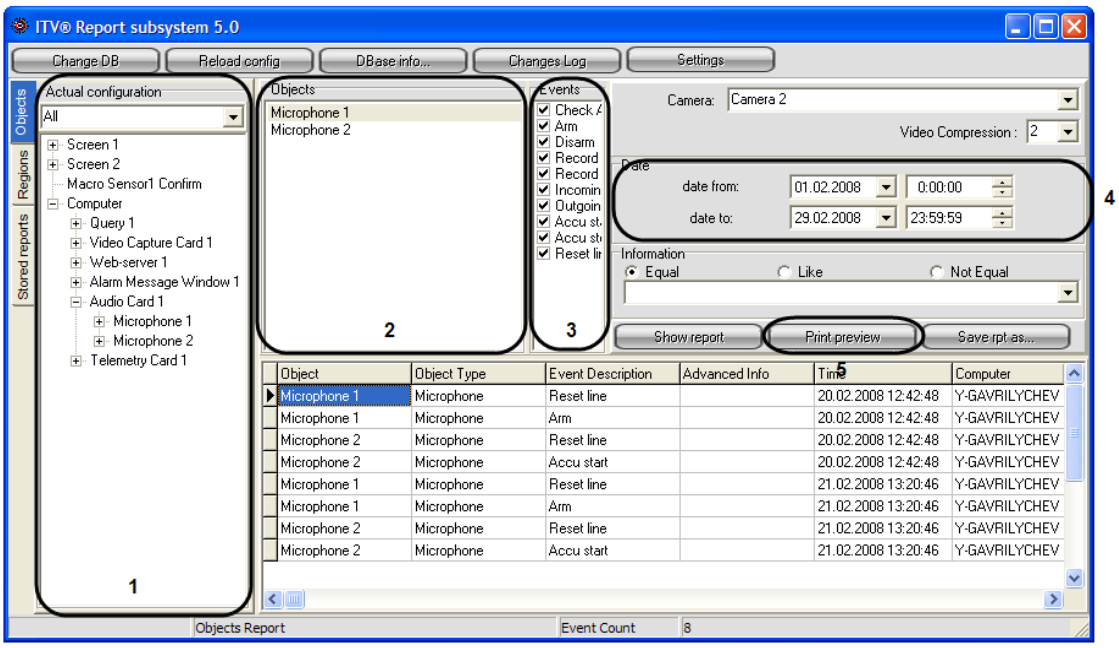


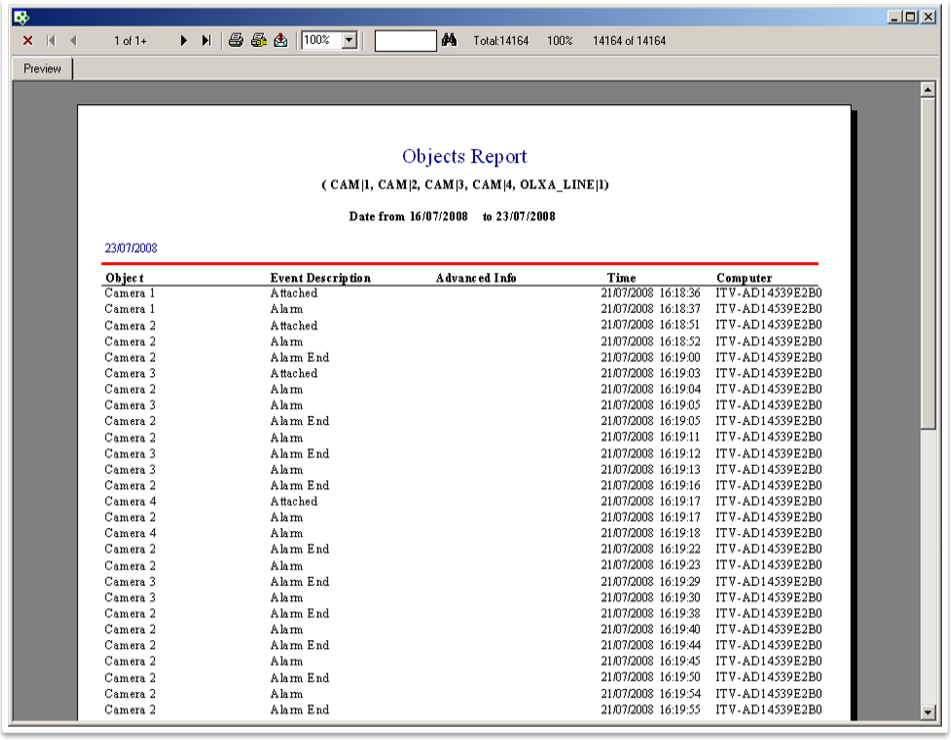
Figure 9.9-4. Creating a printed report

Creating a printed report is similar to the screen report creation procedure in p. 1 to 4 (see sections above).

To create a printed report, click the Print Preview button in p.5.

NOTE. Clicking the Print Preview button is equivalent to pressing F6 on the keyboard.

This completes the creation of the printed report. The report will open in a separate window (Figure 9.9-5).



Objects Report

(CAM|1, CAM|2, CAM|3, CAM|4, OLXA_LINE|1)

Date from 16/07/2008 to 23/07/2008

23/07/2008

Object	Event Description	Advanced Info	Time	Computer
Camera 1	Attached		21/07/2008 16:18:36	ITV-AD14539E2B0
Camera 1	Alarm		21/07/2008 16:18:37	ITV-AD14539E2B0
Camera 2	Attached		21/07/2008 16:18:51	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:18:52	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:00	ITV-AD14539E2B0
Camera 3	Attached		21/07/2008 16:19:03	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:19:04	ITV-AD14539E2B0
Camera 3	Alarm		21/07/2008 16:19:05	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:05	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:19:11	ITV-AD14539E2B0
Camera 3	Alarm End		21/07/2008 16:19:12	ITV-AD14539E2B0
Camera 3	Alarm		21/07/2008 16:19:13	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:16	ITV-AD14539E2B0
Camera 4	Attached		21/07/2008 16:19:17	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:19:17	ITV-AD14539E2B0
Camera 4	Alarm		21/07/2008 16:19:18	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:22	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:19:23	ITV-AD14539E2B0
Camera 3	Alarm End		21/07/2008 16:19:29	ITV-AD14539E2B0
Camera 3	Alarm		21/07/2008 16:19:30	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:38	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:19:40	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:44	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:19:45	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:50	ITV-AD14539E2B0
Camera 2	Alarm		21/07/2008 16:19:54	ITV-AD14539E2B0
Camera 2	Alarm End		21/07/2008 16:19:55	ITV-AD14539E2B0

Figure 9.9-5. Printed repor

The report templates can be created in the Report system. The templates help automate the process of creating the screen and printed reports on a selected list of objects for particular time periods.

A report template comprises of a list of objects and events related to these objects. When the template is created, a list of objects and events is formed. To create a particular screen or printed report based on this template, only the time period should be specified.

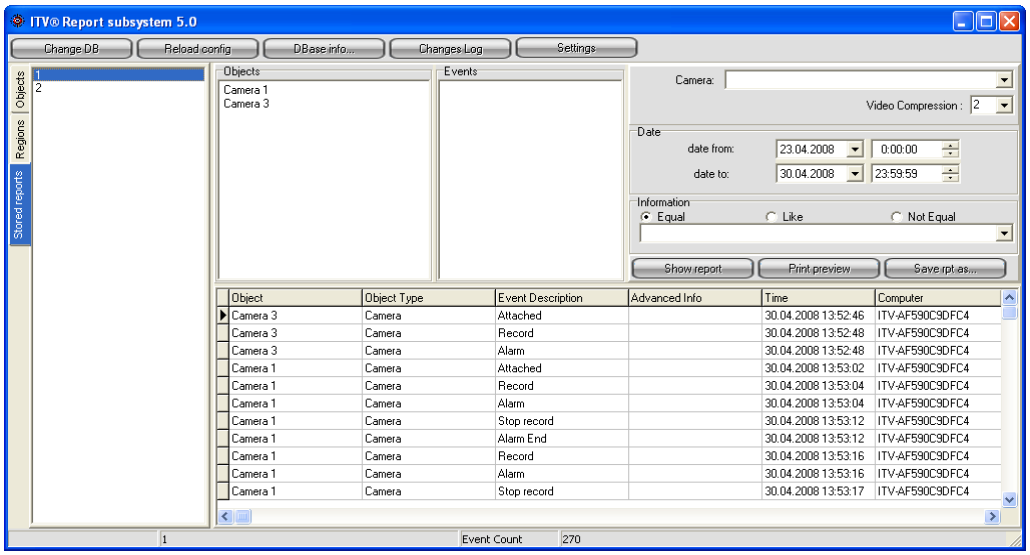


Figure 9.9-6. Creating a printed report from the template

Creating a printed report is similar to the screen report creation procedure in p. 1 to 2 (see the Creating Screen Report from Report Template section above).

To create a printed report from the template, click the Print Preview button in p.3.

NOTE. Clicking the Print Preview button is equivalent to pressing F6 on the keyboard.

This completes the creation of the printed report from the template. The report will open in a separate window.

9.9.3 Printing the report

The report templates can be created in the Report system. The templates help automate the process of creating the screen and printed reports on a selected list of objects for particular time periods.

A report template comprises of a list of objects and events related to these objects. When the template is created, a list of objects and events is formed. To create a particular screen or printed report based on this template, only the time period should be specified.

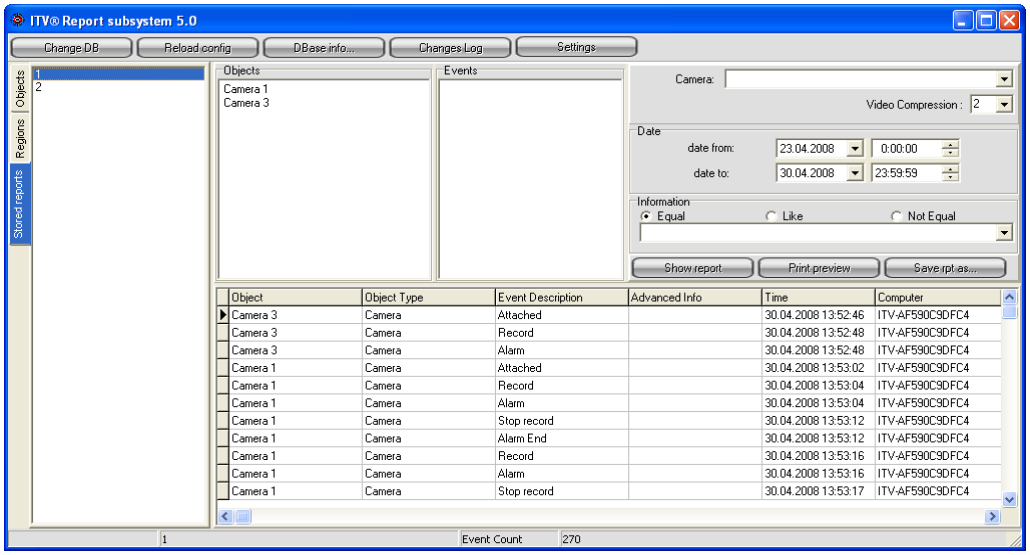


Figure 9.9-7. Creating a printed report from the template

Creating a printed report is similar to the screen report creation procedure in p. 1 to 2 (see the Creating Screen Report from Report Template section above).

To create a printed report from the template, click the Print Preview button in p.3.

NOTE. Clicking the Print Preview button is equivalent to pressing F6 on the keyboard.

This completes the creation of the printed report from the template. The report will open in a separate window.

9.9.4 Exporting the report to a file

The Report system allows exporting the created report into one of the commonly used file formats.

The report to be exported opens in a separate window (Figure 9.9-8).

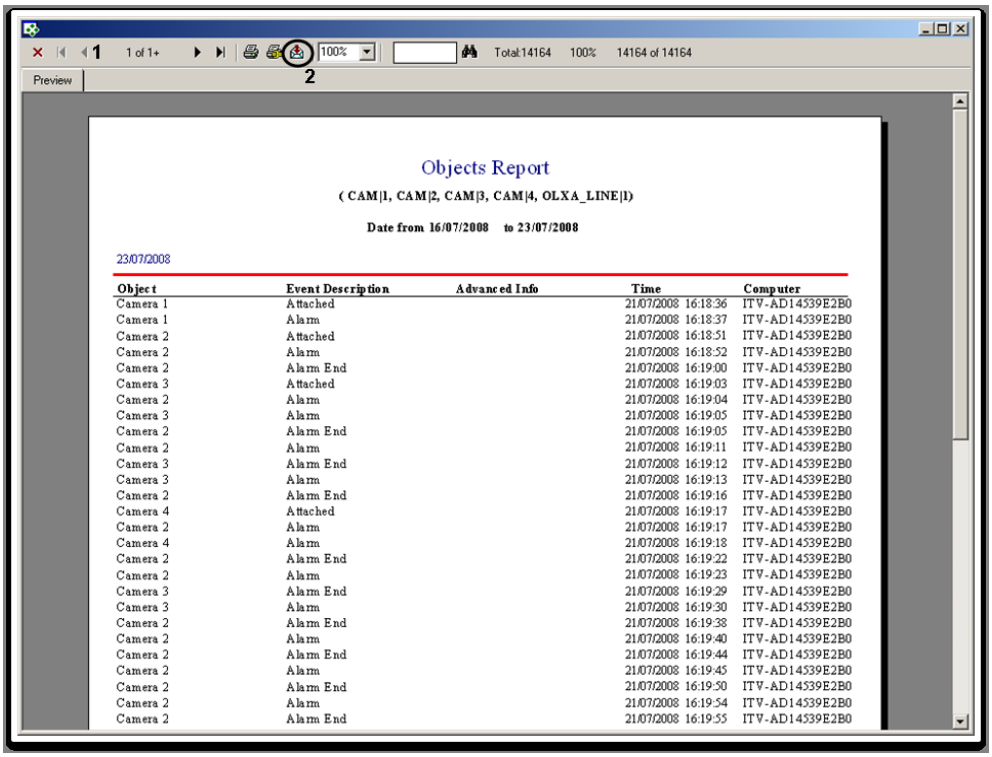


Figure 9.9-8. Exporting the report

The report is exported from the printed report window. To export the report, do the following:

a. Create the printed report (see the Creating the Printed Report section).

b. Click the Export button in the window showing the report.

c. Specify the following in the Export dialog box (Figure 9.9-9):

- in the Format drop-down list, select the format to export the report to

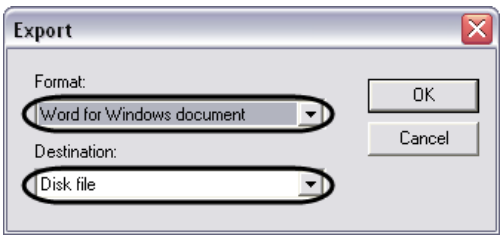


Figure 9.9-9. The Export window

- in the Destination drop-down list, select the action to be taken. The Destination list contains the following options:

1. Application – open the exported file in the corresponding application.

2. Disk File – save the exported file to disk in a specified format.

3. Exchange Folder – send the file to Microsoft Exchange project.

4. Lotus Domino – send the file to Lotus project.

5. Microsoft Mail (MAPI) – send the file via Windows mail client.

NOTE. The Destination list is disabled for some formats.

d. Click the OK button in the Export window.

e. If Disk File is selected in the Destination list, the Choose Export File dialog box will appear. Select the folder and filename to save the report to (Figure 9.9-10).

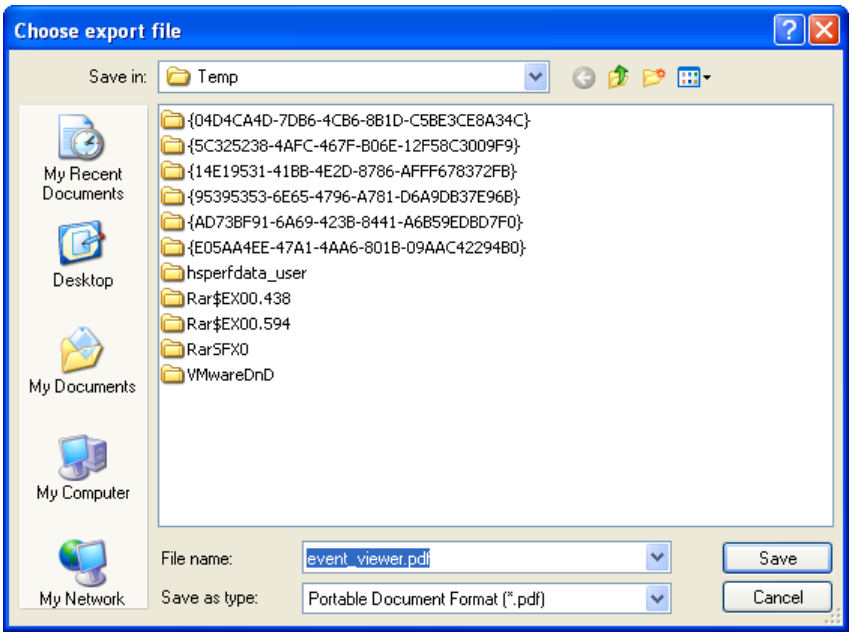


Figure 9.9-10. The Choose Export File window

Specify the filename and folder and click the Save button.

NOTE. The Choose Export File window does not open for some file formats.

This completes the exporting of the report into a file.

9.10 Video recording playback from the Report system

The Report system allows playback of the video recordings related to a selected event from the screen report. The video playback starts from the moment the event occurred.

The recordings are played using the Converter.exe utility or the surveillance window of the corresponding camera. The playback option is selected in the Report system settings window (See the OptionsForm Window section).

NOTE. To play the video recordings directly in the surveillance window, start the Intellect software, and create and set up the surveillance window.

9.10.1 Selecting the playback mode of video recordings

The Report system provides twoways of playing the video recordings: using the Converter.exe utility or the surveillance window of the Intellect system (Figure 9.10-1).

NOTE. To play the video recordings in the surveillance window, the Intellect system should be running on the server where the archive is taken from.

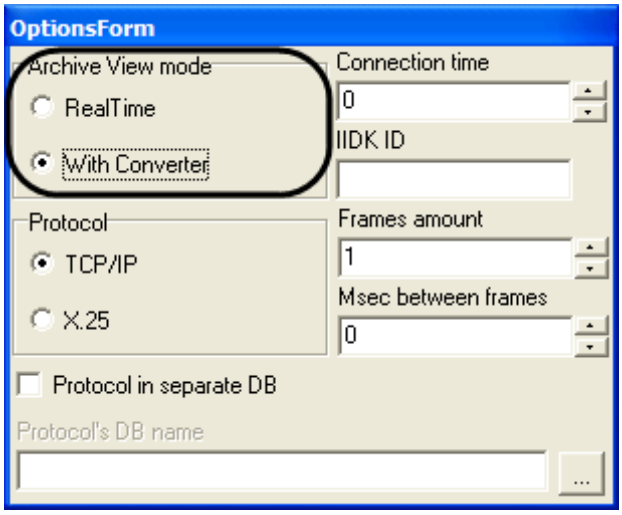


Figure 9.10-1. Choosing the video archive playback option

If the RealTime radio-button is selected, the archive will be played in the surveillance window. If the With Converter radio-button is selected, the archive will be played using the Converter.exe utility.

9.10.2 Playback of the video recordings from the Report system

To play the video recordings from the Report system, do the following:

1. Create the screen report (see the Creating the Screen Form section) (Figure 9.10-2).

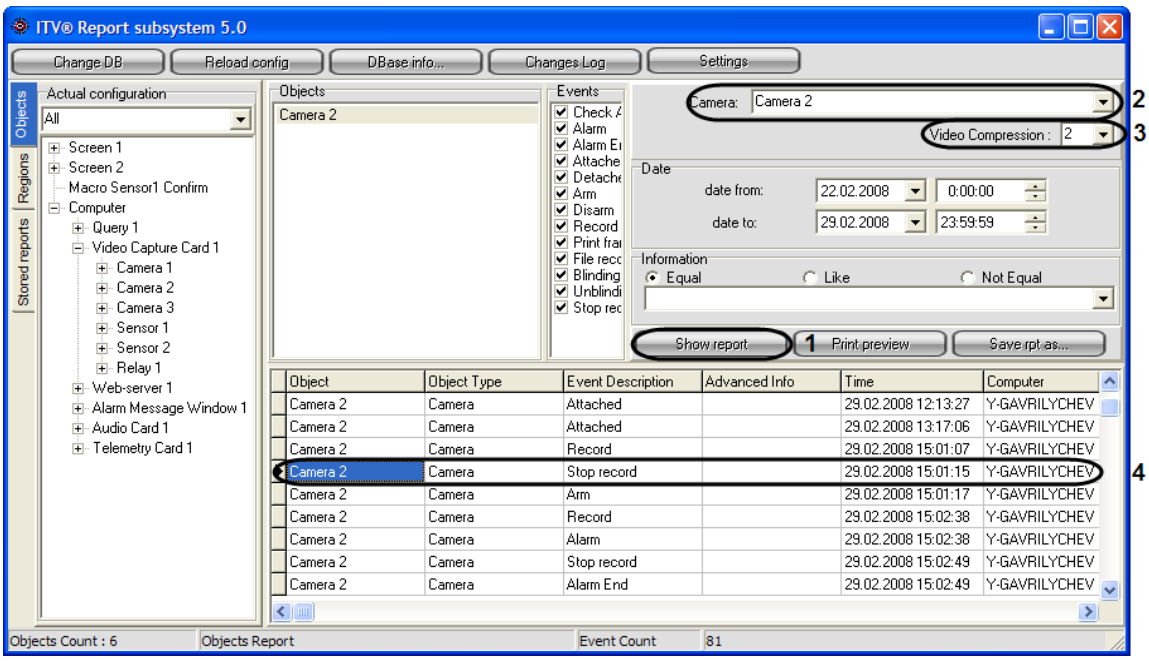


Figure 9.10-2. Playback of the video recordings from the Report system

2. Select the camera from the list of all camera names in the system.

By default, only the recordings from the Camera objects are played from the screen report. The recording from the camera that generated the event shown in the Event Description column, is played. No recording is played for other objects.

The camera whose archive will be played, should be selected in the Camera field.

3. Specify the compression level for the playback.

4. Double-click the event in the screen report.

The converter.exe utility or the surveillance window will open, showing the recording for the time specified in the Data column of the screen report for the selected event (Figure 9.10-3).

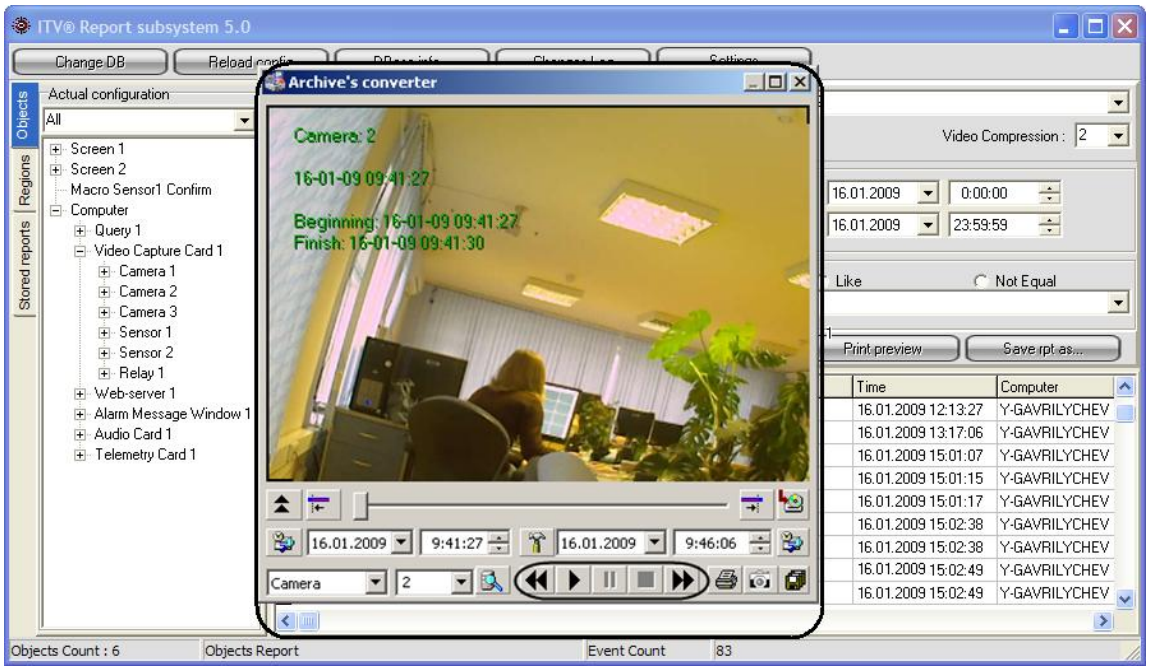


Figure 9.10-3. Playing the video recording from the Report system

9.11 Filtering the events in the screen report according to the additional information

The Report system allows to show only the rows of the screen report containing particular additional information.

By default, the screen report contains all events that fit the report settings. To display only the rows that contain particular information, do the following:

NOTE. The list is filtered by the Advanced Info column.

a. Create the screen report (see the Creating the Screen Report section) (Figure 9.11-1).

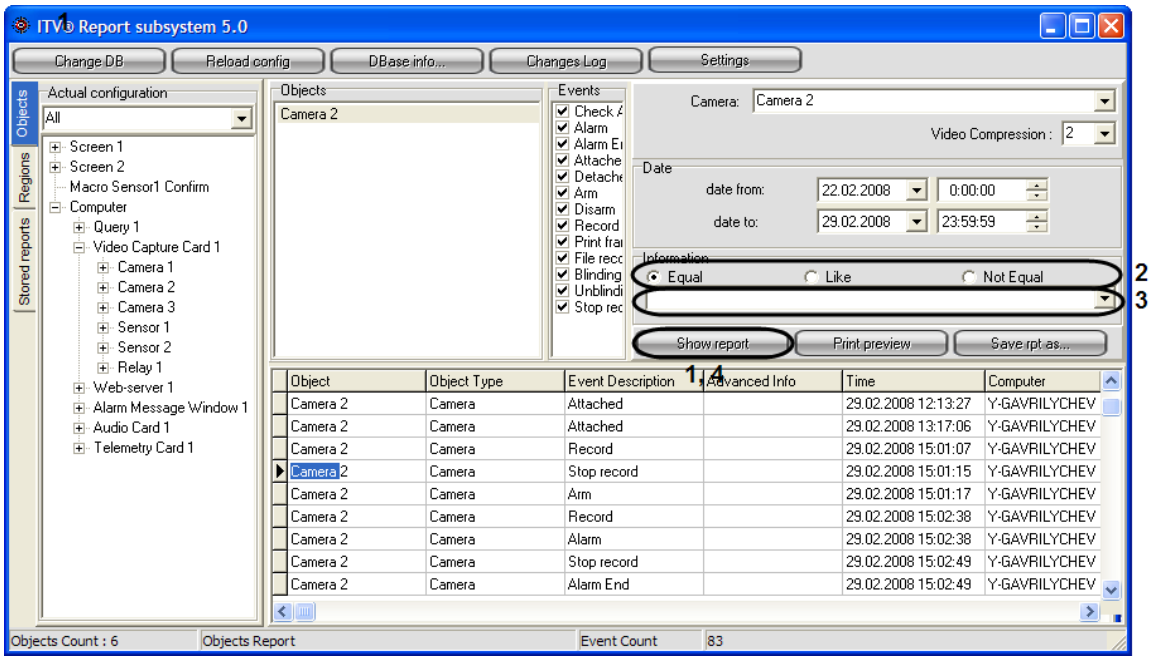


Figure 9.11-1. Filtering the screen report

b. Select the filtering method using the Information radio-buttons.

1. Equal radio-button. When selected, the system looks for exact case-sensitive matches only, between the string in the Information field and the Advanced Info column.

2. Like radio-button. When selected, the system looks for the rows where the Advanced Info column contains the search string, case-sensitive.

3. Not Equal radio-button. When selected, the system looks for the exact case-sensitive matches, only between the string in the Information field and the Advanced Info column.

c. Enter the character string to filter the report by.

d. Click the Show Report button to run the filter.

Only the filtered rows will be displayed in the screen report.

9.12 The keyboard shortcuts list

The following keyboard shortcuts are available in the Report system:

a. All panels:

a. F5 – creating the screen report.

b. F6 – creating the printed report.

c. Del – deleting an object from the Objects panel.

d. Ctrl+A – selecting all objects in the list in the Objects panel.

b. Objects panel:

a. Ctrl+F – searching the tree for an object by name or any part of the name.

b. Enter – adding the selected object to the report.

c. The Regions panel:

1. Ctrl+F – searching the tree for an object by name or any part of the name.
2. Enter – adding the selected object to the report.

d. The Shared Reports panel:

Ctrl+Del - deleting the selected report template.

10 Conclusion

Please send your comments or requests concerning this Guide to the AxxonSoft Training and documentation development division at (documentation@itv.ru).

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11 Appendix 1. Interface

11.1 Description of the Main Control Panel Interface

The Main control panel as part of the System settings interface box has a fixed position and is located in the upper right corner of the System settings interface box (Figure 11.1-1).

Figure 11.1-1. Main control panel of the System settings interface box

The INTELLECT™ Main control panel has been designed to be small (to save on the usable monitor area) and contains only the information window and two menu buttons to the right of it.

INTELLECT™ Main control panel elements and descriptions thereof are given in Table 11.1-1.

Table 11.1-1

UI element	Comments
	Information windows or help window. This window displays comments (brief information) to the UI elements, and system error information, when pointed at with the mouse.
	The Screens button. The button is designed for control of virtual screens.
	The Execute button. Designed to display the System settings dialog box on the monitor and manual execution of the macro commands and quitting system operation.

11.2 Description of the System settings dialog box

11.2.1 Tabs panel

The Tabs panel is displayed in the upper left corner of the System settings dialog box and is designed for shifting between INTELLECT™ software groups of objects. The Tabs panel is shown in Figure 11.2-1.

Figure 11.2-1 Tabs panel of the System settings dialog box

A list and brief description of tabs comprising the System settings dialog box are given in Table 11.2-1.

Table 11.2-1

№	Section (Tab) of the System settings dialog box	Key functionalities of the section (tab)
1	Hardware	The tab is designed for connection and configuration of hardware and program modules. Also, this tab is used for connection and configuration of customer-tailored components of the Operator UI, i.e., such objects as the Operator search window and notification window.
2	Interfaces	The tab is designed for the creation and configuration of virtual screens and UI components in them, i.e., Video Monitor, audio players and control panels of various devices and modules.
3	Architecture	The tab is designed for describing the system structure, network settings defining PC links and parameters for data exchange between the PCs of the distributed network.
4	Programming	This tab is designed for the creation of macro commands and scripts, as well as for the creation of time zones, shift timetables, delineation of secured object areas, access levels for the access points, which are equipped with readers.
5	Users	The tab is designed for the creation of user accounts (registration) of the digital video surveillance and audio monitoring system, classification of the levels (rights) of their access to the system resources and assigning passwords to the users.

To transfer from one tab to another, use the mouse. For the above purpose, follow the next steps:

1. Drag the mouse cursor to the tab.
2. Click the left mouse button.

11.2.2 Objects tree

The system is based on the tree-like structure of the objects layout (objects tree). The objects tree is arranged as a multi-level list of embedded objects (Figure 11.2-2).

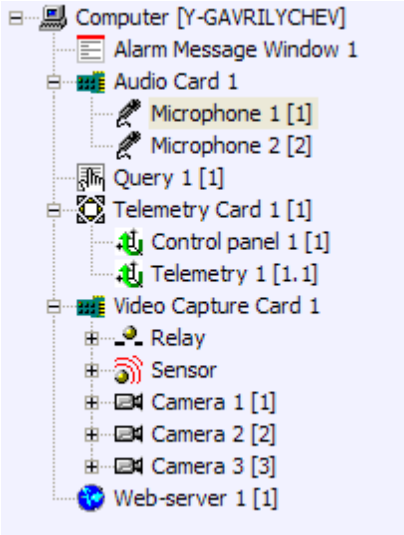


Figure 11.2-2 Objects tree of the Hardware tab

The objects structure is configured as a hierarchy, where low-order (daughter) objects can only be created on the basis of the higher-order (parent) object.

The objects tree can be viewed in expanded form, embedded groups (branches) can be viewed or hidden, if not required to be controlled currently.

To get down the branch of the objects tree, containing daughter objects, click the left mouse button pointing at«-» symbol appearing to the left of the parent object (Figure 11.2-3).

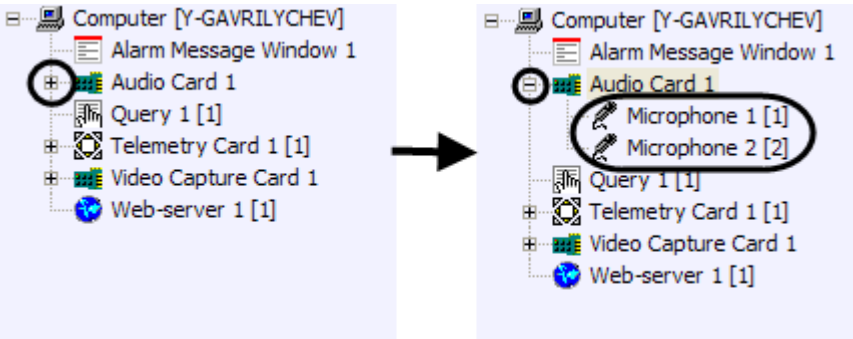


Figure 11.2-3 Displaying the daughter objects of the objects tree on the monitor

To collapse the daughter objects, click the left mouse button pointing the cursor at the minus symbol (Figure 11.2-4).

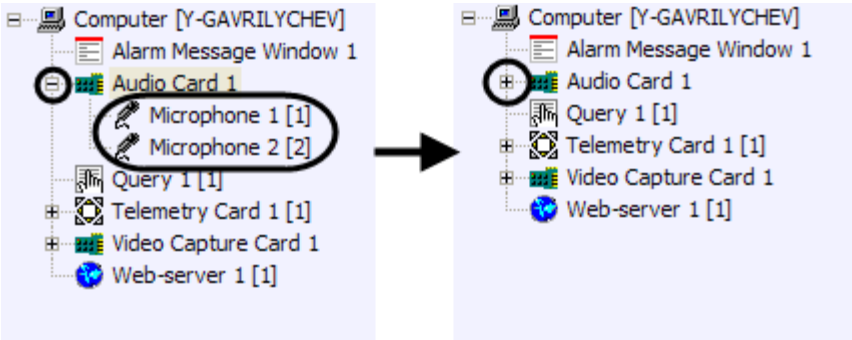


Figure 11.2-4 Collapsing the daughter objects of the objects tree

11.2.3 Context menu of the system object

The context menu is displayed within the objects tree. To display the menu on the monitor, click the right mouse button, pointing the cursor at the system object in the objects tree (Figure 11.2-5).

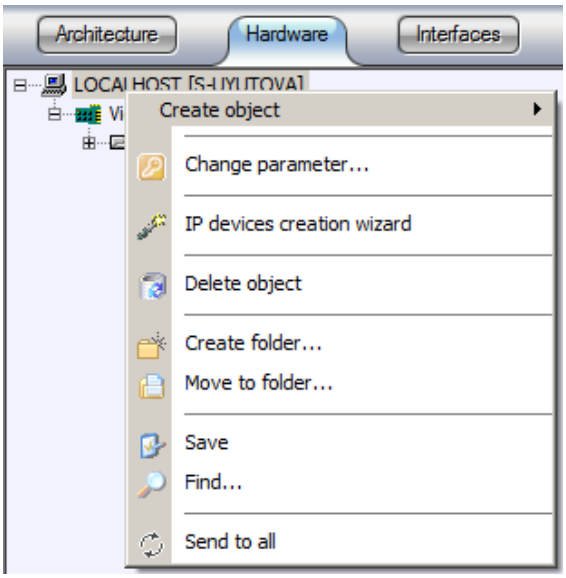


Figure 11.2-5 The context menu of the object in the objects tree

The number of menu lines depends on the video surveillance system configuration and object tasks. The context menu of a system object is described below.

11.2.3.1 *The Create object function*

The “Create object” function, which is used to create a new system object in the Hardware objects tree, is selected from the context menu of the parent system object (Figure 11.2-6).

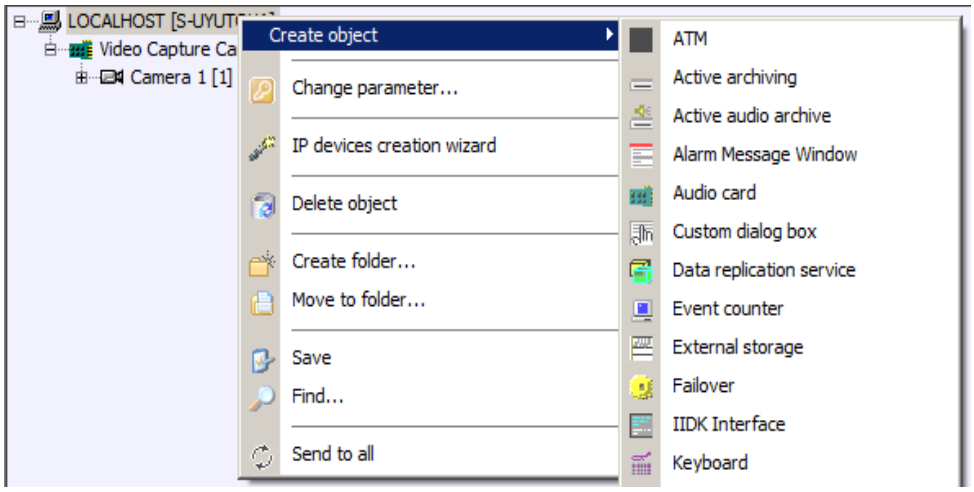


Figure 11.2-6 Using the “Create object” function

When the “Create object” function is selected, the menu will display a list of embedded objects. Figure 11.2-6 shows an example of a list of objects which can be created on the basis of a “Computer” object.

11.2.3.2 *The Change parameter function*

The “Change parameter” function is to edit the parameters of INTELLECT™ objects in the database. This function is not recommended to be used by new users.

When the “Change parameter” function is selected in the context menu of the system object, the “Change parameter” box appears (Figure 11.2-7).

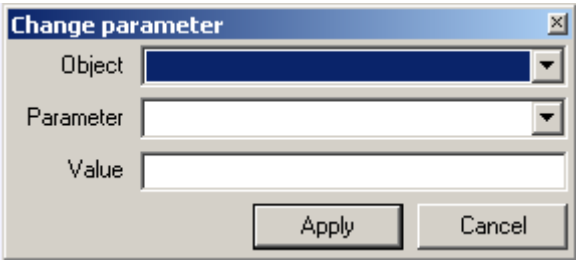


Figure 11.2-7 The “Change parameter” box

In the “Object” dropdown list select the type of system objects the parameter of which is to be edited. This list contains only objects that are child objects of that one the context menu of which was used to call the box. To change parameters of the “Computer” object, select the “Change parameter” item in the context menu that appears when the area with no objects of INTELLECT™ objects tree is right-clicked.

In the “Parameter” dropdown list select the object parameter that is to be changed in the INTELLECT™ database.

Attention!The parameter will be changed for all objects of selected type in the distributed configuration.

In the “Value” field specify a new value for the parameter in the format in which it will be stored in the database. One can learn about the type of parameter using the ddi.exe utility (see “Editing intellect.dbi and intellect.ext.dbi database templates using the ddi.exe utility” section). One can learn about the format of parameter while viewing INTELLECT™ database (see “Viewing INTELLECT™ software database” section).

Example. All cameras in the system are to be set for displaying black-and-white video.

For this do the following:

1. Call the “Change parameter” box in the context menu of the “Video capture card” or “Camera” object.
2. Fill in the fileds in the “Change parameter” box as shown in the figure (Figure 11.2-8).

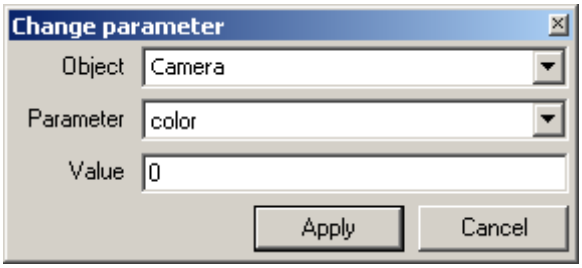


Figure 11.2-8 Changing the “color” parameter for the “Camera” object

3. Click the “Apply” button.

As a result the black-and-white mode of displaying video is set for all cameras in the system.

11.2.3.3 *The IP devices creation wizard function*

When the “IP devices creation wizard” function is selected in the context menu of the “Computer” system object, IP devices creation wizard starts. Its operation is described in “INTELLECT™Software Package. Installing and configuring security system components guide” in the section of the same name.

11.2.3.4 *The Delete object function*

To delete an object from the tree, drag the cursor pointer to the object and, with the context menu opened, select the Delete object option. Now the PC monitor will show a dialog box requesting to confirm that the system object be deleted (Figure 11.2-9).

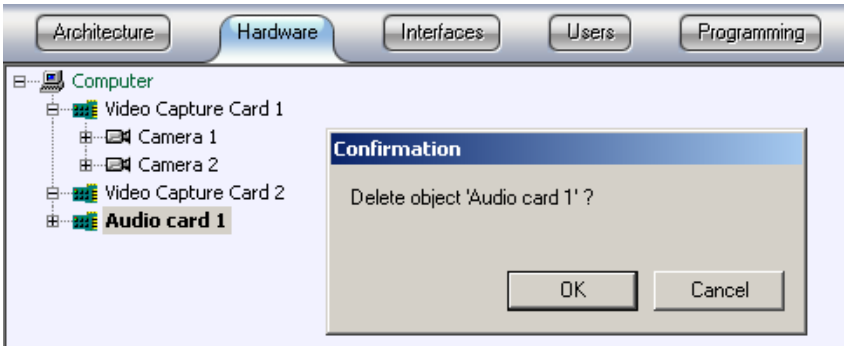


Figure 11.2-9 Confirmation for deletion of the object

To confirm that the object should be deleted, click OK or, if you want to quit the delete function, click Cancel. As soon as deletion is confirmed, the object, as well as its daughter objects, will be removed.

The function Delete system object applies to all objects, including the Computer object, created by default when Intellect™ system is installed.

Note. Please be aware, that, a deleted Computer- local computer parent object can hardly be restored. That is why the developer does not recommend deleting objects such as Computer, created by Intellect™ system.

11.2.3.5 *The Create folder function*

The create folder function is used to properly arrange the system objects displayed in the objects tree, in cases when there are many types of objects. Objects are grouped into folders at the user’s diskretion.

To create a folder, display the Computer context menu in the monitor and select the Create folder option (Figure 11.2-10).

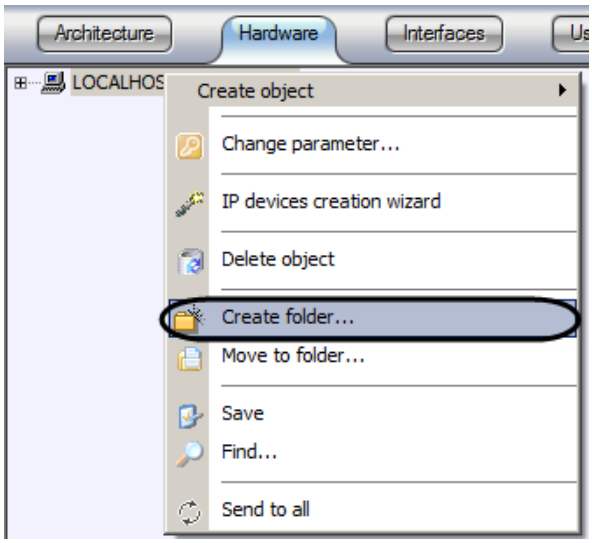


Figure 11.2-10 Selecting the Create folder option

Now the PC monitor will show a dialog box requesting to enter a Folder name (Figure 11.2-11). Having entered the folder name in the dialog box, click OK.

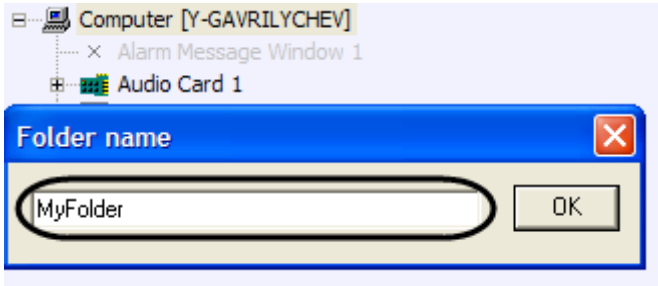


Figure 11.2-11 Folder name dialog box

Now the objects tree will show the folder, which has just been created (Figure 11.2-12).

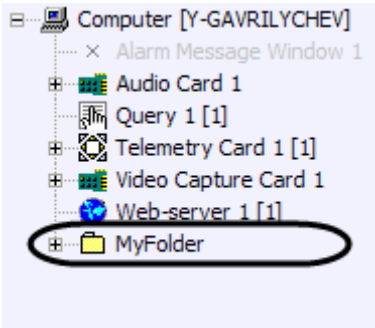


Figure 11.2-12 A new folder included into the objects tree

If a new folder is to be created in the objects tree, display the context menu in a free field of the window showing the objects tree near the objects tree branch, where you are going to create a new folder (to create a new folder in the root directory, the context menu should be displayed near the Computer object). The context menu in this case will be displayed as follows:

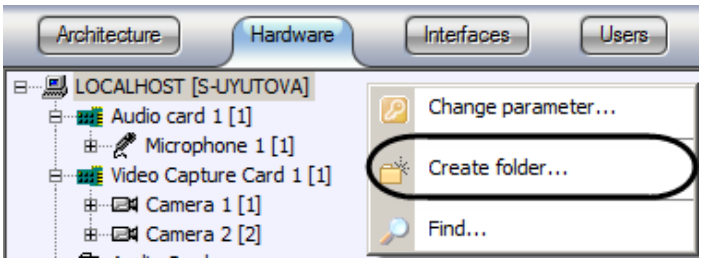


Figure 11.2-13 The context menu of the objects tree field

The following steps are similar to those described above. Now, the new folder will be displayed as follows (Figure 11.2-14):

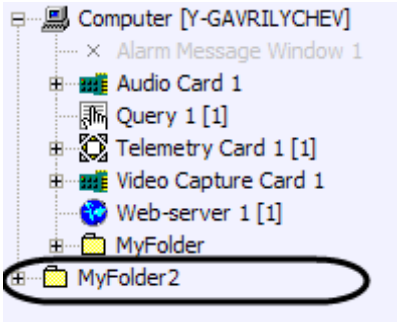


Figure 11.2-14 The folder has been created

11.2.3.6 *The Move to folder function*

This function allows moving system objects to the objects tree folder. To move objects to the folder, select the object, which you need to move, display the context menu and select the Move to folder option (Figure 11.2-15).

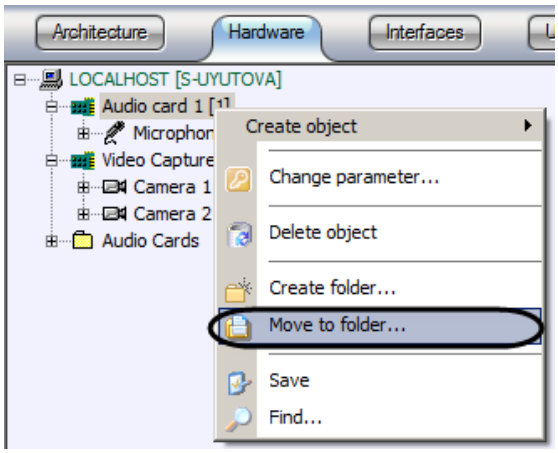


Figure 11.2-15 Selecting the Move to folder option

The monitor will display a window for selecting a folder, where you will move the selected system object (Figure 11.2-16).

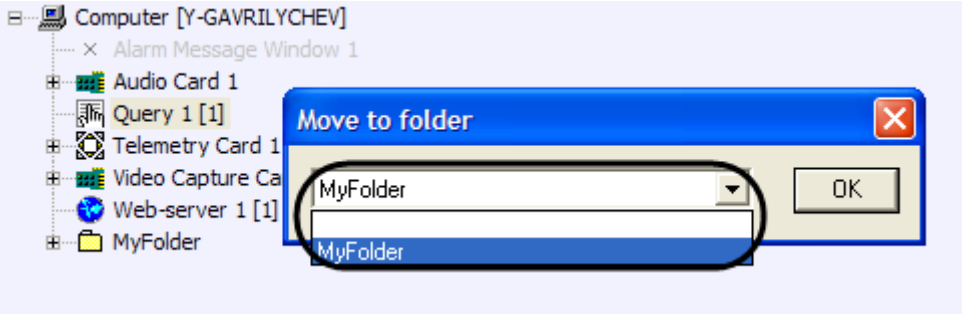


Figure 11.2-16 Selecting a folder

To confirm the selected folder, click OK. The object will be moved to the given folder (Figure 11.2-17).

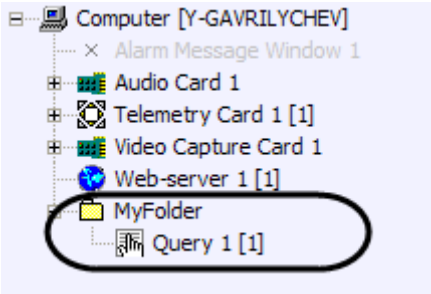


Figure 11.2-17 The folder has been moved to the folder

11.2.3.7 *The Save function*

INTELLECT™ system allows creating objects based on a template. A template is created using the "Save" function accessible in the main functional menu.

Below we describe how to create the "Camera" object on the basis of a template using the "Save" function.

First of all select an object that has already been created and configured, for instance, the "Camera 1" object. Figure 11.2-18 shows a setting panel with highlighted parameters of the "Camera 1" object which have been modified (differ from the default settings).

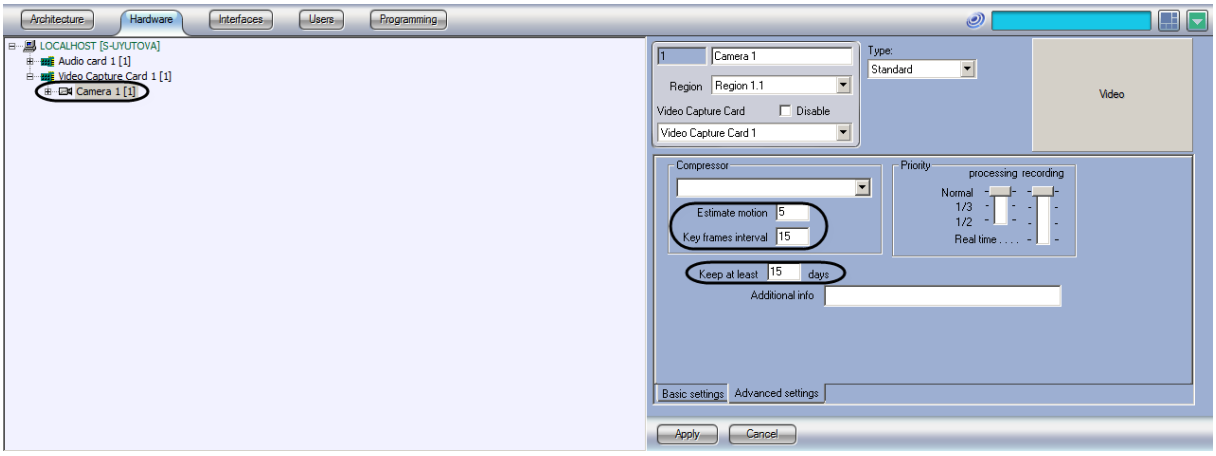


Figure 11.2-18 The settings of the "Camera" object

To create a template based on this object, do the following:

1. Call the context menu of the “Camera 1” object.

2. Select the “Save” menu item (Figure 11.2-19).

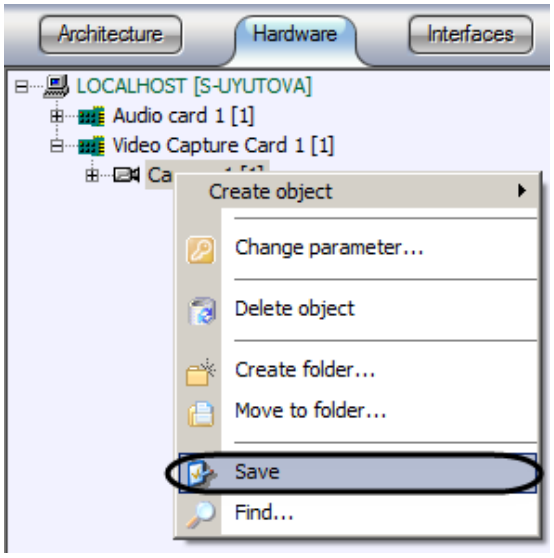


Figure 11.2-19 The “Save” menu item

The template of the “Camera” object (with the settings of the “Camera 1” object) has been created.

Now create the “Camera 2” object based on the “Video capture card 1” object (see *The Create object function* section). By default the “Camera 2” object will have the same settings as the “Camera 1” object (Figure 11.2-20).

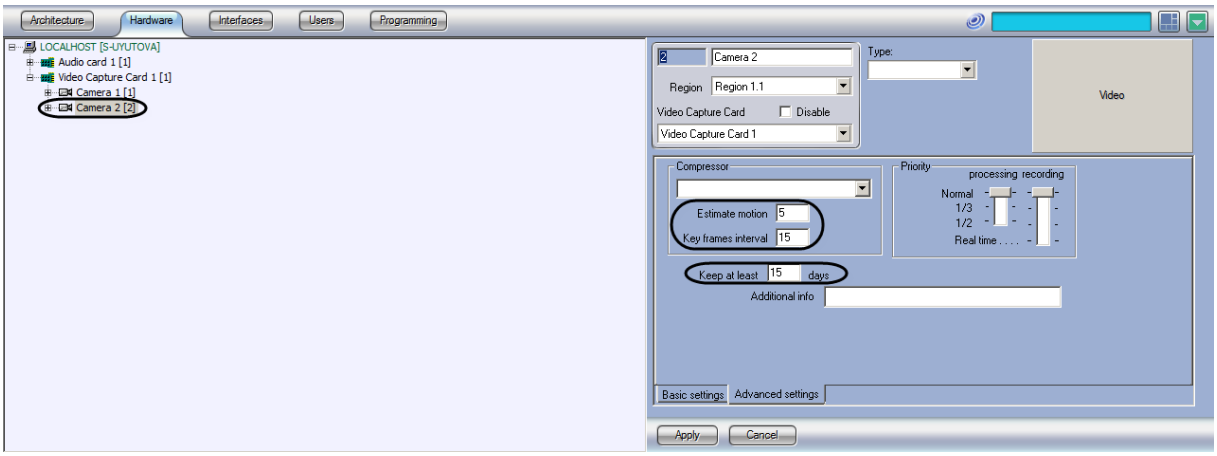


Figure 11.2-20 The object created on the basis of a template

11.2.3.8 *The Find function*

The Find option of the menu is designed to search for an object in a tree. Intellect™ system uses two methods of searching for an object:

a. Searching within a tree. This method is used when only an object name (type) is known. In this case, to find an object, follow the next steps:

    a. display the context menu for the objects tree on the monitor;

    b. select Find in the menu (Figure 11.2-21);

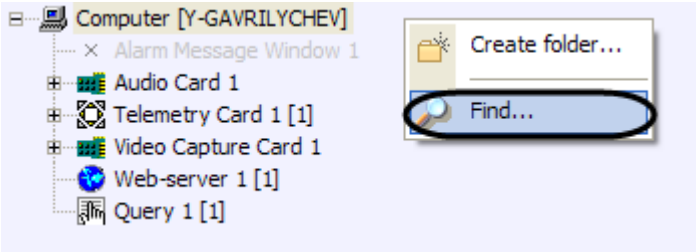


Figure 11.2-21 Selecting the Find function

Now the monitor will display a box to enter the name of the required object.

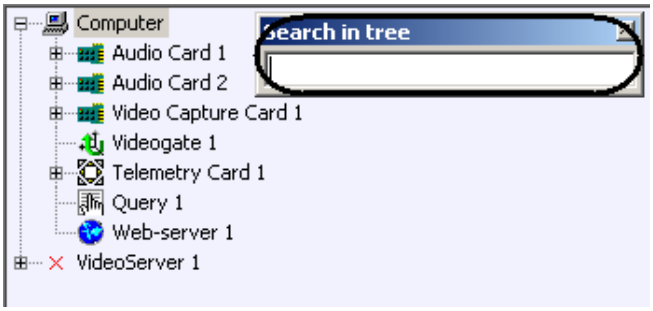


Figure 11.2-22 The box for entering a name of the required object

c. enter the name of the required object (Figure 11.2-23).

Figure 11.2-23 Entering the name of the object

d. press Enter on the keyboard to start searching.

If the object is found, it will be highlighted grey in the objects tree (Figure 11.2-24).

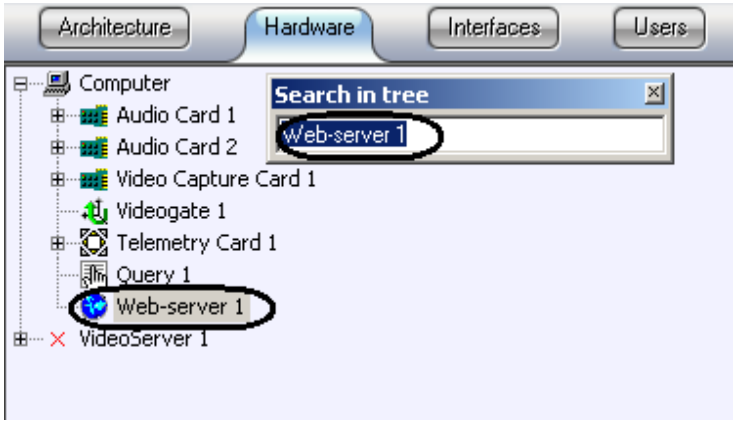


Figure 11.2-24 Example of a positive result of searching for an object

If the system finds no objects, there will be no highlighted objects in the tree (Figure 11.2-25).

Figure 11.2-25 Example of a negative result of searching for an object

To close the window for entering the object name, when the search is complete, click the left mouse button, pointing at the window field displaying the objects tree.

b. Search from a selected object.

To find an object, whose location in the objects tree is approximately known, the next steps can be followed:

a. select an object, located above of the search field.

NOTE. Object search across the tree is more effective, if the required object is a daughter object of the Computer object. Otherwise, the search will go down the branch of the selected object.

b. display the context menu for the objects tree field on the monitor;

c. select Find in the menu (Figure 11.2-26);

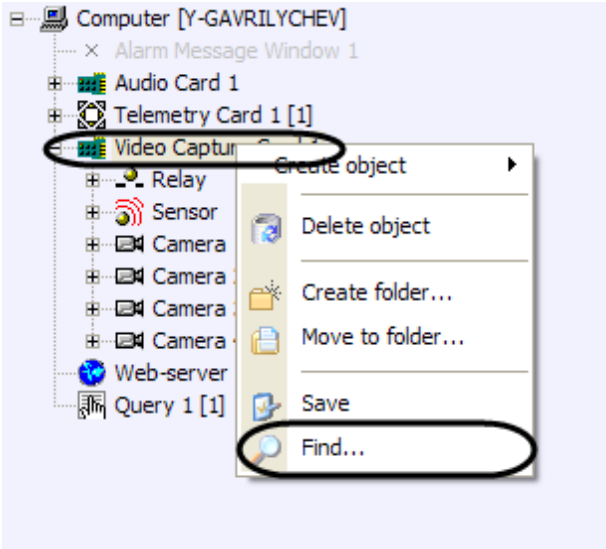


Figure 11.2-26 Selecting the Find function

To proceed further follow method 1 (described above).

11.2.3.9 *The Reconnect function*

This line is displayed on the monitor in cases, when, apart from the base Computer, there is at least one (additional) Computer object, available for connection to the base Computer, communication with which fails, due to unknown reasons.

To install a link between two Computer objects, display the context menu of the additional Computer object, available for connection to the network and select Reconnect from the menu (Figure 11.2-27).

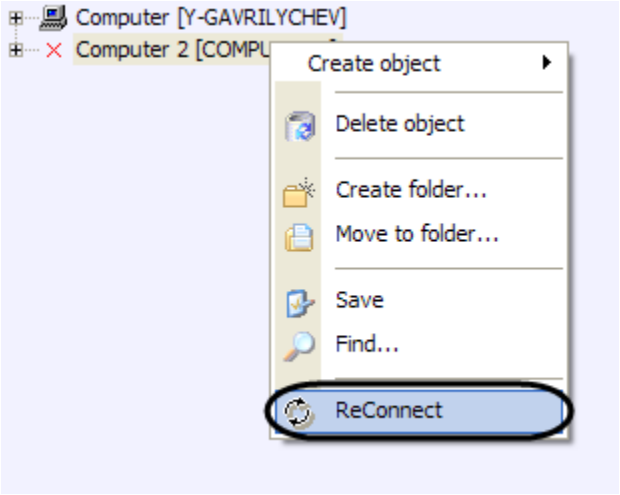


Figure 11.2-27 Selecting the Reconnect option

Now the object of the base and remote computer will be connected to the network (Figure 11.2-28).

Figure 11.2-28 Connection completed

11.2.3.10 *The Send to all function*

This function allows broadcasting intellect.sec, the key file, governing the system configuration, to all PCs which have the distributed digital video surveillance and audio monitoring system. If the system functional has been updated and a new key file was received, it should be updated in all system PCs, using the Send to all function.

This function is accessible only from the context menu of the Computer object, corresponding to the given local computer, which performs administrator functions (Figure 11.2-29).

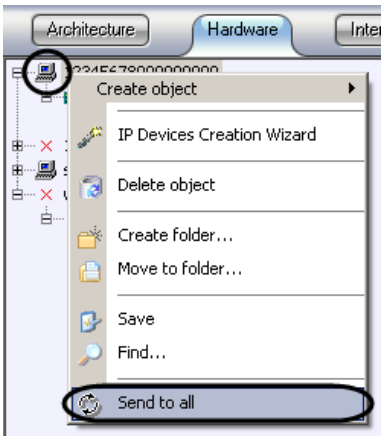


Figure 11.2-29 Selecting the Send to all option

NOTE. If an updated key file is not broadcast in due time to all system computers, the Intellect system will not get started, when the PC is switched on, since the key file data will not match the information contained in the database.

11.2.3.11 *The Send key function*

This function allows updating the key file in the remote computer of the system and can be accessed only from the Main menu of the object, such as Computer, corresponding to the r–mote computer (Figure 11.2-30).

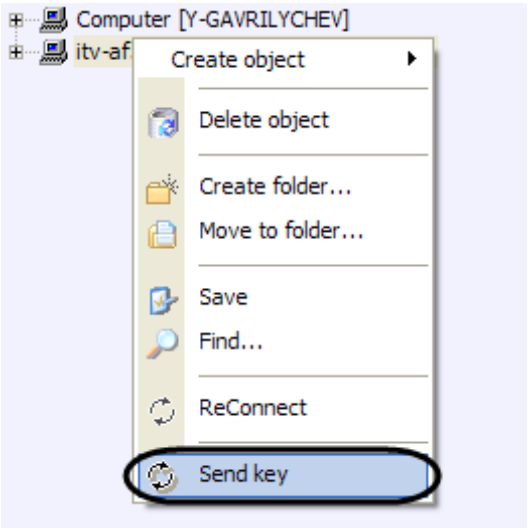


Figure 11.2-30 Selecting the Send key option

NOTE. If an updated key file is not broadcast in due time to the given computer, the Intellect system will not get started, when the PC is switched on, since the key file data will not match the information contained in the database.

11.2.4 Object setting panel

The setup panel of the system object can be found in the right hand side of the System settings dialog box (Figure 11.2-31) and is designed to displayed and configure the object selected in the tree.

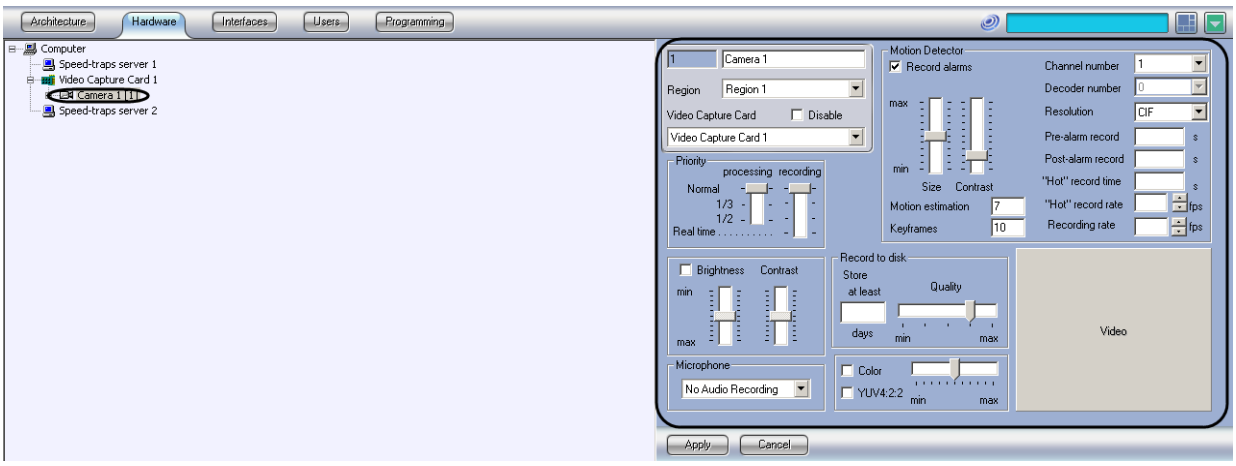


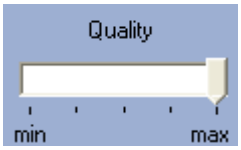
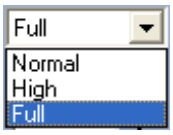
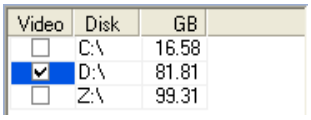
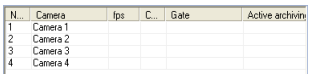
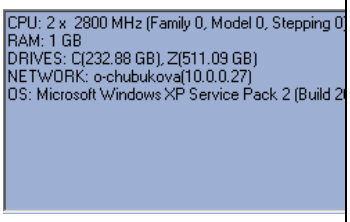
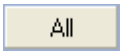
Figure 11.2-31 Settings panel of the Web-server object

Depending on the type of object selected, the settings panel of the given object displays the field for entering certain parameters – the elements of the settings panel.

Elements of the settings panel are given in Table 11.2-2.

Table 11.2-2

Element Image	Element name	Options for using the element
	The field for entering the numerical value of the parameter	Enter the numerical value of the parameter Drag the mouse cursor to the field, click the left button and enter the required number in the keyboard
	The field for entering the line value of the parameter	Enter the line value of the parameter Drag the mouse cursor to the field and enter the required number in the keyboard
	Check mark	Check/un- check the box To check the box, click on it with the left mouse button, to remove the check mark – click it again.
Active camera Alarms cameras Max Min List	Selector	Set the selector in the required position To select the required option, click on it with the left mouse button. All other fields in this case get cleared automatically.

Element Image	Element name	Options for using the element
	Slide	Set the slide in the required position. Drag the pointer along the scale with the mouse.
	Dropdown list	Select the required line in the dropdown list. The list drops down as soon as you click the down arrow, which, as a rule, is displayed in the right hand side of the element and is configured as a triangle. To select a line, click on it with the left mouse button.
	Data table	The table displays the fields, which have been automatically filled in previously. To use the table, check the box corresponding to the required line (column). The fields containing text may not be edited. The number of lines may not be edited.
	Table	The data is entered as follows: 1. Drag the cursor to the table cell. 2. Enter/select the required value in the field/from the list in the column lines of the table. As you move to the next cell, the data you have entered is retained in the table. 3. To add new lines in the table, select any field in any filled out line available and press the down arrow on the keyboard. 4. To delete a line from the table, press the Ctrl+Delete key combination.
	Data field	The data field allows displaying various information messages. It cannot be edited.
	Button	The start up function button. To click the button with the mouse, drag the mouse

Element Image	Element name	Options for using the element
		cursor to the button, then click on it with the left mouse button.

11.2.5 The Apply and Cancel buttons

The Apply and Cancel buttons are displayed at the bottom part of the System settings dialog box and are used to confirm or cancel the entry of values for the object settings (Figure 11.2-32).

Figure 11.2-32 The Apply and Cancel buttons

The Apply button is used to save the assigned object identification and setting parameters. The Cancel button is used to return to the previous object identification and setting parameters.

NOTE. The parameters entered with the Apply button cannot be cancelled with the Cancel button.

11.2.6 System settings dialog box elements

The Apply and Cancel buttons are displayed at the bottom part of the System settings dialog box and are used to confirm or cancel the entry of values for the object settings (Figure 11.2-33).

Figure 11.2-33 The Apply and Cancel buttons

The Apply button is used to save the assigned object identification and setting parameters. The Cancel button is used to return to the previous object identification and setting parameters.

NOTE. The parameters entered with the Apply button cannot be cancelled with the Cancel button.

11.2.7 The Architecture tab

The Architecture tab allows creating a distributed video surveillance and audio monitoring system and is used to configure connections and data exchange between various system components.

11.2.7.1 *Connection settings table*

The Connection settings table can be accessed from the Architecture tab. This table is used to configure connections between computers of the distributed system and distribute the information about the events registered by the system. The connection settings table is shown in Figure 11.2-34.

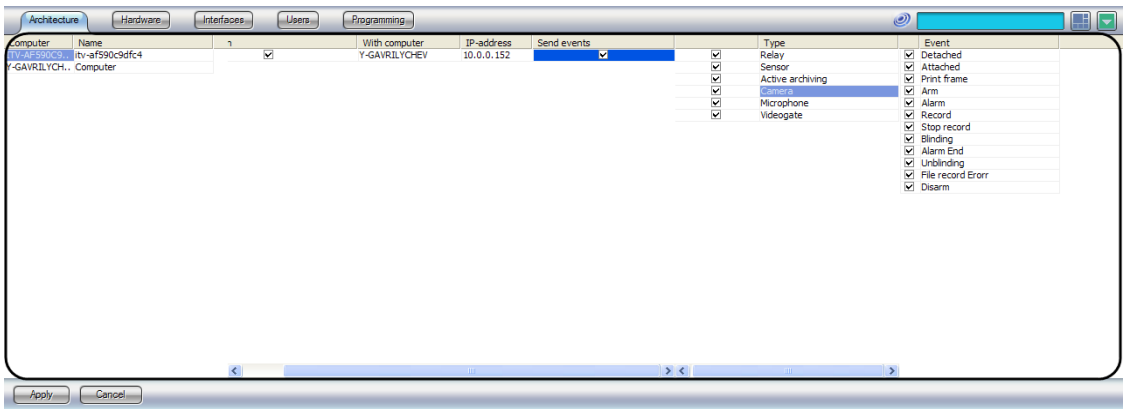


Figure 11.2-34 Connection settings table

Table 11.2-3 describes the elements of the connection settings table.

Table 11.2-3

№	Column	Description	Value
1	Computer	Network name of the computer	Is defined by the OS
2	Name	Computer name in the system	Is defined in the Hardware settings tab
3	Connection	Check mark	If the box is checked, it means that the computer is connected. If the box is not checked, it means that connection was not established.
4	With computer	List of names of the network computers	Is defined by the OS
5	IP-address	IP-address of the computer in the local network (if connected via the Internet, then public IP-address)	Is either defined by the OS or assigned manually. When IP-address of the Server/RAW is edited, then IP-address only for the current Server/RAW is changed. For other Servers/RAWs IP-addresses are to be changed individually.
6	Send messages	Checkbox	AA checked box means there is permission for sending the messages to the computer it is connected to. A non-checked box means there is no permission for sending the messages.
7	Type	List of the system objects, from which the events will be broadcast to the selected computers.	Is defined by the list of the registered objects.
8	Event	A check mark in the list across each point of the event list, corresponding to the hardware selected in the Type column.	A checked box means that the given event will be broadcast. A non-checked box means that the given event will not be broadcast.

11.2.8 The Hardware tab

The Hardware tab is used to create and configure the system objects corresponding to different hardware types, used as components of the video surveillance and audio monitoring system, which will be created.

11.2.8.1 *Hardware tab components*

The Hardware tab displays the tree of system objects referred to the Hardware group and the settings panel of the object selected in the tree. The settings panels of each object used in the video surveillance and audio monitoring system are described in the following sections.

11.2.8.2 *Settings panel of the Computer object*

The settings panel of the "Computer" object is shown in Figure 11.2-35, Figure 11.2-36

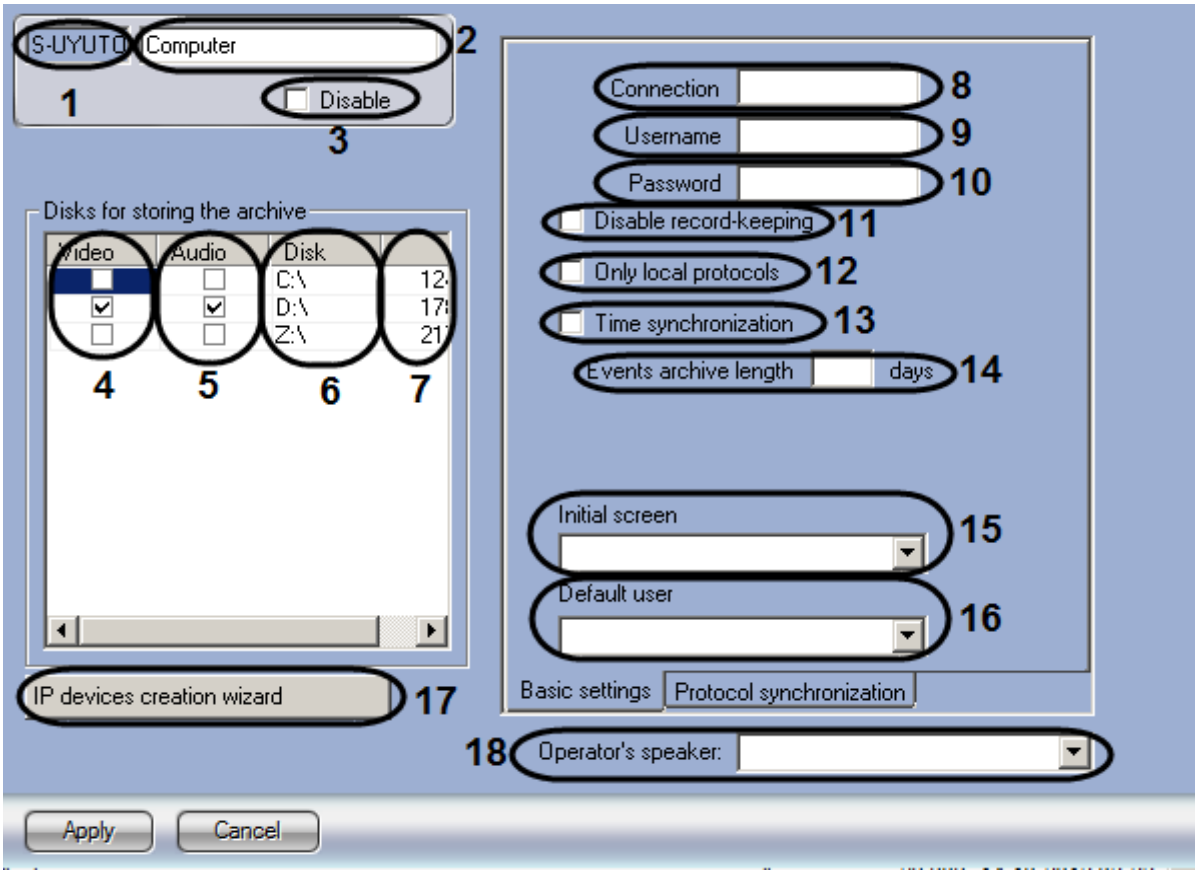


Figure 11.2-35 The settings panel of the "Computer" object. The "Basic settings" tab

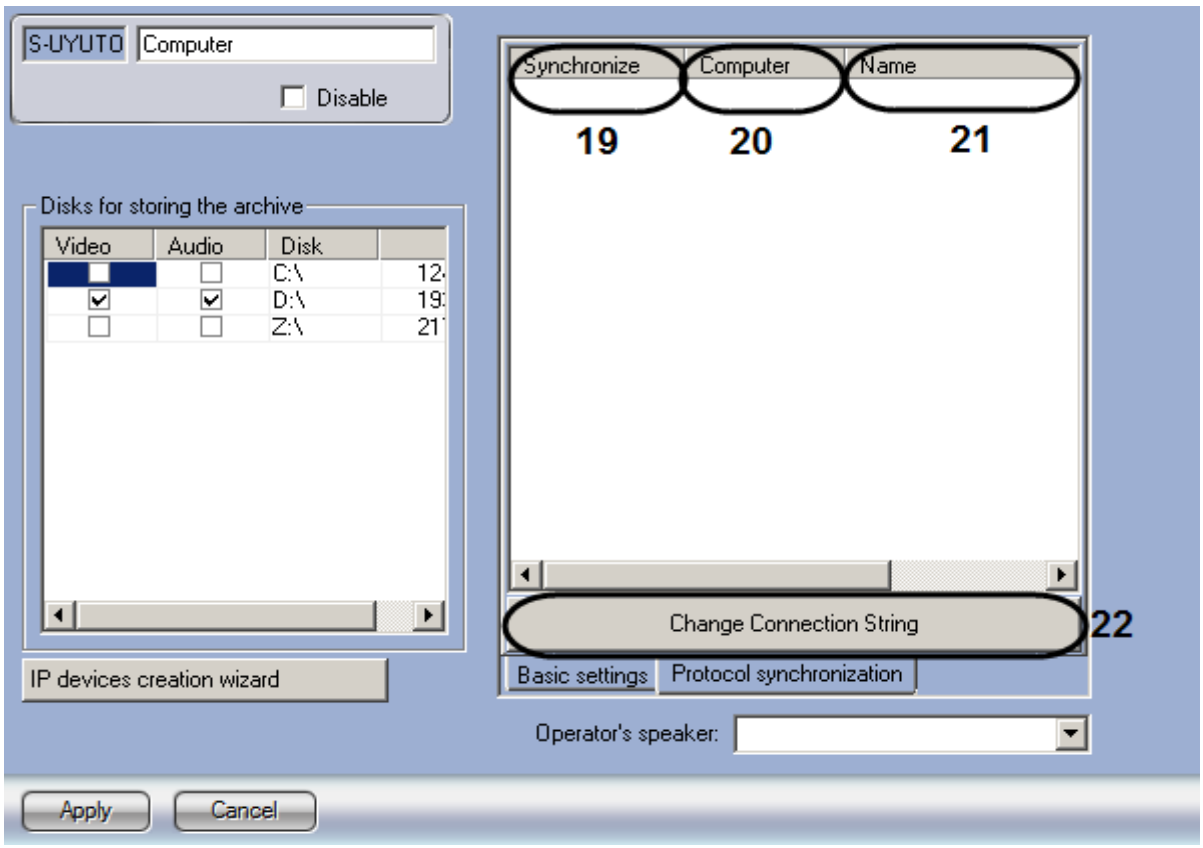


Figure 11.2-36 The settings panel of the “Computer” object. The “Protocol synchronization” tab

Table 11.2-4 describes the parameters of the Computer object settings.

Table 11.2-4

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Network name*	Automatically	Displays the computer name in the local network	Latin and service characters	-	Depends on the number of Computer objects registered in the system
2	Name*	Enter the value in the field	Set the name of the computer object in the system	Latin, Cyrillic and service characters	Comput -er	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the	Defines the condition of the Computer object	Boolean type	Not availabl	Yes – the Computer is

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
		check mark	(connected or diskonnected) in the system		e	diskonnected and is not in use No – the Computer is connected and is in use.
Disks for Archive Storage						
4	Video	Is identified by the check mark	Set the disk for storing video archive from cameras and also audio archive during synchronous audio and video recording	Boolean type	No	Yes – the disk is used for video archive storingt No- the disk is not used for video archive storingt
5	Audio	Is identified by the check mark	Set the disk for storing audio archive from microphones	Boolean type	No.	Yes – the disk is used for video archive storingt No- the disk is not used for video archive storingt
6	Disk	Automatically	Displays the names of local disks , accessible for storing video and audio archive	Names of local disks (Latin characters)	-	Depends on the total number of local disks
7	Gb	Automatically	Contains information about free space on the every accessible disk	Disk space in GB	-	Depends on the total free disk space
Settings Group						
8	Connection	Enter the value in the field	Gives the name to the modem connection used in the Windows	Latin, Cyrillic and service	Not defined	A line containing a sequence of any symbols (letters,

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			OS.	characters		digits, service characters) Number of symbols – from 1 to 30.
9	Username	Enter the value in the field	Sets the login name for the existing Windows modem connection.	Latin, Cyrillic and service characters	Not defined	A line containing a sequence of any symbols (letters, digits, service characters), case-sensitive. Number of symbols – from 1 to 30.
10	Password	Enter the value in the field	Sets the password for the existing Windows modem connection	Latin, Cyrillic and service characters	Not defined	A line containing a sequence of any symbols (letters, digits, service characters), case-sensitive. Number of symbols – from 1 to 30.
11	Disable record-keeping	Is identified by the check mark	Switches off storing of events to the “Event viewer” database on the local computer.	Boolean type	No	Yes - events are not stored to the “Event viewer” database No - events are stored to the “Event viewer” database
12	Only local protocols	Is identified by the check mark	Activates logging to the database the Events viewer only information about events, registered on the given computer	Boolean type	Not availabl e	Yes – only events, registered at this computer are logged to the database the Events viewer No – events,

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
						registered at this computer are not logged to the database the Events viewer
13	Time synchronization	Checkbox	Set time synchronization of all computers in the distributed system with system time of this computer. Time is automatically synchronized at midnight every 24 hours or when INTELLECT™ is started on the Server that is the source of time synchronization.	Boolean type	No	Yes - time is synchronized No – time is not synchronized
14	Events archive length	Type-in the value in the field	Sets the peiod of time for the events to be stored in the “Event viewer” database	Days	-	More than 1
15	Initial screen	Is selected from the list	Set the screen to be displayed on default after downloading of the Intellect digital video surveillance system.	Names of the Screen objects registered in the system	-	Depends on total number of Screen objects registered in the system.
16	Default user	Is selected from the list	Defines a default user, i.e., the user, the rights and authorities of which will be used to launch Intellect™ software without a password.	Names of the users registered in the system.	Not defined	List of users registered in the Intellect™ system.
17	IP devices creation wizard	Press the button	Access to creating, settings and editing of IP devices.	-	-	-

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
18	Operator's speaker	Is selected from the list	Allows swlwcting the speaker that is to be in use for audio playback	Names of the Speaker objects registered in the system	Not defined	Depends on number of the Speaker objects registered in the system
Protocol synchronisation						
19	Synchronise	Is identified by the check mark	Set the syncronisation of database The Events viewer of local and remote computers	Boolean type	-	Yes– database the Events viewer of local and remote computers are synchronised No– database the Events viewer of local and remote computers are not synchronised
20	Computer	Automatically	Displays the netname of remote computer with which database the Events viewer must be synchronised	Latin alphabet and service characters	-	Depends on the number of computers, registered in the system
21	Name	Automatically	Displays the name of remote computer in the net	Latin, Cyrillic and service characters		A line containing a sequence of any symbols (letters, digits, service characters), case-sensitive. Number of symbols – from 1 to 60.
22	Change connection string	Press the button	Access to settings and editing the parameters of coonection to the database theEvents viewer of remote computer	-	-	-

11.2.8.3 *Settings panel of the Video capture card object*

The settings panel of the “Video capture card” object is shown in Figure 11.2-37.

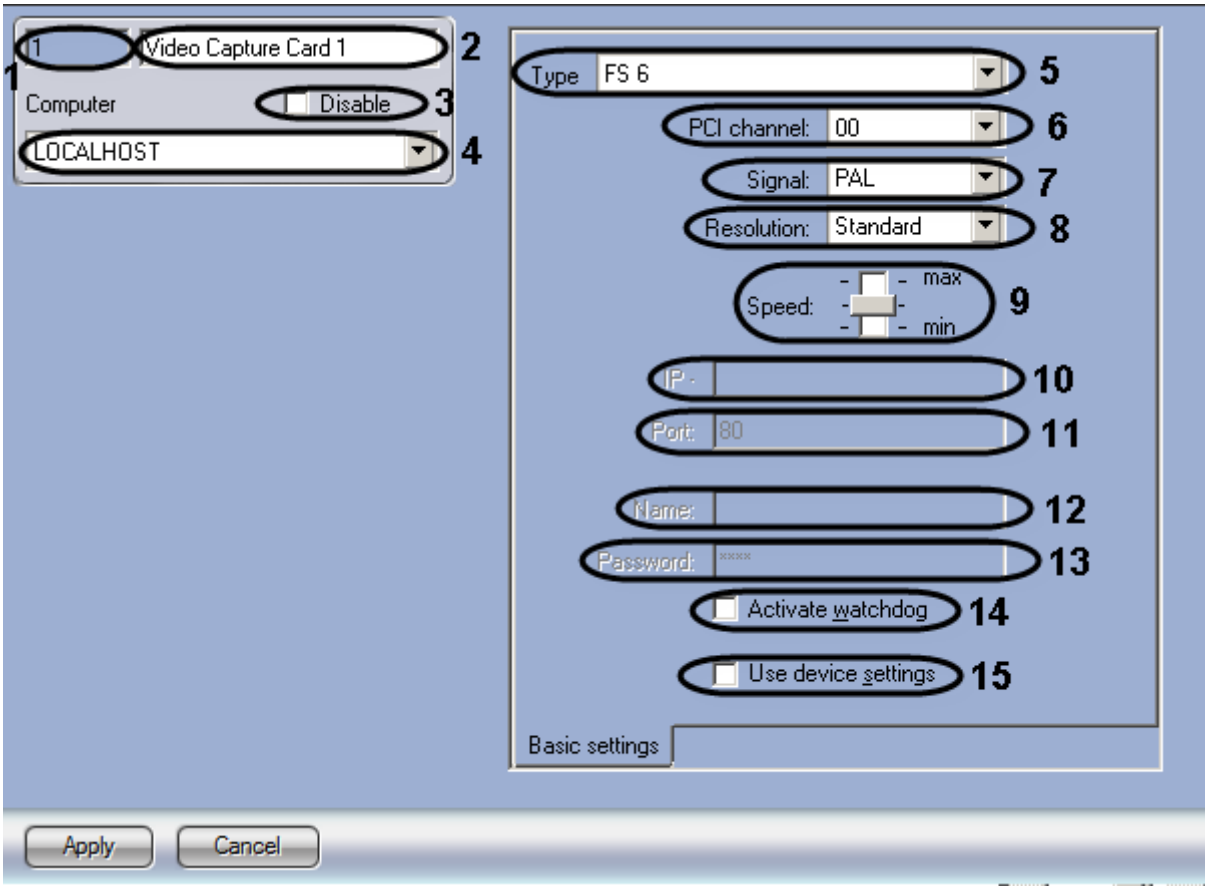


Figure 11.2-37 The settings panel of the “Video capture card” object

Table 11.2-5 describes the parameters of the Video capture card settings panel.

Table 11.2-5

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
1	The “Identification number” field	Automatically	Shows the identification number of the “Video capture card object” in the system.	Sequence of numbers	-	Depends on the number of the “Video capture card” objects in the system.
2	The “Name” field	Enter the value in the field	Assigns a name to the “Video capture card” object in the system.	Latin, Cyrillic letters and service characters	Video capture card	A line representing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
3	The “Disable” checkbox	Is set with a checkbox	Shows the status (enabled or disabled) of the “Video capture card” object in the system.	Boolean type	-	Yes – the “Video capture card” object is disabled and is not in use. No – the “Video capture card” object is enabled and is in use.
4	The “Computer” dropdown list	Is selected in the list	Assigns the parent “Computer” object for the “Video capture card” object.	Name of the “Compute r” objects registered in the system.	Name of the parent “Comput er” object	Depends on the number of the “Computer” objects in the system.
The “Basic settings” group						
5	The “Type” dropdown list	Is selected in the list	Sets the type of the video capture card	Types of video capture cards	Is not defined	Video capture cards (FS-3, FS-5, FS-6, FS-8, WS–4, WS-7/17). Network video hubs (WaveHub, LinuxHub) Network devices (Axis, Panasonic, etc.)
6	The “PCI channel” dropdown list	Is selected in the list	Assigns the PCI channel number of the video capture card’s ADC.	List of active channels available for video input.	-	From 0 to 31, depending on the number of PCI channels in the video server and the number of installed ADCs.
7	The “Signal” dropdown list	Is selected in the list	Sets the format of the incoming video signal.	List of video signal formats	PAL	PAL, NTSC
8	The “Resolution” dropdown list	Is selected in the list	Sets resolution of the video frames.	List of available video frame resolution s	Standard	PAL: Standard- 352x288 pixels. High - 704x288 pixels.

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
						Full - 704x576 pixels. NTSC: Standard – 352x240 pixels. High - 640x240 pixels. Full - 640x480 pixels.
9	The “Speed” slider	Is set in the required position.	Sets the total frame rate of the video signals processed by the video capture card’s ADC.	Permitted deviations of the total video signal frame rate transmission.	Average	Max – maximum permitted total video signal frame rate. Average – half of the maximum permitted total video signal frame rate. Min – one third of the maximum permitted total video signal frame rate.
10	The “IP” field	Enter the value in the field	Sets the IP address of a network device.	IP address	-	A line presented as xxx.xxx.xxx.xxx Contains the values: 0.0.0.0 – 255.255.255.255 Depends on network settings of IP devices registered in the system
11	The “Port” field	Enter the value in the field	Sets the connection port of IP-device	Nonnegative integer		From 0 to 65535 Depends on net settings of IP devices
12	The “Name” field	Enter the value in the field	Set the user’s name for connection to the net IP-device	-	-	Depends on net settings of IP-device

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
13	The “Password” field	Enter the value in the field	Sets the password required for connection to the network device.	-	-	Depends on net settings of IP devices
14	The “Activate WatchDog” checkbox	Is set with a checkbox	Activate Windows OS reset, if the main modules of the Intellect video surveillance system hang up	Boolean type	-	Yes – reset of Windows OS is activated No - reset of Windows OS is not activated
15	The “Use device settings” checkbox	Is set with a checkbox	Allows using settings specified in Web server or another software of IP device	Boolean type	-	Yes – settings of IP device are in use. No – settings of INTELLECT™ are in use

11.2.8.4 *Settings panel of the Camera object*

The settings panel of the “Camera” object is shown in Figure 11.2-38 and Figure 11.2-39.

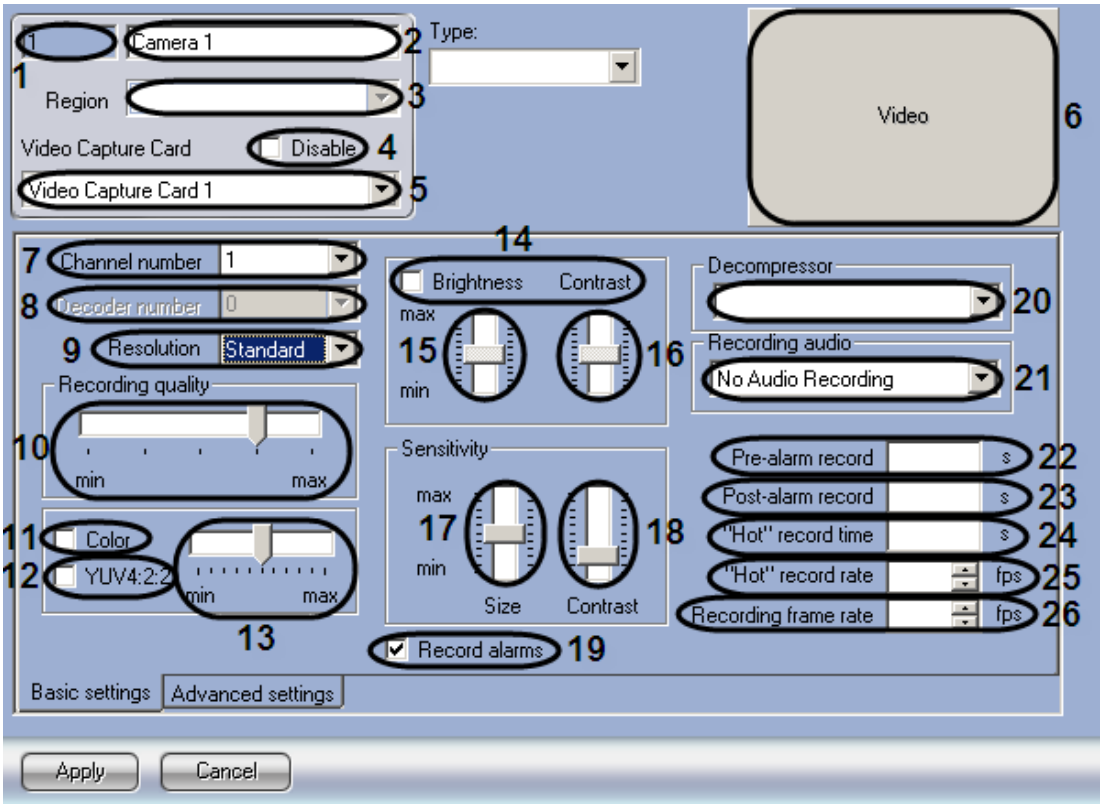


Figure 11.2-38 The settings panel of the “Camera” object. The “Basic settings” tab

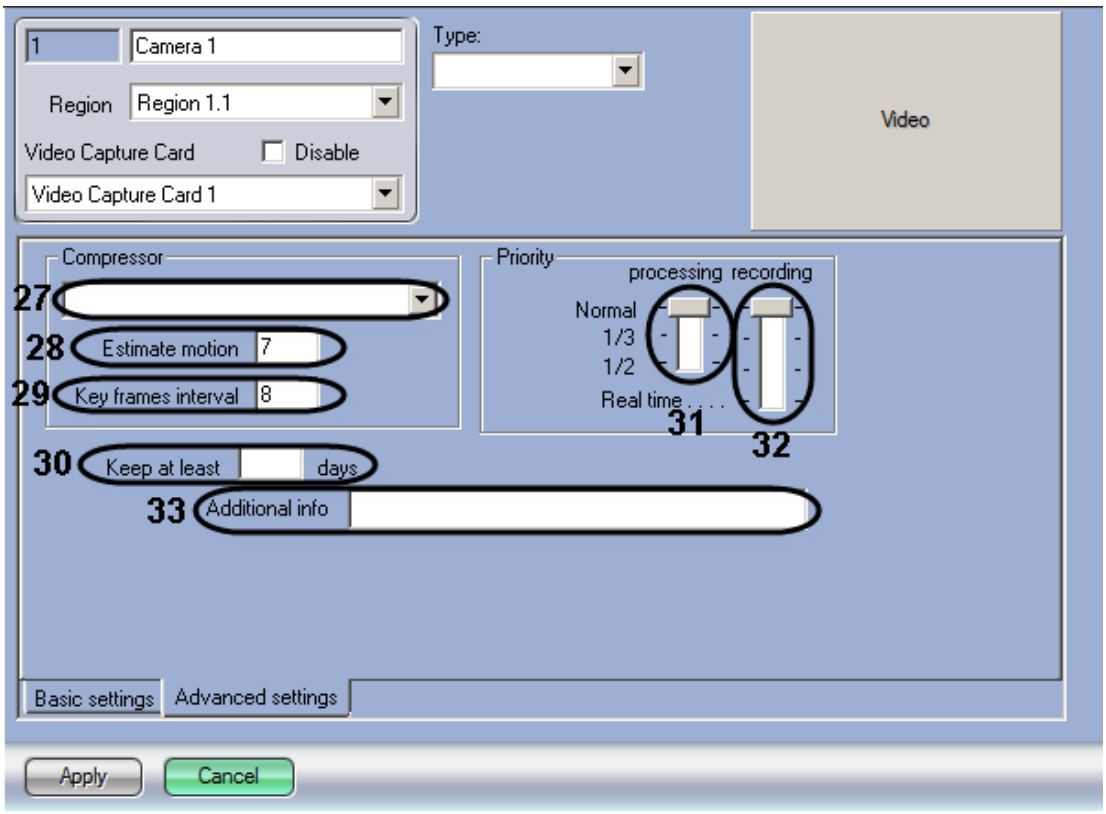


Figure 11.2-39 The settings panel of the “Camera” object. The “Advanced settings” tab

Table 11.2-6 describes the settings parameters of the “Camera” object.

Table 11.2-6

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
1	The “Identification number” field	Automatically	Shows the identification number of the “Camera” system object in the system.	Sequence of numbers	-	Depends on the number of the “Camera” objects in the digital distributed video surveillance system.
2	The “Name” field	Enter the value in the field	Set the name of the “Camera” object in the system	Latin, Cyrillic letters and service characters	Camera	A line representing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	The “Region” drop-down list	Is selected from the list	Assigns the “Section” structural element, to which the given	Name of the “Section” objects	Section	Depends on the number of created “Section” objects registered in the

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
			“Camera” object refers.	registered in the system.		system.
4	The “Disable” checkbox	Is set with a checkbox	Set the status (connected or diskonnected) of the “Camera” object in the system.	Boolean type	Not available	Yes – the “Camera” object is disabled and is not in use. No – the “Camera” object is connected and is in use.
5	The “Video capture card” drop-down list	Is selected from the list	Set the parent “Video capture card” object for the given “Camera” object.	Name of the “Video capture card” objects registered in the system.	Name of the parent “Video capture card” object.	Depends on the number of the “Video capture card objects” in the system.
6	The “Video” box	Left-click	Displays video with settings	Video	-	-
The “Basic settings” tab						
7	The “Channel number” drop-down list	Is selected from the list	Defines the number of the channel used to connect a video camera to the video capture card. Corresponds to the BNC-adapter number.	Sequence of numbers	1	Depends on the type of the video capture card. Maximum 16 channels.
8	The “Decoder number” drop-down list	Is selected from the list	Defines the number of channels for connecting a camera to the video capture card. Parameter is active only with the use of outdated video capture cards. Parameter is not active with the use of video capture cards by AxxonSoft company.	Sequence of numbers	0	From 0 to 3
9	The “Resolution” drop-down list	Is selected from the list	Set the resolution of the frame.	List of available resolutions of the	Standard	PAL: Standard - 352x288

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
				frames.		pixels. High - 704x288 pixels. Full – 704x576 pixels. NTSC: Standard– 352x240 pixels. High – 640x240 pixels. Full – 640x480 pixels.
10	The “Recording quality” slider	The slider is set in the required position	Set the quality of the recorded frame. Is a value reciprocal to the level of video signal compression.	-	Above average	Min – maximum compression level and the lowest video signal quality. Max – the lowest compression level and the highest video signal quality.
11	The “Color” checkbox	Is set with a checkbox	Set the type of video image received from the camera (color or black and white)	Boolean type	No	Yes – the video will be color. No – the video will be black and white.
12	The “YUV 4:2:2” checkbox	Is set with a checkbox	Set the format of the video signal color image.	Boolean type	No	Yes – the video signal will be displayed in the “YUV 4:2:2” format. No – the video signal will be displayed in the “YUV 4:2:0” format.
13	The “Color” slider	The slider is set in the required position	Set the color saturation of the colored video	From maximum color saturation to a black and white video.	Average	Max – corresponds to the maximum color saturation of the video. Min – corresponds to the black and white video.
14	The “Brightness-Contrast”	Is set with a checkbox	Set the mode for setting brightness and contrast	Types of modes for setting	Automatic	Automatic - brightness and contrast

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
	checkbox		of the video	brightness and contrast of the video		are set automatically. Manual ☑ - brightness and contrast are set manually. Manual setting with automatic optimization ☑ - brightness and contrast are set manually and followed by automatic optimization.
15	The “Brightness” slider	The slider is set in the required position	Set the video brightness	From maximum brightness (white video) to minimum brightness (black video)	Average	Max – corresponds to the maximum brightness of the video. Min – corresponds to the minimum brightness of the video.
16	The “Contrast” slider	The slider is set in the required position	Set the video contrast	-	Average	Max – corresponds to the maximum contrast of the video. Min – corresponds to the minimum contrast of the video.
17	The “Size” slider	The slider is set in the required position	Set the minimum object size triggering the main motion detector.	% in relation to the screen elevation	Average	Minimal – 0% of the video surveillance box size. Maximum – 100% of the video surveillance box size
18	The “Contrast” slider	The slider is set in the required position	Set the minimal contrast of the object triggering the main motion detector	-	Less than average	Max – correspond to maximal contrast of the object Min – corresponds to the minimal contrast of the object
19	The “Record alarms” checkbox	Is set with a checkbox	Starts automatic video recording on the alarm from the camera (alarm on the Main motion detector)	Boolean type	Yes	Yes – automatic video recording on the alarm from the camera is active. No – automatic video

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
						recording on the alarm from the camera is not active.
20	The “Decompressor” drop-down list	Is selected from the list	Set the technology using which the compressed video stream will be decompressed	The list of available decompressors	No	BOSCH FfmpegAllInOneDecoder H263IppDecoder H264InterlacedIppDecoder H264IppDecoder MJPEGIpp Motion Wavelet 1 MPEG2IppDecoder MPEG4IppDecoder MxPEG Mobotix RGB24toYUV420 StreamLabs VWV WMVIppDecoder
21	The “Recording audio” drop-down list	Is selected from the list	Set a microphone audio signal from which will be recorded simultaneously with the video signal from the camera.	Name of the Microphone objects registered in the system.	No recording	Depends on the number of the Microphone objects registered in the system. No recording – there is no synchronous audio and video recording
22	The “Pre-alarm record” field	Enter the value in the field	Set the pre-alarm time period for video recording, during which there is pre-event recording	Time (in sec)	-	Recommended time – from 0 to 20
23	The “Post-alarm record” field	Enter the value in the field	Set the time period for video recording after alarm registration.	Time (in sec)	-	Recommended time – from 0 to 20
24	The “Hot-record time” field	Enter the value in the field	Set the time period from the alarm registration, during which the frame rate of recording will comply with the value entered in the “Hot record rate” field	Time (in sec)	-	Recommended time – from 0 to 30
25	The “Hot-record rate” field	Enter the value in the field / select from the list	Set the frame rate of alarm’s hot recording	fps	-	From 0 to 100. Recommended time – from 0 to 20

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
26	The “Recording frame rate” field	Enter the value in the field/ select from the list	Set the frame rate for video recording	fps	-	From 0 to 100. Recommended time – from 1 to 25 for PAL From 1 to 30 for NTSC
The “Advanced settings” tab						
27	The “Compressor ” drop-down list	Is selected from the list	Set the algorithm of video stream compression	The list of available algorithms	No	MJPEG, Motion Wavelet, Motion Wavelet 2
28	The “Estimate motion” field	Enter the value in the field	Set threshold of camera’s sensivity to motion depending on the change of object’s brightness. Delta frame of video signal is created by this criterion.	Sequence of numbers	7	From 2 to 255
29	The “Key frames interval” field	Enter the value in the field	Set the interval of including the keyframes into the video stream compressed by the Motion Wavelet algorithm.	Sequence of numbers	10	From 1 to 100
30	The “Keep at least ___ days” field	Enter the value in the field	Set the time period for keeping the video archive from the camera and also audio archive(with the synchro records) on the Server	Day	-	More than 1
31	The “Processing priority” slider	The slider is set in the required position	Set the priority of video processing	The order of video processing	Normal	Normal – normal video procession order 1/3 – 1/3 procession order 1/2 – 1/2 procession order
32	The “Recording priority” slider	The slider is set in the required position	Set the priority of video processing in the recording mode	The order of video processing in the recording mode	Normal	Normal – normal video record order 1/3 – 1/3 procession order 1/2 – 1/2 procession order All resources – all ADC resourses are in use for video recording

№	Parameter	Method for setting the parameter value	Description	Presented as	Default value	Range of values
33	The “Additional info” field	Enter the value in the field	Set the information displayed on the monitor above the camera name. This information is added to the export file and when the frame is printed, as to the event log	The line not longer than 100 characters	Blank line	Latin, Cyrillic letters and service characters

11.2.8.5 *Settings panel of the Detection zone object*

The “Detection zone” object is used to register and configure intelligent video detectors. The settings panel of the “Detection zone” object is shown in Figure 11.2-40.

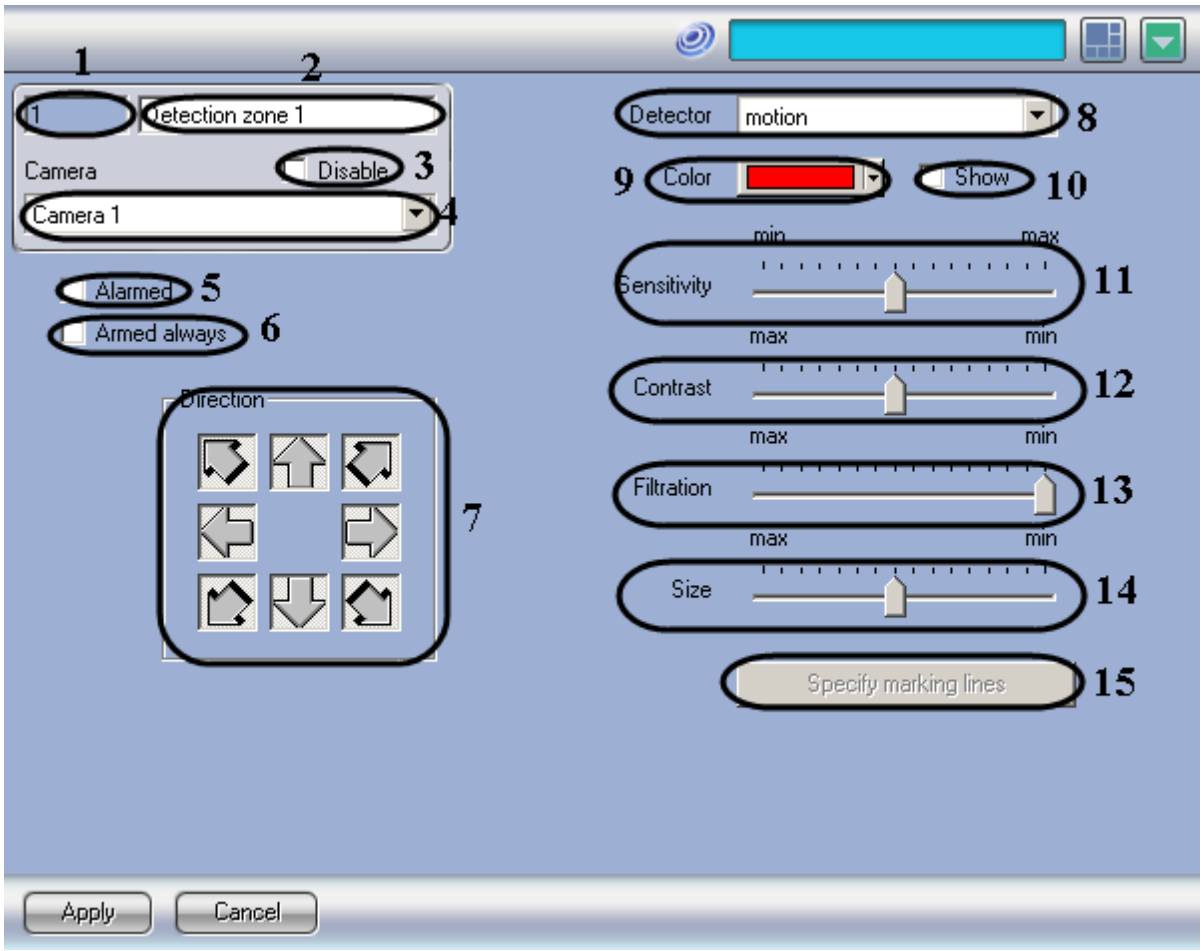


Figure 11.2-40 The settings panel of the “Detection zone” object

Table 11.2-7 describes the parameters of the settings corresponding to the elements of the settings panel of the “Detection zone” object.

Table 11.2-7

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Detection zone object in the digital distributed video surveillance system.	Sequence of numbers	-	Depends on the number of Detection zone objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the field	Defines the name of the Detection zone object in the digital distributed video surveillance system.	Latin, Cyrillic letters and service characters	Detection zone	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Detection zone object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Detection zone is diskonnected and is not in use No – the Detection zone object is connected and is in use.
4	Camera	Is selected from the list	Defines the parent Camera object of the digital distributed video surveillance system, to which the given Detection zone object refers.	Name of the Camera objects registered in the system	Name of the parent Camera object.	Depends on the number of Camera objects in the digital distributed video surveillance system.
5	Alarmed	Is identified by the check mark	Starts automated recording of the video signal from the camera with the alarm received from the selected detector.	Boolean type	Not available	Yes - automated recording of the video signal with the alarm received from the selected detector is in progress. No - automated recording of the video signal with the alarm received from the selected detector is not

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
						in progress.
6	Always armed	Is identified by the check mark.	Defines the condition of the selected detector as Always armed.	Boolean type	Not available	Yes – the detector should always be armed. No – the operator may disarm the detector.
Direction Group						
7	Direction of search*	Press the arrow buttons.	Defines the direction of search for the motion detector.	8 possible directions to follow an object within the frame.	Pressed: up, down, to the left, to the right Pulled out: up and to the left, up and to the right, down and to the left, down and to the right.	Up, down, to the left, to the right, up and to the left, up and to the right, down and to the left, down and to the right.
Out of the groups						
8	Detector	Is selected from the list	Is used to define the type of the detector in use.	List of the detectors in the system.	Motions	Motions Image sharpening Steadiness Changing the background of: Flash Closing Faces abandoned items; Opposite line
9	Color	Is selected either from the list or in	Defines the frame border color in the observed	RGB, CMY	Red	Corresponds to the standard range of the

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
		the Color settings panel (is selected using the Color select command).	scene. This parameter is active only with the following detectors selected from the Detector list: motion, face, abandoned items, opposite line.	or HSL.		selected color system.
10	Show	Is identified by the check mark	Defines the frame border in the observed scene. This parameter is active only with the following detectors selected from the Detector list: motion, face, abandoned items, opposite line.	Boolean type	No – for the motion detector. Yes - for the following detectors: face, abandoned items, opposite line.	Yes – the object border is displayed in the observed scene. No – the object border is not displayed in the observed scene.
11	Sensitivity	Set the slide in the required position.	Defines the cognominal parameter of the selected detector settings. Depends on the type of detector selected.	-	Average	-
12	Contrast	Set the slide in the required position.	Defines the cognominal parameter of the selected detector settings. Depends on the type of detector selected. Is not applicable for all detector types.	-	Average	-
13	Filtration	Set the slide in the required position.	Defines the cognominal parameter of the selected detector settings. Depends on the type of detector selected. Is not applicable for all	-	Minimal	-

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			detector types.			
14	Size	Set the slide in the required position.	Defines the cognominal parameter of the selected detector settings. Depends on the type of detector selected. Is not applicable for all detector types.	-	Average	-
15	Set delimitation lines	Is not used	-	-	-	-

b. Name of the element is not displayed in the settings panel of the given object.

11.2.8.6 *Settings panel of the Audio card object*

The “Audio card” object is designed to register and configure audio signal digitization devices installed on the videoserver of the Intellect™ system.

The settings panel of the “Audio card” object is shown in Figure 11.2-41.

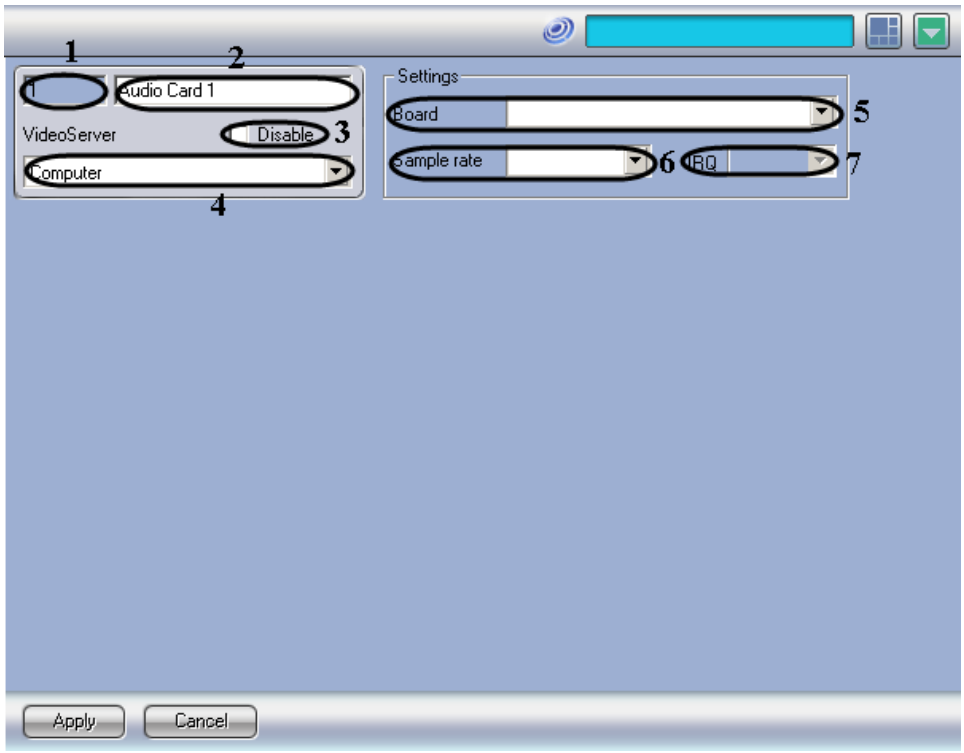


Figure 11.2-41. Audio card settings panel

Table 11.2-8 describes the parameters of the settings corresponding to the elements of the settings panel of the “Audio card” object.

Table 11.2-8

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Audio card object in the digital distributed video surveillance system.	Sequence of numbers	-	Depends on the number of Audio card objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Defines the name of the Audio card object in the digital distributed video surveillance system.	Latin, Cyrillic letters and service characters	Audio card	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Audio card object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Audio card object is diskonnected and is not in use. No – the Audio card object is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Camera object of the digital distributed video surveillance system, to which the given Audio card object refers.	Name of the Computer objects registered in the system	Name of the parent Camera object.	Depends on the number of Computer objects in the digital distributed video surveillance system.
Settings Group						
5	Board	Is selected from the list	Defines the device for sound digitization. Digitization devices include various sound cards, such as SoundBlaster, AD converters of the video capture cards, USB of the	List of audio digitization devices.	Not defined	Depends on the number of audio signal digitization devices installed on the videoserver. For SoundBlaster type audio cards -

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			audio signal digitization.			the name of the card For the AD converters of the video capture cards – the name of the video capture card, including the number of the audio channel. For the USB – the name of the video capture card, including the number of the audio channel. For network devices – the type of network device: AX, LH. IpCamAxis
6	Digitization frequency	Is selected from the list	Defines the frequency for audio signal digitization.	Hz	For SoundBlaster type audio cards - 8000. For the AD converters of the video capture cards - 8000.	For SoundBlaster type audio cards - the frequency range of the digitization depends on the type of the audio card 48 000 is the maximum value for any card. For the AD converters of the video capture cards - 8000, 16000, 32000. For USB devices – the frequency range of the digitization depends on the type of device used; 48 000 is the maximum value.
7	IRQ	Is not used	-	-	-	-

c. Name of the element is not displayed in the settings panel of the given object.

11.2.8.7 *Settings panel of the Microphone object*

The settings panel of the “Microphone” object is shown in Figure 11.2-42.

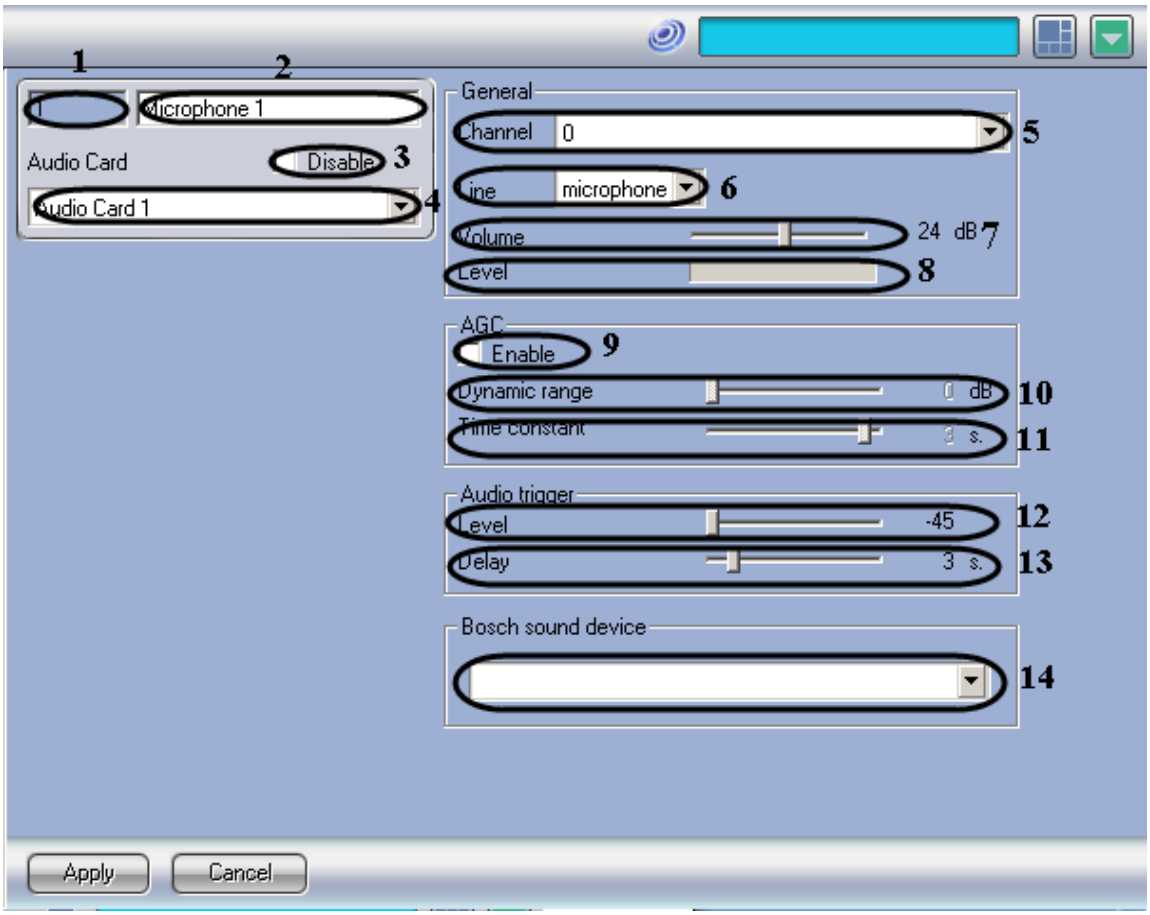


Figure 11.2-42 The settings panel of the “Microphone” object

Table 11.2-9 describes the settings parameters of the “Microphone” object.

Table 11.2-9

№	Parameter	Method for setting the parameter value	Parameter description	Symbol used	Default value	Value range
1	Identification number	Automatically	Displays the identification number of the Microphone object in the system.	Sequence of numbers	-	Depends on the number of Microphone objects in the system
2	Name	Entering the value in the field	Set the name of the Microphone object in the system	Latin, Cyrillic letters and service characters	Microph one	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	Disable	Is set by a check box	Defines the condition of the Microphone	Boolean type	No	Yes – the Microphone is diskonnected and is not

№	Parameter	Method for setting the parameter value	Parameter description	Symbol used	Default value	Value range
			object (connected or diskonnected) in the system.			in use. No – the Microphone is connected and is in use.
4	Audio card	Select from the list	Defines the parent Audio card object for the given Microphone object	Name of Sound card objects registered in the system	Name of Sound card parento bject	Depends on the number of Audio cards in the system.
General group						
5	Channel	Select from the list	Defines the number of the channel for the audio signal input in compliance with the RCA-F pin to which the microphone is connected.	Right,left chanel	0	Depends on the type of audio signal digitization card. For AxxonSoft AD converters of the audio signal digitization cards and SoundBlaster type audio cards: 0 – Left channel. 1 – Right channel.
6	Line	Select from the list	Set the source of audio signal	Source type of audio signal	Microph one	Microphone – audio signal comes from the microphone. Phone – the audio signal comes from the telephone line.
7	Volume	Is set in the position	Defines the volume of the audio signal	Volume of the sound in Db	24	From 0 to 45
8	Level	Automatically	Displays the volume of the incoming audio signal.	Volume of the sound in Db	-	From 0 to 45
AGC group (is set with the use of Olkha sound cards:«Olkha-9P», «Olkha-10LP», «Olkha-12U», «Olkha-14»)						
9	Enable	Is set by a check box	Enables automatic adjustment of audio signal volume	Boolean type	No	Yes – automatic adjustment of audio signal volume is enable No – automatic adjustment of audio signal volume is disabled

№	Parameter	Method for setting the parameter value	Parameter description	Symbol used	Default value	Value range
10	Dynamic range	Is set in the position	Set the level of audio signal volume after the automatic adjustment	Sound volume in Db	0	From 0 to 45
11	Time constant	Is set in the position	Defines the time period, during which audio signal is leveled to the required volume with automatic adjustment	Time in sec	3	From 0,1 to 6
Audio trigger						
12	Level	Is set in the position	Set the volume of the sound, which exeeding leeds to auto recording of audio signal (registration of alarm)	Sound volume in reference units	-45	-45 – audio trigger is on From -44 to 0 –audio trigger is off
13	Delay	Is set in the position	Defines the time period, during which the threshold of audio signal after the end of alarm is being performed	Time in sec	3	From 1 to 16
Bosh sound device group (is set for sound cards IP-cameras Bosch)						
14	Bosh sound device	Select from the list	Set the sound device, audio signals from which shoul be transmitted to loudspeakers of the given IP-camera Bosch	Names of registered sound devices	-	Depends on sound devices, registered in the system

*Name of the element is not displayed in the settings panel of the given object.

11.2.8.8 *Settings panel of the Telemetry card object*

The “Telemetry card” object is designed to register and configure serial ports (COM) used for connecting the PTZ units of the Intellect™ system.

The settings panel of the “Telemetry card” object is shown in Figure 11.2-43.

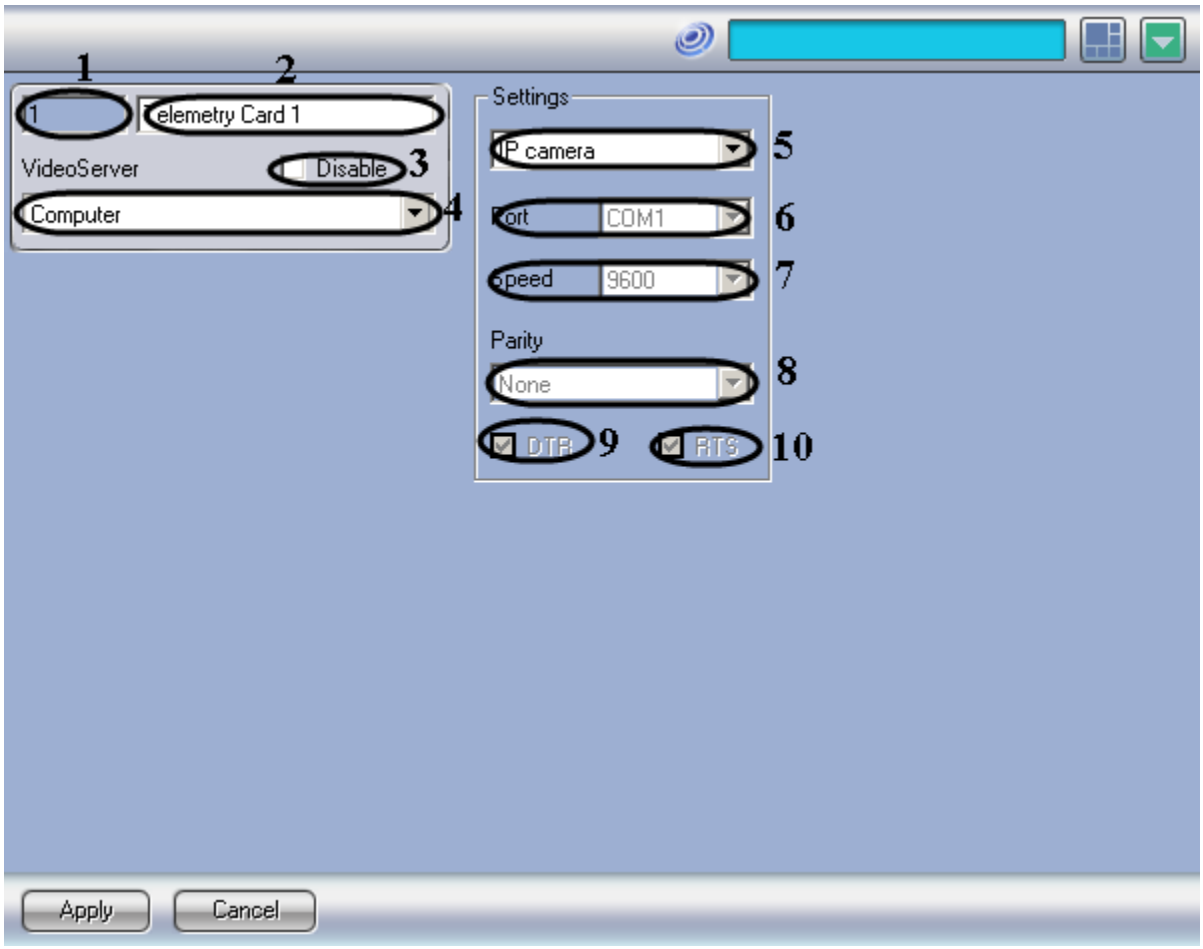


Figure 11.2-43 The settings panel of the “Telemetry card” object

Table 11.2-10 describes the parameters of the settings corresponding to the elements of the settings panel of the “Telemetry card” object.

Table 11.2-10

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Telemetry controller object in the digital distributed video surveillance system.	Sequence of numbers	-	Depends on the number of Telemetry controller objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Defines the name of the Telemetry controller object in the digital distributed video surveillance system.	Latin, Cyrillic letters and service characters	Telemetry controller No.	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols –

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
						from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Telemetry controller object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Telemetry controller object is diskonnected and is not in use No – the Telemetry controller is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object of the digital distributed video surveillance system, to which the given Telemetry controller object refers.	Name of the Computer objects registered in the system	Name of the parent Camera object.	Depends on the number of Computer objects in the digital distributed video surveillance system
Settings Group						
5	Controller type*	Is selected from the list	Defines the data communication protocol with the PTZ unit over the serial port (COM). Data communication protocols are supplied by the PTZ vendors.	Name of the PTZ units integrated in the system.	Videotec	Corresponds to the list of the PTZ units integrated in the system.
6	Port	Is selected from the list	Defines the number of the COM port of the computer, to which PTZ will be connected.	List of COM ports available	COM1	Depends on the number of COM ports in the videoserver or Remote administrator workstation.
7	Speed	Is selected from the list	Defines the data communication rate for the COM port.	Kb/sec	9600	From 300 to 256000.
8	Parity	Is selected from the list	Defines the parity check mode for the data transmission over the COM port.	List of parity check modes.	None	Even, Odd, None, Mark, Space.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
9	DTR	Is identified by the check mark.	Defines the power supply to the PTZ unit via the DTP COM port.	Boolean type	Yes	Yes – the power will be supplied via the DTR port. No – the power will not be supplied via the DTR port.
10	RTS	Is identified by the check mark.	Defines the power supply to the PTZ unit via the RTS COM port.	Boolean type	Yes	Yes – the power will be supplied via the RTS port. No – the power will not be supplied via the RTS port.

6. Name of the element is not displayed in the settings panel of the given object.

11.2.8.9 *Settings panel of the PTZ device object*

The “PTZ device” object is designed to register and configure the PTZ device in the Intellect™ system.

The settings panel of the the “PTZ device” object is shown in Figure 11.2-44.

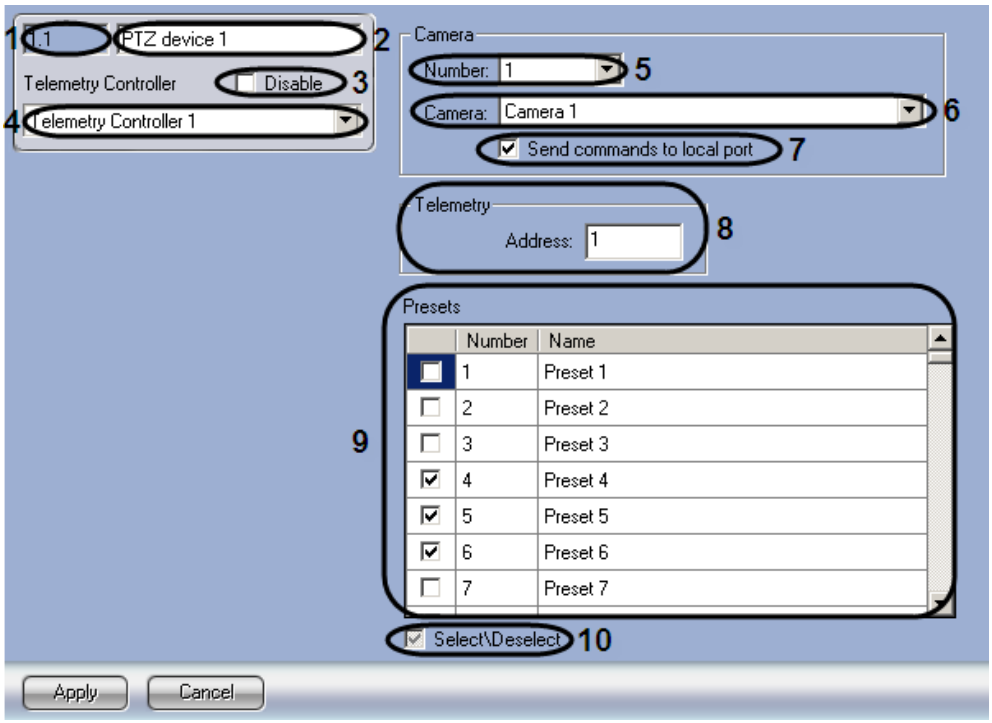


Figure 11.2-44. The PTZ device settings panel

Table 11.2-11 describes the parameters of the settings corresponding to the elements of the settings panel of the “PTZ device” object.

Table 11.2-11

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number	Automatically	Display the identification number of the “PTZ device” object in the digital distributed video surveillance system	Sequence of numbers	-	Depends on the number of the “PTZ device” objects in the digital distributed video surveillance system
2	Name	Enter the value in the field	Set the name of the “PTZ device” object in the digital distributed video surveillance system	Latin, Cyrillic letters and service characters	PTZ device	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of characters – from 1 to 60.
3	Disable	Is set with the checkbox	Set the status of the “PTZ device” object (connected or diskonnected) in the digital distributed video surveillance system	Boolean type	No	Yes – the PTZ device is diskonnected and is not in use No – the PTZ device is connected and is in use.
4	Telemetry controller	Is selected from the list	Set the parent “Telemetry controller” object of the digital distributed video surveillance system, to which the given “PTZ device” object refers.	Name of the “PTZ device” objects registered in the system	Name of the parent “Telemetr y controller” object.	Depends on the number of Telemetry controllers in the digital distributed video surveillance system
The “Camera” group						
5	Number	Is selected from the list	Set the identification number of the surveillance camera, where the PTZ device is installed.	Sequence of numbers	Not defined	Depends on the number of surveillance cameras in the digital distributed video surveillance system
6	Camera	Is selected from the list	Match the PTZ device with the surveillance camera, where it is	Name of the “Camera” objects	No	Depends on the number of the “Camera” objects in the digital distributed

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			installed. The parameter is used by the Video Monitor and telemetry window for the purposes to control the PTZ device.	registered in the system		video surveillance system
7	Send commands to local port	Is set with the checkbox	Boost priority of the local COM port when the commands are sent to the PTZ device	Boolean type	No	Yes – the priority of COM port is higher than for other devices No – the priority of COM port is set by default
8	Address	Is selected from the list	Set the address of PTZ device installed as hardware (with the jumpers on the PTZ device) or as software (with the software designed to update the PTZ device firmware).	Sequence of numbers	1	Integer from 1 to 255. Depends on the protocol of PTZ device
9	Presets	Is set with the checkbox	Select the presets that are to be displayed in the “Telemetry control” box	Boolean type	No	Yes – the preset name is displayed in the “Telemetry control” box No – the preset name is not displayed in the “Telemetry control” box
	Name	Enter the value in the field	Set the preset name to display it in the “Telemetry control” box	Latin, Cyrillic letters and service characters	Preset	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive
10	Select/Deselect	Is set with the checkbox	Check/Uncheck all the elements in the “Presets” table	Boolean type	No	Yes – select all the presets No – uncheck all the presets

11.2.8.10 *Settings panel of the Control panel object*

The “Control panel” object is designed to register and configure a specialized control panel used for PTZ control in the Intellect™ system.

The settings panel of the “Control panel” object is shown in Figure 11.2-45.

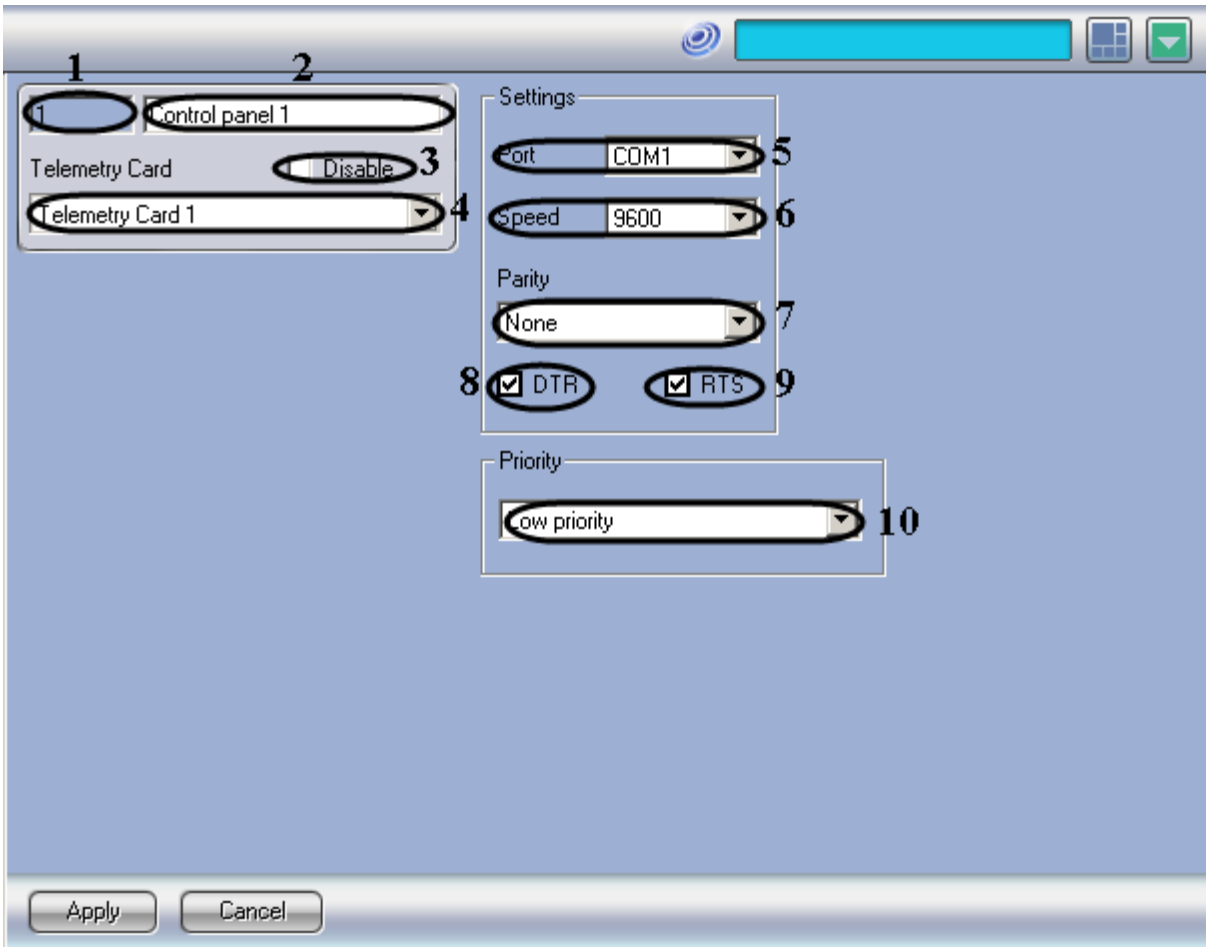


Figure 11.2-45. Settings panel of the Control panel

Table 11.2-12 describes the parameters of the settings corresponding to the elements of the settings panel of the “Control panel” object.

Table 11.2-12

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Control panel object in the digital distributed video surveillance system.	Sequence of numbers	-	Depends on the number of Control panel objects in the digital distributed video surveillance system

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
2	Name*	Enter the value in the fieldhe	Defines the name of the Control panel object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Control panel	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Control panel object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Control panel object is diskonnected and is not in use No – the Control panel is connected and is in use.
4	Telemetry controller	Is selected from the list	Defines the parent Telemetry controller object of the digital distributed video surveillance system, to which the given Control panel object refers.	Name of the PTZ unit objects registered in the system	Name of the parent Telemetry controller object.	Depends on the number of Telemetry controller objects in the digital distributed video surveillance system
Settings Group						
5	Port	Is selected from the list	Defines the number of the COM port of the computer, to which the Control panel will be connected.	List of COM ports available	COM1	Depends on the number of COM ports in the video server or Remote Administrator Workstation.
6	Speed	Is selected from the list	Defines the data communication rate for the COM port.	Kb/sec	9600	From 300 to 256000.
7	Parity	Is selected from the list	Defines the parity check mode for the data transmission over the COM port.	List of parity check modes.	None	Even, Odd, None, Mark, Space.
8	DTR	Is identified by the check mark.	Defines, whether or not power should be supplied to the control panel via the DTA COM	Boolean type	Yes	Yes – the power will be supplied via the DTR port.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			port.			No – the power will not be supplied via the DTR port.
9	RTS	Is identified by the check mark.	Defines, whether or not power should be supplied to the control panel via the RTS COM port.	Boolean type	Yes	Yes – the power will be supplied via the RTS port. No – the power will not be supplied via RTS port.
10	Priority	Is selected from the list	Defines priorities for control of the PTZ units using the Control panel.	Names of priorities used to control PTZ units.	Low	Control prohibited – the PTZ unit cannot be controlled using the Control panel. Low – the given PTZ can be controlled no sooner than when the PTZ with standard or high priorities has been controlled. Standard – the given PTZ can be controlled no sooner than when the PTZ with high priority has been controlled. High – the PTZ with the given priority will be controlled first.

7. The name of the element is not displayed in the settings panel of the given object.

11.2.8.11 *Settings panel of the Active archiving object*

The settings panel of the “Active archiving” object is shown in Figure 11.2-46.

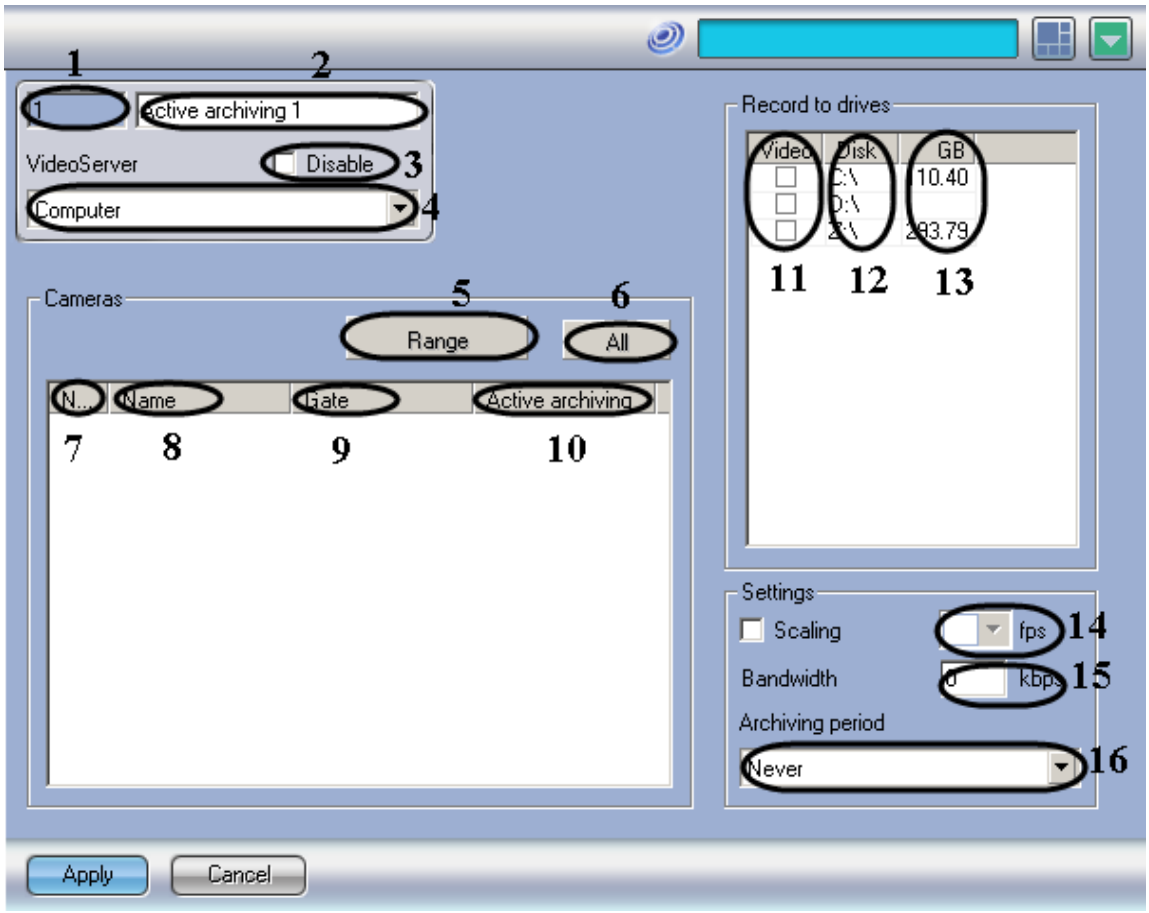


Figure 11.2-46 The settings panel of the "Active archiving" object

Table 11.2-13 describes the parameters of the settings corresponding to the elements of the settings panel of the "Active archiving" object.

Table 11.2-13

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	The "Identification number" field	Automatically	Displays the identification number of the "Active archiving" object in the system.	Sequence of numbers	-	Depends on the number of "Active archiving" objects in the system.
2	The "Name" field	Type-in the value in the field	Sets the name of the "Active archiving" object in the system.	Latin, Cyrillic and service characters	Active archiving	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	The "Disable" checkbox	Checkbox is set	Sets the state of the "Active archiving" object (enabled or disabled) in	Boolean type	Not available	Yes – the "Active archiving" object is disabled and is not in

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			the system.			use. No – the “Active archiving” object is enabled and is in use.
4	The “VideoServer” dropdown list	Selected in the list	Sets the parent “VideoServer” object of the system for the given “Active archiving” object	Name of the “VideoServer” objects registered in the system	Name of the parent “VideoServer” object	Depends on the number of “VideoServer” objects in the system
The “Cameras” group						
5	The “Range” button	The button is pressed	Access to the complex selection of video cameras for copying of video archive to the “Active archiving”	-	-	-
6	The “All” button	The button is pressed	Selection of all cameras registered in the system for copying of video archive to the “Active archiving”	-	-	-
7	The “Number” dropdown list	Selected in the list	Sets the identification number of the surveillance camera for copying of video archive to the “Active archiving”	Sequence of numbers	-	Depends on the number of cameras registered in the system
8	The “Camera” dropdown list	Is selected from the list	Sets the name of the camera for copying of video archive to the “Active archiving”	Names of cameras registered in the system	-	Depends on the number of cameras registered in the system
9	The “Gate” dropdown list	Selected in the list	Sets the “Videogate” object through which video archive from the selected camera has to be transferred to the “Active archiving”	Name of the “Gate” objects registered in the system	-	Depends on the number of “Gate” objects registered in the system
10	The “Active archiving” dropdown list	Selected in the list	Sets the “Active archiving” object which will supply the data to the given “Active archiving”	Name of the “Active archiving” objects registered in the system	-	Depends on the number of “Active archiving” objects registered in the system
The “Record to drives” group						

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
11	The “Video” checkbox	Checkbox is set	Sets the drive to store the “Active archiving”	Boolean type	No	Yes - the “Active archiving” is stored to the drive No - the “Active archiving” is not stored to the drive
12	The “Disk” column	Automatically	Displays names of local (network, USB) disks, available for storing the “Active archiving”	Name of available disks (Latin characters)	-	Depends on the total number of available disks
13	The “GB” column	Automatically	Diaplays information about free space on the every available disk	Disk space in GB	-	Depends on free disk space
The “Settings” group						
14	The “Scaling” checkbox	Checkbox is set	Enables scaling of video archive for transmitting it to the “Active archiving”	Boolean type	-	Yes – the scaling function is enabled. No – the scaling function is disabled.
	The “Scaling” dropdown list	Selected in the list	Sets the frame rate of video archive while scaling	Frame/sec	-	1, 2, 3, 4, 6, 8, 12, 25
15	The “Bandwidth” field	Type-in the value in the field	Sets the maximum bandwith of transmitting one video channel to the “Active archiving” via the LAN.	Kbit/sec	0	Depends on the bandwidth of the local network and resources used by the computer. 0 – bandwidth is not limited
16	The “Archiving period” dropdown list	Selected in the list	Set the timetable of copying video archive to the “Active archiving”	Name of “Time zone” objects registered in the system Never Always	Never	Never – there is no copying of video archive to the “Active archiving”. Always – there is copying of video archive to the “Active archiving”. Time zone – copying of video archive to the “Active archiving” is performed according to the time zone.

11.2.8.12 *Settings panel of the Keyboard object*

The “Keyboard” object is designed to register and configure a special keyboard used for on-line control of major functions of the Intellect™ digital distributed video surveillance system.

The settings panel of the “Keyboard” object is shown in Figure 11.2-47.

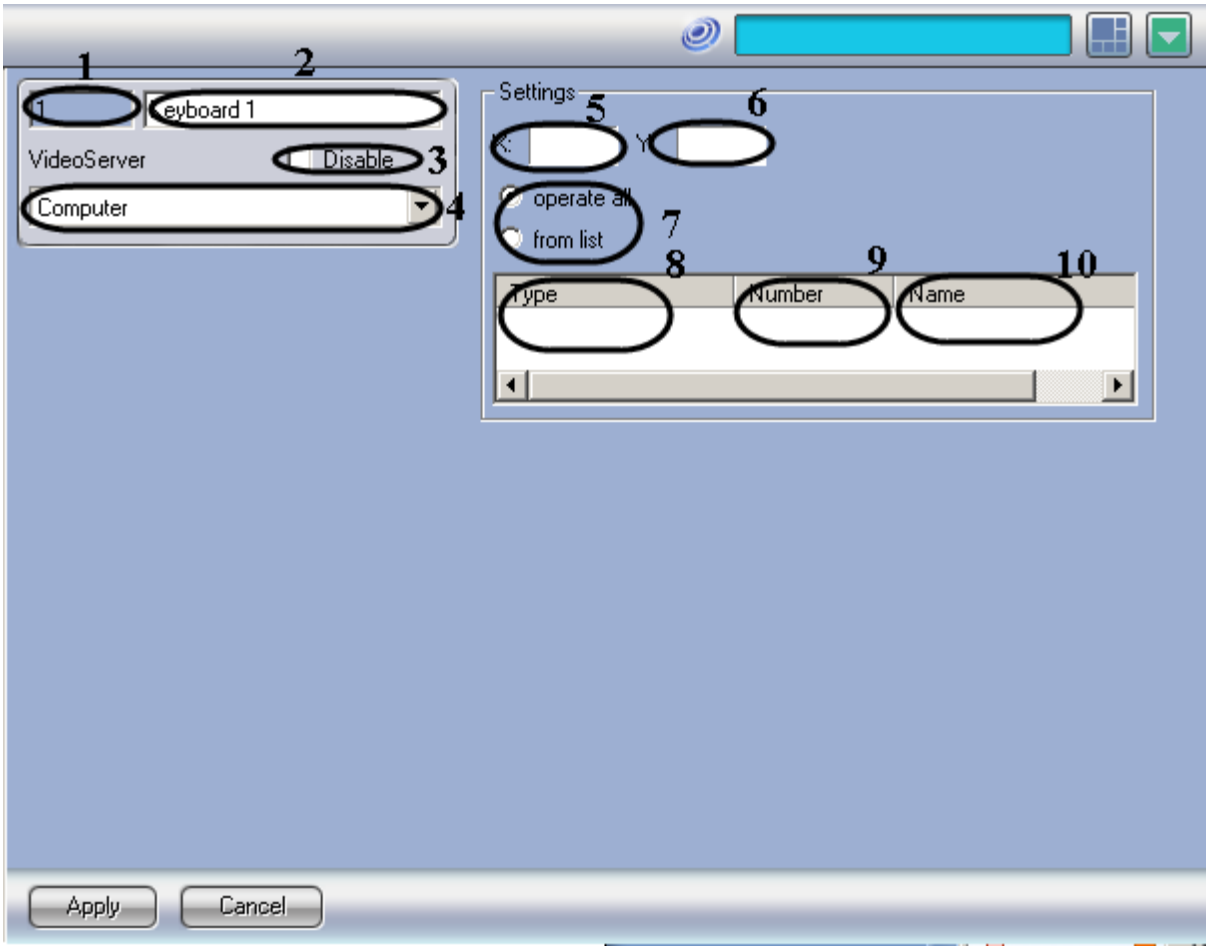


Figure 11.2-47 The settings panel of the “Keyboard” object

Table 11.2-14 describes the parameters of the settings corresponding to the elements of the settings panel of the “Keyboard” object.

Table 11.2-14

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Special keyboard object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Special keyboard objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Defines the name of the Special keyboard object	Latin, Cyrillic and service	Special keyboar	A line containing a sequence of any symbols

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			in the digital distributed video surveillance system.	characters	d	(letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Special keyboard object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Special keyboard object is diskonnected and is not in use No – the Special keyboard object is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object of the digital distributed video surveillance system, to which the given Special keyboard object refers.	Name of the Computer objects registered in the system	Name of the parent Camera object.	Depends on the number of Computer objects in the digital distributed video surveillance system
Settings Group						
5	X	Entering the value in the field.	Defines the coordinate on the X horizontal axis for the upper left corner of the object selection window, to which the given command refers.	% of the screen width.	Not defined	From 0 to 100.
6	Y	Entering the value in the field.	Defines the coordinate on the Y vertical axis for the upper left corner of the object selection window, to which the given command refers.	% of the screen height.	Not defined	From 0 to 100.
7	Control devices*	Set the selector in the required position	Defines the interface objects, which will be controlled with the special keyboard.	Types of controllable devices	Operate all	Operate all – the Operator may operate all interface objects according to the settings in the Special keyboard configuration. From list – the Operator may operate only those interface objects, which are defined in the list below.
8	Type	Is selected from	Defines the type of interface object, which	Types of objects	Not	Depends on the number of interface objects

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
		the list	may also be operated using the Special keyboard.	registered in the system.	defined	created in the digital distributed video surveillance system.
9	Number	Is selected from the list	Defines the identification number of an interface object, which may also be operated using the Special keyboard.	Sequence of numbers	Not defined	Depends on the number of created devices, selected in item 8 of the digital distributed video surveillance system.
10	Parameter	Automatically	Defines the device selected in item 9.	Name of the objects of the same type registered in the system	Not defined	Depends on the number of created devices, selected in item 8 of the digital distributed video surveillance system.

8. The name of the element is not displayed in the settings panel of the given object.

11.2.8.13 *Settings panel of the System restarting service object*

The settings panel of the "System restarting service" object is shown in Figure 11.2-48.

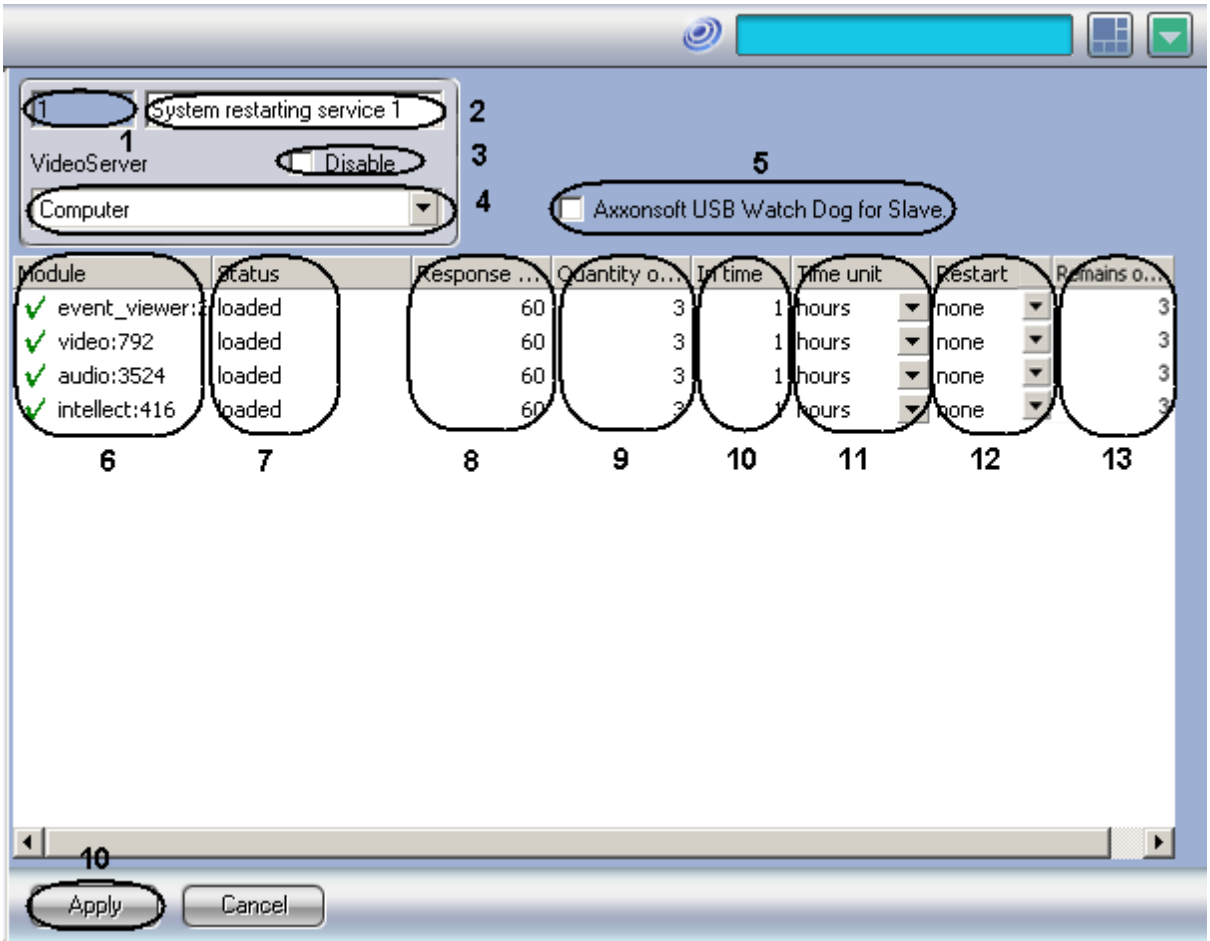


Figure 11.2-48 The settings panel of the "System restarting service" object

Table 11.2-15 describes the parameters of the object settings “System restarting service”.

Table 11.2-15

№	Name of parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Field «Identification number»	Automatically	Displays the object’s identification number «System restarting service» in the system	Sequence of numbers	-	From 1 and above. Depends on the number of objects «System restarting service» in the system
2	Field «Name»	Enter the value in the field	Defines the name of the object «System restarting service» in the system	Latin, Cyrillic and service characters	System restarting service	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive Number of symbols – from 1 to 60.
3	Checkbox «Disable»	Is identified by the check mark	Defines the condition (connected or diskonnected) of the «System restarting service» in the system	Boolean type	No	Yes – the System restarting service is diskonnected and is not in use No – the System restarting service is connected and is in use.
4	Dropdown list «Computer»	Is selected from the list	Defines the parent Computer object in the system , to which the given object «System restarting service»refers	Name of the Computer objects registered in the system	Name of the parent Computer object.	Name of the parent Computer object(object «System restarting service »must not be edited remotely)
5	Checkbox «AxxonSoft USB Watch Dog for Slave.exe»	Is identified by the check mark	Activates computer system of automatic restarting with the albescence of slave.exe. process’s activity	Boolean type	No	Yes – system of automatic restarting is activated No – system of automatic restarting is deactivated
Control table of «Intellect» complex ‘s modules operation						
6	Column «Module»	Automatically	Displays the list of started modules at the computer	Name f started modules	-	Depends on the number of modules, registered in the system
7	Column «Status»	Automatically	Displays current state of modules	Name of current states and modules	-	Loaded–module operates Unloaded (red field) – on the expiry of waiting time interval module’s response is abscent Unloaded – module is unloaded
8	Column«Resp	Entering of text	Set waiting time	Nonnegativ	60	From 0 and above

№	Name of parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
	onse time, sec»	in the field	interval of module's response in seconds. With the absence of response on the expiry of set time interval the system may be restarted.	e integers		
9	Column«Quantity of restarts»	Entering of text in the field	Set the maximal quantity of restarts for a period of time, specified in the column «In time » and «Period type »	Nonnegative integers	3	From 0 and above
10	Column «In time»	Entering of text in the field	Set period of time for which maximal quantity restarts of the system may be performed	Nonnegative integers	1	From 0 and above
11	Column«Period type»	Selection of value from the list		Unit s of time measurement	hours	hours –time period is measured in hours days – time period is measured in days
12	Column«Restart»	Selection of value from the list	Set the type of system's restarting	Name of possible types of restarts	Nothing	Nothing – restarting is not being performed Module – module's restarting is being performed Core set – restarting of the «Intellect» core set is being performed
13	Column «Remains of restarts»	Automatically	Displays remains or restarts for a time period, set in the columns «In time» and «Type of period »	Nonnegative integers	-	Depends on the maximal quantity of restarts and on the fact how many restarts have been performed for a current time period

11.2.8.14 *Settings panel of the Voice Notification Service object*

The "Voice notification service" object is designed for the registration of the program module, which supports voice notification of the surveillance system operation, upon occurrence of certain events.

The settings panel of the "Voice notification service" object is shown in Figure 11.2-49.

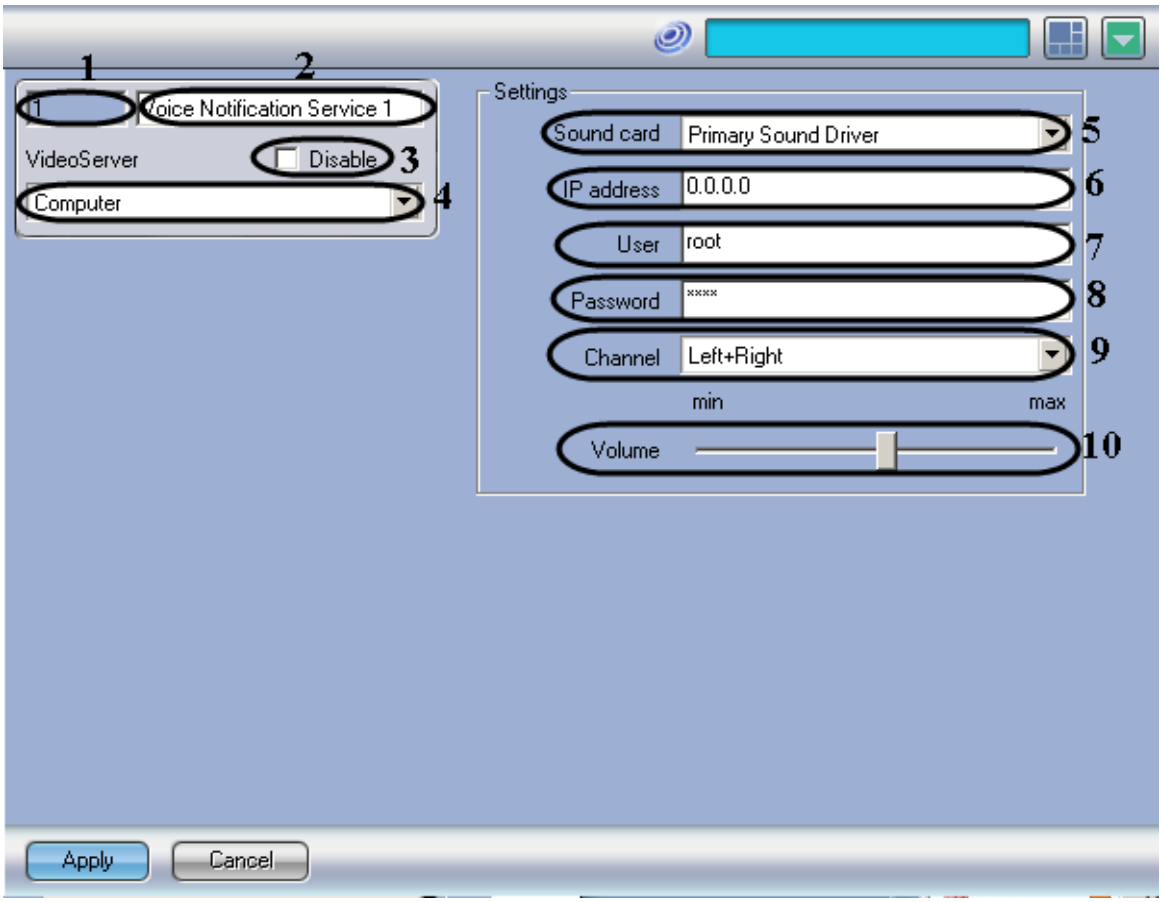


Figure 11.2-49 The settings panel of the "Voice Notification Service" object

Table 11.2-16 describes the parameters of the settings corresponding to the elements of the settings panel of the "Voice notification service" object.

Table 11.2-16

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Voice notification service object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Voice notification service objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Defines the name to the Voice notification service object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Voice notificati -on service	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
3	Disable	Is identified by the check mark	Defines the condition of the Voice notification service object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Voice notification service is diskonnected and is not in use No – the Voice notification service is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object of the digital distributed video surveillance system, to which the given Voice notification service object refers.	Name of the Computer objects registered in the system	Name of the parent Camera object.	Depends on the number of Computer objects in the digital distributed video surveillance system
Settings Group						
5	Audio card	Is selected from the list	Defines the device, which will receive an audio signal for voice notification.	Types of audio devices registered in the system.	Name of the audio card installed.	Name of the installed audio card – defines the audio card in the video server of Remote Administrator Workstation, which will process the audio signal of the voice notifications. LinuxHub – defines the LinuxHub type device, which will reproduce the audio signal of the voice notification. Axis – defines the Axis type device, which will reproduce the audio signal of the voice notification.
6	IP-address	Enter the value in the field	Defines the IP-address of LinuxHub and Axis devices. *NOTE. This field is active, if LinuxHub and Axis options are selected in the Audio card menu.*	Sequence of numbers	0.0.0.0	Sequence of symbols like: xxx.xxx.xxx.xxx From 0.0.0.0 to 255.255.255.255 depending on the local network settings.
7	User	Enter the value in the field	Defines the user name used for connection to LinuxHub and Axis	Latin characters, digits and service	root	A line containing a sequence of any symbols (letters, digits,

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			devices. *NOTE. This field is active, if LinuxHub and Axis options are selected in the Audio card menu.*	characters.		service characters), case-sensitive. Number of symbols – from 1 to 60.
8	Password	Enter the value in the field	Defines a password used for connection to LinuxHub and Axis devices. *NOTE. This field is active, if LinuxHub and Axis options are selected in the Audio card menu.*	Latin characters, digits and service characters.	root	A line containing a sequence of any symbols (letters, digits, service characters), case-sensitive. Number of symbols – from 1 to 60.
9	Channel	Is selected from the list	Defines a channel in the audio card of the video server to reproduce the audio signal.	Name of the audio channel, where the sound is transmitted.	Left+Rig-ht	Left+Right – the audio notification signal is transmitted to both channels of the audio card. Left – the audio notification signal is transmitted to the left channel of the audio card. Right – the audio notification signal is transmitted to the right channel of the audio card.
10	Volume	The slide is placed in the required position.	Defines the volume of the audio signal, transmitted to the audio card. *NOTE. The option is active, if the Audio board option is selected in the audio card menu.*	Db	24 Db	Min - 0 Max - 45

9. The name of the element is not displayed in the settings panel of the given object.

11.2.8.15 *Settings panel of the Voice messages service object*

The “Voice messages service” is designed for registration of the program module, which supports transmission of voice messages through telephone lines. This service provides automatic redial of pre-defined telephone numbers and playback of audio files.

The settings panel of the “Voice messages service” object is shown in Figure 11.2-50.

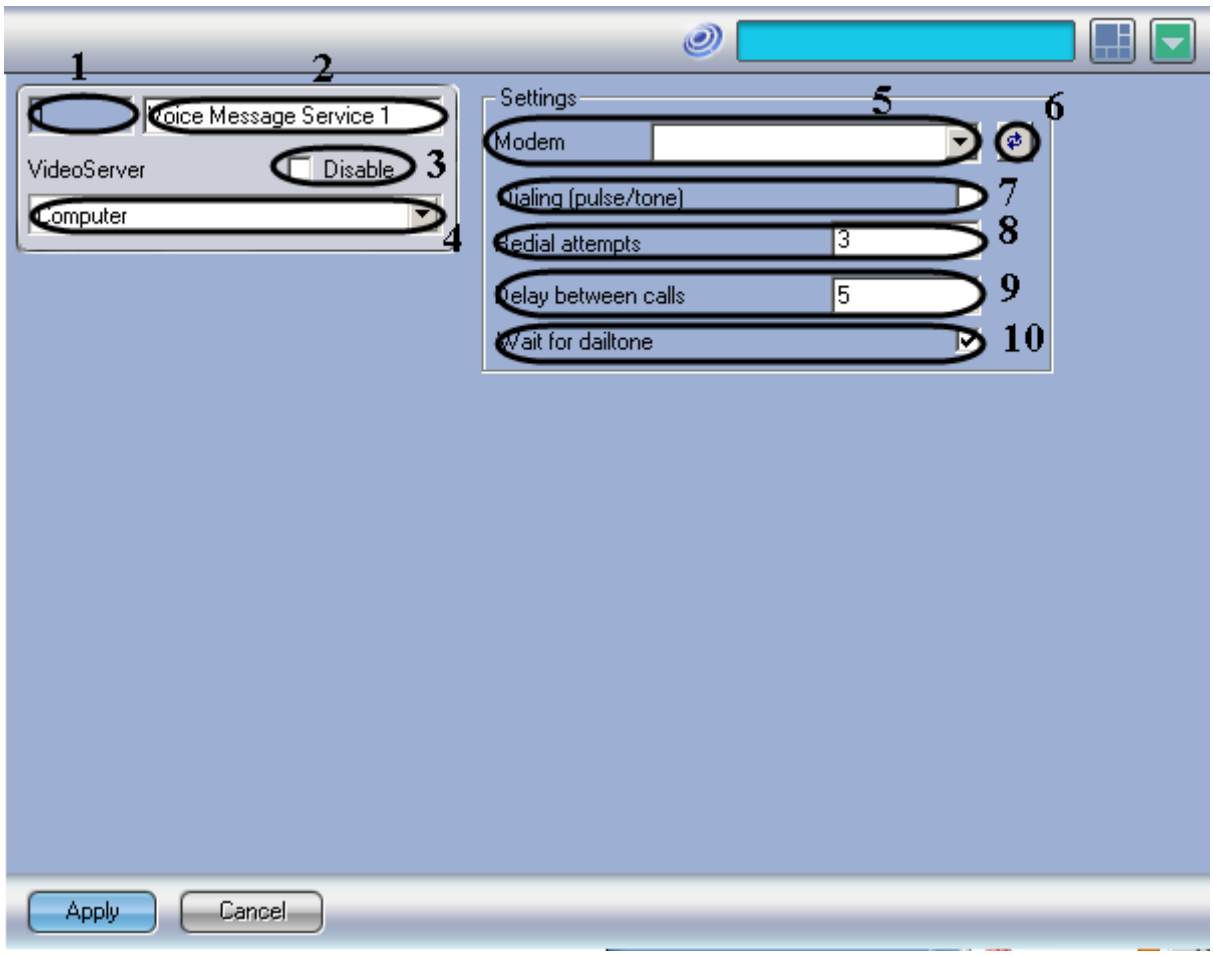


Figure 11.2-50 The settings panel of the “Voice messages service” object

Table 11.2-17 describes the parameters of the settings corresponding to the elements of the settings panel of the “Voice messages service” object.

Table 11.2-17

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Voice messages service object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Voice message service objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Displays the name of the Voice messages service object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Voice message s service	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
3	Disable	Is identified by the check mark	Shows the status (connected or diskonnected) of the Voice messages service object in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Voice messages service is diskonnected and is not in use No – the Voice messages service is connected and is in use.
4	Computer	Is selected from the list	Assigns the parent Computer object of the digital distributed system, to which the given Voice messages service object refers.	Name of the Computer objects registered in the system.	Name of the parent Compute r object	Depends on the number of Computer objects in the digital distributed video surveillance system
Settings Group						
5	Modem	Is selected from the list	Defines the voice modem for transmitting the voice messages.	Name of the voice modem registered by the Windows OS.	Not defined	Depends on the number of connected voice modems.
6	-	Press the button.	All connected modems are scanned to identify voice modems and to make up a list of modems.	-	-	-
7	Dial (pulse/tone)	Is identified by the check mark	Defines number dialling mode: pulse or tone.	Boolean type	Not available	Yes – tone dialling. No – pulse dialling.
8	Redial attempts	Enter the value in the field	Defines the maximum number of redial attempts to establish a connection.	Sequence of numbers	5	From 1 to 10. (recommended – from 1 to 5).
9	Delay between calls	Enter the value in the field	Defines a time period between redial attempts.	from	3	Recommended number from 30 to 120.
10	Wait for dial tone	Is identified by the check mark	Waits for a dial tone before redialling the number.	Boolean type	Yes	Yes - waiting for a dial tone before number redial is required. No - waiting for a dial tone before number redial is not required.

10. The name of the element is not displayed in the settings panel of the given object.

11.2.8.16 *Settings panel of the Voice message object*

The “Voice message” object is designed to create a voice message transmitted to the telephone lines. The settings panel of the “Voice message” object is shown in Figure 11.2-51.

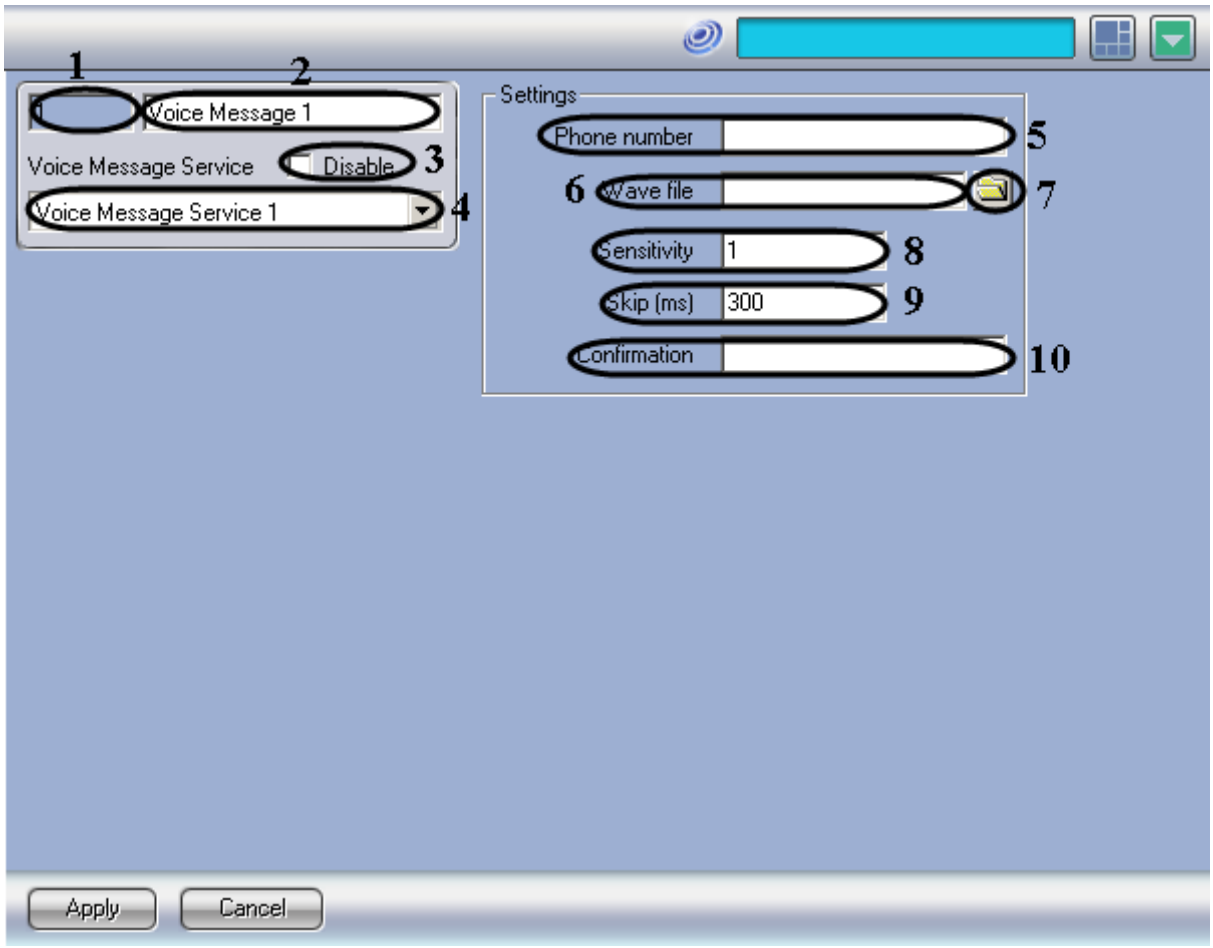


Figure 11.2-51 The settings panel of the “Voice message” object

Table 11.2-18 describes the parameters of the settings corresponding to the elements of the settings panel of the “Voice message” object.

Table 11.2-18

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Voice message object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Voice message objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the field	Displays the name of the Voice messages object in the digital distributed video surveillance	Latin, Cyrillic and service characters	Voice message	A line containing a sequence of any symbols (letters, digits, service characters), not case-

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			system.			sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Shows the status (connected or diskonnected) of the Voice message object in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Voice messages object is diskonnected and is not in use. No – the Voice message object is connected and is in use.
4	Voice messages service	Is selected from the list	Assigns the parent Voice messages service object of the digital distributed system, to which the given Voice message object refers.	Name of the Voice messages service objects registered in the system.	Name of the parent Voice messages service object.	Depends on the number of Voice message service objects in the digital distributed video surveillance system
Settings Group						
5	Phone number	Enter the value in the field	Defines the phone number of the voice message recipient.	Sequence of numbers	Not defined	A line, containing a sequence of digits. Depends on the voice modem in use.
6	Audio file	Enter the value in the field	Defines the route to the audio file, which will be played back, when the recipient picks up the phone.	Latin, Cyrillic and service characters.	Not defined	A line containing a sequence of symbols (letters, digits, service characters), not case-sensitive
7	Wave file	Press the button.	Defines the route to the audio file, which will be played back when the recipient picks up the phone, by selecting a file directly from the standard file select menu.	-	-	-
8	Sensitivity	Enter the value in the field	Defines the maximum noise level in the phone set, which prevents false identification of the noise as a reply of the voice message recipient.	Sequence of numbers	1	From 1 to 10.
9	Skip (ms)	Enter the value in the field	Defines a time period between redial attempts.	ms	300	More than 1

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
10	Confirmation	Enter the value in the field	Defines a digital code, which the recipient should enter to confirm voice message receipt.	Sequence of numbers	Not defined	A line, containing a sequence of digits. Number of symbols should be equal to 1.

11. The name of the element is not displayed in the settings panel of the given object.

11.2.8.17 *Settings panel of the Short Message Service object*

The “Short message service” object is designed to register and configure the program module, which supports short message (SMS) transmission to a mobile phone via a cellular network.

The settings panel of the “Short message service” object is shown in Figure 11.2-52.

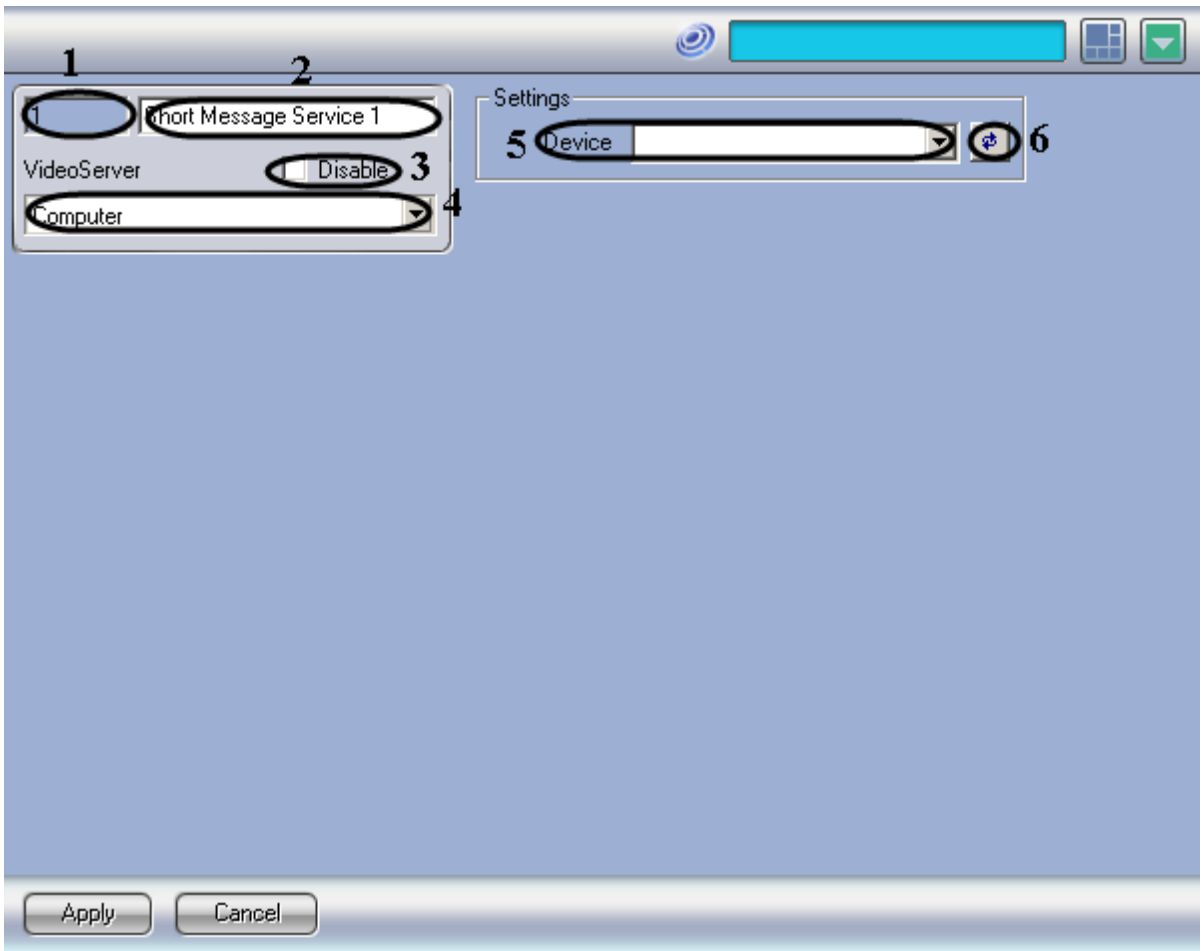


Figure 11.2-52 The settings panel of the “Short Message Service” object

Table 11.2-19 describes the parameters of the settings corresponding to the elements of the settings panel of the “Short message service” object.

Table 11.2-19

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Short message service object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Short message service objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Defines the name of the Short message service object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Short message service	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Short message service object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Short message service is diskonnected and is not in use No – the Short message service is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object of the digital distributed video surveillance system, to which the given Short message service object refers.	Name of the Computer objects registered in the system	Name of the parent Camera object.	Depends on the number of Computer objects in the digital distributed video surveillance system
Settings Group						
5	Device	Is selected from the list	Defines the GSM device, which will be used to transmit SMS.	Names of the GSM devices registered in the Windows OS.	Not defined	Depends on the number of connected GSM devices.
6	Select device*	The button is pressed.	Scans connected devices to find GSM devices and includes them into the Devices list.	-	-	-

d. The name of the element is not displayed in the settings panel of the given object.

11.2.8.18 *Settings panel of the Short Message object*

The “Short message” object is designed to create short messages (SMS) for transmission to mobiles phones via a mobile network.

The settings panel of the “Short message” object is shown in Figure 11.2-53.

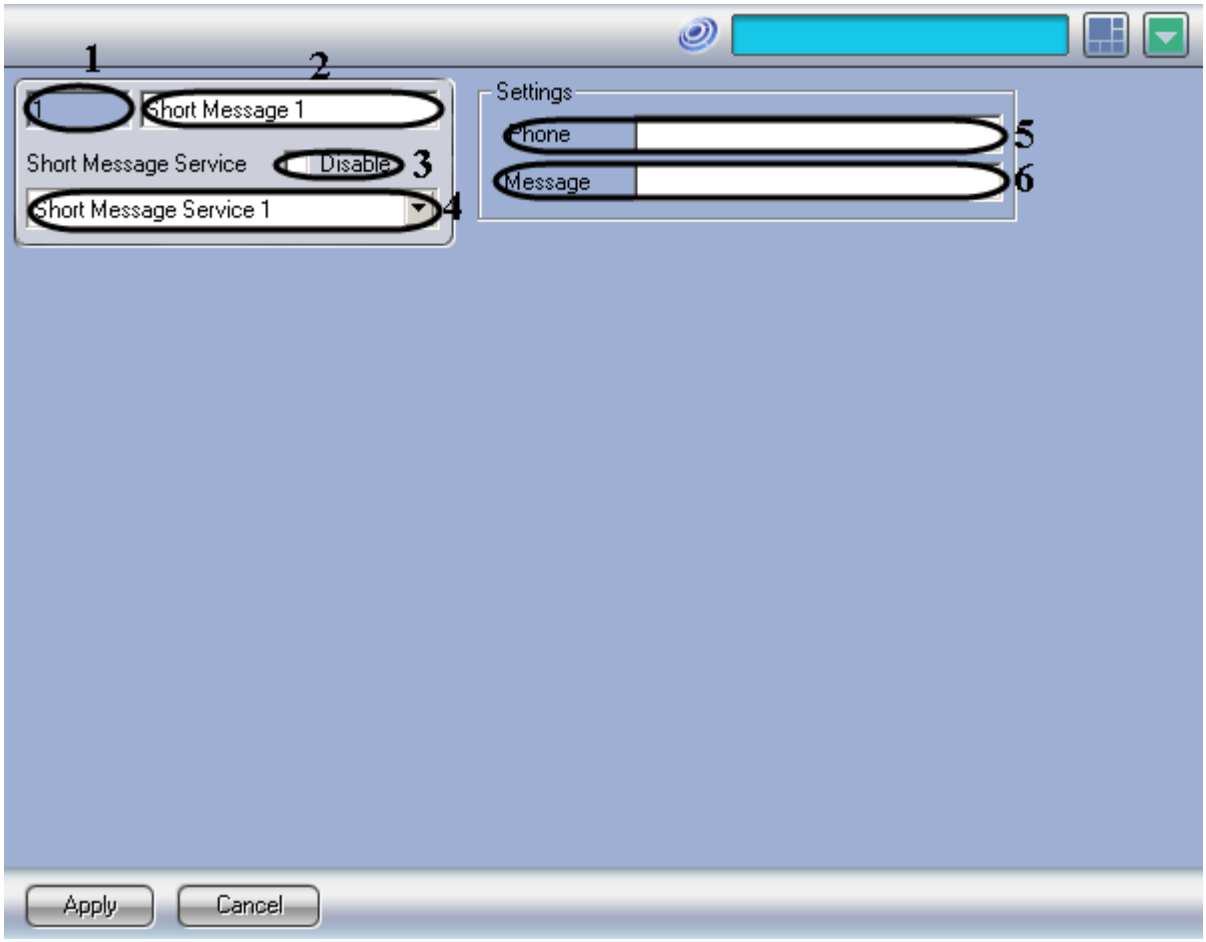


Figure 11.2-53 The settings panel of the “Short Message” object

Table 11.2-20 describes the parameters of the settings corresponding to the elements of the settings panel of the “Short message” object.

Table 11.2-20

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Short message object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Short message objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the field	Defines the name of the Short message object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Short message	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols –

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
						from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Short message object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Short message object is diskonnected and is not in use No – the Short message object is connected and is in use.
4	Short message service	Is selected from the list	Defines the parent Short message service object of the digital distributed video surveillance system, to which the given Voice notification object refers.	Name of the Short message service objects registere d in the system	Name of the parent Short Message Service object	Depends on the number of Short message service objects in the digital distributed video surveillance system
Settings Group						
5	Phone	Enter the value in the field	Defines a mobile phone number for receiving SMS.	Sequence of numbers	Not defined	Number according to the international dial plan: Example: +79061234567)
6	Message	Enter the value in the field	Defines SMS text, which will be transmitted over the mobile network.	Latin, Cyrillic and service character s	Not defined	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.

e. The name of the element is not displayed in the settings panel of the given object.

11.2.8.19 *Settings panel of the Mail Message Service object*

The “Mail message service” object is designed to register the program module, which supports mail message transmission to the e-mail boxes of the remote system users. The settings panel of the “Mail message service” object is shown in Figure 11.2-54.

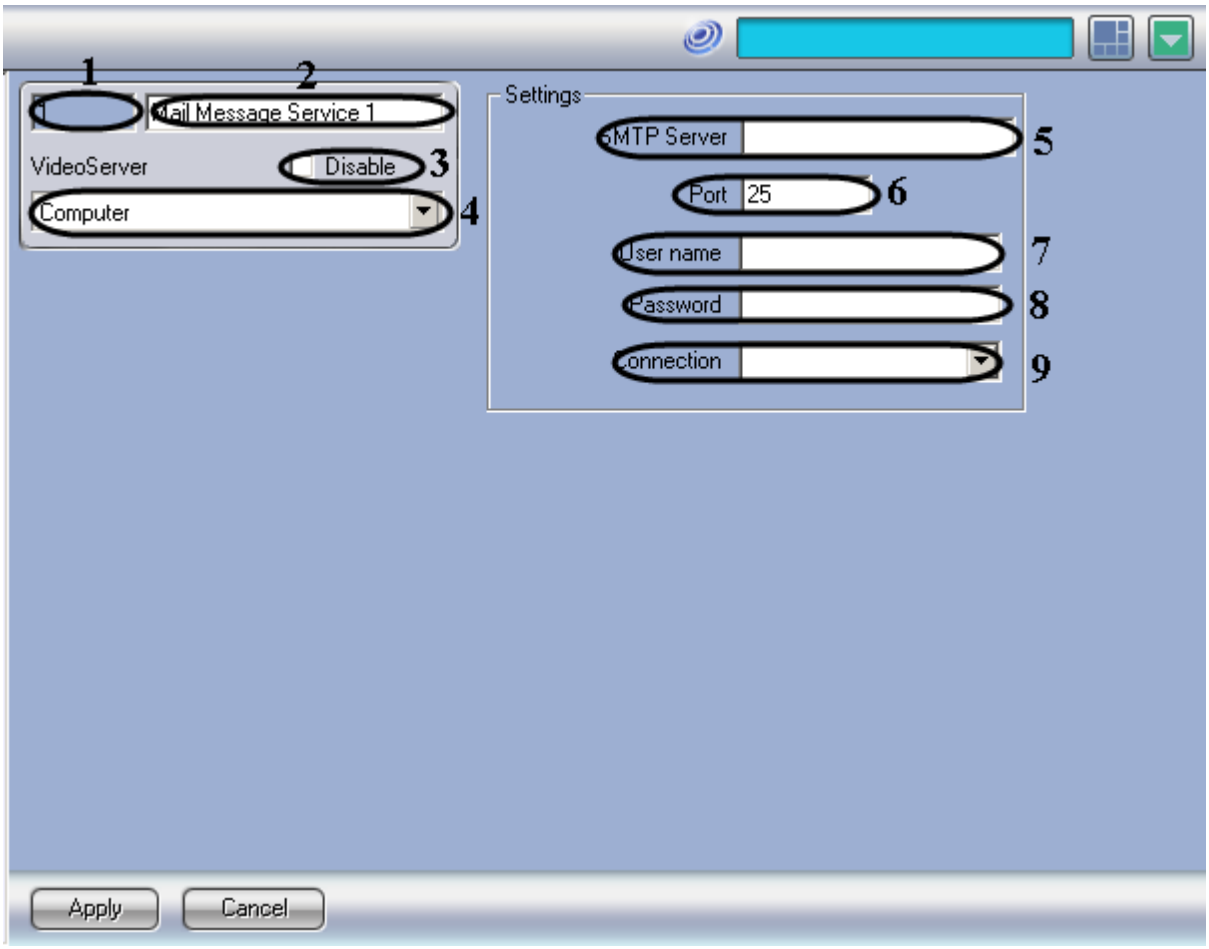


Figure 11.2-54 The settings panel of the “Mail Message Service” object

Table 11.2-21 describes the parameters of the settings corresponding to the elements of the settings panel of the “Mail message service” object.

Table 11.2-21

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Mail message service object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Mail message service objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Defines the name of the Mail message service object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Mail message service	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Defaul t value	Value range
3	Disable	Is identified by the check mark	Defines the condition of the Mail message service object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not availa b-le	Yes – the Mail message service is diskonnected and is not in use No – the Mail message service is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object of the digital distributed video surveillance system, to which the given Mail message service object refers.	Name of the Compute r objects registere d in the system	Name of the parent Camer a object.	Depends on the number of Computer objects in the digital distributed video surveillance system
Settings Group						
5	SMTP server	Enter the value in the field.	Defines the SMTP server address, which will transmit SMS.	Latin, Cyrillic and service characte rs	Not define d	A line containing a sequence of symbols (letters, digits, service characters), not case-sensitive, number of symbols – from 1 to 60.
6	Port	Enter the value in the field	Defines the number of the SMTP server port, which will transmit SMS.	Sequenc e of numbers	25	To be defined by the system administrator.
7	User name	Enter the value in the field.	Defines the user name (login) for authorization on the SMTP-server. User name matches a unique mail box name in the mail server.	Latin, service characte rs and digits.	Not define d	A line containing a sequence of symbols (letters, digits, service characters), case-sensitive, number of symbols – from 1 to 60.
8	Password	Enter the value in the field.	Defines a password for authorization on the SMTP-server.	Latin, service characte rs and digits.	Not define d	A line containing a sequence of any symbols (letters, digits, service characters), case-sensitive. Number of symbols – from 1 to 60.
9	Connection	Is selected from the list	Defines the connection type with the Internet global network.	Connecti -on types	LAN	LAN – access via a local network. RAS – access via a remote workstation.

12. The name of the element is not displayed in the settings panel of the given object.

11.2.8.20 *Settings panel of the Mail Message object*

The “Mail message” object is designed to create mail messages (e-mail messages) for transmission to the mail boxes of the remote system users. The settings panel of the “Mail message” object is shown in Figure 11.2-55.

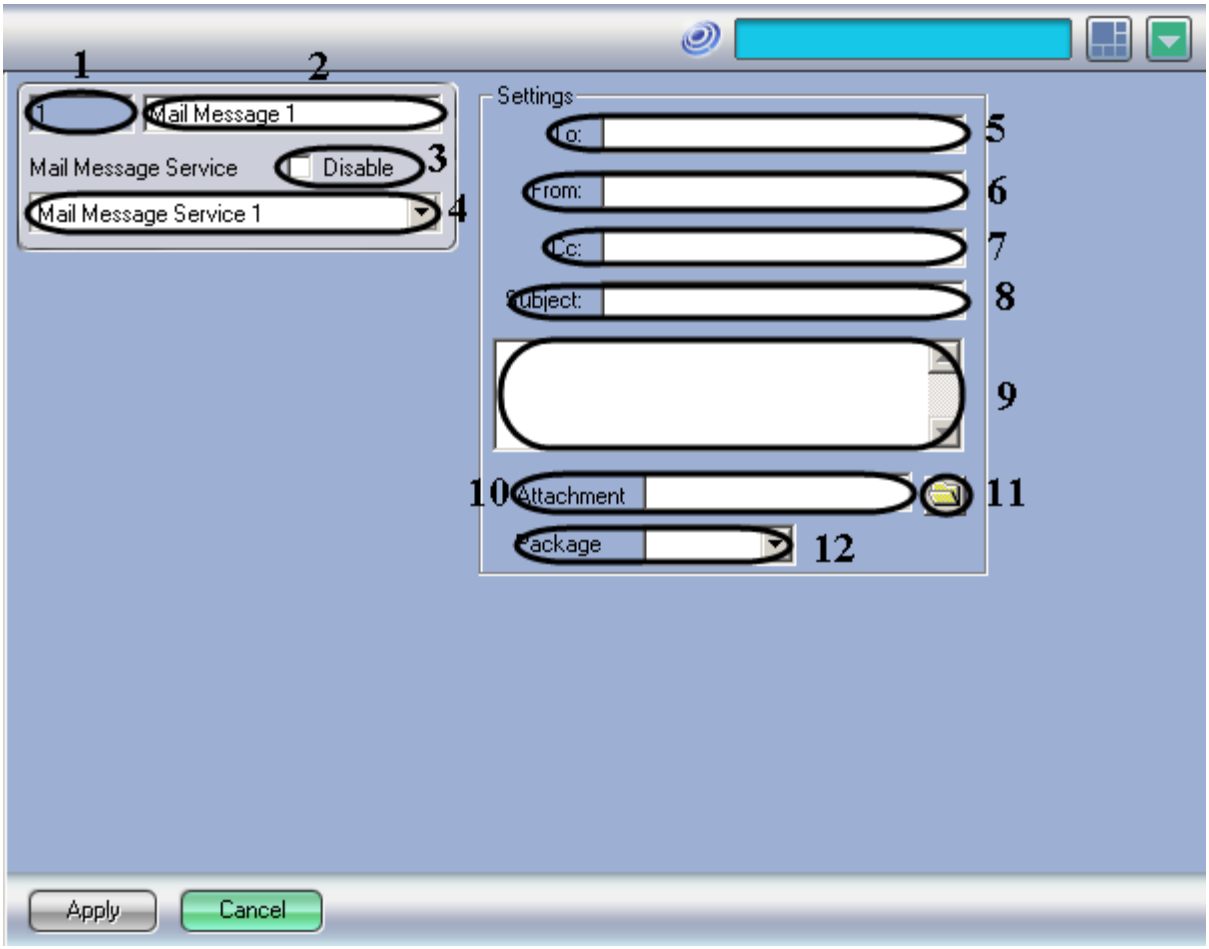


Figure 11.2-55 The settings panel of the “Mail Message” object

Table 11.2-22 describes the parameters of the settings corresponding to the elements of the settings panel of the “Mail message” object.

Table 11.2-22

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Defaul t value	Value range
1	Identification number*	Automatically	Displays the identification number of the Mail message object in the digital distributed video surveillance system.	Sequenc e of numbers	-	From 1 and above. Depends on the number of Mail message objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the field	Defines the name of the Mail message object in the digital distributed video surveillance	Latin, Cyrillic and	Mail messa	A line containing a sequence of any symbols (letters, digits, service

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Defaul t value	Value range
			system.	service characte rs	-ge	characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Mail message object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not availa b-le	Yes – the Mail message object is diskonnected and is not in use No – the Mail message object is connected and is in use.
4	Mail message service	Is selected from the list	Defines the parent Mail message object, to which the given Mail message object refers.	Name of the Mail message service objects registere d in the system	Name of the parent Mail Messa -ge Servic e object	Depends on the number of Mail message service objects in the digital distributed video surveillance system
Settings Group						
5	To	Enter the value in the field.	Defines the mail box address of the mail message recipient.	Latin and service characte rs	Not define d	A line containing a sequence of symbols (letters, digits, service characters), not case-sensitive, number of symbols – from 1 to 30.
6	From	Enter the value in the field.	Defines the mail box address of the mail message sender.	Latin and service characte rs	Not define d	A line containing a sequence of symbols (letters, digits, service characters), not case-sensitive, number of symbols – from 1 to 30.
7	CC	Enter the value in the field.	Defines the mail box address of the mail message copy recipient.	Latin and service characte rs	Not define d	A line containing a sequence of symbols (letters, digits, service characters), not case-sensitive, number of symbols – from 1 to 60. If a mail message needs to be copied to a few mail addresses, the said addresses should be entered with a semicolon.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Defaul t value	Value range
8	Subject	Enter the value in the field	Defines the subject of the mail message	Latin, Cyrillic and service characte rs	Not define d	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
9	Text message*	Enter the value in the field	Defines the text contents of a mail message.	Latin, Cyrillic and service characte rs	Not define d	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 250.
10	Attachment	Enter the value in the field	Defines a path to the file, which will be attached to the mail message.	Latin, Cyrillic and service characte rs	Not define d	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 250.
11	Select file*	The button is pressed.	Defines a path to the file, which will be attached to the mail message, through selecting the file directly from the standard file select menu.	-	-	-
12	Package	Is selected from the list	Defines the compression format for archiving the file, which will be attached to the mail message.	Archiving type	Empty field	Empty field – the file attached to the mail message is transmitted without compression. GZIP – a file attached to the mail message will be compressed in the gzip archive before transmission.

13. The name of the element is not displayed in the settings panel of the given object.

11.2.8.21 *Settings panel of the Web-server object*

The “Web-server” object is used for viewing the video surveillance information from an Internet browser and TCP/IP communication environment. The settings panel of the “Web-server” object is shown in Figure 11.2-56.

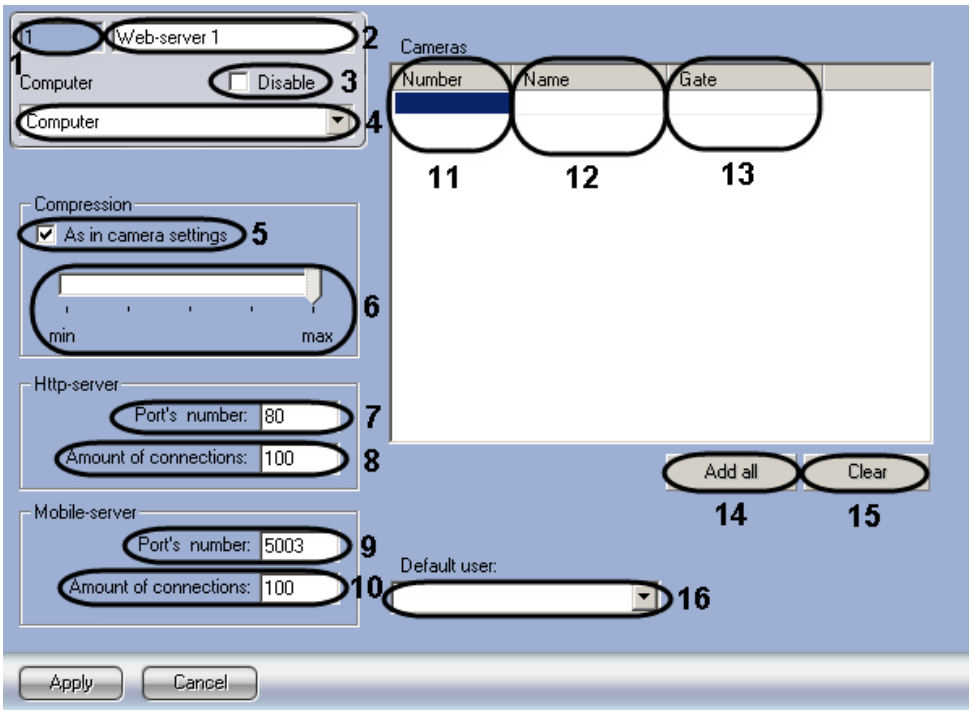


Figure 11.2-56 The settings panel of the "Web-server" object

Table 11.2-23 describes the parameters of the settings corresponding to the elements of the settings panel of the "Web-server" object.

Table 11.2-23

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the "Web-server" object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of the "Web-server" objects in the digital distributed video surveillance system.
2	Name*	Type-in the value in the field	Sets the name of the "Web-server" object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Web-server	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Checkbox	Sets the state of the "Web-server" object (enabled or disabled) in the digital distributed video surveillance system.	Boolean type	No	Yes – the "Web-server" object is disabled and is not in use No – the "Web-server" object is enabled and is in use

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
4	Computer	Selected in the list	Sets the parent “Computer” object of the digital distributed video surveillance system, to which the given “Web- server” object refers.	Name of the “Computer” objects registered in the system	Name of the parent “Computer” object	Depends on the number of the “Computer” objects in the digital distributed video surveillance system
The “Cameras” group						
5	As in camera settings	Checkbox	Sets the transmission of video signal to Remote Workstations using the “Web-server” module. The compression level of this video signal is to be the same as it is for to the recorded and transmitted video signals or as it is set by the slider below the “As in camera settings” checkbox.	Boolean type	Yes	Yes – the compression level of the video signal transmitted with the “Web- server” module is be the same as the compression level of the recorded and transmitted video signal. No – the compression level of the video signal transmitted with the “Web- server” module is the same as one set by the slider below the “As in camera settings” checkbox
6	Signal compression *	Set the slider in the required position	Sets the compression level of the video signal transmitted with the “Web-server” module to the Remote Workstations. The higher the compression level, the lower the quality of video signal. The parameter is active, only if the “As in camera settings” checkbox is unchecked (i.e., the “As in camera settings” parameter has “No” value).		Min	Min – the minimal compression level, at which the video signal is transmitted as a non-compressed video. Max – maximum video signal compression level.
The “HTTP-server” group						
7	Port’s number	Type-in the value in the field	Sets the number of the port used by the HTTP server (for video surveillance with the Web-browser via the	Sequence of numbers	80	Any allowable port numbers which are not in use. The number of ports is

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			Internet).			defined by the system administrator.
8	Amount of connections	Type-in the value in the field	Sets the maximum allowable number of connections to the video server via the “Web-server” module. Each request to view the camera feed and each request to control all PTZ devices is considered as a user connection.	pcs	100	Any integer. In the case where 0 value is specified, video signals will not be displayed on the Web-server monitor.
The “Mobile-server” group						
9	Port’s number	Type-in the value in the field	Sets the number of the port for Mobile-server operations (used for video surveillance with PocketPCs and SmartPhones).	Sequence of numbers	5003	Any allowable port numbers which are not in use. The number of ports is defined by the system administrator.
10	Amount of connections	Type-in the value in the field	Sets the maximum allowable connections to the video server via the “Web-server” module. Each request to view the camera feed and each request to control all PTZ devices is considered as a user connection.	pcs	100	Any integral number. In the case where 0 value is entered, video signals will not be displayed in the Web server monitor.
The “Cameras” group						
11	Number	Selected in the list	Sets the identification number of the video camera video from which is transmitted to the Remote Workstation via the “Web-server” module.	Sequence of numbers	Not set	Depends on the number of video surveillance cameras in the digital distributed video surveillance system.
12	Name	Selected in the list	Sets the name of the video camera video from which is transmitted to the Remote Workstation via the “Web-server”	Names of the “Camera” objects registered in the system	Not set	Depends on the number of video surveillance cameras in the digital distributed video surveillance system

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			module.			
13	Gate	Selected in the list	Sets the name of videogate video from which is transmitted to the Remote Workstation via the “Web-server”	Names of the “Videogate” objects registered in the system	Not set	Depends on the number of videogates in the digital distributed video surveillance system
14	Add all	Click the button	Adds all video cameras installed in the digital distributed video surveillance system to the list of cameras video from which is transmitted to the Remote Workstation via the “Web-server”	-	-	-
15	Clear	Click the button	Removes all video cameras from the list of cameras video from which is transmitted to the Remote Workstation via the “Web-server”	-	-	-
16	Default user	Selected in the list	Sets the user with rights and authorities to conduct video surveillance from the Remote Workstation via the “Web-server”	The names of users registered in the system and added to the rights	Not set	Depends on the number of users registered in INTELLECT™

- The name of the element is not displayed in the settings panel of the given object.

11.2.8.22 *Settings panel of the rtsp Server object*

The settings panel of the “rtsp Server” object is shown in Figure 11.2-57.

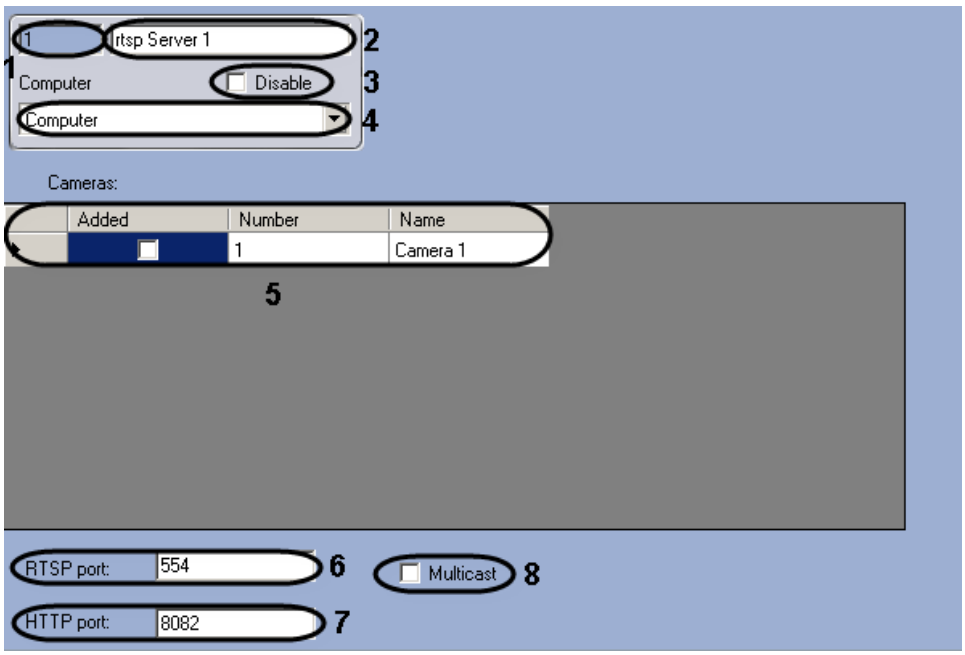


Figure 11.2-57 The settings panel of the “rtsp Server” object

Table 11.2-24 describes the parameters of the settings corresponding to the elements of the settings panel of the “rtsp Server” object.

Table 11.2-24

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	ID*	Automatically	Displays the ID of the “rtsp Server” object in the video surveillance system	Sequence of numbers	-	Depends on the number of the “rtsp Server” objects in the video surveillance system
2	Name*	Type-in the value in the field	Sets the name of the “rtsp Server” object in the video surveillance system	Latin, Cyrillic and service characters	rtsp Server	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	Disable	Checkbox	Sets the state (enabled or disabled) of the	Boolean type	No	Yes – the “rtsp Server” object is disabled and is not

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			“rtsp Server” object in the video surveillance system			in use. No - the “rtsp Server” object is enabled and is in use.
4	Computer	Selected in the list	Sets the parent “Camera” object to which the “rtsp Server” object relates	Names of the “Computer” objects registered in the system	Name of the parent “Computer” object	Depends on the number of Servers in the video surveillance system with distributed architecture
5	Cameras	Checkbox	Specifies cameras video from which is to be transmitted to remote workstations	Boolean type	No	Yes – video stream can be viewed at remote workstation. No – video stream cannot be viewed at remote workstation
6	RTSP port	Type-in the value in the field	Sets the port via which video is transmitted	Sequence of numbers	554	Any numbers of ports that are not in use. The number of ports is specified by the system administrator.
7	HTTP port	Type-in the value in the field	Sets the port which is to be in use for transmitting video via http-protocol	Sequence of numbers	8081	Any numbers of ports that are not in use. The number of ports is specified by the system administrator.
8	Multicast	Checkbox	Enables video transmission via different RTSP ports. The “Multicast” mode allows	Boolean type	No	Yes – video is transmitted via several RTSP ports. No – video is transmitted via one

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			reducing Server load due to transmitted data reduction.			RTSP port.

11.2.8.23 *Settings panel of the Custom Dialog Box object*

The “Custom Dialog Box” object is designed to display a separate user window, i.e., the Custom Dialog Box, which is used to operate a certain PTZ unit. The Custom Dialog Box is furnished with a set of elements enabling operation of the above PTZ units. The settings panel of the “Custom Dialog Box” object is shown in Figure 11.2-58.

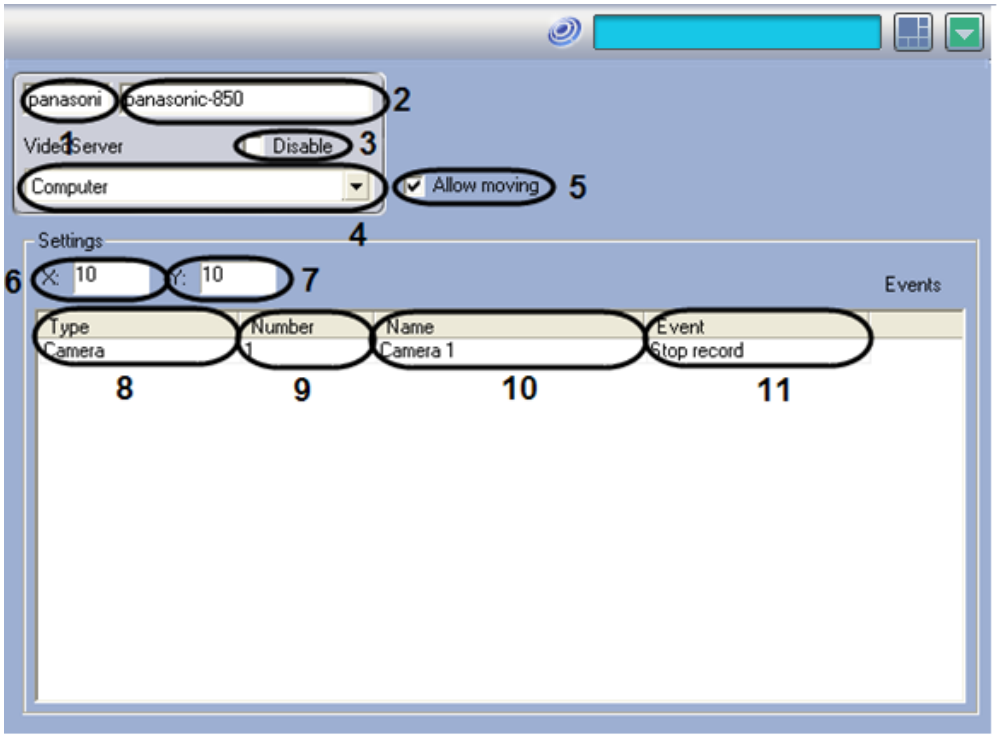


Figure 11.2-58 The settings panel of the “Custom Dialog Box” object

Table 11.2-25 describes the parameters of the settings corresponding to the elements of the settings panel of the “Custom Dialog Box” object.

Table 11.2-25

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identifier*	Enter the value in the field	File name designed for certain PTZ unit control. The filename is usually the same as the	Sequence of	-	A line containing a sequence of symbols (Latin and service

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			name of the PTZ unit.	numbers		characters, digits), not case-sensitive Number of symbols – from 1 to 60.
2	Name*	Enter the value in the field	Defines the name of the Operator search window object in the digital distributed video surveillance system. To ensure user friendliness, the object name is usually given the same name as the name of the PTZ unit.	Latin, Cyrillic and service characters	Operator search window	A line containing a sequence of symbols (Latin and service characters, digits), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the status of the Operator search window object (connected or diskonnected).	Boolean type	Not available	Yes – the Operator search window object is diskonnected and is not in use. No – the Operator search window object is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object of the digital distributed video surveillance system, to which the given Operator search object refers.	Name of the Computer objects registered in the system	Name of the parent Compu-ter object.	Depends on the number of Computer objects in the digital distributed video surveillance system
5	Allow moving	Is identified by the check mark.	Allows moving the Operator search window over the screen using the mouse.	Boolean type	Not available	Yes – movement is allowed. No – movement is prohibited.
Settings Group						
6	X	Enter the value in the field.	Defines the coordinate in the X horizontal axis for the upper left corner of the Operator search window on the screen.	% of the screen width.	Not defined	From 0 to M*100, where M is the number of surveillance monitors installed.
7	Y	Enter the value in the field.	Defines the coordinate in the Y vertical axis for the upper left corner of the Operator search window on the screen.	% of the screen height.	Not defined	From 0 to M*100, where M is the number of surveillance monitors installed.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
8	Type	Is selected from the list	Defines the macro command for displaying the Operator search window.	Names of the Microph-one objects registered in the system	Not defined	Depends on the number of types of objects created in the digital distributed video surveillance system.
9	Number	Is selected from the list	Defines the number of the macro command for displaying the Operator search window.	Sequence of numbers	Not defined	Depends on the number of Macro command objects created in the digital distributed video surveillance system.
10	Name	Automatically	Defines the name of the macro command for displaying the Operator search window.	Names of the Microph-one objects registered in the system	Not defined	Depends on the number of types of objects created in the digital distributed video surveillance system.
11	Event	Is selected from the list	Defines the operation, which Intellect™ system performs, when the given program is launched.	Types of events for the given types of devices.	Empty	Empty – no operations in progress. Execute – the Intellect™ system is requested to execute a macro.

f. The name of the element is not displayed in the settings panel of the given object.

11.2.8.24 *Settings panel of the Alarm Message Window object*

The “Alarm Message Window” object is designed to display an interface box showing the alarm event, which is initiated by the Intellect digital video surveillance system.

The settings panel of the “Alarm Message Window” object is shown in Figure 11.2-59.

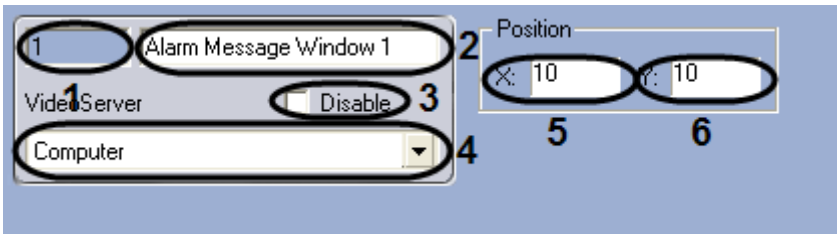


Figure 11.2-59 The settings panel of the “Alarm message window” object

Table 11.2-26 describes the parameters of the settings corresponding to the elements of the settings panel of the “Alarm Message Window” object.

Table 11.2-26

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Alarm notification window object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Alarm notification window objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the field	Defines the name of the Alarm notification window object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Alarm notification window	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Alarm notification window object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not availab-le	Yes – the Alarm notification window object is diskonnected and is not in use. No – the alarm notification window object is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object of the digital distributed video surveillance system, to which the given Alarm notification window object refers.	Name of the Computer objects registered in the system	Name of the parent Compu-ter object.	Depends on the number of Computer objects in the digital distributed video surveillance system
5	X	Enter the value in the field.	Defines the coordinate in the X horizontal axis for the upper left corner of the Alarm notification window on the screen.	% of the screen width.	Not defined	From 0 to M*100, where M is the number of surveillance monitors installed.
6	Y	Enter the value in the field.	Defines the coordinate in the Y vertical axis for the upper left corner of the Alarm notification window on the screen.	% of the screen height.	Not defined	From 0 to M*100, where M is the number of surveillance monitors installed.

14. The name of the element is not displayed in the settings panel of the given object.

11.2.8.25 *Settings panel of the Videogate object*

The settings panel of the “Videogate” object is shown in Figure 11.2-60.

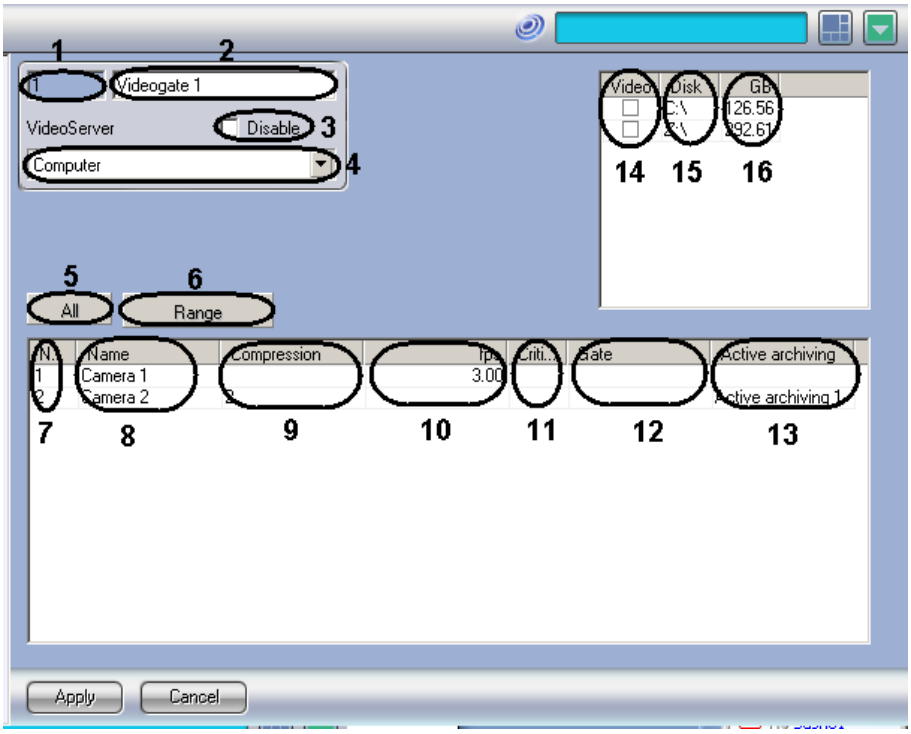


Figure 11.2-60 The settings panel of the “Videogate” object

Table 11.2-27 describes the parameters of the settings corresponding to the elements of the settings panel of the “Videogate” object.

Table 11.2-27

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Videogate object in the digital distributed video surveillance system.	Sequence of numbers	-	Depends on the number of Videogate objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Defines the name of the Videogate object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Archiver.	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Videogate object (connected or diskonnected) in the	Boolean type	Not available	Yes – the Videogate is diskonnected and is not in use

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
			digital distributed video surveillance system.			No – the Videogate is connected and is in use.
4	Computer	Is selected from the list	Defines the parent Computer object for the given Videogate object	Name of the Computer objects registered in the system	Name of the parent Computer object.	Depends on the number of Computer objects in the digital distributed video surveillance system
5	All	The button is pressed.	Selection of all video cameras registered in the system for transmitting video signals through the video gate	-	-	-
6	Gate	The button is pressed.	Access to the complex selection of video cameras for transmitting video signals through the video gate	-	-	-
7	Number	Is selected from the list	Defines the number of the camera for transmitting video signals through the video gate	Sequence of numbers	-	Depends on the number of surveillance cameras in the digital distributed video surveillance system
8	Name	Is selected from the list	Sets the name of the video surveillance camera for transmitting video signals through the video gate	Name of the Camera objects registered in the system	-	Depends on the number of surveillance cameras in the digital distributed video surveillance system
9	Compression	Is selected from the list	Sets the level of video signal compression for transmitting video signals through the video gate. With the given value there is additional consumption of Server's resources. The compression level can be changed only for the video from analog cameras compressed by the Motion Wavelet codec.	Sequence of numbers	-	In order of rising compression level 0,1,2,3,4,5 (0 – without compression, 5 – maximum compression).

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
10	fps	Enter the value in the field	Sets the video signal rate for transmitting video signals through the video gate.	Sequence of numbers	-	Not more than digitizing of video signal by video capture card
11	Critical rate	Enter the value in the field	Set the minimum permissible rate of the video signal, when received by the Videogate to control the transmission of video signal through the local net	Sequence of numbers	-	Not more than the frame rate of the video signal, that is transmitted to the Videogate
12	Gate	Is selected from the list	Set the Videogate object from which video signal from the selected camera has to be transmitted to the given Videogate	Name of the Videogate objects registered in the system	Not defined	Depends on the number of Videogate objects, registered in the digital distributed video surveillance system
13	Active archive	Is selected from the list	Set the object Active archive, from which video signal from the selected camera has to be transmitted to the given Videogate	Name of the Active archive objects registered in the system.	Not defined	Depends on the number of Active archive objects registered in the digital distributed video surveillance system.
14	Video	Is identified by the check mark	Set the didsk for storing the archive of video signals, going through ther Videogate.	Boolean type	-	Yes, the disk is used for storing the Videogate module. No - the disk is not used for storing the Video gate module
14	Disk	Automatically	Displays the names of local (net, USB) disks, accessible for storing archive of Videogate module.	Names of available disks(Latin characters)	List of available hard disks	Depends on the total number (both local and network) of accessible disks.
15	GB	Automatically	Contains information about free space on every available disk	Disk space in GB	-	Depends on the free disk space

15. The name of the element is not displayed in the settings panel of the given object.

11.2.8.26 *Settings panel of the Event Counter object*

The “Event counter” object is designed to register and count events of a certain type, occurring at the pre-defined objects and registered by the INTELLECT™ system.

The settings panel for the “Event counter” object is shown in Figure 11.2-61.

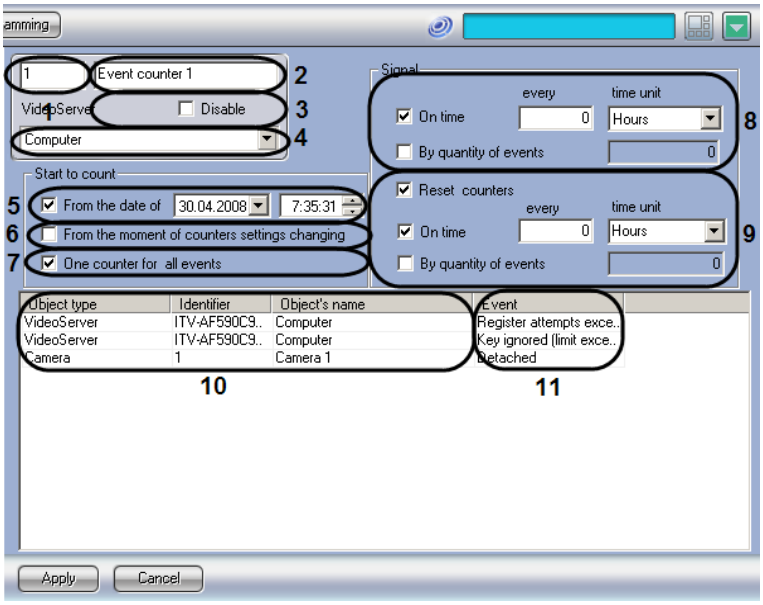


Figure 11.2-61 The settings panel for the “Event counter” object

Table 11.2-28 describes the parameters of the settings corresponding to the elements of the settings panel of the “Event counter” object.

Table 11.2-28

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the “Event counter” object in the digital distributed video surveillance system.	Sequence of numbers	-	Depends on the number of the “Event counter” objects in the digital distributed video surveillance system.
2	Name*	Specify the value in the field	Sets the name of the “Event counter” object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Event counter	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
3	Disable	Set the checkbox	Sets the state of the “Event counter” object (enabled or disabled) in the digital distributed video surveillance system.	Boolean type	No	Yes – the “Event counter” object is disabled. No – the “Event counter” object is enabled.
4	Computer	Select in the list	Sets the parent “Computer” object of the digital distributed video surveillance system, to which the given “Event counter” object refers.	Name of the “Computer” objects registered in the system	Name of the parent “Computer” object.	Depends on the number of the “Computer” objects in the digital distributed video surveillance system
The “Start to count” group						
5	From the date of (activation)	Set the checkbox	Allows setting the start to count date and time manually.	Boolean type	Yes	Yes – the Start to count date and time are set manually. No – The Start to count date and time are set at the date and time, when the “Event counter” object was last modified.
	From the date of (date)	Specify the value in the field or select it in the dropdown list.	Sets the Start to count date.	DATE:MONTH:YEAR	Current system date	09.1752 – 12.9999
	From the date of (time)	Specify the value in the field	Sets the Start to count time.	HOURS:MINUTES:SECONDS	Current system time	00:00:0 - 23:59:59
6	From the moment of counters settings changing	Set the checkbox	Sets the Start to count date and time at the date and time, when the “Event counter” object was last modified.	Boolean type	No	Yes – the Start to count date and time are set at the date and time, when the “Event counter” object was last modified. No – the Start to count date and time are set

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
						manually.
7	One counter for all events	Set the checkbox	Sets the counter for all events referred to the “Objects and events” group of the given “Event counter” object.	Boolean type	Yes	Yes – Counter No. 1 is used to count all events. No – the events are counted by different counters (each event is counted by an individual counter).
The “Counter notification” group						
8	On time (activation)	Set the checkbox	Enables a regular notification in preset periods of time.	Boolean type	Yes	Yes – on time notification is enabled. No – on time notification is disabled (notification by quantity of events is enabled).
	On time (every)	Specify the value in the field	Sets a notification period as a time period. Notification is performed irrespective of on time at 00 minutes 00 seconds of every hour (or at 00 hours 00 minutes 00 seconds of every day – depending on the “time unit” settings)	Sequence of numbers	0	0 - 2147483648
	On time (time unit)	Select the value in the list	Sets a time unit for the given notification.	Line	Hours	Hours Days
	By quantity of events (activation)	Set the checkbox	Enables a regular notification about events starting from the preset one.	Boolean type	No	Yes – notification by quantity of events is enabled. No – notification by quantity of events is disabled (on time notification is enabled).

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
	By quantity of events (quantity of events)	Specify the value in the field	Sets a number of event starting from which the notification will be performed. Example: if the parameter has “5” value, then notification will be performed by every event starting from 5 (5,6,7,8, etc.)	Sequence of numbers	0	0 - 2147483648
The “Reset counters” group						
9	On time (activation)	Set the checkbox	Enables a cyclic counter reset in a preset time period.	Boolean type	Yes	Yes – a cyclic reset in a preset time period is enabled. No – a cyclic reset in a preset time period is disabled (By quantity of events (cyclic reset by quantity of events is enabled).
	On time (every)	Specify the value in the field	Sets a reset period as a time period. Reset is performed irrespective of on time at 00 minutes 00 seconds of every hour (or at 00 hours 00 minutes 00 seconds of every day – depending on the “time unit” settings).	Sequence of numbers	0	0 - 2147483648
	On time (time unit)	Select in the list	Sets a time unit for the given reset.	Line	Hours	Hours Days
	By quantity of events (activation)	Set the checkbox	Enables a counter reset performed upon occurrence of a preset number of events.	Boolean type	No	Yes – a cyclic reset upon occurrence of a preset number of events is enabled. No – a cyclic reset upon

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
						occurrence of a preset number of events is disabled (a cyclic reset on time is enabled).
	By quantity of events (quantity of events)	Specify the value in the field	Sets a reset period for counters as a number of events.	Sequence of numbers	0	0 - 2147483648
The “Objects and events” group						
10	Object type	Select in the list	Sets the type of object for which the events are to be counted.	Types of objects registered in the system.	Not set	Depends on the number of object types registered in the digital distributed video surveillance system.
	Identifier	Select in the list	Sets the identification number of an object of the preset type for which the events are to be counted.	Sequence of numbers	Not set	Depends on the number of objects of the given type in the digital distributed video surveillance system.
	Object’s name	Automatically	Displays the identification number of the selected object.	Latin, Cyrillic and service characters	Not set	Object name aith the preset identifier.
11	Event	Select in the list	Sets an event that is to be counted.	Latin, Cyrillic and service characters	Not set	Depends on the number of types of objects registered in the digital distributed video surveillance system.

- The name of the element is not displayed in the settings panel of the given object.

11.2.8.27 *Settings panel of the Data replication service object*

The “Data replication service” object is for archive replication from unconnected servers.

The settings panel of the “Data replication service” object is shown in Figure 11.2-62.

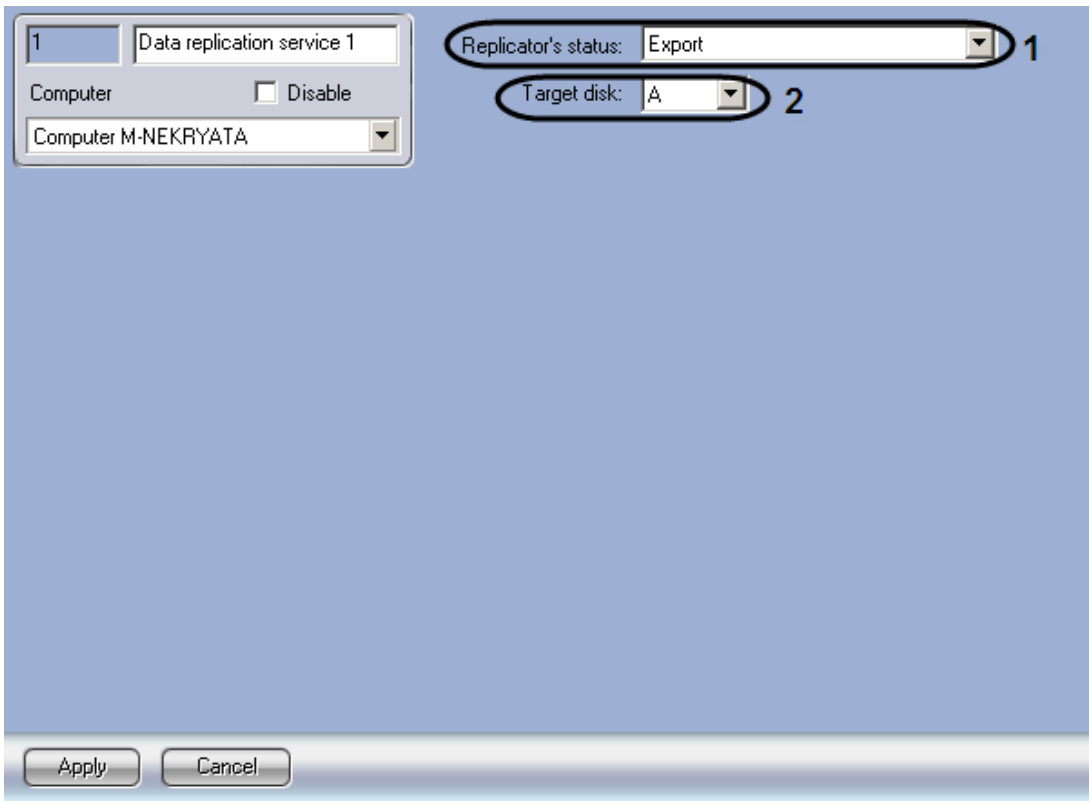


Figure 11.2-62 The settings panel of the "Data replication service" object

Description of setting parameters relevant to element on the settings panel of the "Data replication service" object is given in Table 11.2-29.

Table 11.2-29

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Replicator's status	Select in the list	Specifies status of Server – whether it is a data source or a target	Names of present replication roles	Export	Export – Server is the source Target – Server is the target
2	Target disk	Select in the list	Specifies removable storage used for data transmission	Letter of drive connected to the Server	-	Depends on the number of drives connected to the Server

11.2.8.28 *Settings panel of the Failover object*

The "Failover" object is used to ensure operation of distributed system in the failover mode.

The settings panel of the "Failover" object is shown in Figure 11.2-63.

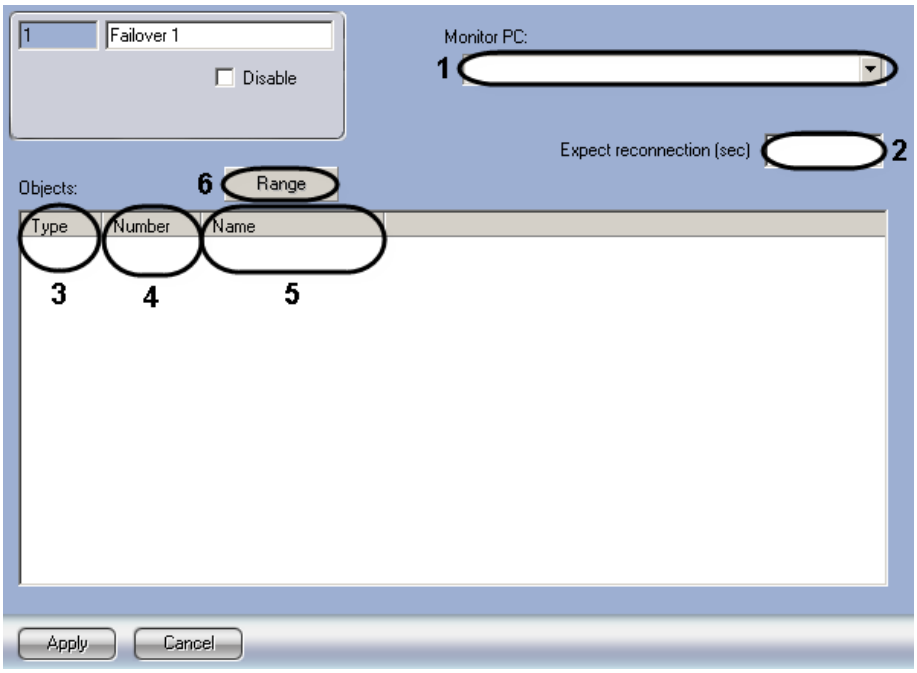


Figure 11.2-63 The settings panel of the “Failover” object

Description of setting parameters relevant to elements on the settings panel of the “Failover” object is given in Table 11.2-30.

Table 11.2-30

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
1	Monitor PC	Select in the list	Sets the name of the Server the state of which is to be under control	Names of the “Computer” objects registered in the system	-	Depends on the number of the “Computer” objects registered in the system
2	Expect reconnection (sec)	Type-in the value in the field	Sets the time period (in seconds) at the end of which configuration will be transferred to backup Server	Sequence of numbers	-	From 0 to 65535
3	Type	Select in the list	Sets the object type in Server configuration that is to be transferred to backup Server in case of connection failure	Types of objects registered on the base of the main Server	-	Depends on the configuration created on the base of the main Server

№	Parameter	Method for setting the parameter value	Parameter description	Symbols used	Default value	Value range
4	Number	Select in the list	Sets the ID of object of selected type that is to be transferred to backup Server in case of connection failure	ID of objects of selected type that are in Server configuration	-	Depends on the number of objects of selected type in the configuration of main Server
5	Name	Automatically	Sets the object name that is to be transferred to backup Server in case of connection failure	Names of objects of selected type that are in Server configuration	-	Depends on the configuration created on the base of the main Server
6	Range	Click the button	Opens the dialog box for integrated selection of tracking objects	-	-	-

11.2.9 The Interfaces tab

The Interfaces tab is designed to create and configure a user interface of the video surveillance and audio monitoring system.

11.2.9.1 *Interfaces tab components*

The Interface tab shows a tree of the system objects, corresponding to the user interface components, and a tools panel, which is used to configure the system object selected in the tree. The settings panels of the system objects used in the video surveillance and audio monitoring system are described in the following sections.

11.2.9.2 *Settings panel of the Screen object*

The “Screen” object is designed to register virtual screens in the system which are used as a basis for interface components created in the Intellect system. The settings panel of the “Screen” object is shown in Figure 11.2-64.

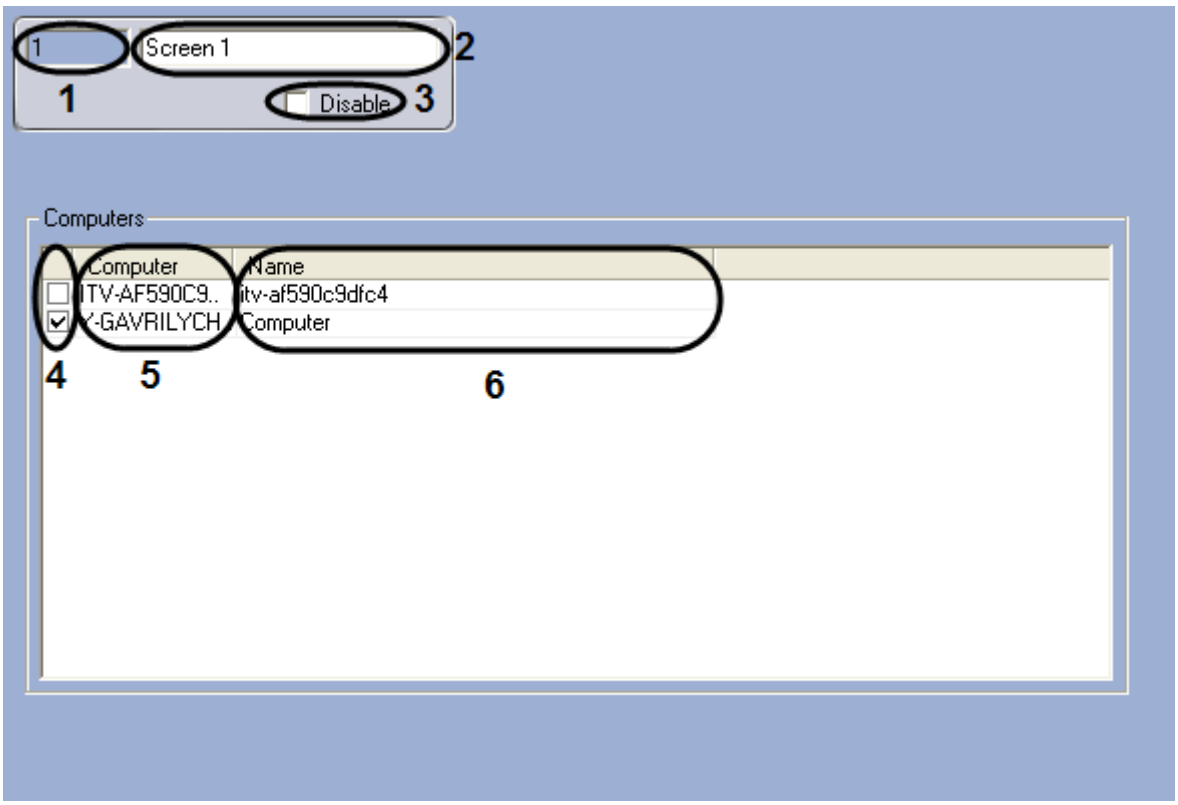


Figure 11.2-64 The settings panel of the “Screen” object

Table 11.2-31 describes the parameters of the settings corresponding to the elements of the settings panel of the “Screen” object.

Table 11.2-31

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
1	Identification number*	Automatically	Displays the identification number of the Screen object in the digital distributed video surveillance system.	Sequen-ce of numbers	-	Depends on the number of Screen objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the box	Defines the name of the Screen object in the digital distributed video surveillance system.	Latin, Cyrillic and service characte r-s	Screen	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the condition of the Screen object (connected or diskonnected) in the digital distributed video surveillance system.	Boolean type	Not avail-able	Yes – the Screen object is diskonnected and is not in use No – the Screen object is connected and is in use.

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
Computer Group						
4	Select an element*	Is identified by the check mark	Contains a list of computers (videoserver, Remote Administrator Workstation, Remote Workstation) connected to the given videoserver (Remote Administrator Workstation). The check marks referred to the computers define whether or not the computers should display the Monitor objects based on the given Screen object.	Boolean type	Not avail-able	Yes – the computer will display the Monitor object, created on the basis of the given Screen object. No – the computer will not display the Monitor object, created on the basis of the given Screen object.
5	Computer	Automatically	Defines the computer name in the local network.	Comput-er name in the local network.	Com-puter name in the local netwo -rk.	Depends on the number of objects in the local network. A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
6	Name	Automatically	Gives the name to the computer used in the digital distributed video surveillance system	Name of the Comput-er object register-ed in the system	Name of the Com-puter object regist-ered in the syste m	Depends on the number of objects in the digital distributed video surveillance system. A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.

16. The name of the element is not displayed in the settings panel of the given object.

11.2.9.3 *Settings panel of the Monitor object*

The face of the settings panel for the “Monitor” object is shown in Figure 11.2-65 and Figure 11.2-66.

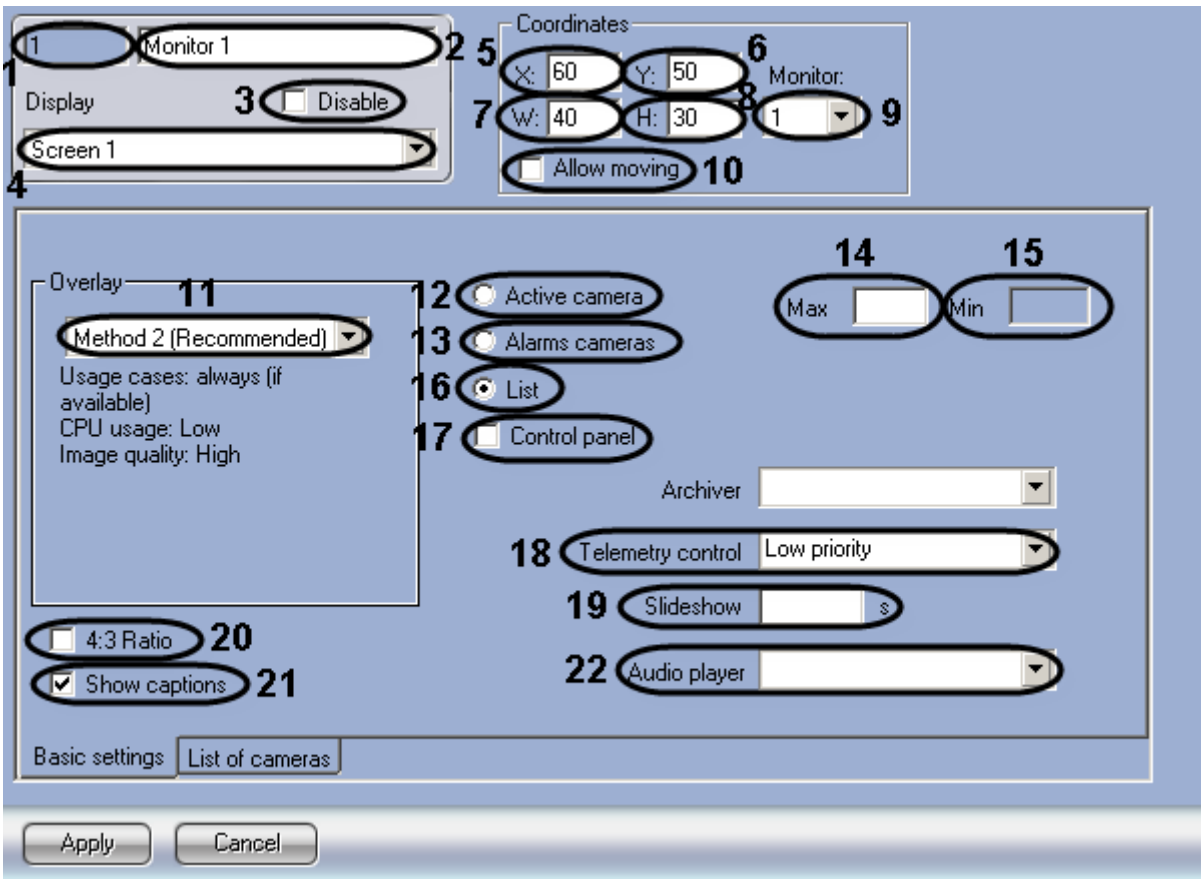


Figure 11.2-65 The settings panel of the "Monitor" object. The "Basic settings" tab

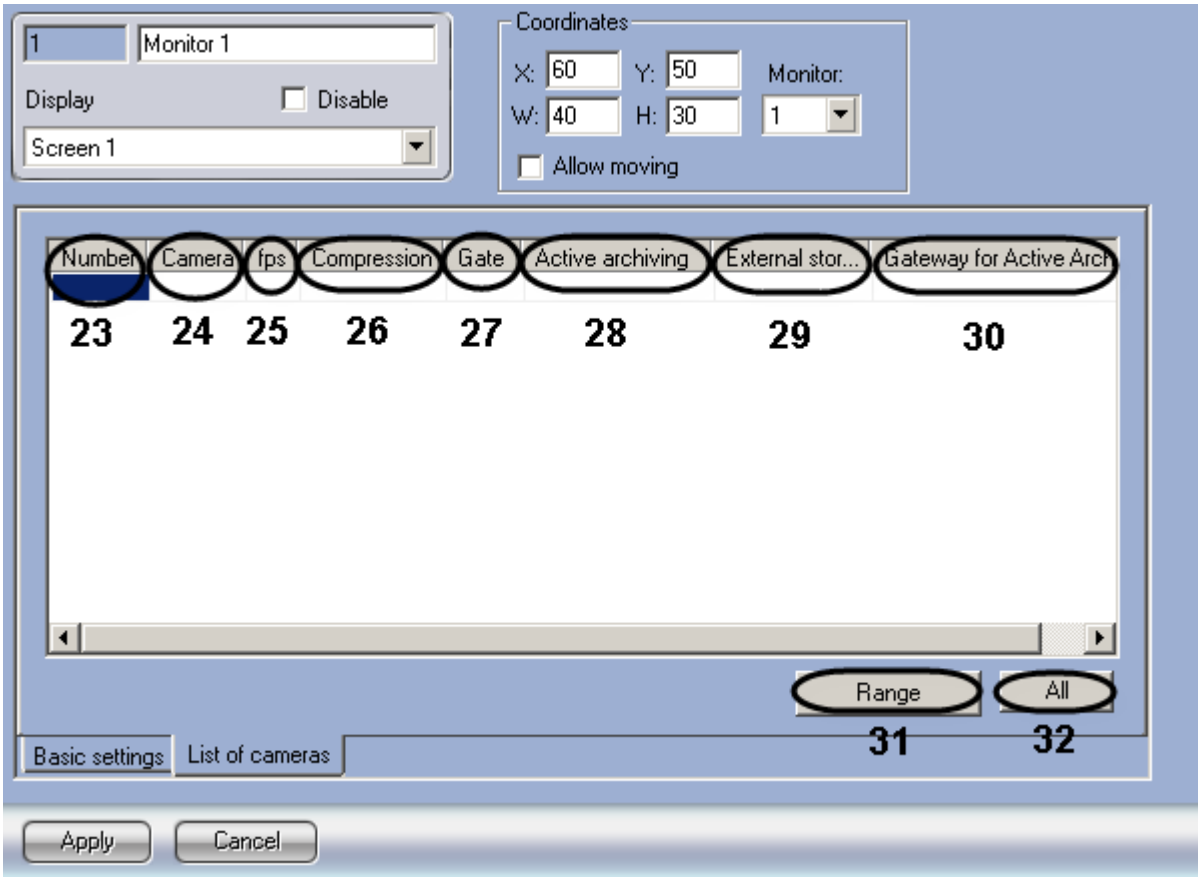


Figure 11.2-66 The settings panel of the "Monitor" object. The "List of cameras" tab

Table 11.2-32 describes the setting parameters of the “Monitor” interface object.

Table 11.2-32 Description of the settings parameters for the “Monitor” interface object

№	Parameter	Method of setting the value	Parameter description	Symbols used	Defa-ult value	Value range
1	The “Identificatio n number” field	Automatically	Displays the identification number of the “Monitor” interface object in the system.	Sequen-ce of numbers	-	Depends on the number of the “Monitor” objects in the system.
2	The “Name” field	Enter the value in the field	Defines the name of the “Monitor” object in the system.	Latin, Cyrillic and service digits	Monitor	A line containing a sequence of any symbols (letters, digits, service digits), not case-sensitive Number of symbols – from 1 to 60.
3	The “Disable” checkbox	Set the checkbox	Defines the mode of the “Monitor” object (on or off) in the system.	Boolean type	-	Yes – the “Monitor” object is disabled and is not in use No – the “Monitor” object is enabled and is in use
4	The “Display” drop-down list	Select in the list	Sets the parent “Screen” object for the given “Monitor” object.	Names of the “Screen” objects register-ed in the system	Name of the parent “Screen” object	Depends on the number of the “Screen” objects in the system.
The “Coordinates” group						
5	The “X” field	Enter the value in the field	Set the “X” coordinate in the horizontal axis for the upper-left corner of the “Monitor” interface box	% of the screen width	-	From 0 to M*100, where M is the number of the monitors installed
6	The “Y” field	Enter the value in the field	Set the “Y” coordinate in the vertical axis for the upper left corner of the “Monitor” interface box	% of the screen height	-	From 0 to M*100, where M is the number of the monitors installed
7	The “W” field	Enter the value in the field	Set the width of the “Monitor” interface box	% of the screen width	-	From 0 to M*100, where M is the number of the monitors installed

№	Parameter	Method of setting the value	Parameter description	Symbols used	Defa-ult value	Value range
8	The “H” field	Enter the value in the field	Set the height of the “Monitor” object if the control panel is not active	% of the screen width	-	From 0 to M*100, where M is the number of the monitors installed
9	The “Monitor” drop-down list	Select in the list	Sets the monitor number, the coordinates to which are assigned	Sequen-ce of numbers	1	From 1 to 9
10	The “Allow moving” checkbox	Set the checkbox	Allows hand shifting of the “Monitor” interface box if the control panel is active	Boolean type	-	Yes – hand shifting is allowed. No – hand shifting is prohibited.
The “Basic settings” tab						
11	The “Overlay” drop-down list	Select in the list	Set the “Overlay” mode for processing video signals	Names of overlay modes	Method2 (Recomm ended)	Method1 – video signals are processed as one stream Method2 (Recommended) – video signals are processed independently from each other None – video signals are not processed by a video capture card
12	The “Active camera” switch	Set in the position	Set the display mode for an active camera box	Boolean type	-	Yes - The “Active camera” mode is enabled and is in use No - The “Active camera” mode is disabled and is not in use
13	The “Alarms cameras” switch	Set in the position	Set the display mode for alarm cameras’ boxes	Boolean type	-	Yes - The “Alarms cameras” mode is enabled and is in use No - The “Alarms cameras” mode is disabled and is not in use
14	The “Max” field	Enter the value in the field	Specify the maximum number of video cameras, boxes of which are displayed on the “Monitor”	Sequence of numbers	-	From 1 to 64 Depends on the number of cameras

№	Parameter	Method of setting the value	Parameter description	Symbols used	Defa-ult value	Value range
			in the “Alarms cameras” and “List” modes			registered in the system
15	The “Min” field	Enter the value in the box	Specify the minimum number of video cameras, boxes of which are displayed on the “Monitor” in the “Alarms cameras” even on no-alarm	Sequence of numbers	-	From 1 to 64 Depends on the number of cameras registered in the system. 0 – on no-alarm camera boxes are not displayed in the “Monitor” box.
16	The “List” switch	Set in the position	Set the display mode according to the selected layout.	Boolean type	Yes	Yes - The “List” mode is enabled and is in use No - The “List” mode is disabled and is not in use
17	The “Control panel” checkbox	Set the checkbox	Activates the control panel for the “Monitor” in the “List” mode	Boolean type	-	Yes - The “Control panel” mode is enabled and is in use No - The “Control panel” mode is disabled and is not in use
18	The “Telemetry control” drop-down list	Select in the list	Set the prioritiy for the Telemetry control using the “Monitor” object	Names of the Telemetry control priorities	Low priority	Forbidden – option of the Telemetry control using the “Monitor” object is disabled Low priority – low priority of control High priority – high priority of control
19	The “Slideshow” field	Enter the value in the field	Set the period of automatic slideshow of camera boxes when the control panel is enabled	Period in seconds (s)	-	Whole number from 1 and bigger
20	The “4:3 Ratio” checkbox	Set the checkbox	Set the 4:3proportion of height and width of the “Monitor” box	Boolean type	-	Yes - proportion of height and width of the “Monitor” box is 4:3 No - proportion of

№	Parameter	Method of setting the value	Parameter description	Symbols used	Defa-ult value	Value range
						height and width of the “Monitor” box can be random.
21	The “Show captions” checkbox	Set the checkbox	Shows the captions for cameras of the “Monitor” interface box	Boolean type	Yes	Yes – The “Captions” submenu is available in the context menu of the “Monitor” interface box No – The “Captions” submenu is unavailable in the context menu of the “Monitor” interface box
22	The “Audio player” drop-down list	Select in the list	Sets the “Audio player” object used to export video with audio from the “Monitor” interface	Names of the “Audio player” objects registered in the system	-	Depends on the number of the audio players registered in the system
The “List of cameras” tab						
23	The “Number” drop-down list	Select in the list	Set the number of the video camera to display on the “Monitor”	Sequen-ce of numbers	-	Depends on the number of video cameras registered in the system
24	The “Camera” drop-down list	Select in the list	Set the name of the video camera to display on the “Monitor”	Name of the cameras register-ed in the system	-	Depends on the number of video cameras registered in the system
25	The “Fps” drop-down list	Select in the list	Set the fps for transmitting the video signal to the “Monitor” of the Client.	Sequence of numbers	-	1, 2, 3, 4, 6, 8, 12, 16, 20, 25, 30
26	The “Compressio n” drop-down list	Select in the list	Set the compression for transmitting the video signal to the “Monitor” of the Client. The given value leads to extra consumption of Server’s resources.	Sequence of numbers	-	In the range of rising compression level 0,1,2,3,4,5 0 – the video signal is not compressed 5 – maximum compression of the video signal

№	Parameter	Method of setting the value	Parameter description	Symbols used	Defa-ult value	Value range
27	The “Gate” drop-down list	Select in the list	Set the “Gate” object via which the video archive from the selected camera is to be transmitted to the “Monitor”	Names of the “Gateway” objects register-ed in the system	-	Depends on the number of the “Gate” objects registered in the system
28	The “Active archiving” drop-down list	Select in the list	Set the “Active archiving” object the video archive fromthe selected camera of which is to be transmitted to the “Monitor”	Names of the “Active archiving” objects register-ed in the system	-	Depends on the number of the “Active archiving” objects registered in the system
29	The “External storage”	Select in the list	Set the “ External storage” object” the video archive from which is to be transmitted to the “Monitor” via the selected camera	Names of the “External storage” objects register-ed in the system	-	Depends on the number of the “External storage” objects registered in the system
30	The “Gateway for Active Archiving” drop-down list	Select in the list	Set the “Gate” object via which the video archive of the “Active archiving” object is to be transmitted to the “Monitor”	Names of the “Gateway for active archiving” objects register-ed in the system	-	Depends on the number of the “Gateway for active archiving” objects registered in the system
31	The “Range” button	Click the button	Select all cameras registered in the system to display on the “Monitor”	-	-	-
32	The “All” button	Click the button	Access to complex selection and editing of cameras’parameters to display on the “Monitor”	-	-	-

11.2.9.4 *Settings panel of the Audio player object*

The settings panel of the “Audio player” object is shown in Figure 11.2-67.

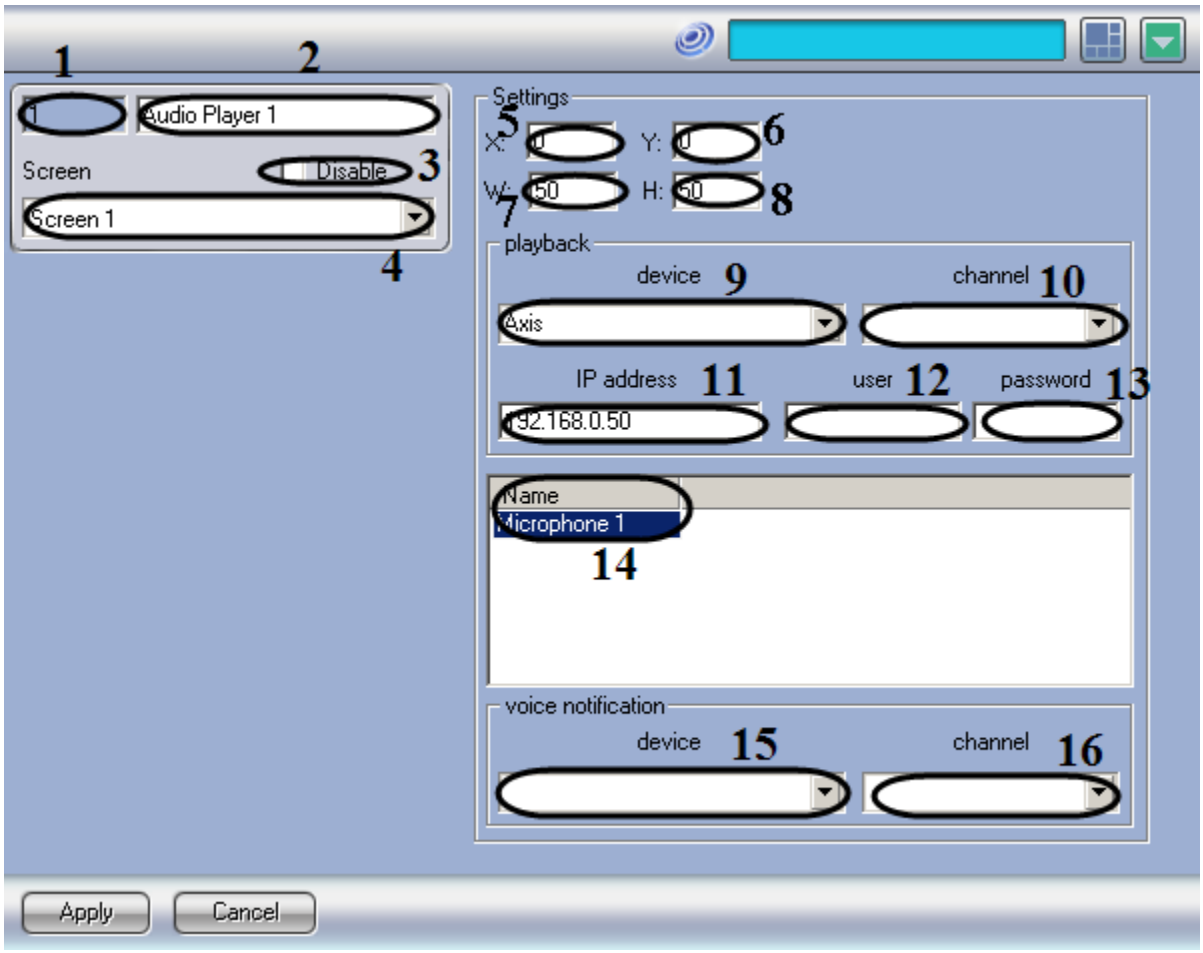


Figure 11.2-67 The settings panel of the "Audio player" object

Table 11.2-33 describes the parameters of the settings corresponding to the elements of the settings panel of the "Audio player" object.

Table 11.2-33

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
1	Identification number	Automatically	Displays the identification number of the Audio player object in the system.	Sequenc e of numbers	-	Depends on the number of Audio player objects in the system.
2	Name	Enter the value in the box	Defines the name of the Audio player object in the system.	Latin, Cyrillic and service characte r-s	Audio player	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Check box Disable	Is identified by the check mark	Defines the status(on or off) of the Audio player object in the system.	Boolean type	Not avail-able	Yes – the Audio player object is diskonnected and is not in use

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
						No – the Audio player object is connected and is in use.
4	Dropdown list Screen	Is selected from the list	Defines the parent Screen object for the given Audio player object.	Names of the Screen objects register-ed in the system	Name of the parent Screen object.	Depends on the number of Screen objects in the system.
Settings Group						
5	X	Enter the value in the field.	Defines the coordinate in the X horizontal axis for the upper left corner of the Audio player on the screen.	% of the screen width.	-	From 0 to M*100, where M is the number of surveillance monitors installed.
6	Y	Enter the value in the box.	Defines the coordinate in the Y vertical axis for the upper left corner of the Audio player on the screen.	% of the screen height.		From 0 to M*100, where M is the number of surveillance monitors installed.
7	W	Enter the value in the box.	Defines the Audio player window width.	% of the screen width.	-	From 40 to M*100, where M is the number of surveillance monitors installed.
8	H	Enter the value in the box.	Defines the Audio player window height.	% of the screen width.	Not defin-ed	From 40 to M*100, where M is the number of surveillance monitors installed.
9	Dropdown list Device	Is selected from the list	Defines sound device for which audio signals shoul be transmited to playback.	Nemes of audio devices,registered in the system	Device on defaul t	Depends on the number of devices in the system.Device on default- is standard sound map
10	Channel	Is selected from the list	Defines the chanal of audio signals' playback	Left+righ t, left,right	Left+ri ght	Left+right audio signal is transmitted to left and right channels of sound device. Left – audio signal is transmitted to the left channel of the sound device. Right– audio signal is transmitted to the right channel of the sound device

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
11	IP address(is set for audio IP-device)	Enter the value in the field.	Set the IP-adress of the sound device	IP-adress	-	Depends on settings registered in the system of IP-devices
12	User(is set for audio IP-device)	Enter the value in the field.	Set the user name to connect to the sound device	-	-	Depends on settings of IP-device
13	Password(is set for audio IP-device)	Enter the value in the field.	Set user's password for connection to the sound device	-	-	Depends on settings of IP-device
«Name» table						
14	Dropdown list Name	Select the value from the list	Set the microphone, which audio signals should be recorded and/or played	Names of «Microphone»objects,registered in the system	-	Depends on number of Microphone objects in the system
15	Dropdown list device	Select the value from the list	Set the voice notification device when alarms are registered by cameras	Names of voice detection devices, registered in the system	Device on default	Depends on voice notification devices, registered in the system. Device n default-standard sound map.
16	Dropdown list Channel	Select the value from the list	Set the channel of voice notification when alarms are registered by cameras	Left+right, left,right	Left+right	Left+right- audio signal is transferred to the left and right channels of the voice notification device.Left- audio signal is transferred to the left channel of the voice notification device.Right-audio signal is transferred to the right channel of the voice notification device

11.2.9.5 *Settings panel of the Telemetry control panel object*

The settings panel of the “Telemetry control panel” object is shown in Figure 11.2-68.

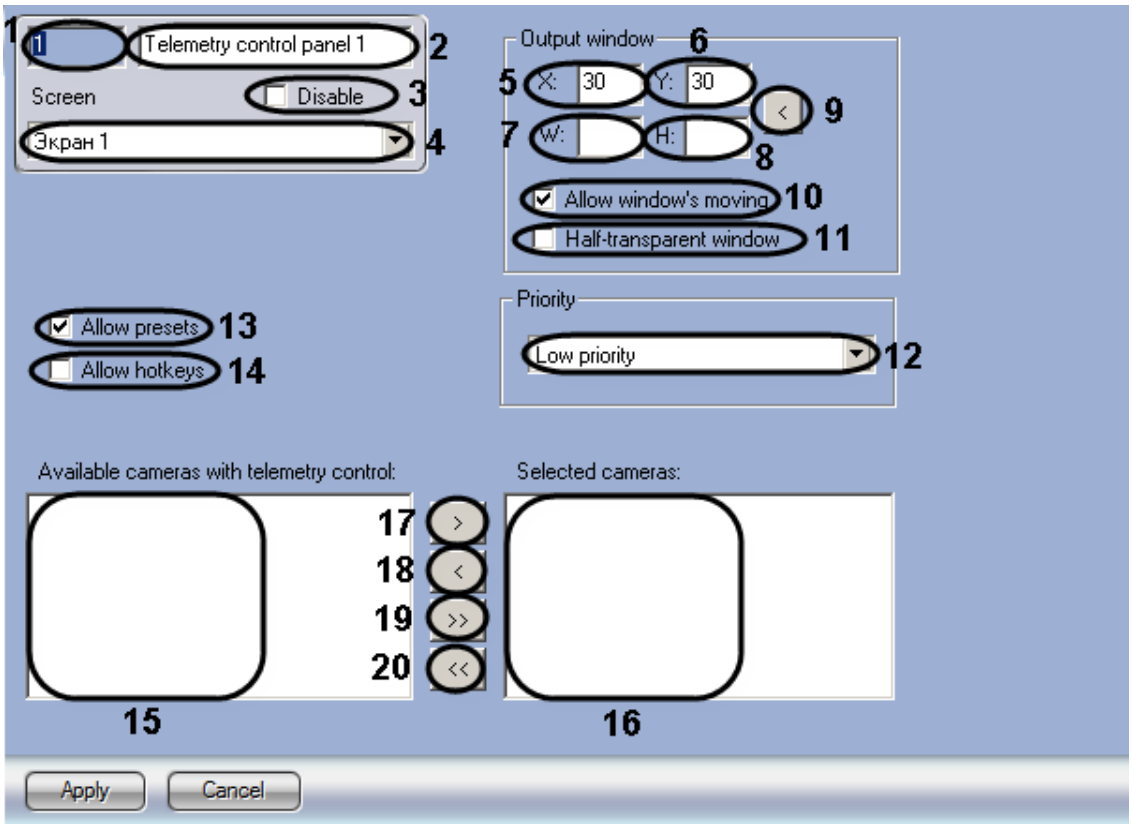


Figure 11.2-68 The settings panel of the “Telemetry control panel” object

Table 11.2-34 describes the parameters of the settings corresponding to the elements of the settings panel of the “Telemetry control panel” object.

Table 11.2-34

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
1	Identification number*	Automatically	Displays the identification number of the “Telemetry control panel” object in the system.	Sequence of numbers	-	1 or more Depends on the “Telemetry control panel” objects in the system.
2	Name*	Type-in the value in the field	Specifies the name of the “Telemetry control panel” object in the system.	Latin, Cyrillic and service characters	Telemetr y control panel	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols –

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
						from 1 to 60.
3	Disable	Checkbox is set	Sets the status of the “Telemetry control panel” object in the system.	Boolean type	-	Yes – the “Telemetry control panel” object is disabled and is not in use No – the “Telemetry control panel” object is enabled and is in use.
4	Screen	Is selected in the list	Sets the parent “Screen” object for the given “Telemetry control panel” object.	Names of the “Screen” objects registered in the system	Name of the parent “Screen” object.	Depends on the number of the “Screen” objects in the system.
The “Coordinates” group						
5	X	Type-in the value in the field.	Sets the coordinate in the X horizontal axis for the upper left corner of the “Telemetry control panel” on the screen.	% of the screen width.	30	From 0 to M*100, where M is the number of surveillance monitors installed.
6	Y	Type-in the value in the field.	Sets the coordinate in the Y vertical axis for the upper left corner of the “Telemetry control panel”on the screen.	% of the screen height.	30	From 0 to M*100, where M is the number of surveillance monitors installed.
7	W	Type-in the value in the field.	Sets the width of the Telemetry control panel.	% of the screen width.	-	From 18 to M*100, where M is the number of surveillance monitors installed.
8	H	Type-in the value in the field.	Sets the height of the Telemetry control panel	% of the screen height.	-	From 34 to M*100, where M is the number of surveillance monitors installed.
9	Current settings*	Click the button	Sets the current coordinates of the Telemetry control panel in X, Y, W and H fields	-	-	-
10	Allow window’s moving	Checkbox is set	Allows moving the Telemetry control using the mouse panel	Boolean type	Yes	Yes – allow moving the Telemetry control panel No – forbid moving Telemetry control panel
11	Half-transparent	Checkbox is set	Displays the half-transparent Telemetry control panel	Boolean type	Yes	Yes- display the half-transparent Telemetry

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
	window					control panel. No – do not display the half-transparent Telemetry control panel.
12	Priority	Is selected in the list	Sets the priority of Telemetry control	Names of priorities for Telemetry control	Low	Forbidden – Telemetry control is forbidden. Low – control over PTZ device using the Telemetry control panel is performed after it controls devices with Standard or High ptiority Standard - control over PTZ device using the Telemetry control panel is performed after it controls devices with High ptiority. High - control over PTZ device using the Telemetry control panel is performed in the first place
13	Allow presets	Checkbox is set	Enables saving presets	Boolean type	Yes	Yes–presets saving is enabled. No – presets saving is disabled
14	Allow hotkeys	Checkbox is set	Enables Telemetry control using a keyboard	Boolean type	No	Yes– keyboard can be used for Telemetry control No – keyboard hotkeys are not used for Telemetry control
15	Available cameras with telemetry control	Automatically	Shows cameras with PTZ devices.	Names of the “Camera” objects registered in the system.	The list of all “Camera ” objects registere d in the system.	Depends on the number of PTZ devices.
16	Selected cameras	Click arrow keys	Shows cameras with PTZ devices that can be controlled using the	-	-	Depends on the number of PTZ devices.

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
			Telemetry control panel			
17	One to the right*	Click the button	Moves specified PTZ device from the “Available cameras with telemetry control” list to the “Selected cameras” list	-	-	-
18	One to the left*	Click the button	Moves specified PTZ device from the “ Selected cameras” list to the “Available cameras with telemetry control” list.	-	-	-
19	All to the right*	Click the button	Moves all PTZ devices from the “Available cameras with telemetry control” list to the “Selected cameras” list.	-	-	-
20	All to the left*	Click the button	Moves all PTZ devices from the “ Selected cameras” list to the “Available cameras with telemetry control” list.	-	-	-

* The name of the element is not displayed in the settings panel of the given object

11.2.9.6 *Settings panel of the Active archiving panel object*

The “Active Archiving panel” object is designed to register and configure the “Active Archiving panel” interface object in the Intellect system, which allows the Operator configuring video data archiving.

The settings panel of the “Active archiving panel” object is shown in Figure 11.2-69.

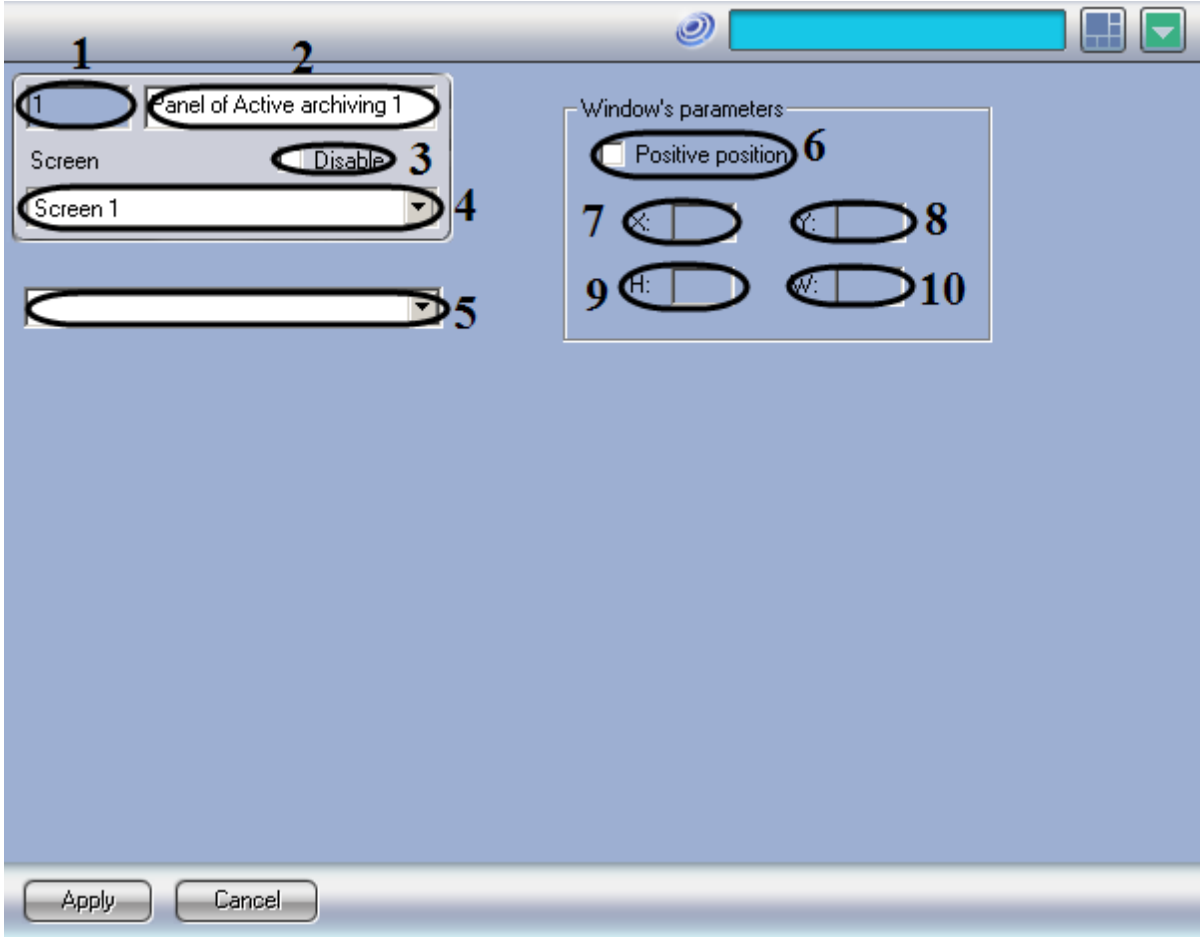


Figure 11.2-69 The settings panel of the “Active archiving panel” object

Table 11.2-35 describes the parameters of the settings corresponding to the elements of the settings panel of the “Active Archiving panel” object.

Table 11.2-35

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
1	Identification number*	Automatically	Displays the identification number of the Active Archiving panel.	Sequence of numbers	-	From 1 and above. Depends on the number of Active Archiving panel objects in the digital distributed video surveillance system
2	Name*	Enter the value in the box	Defines the name of the Active Archiving panel object.	Latin, Cyrillic and service characters	Active Archi-ving panel	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
3	Disable	Is identified by the check mark	Defines the status of the Active Archiving panel object.	Boolean type	Not avail-able	Yes – the Active Archiving panel is diskonnected and is not in use No – the Active Archiving panel is connected and is in use.
4	Screen	Is selected from the list	Defines the parent Screen object of the digital distributed system, to which the given Active Archiving panel object refers.	Names of the Screen objects registered in the system.	Name of the parent Com-puter object.	Depends on the number of Computer objects in the digital distributed video surveillance system
5	Active archive*	Is selected from the list	Defines an Active Archive, which the Operator will control with the Active Archiving panel interface object.	Name of the Active archive objects registered in the system.	Active archi-ve	Depends on the number of Active archive objects in the digital distributed video surveillance system.
6	Fixed position	Is set with a check mark	Defines, if the user can drag the Active Archiving panel over the screen with the mouse.	Boolean type	Not avail-able	Yes – the Active Archiving panel may not be dragged. No – the Active Archiving panel may be dragged.
7	X	Enter the value in the box (Automatically, if the Fixed position option is checked).	Defines a coordinate in the X horizontal axis for the upper left corner of the Active Archiving panel on the screen.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.
8	Y	Enter the value in the box (Automatically, if the Fixed position option is checked).	Defines a coordinate in the Y vertical axis for the upper left corner of the Active Archiving panel on the screen.	% of the screen height.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.
9	W	Enter the value in the box (Automatically, if the Fixed position option is	Defines the width of the Active Archiving panel.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
		checked).				
10	H	Enter the value in the box (Automatically, if the Fixed position option is checked).	Defines the height of the Active Archiving panel.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.

- The name of the element is not displayed in the settings panel of the given object.

11.2.9.7 *Settings panel of the Map object*

The “Map” object is designed to register and configure the “Map” interface object in the Intellect system, which allows creating and mapping the symbols of the installed devices in the controlled territory and to use the symbols to operate the devices. The settings panel of the “Map” object is shown in Figure 11.2-70.

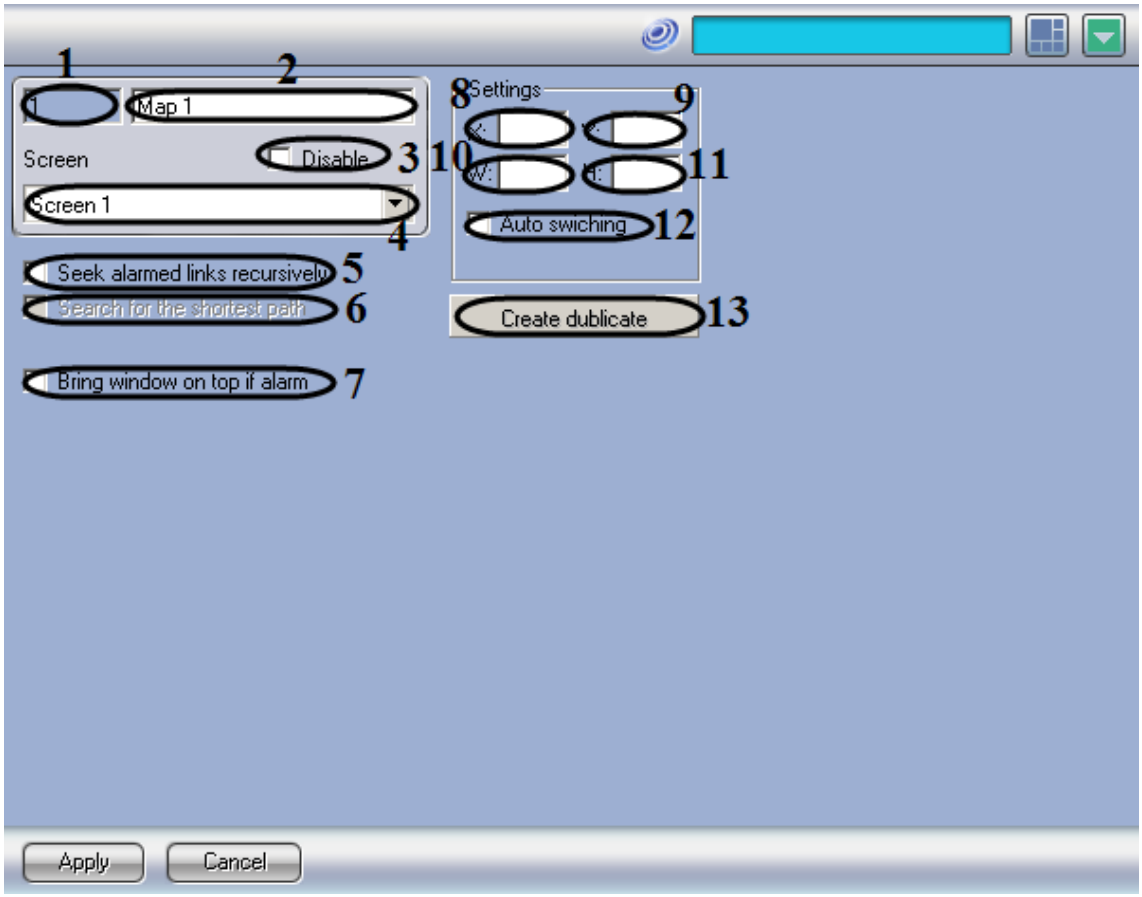


Figure 11.2-70 The settings panel of the “Map” object

Table 11.2-36 describes the parameters of the settings corresponding to the elements of the settings panel of the “Map” object.

Table 11.2-36

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
1	Identification number*	Automatically	Displays the identification number of the Map object in the digital distributed video surveillance system.	Sequen-ce of numbers	-	From 1 and above. Depends on the number of Map objects in the digital distributed video surveillance system
2	Name*	Enter the value in the box	Displays the name of the Map object in the digital distributed video surveillance system.	Latin, Cyrillic and service characte r-s	Map	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Displays the status of the Map object in the digital distributed video surveillance system.	Boolean type	Not avail-able	Yes – the Map object is diskonnected and is not in use No – the Map object is connected and is in use.
4	Screen	Is selected from the list	Defines the parent Screen object of the digital distributed system, to which the given Map object refers.	Names of the Screen objects register-ed in the system.	Name of the parent Com-puter object.	Depends on the number of Computer objects in the digital distributed video surveillance system
5	Seek alarm links recursively	Is identified by the check mark	Defines, if recursive search for the objects in the levels is possible. The recursive search means a search, where the transfer from one level, containing an object, to another level, containing a symbol, follows a gradual pattern of moving to the neighboring levels, using consecutive references.	Boolean type	Not avail-able	Yes – a recursive search for objects is switched on. No – a recursive search for objects is switched off.
6	Seek shortest path	Is identified by the check mark	Enables the search of the sortest path to the alarmed layer, if several paths from the active layer are available. The path is calculated automatically. Only the Link to Layer with the shortest path will blink in the active layer.			

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
			Can be enabled only together with the Seek Alarm Links Recursively checkbox.			
7	Bring window on top if alarm sounds	Is identified by the check mark	Defines, if the window of the Map interface object can be displayed above all active applications in case of an alarm from any object of the Map interface object.	Boolean type	Not avail-able	Yes - the window of the Map interface object will be displayed above all active applications in case of an alarm from any object of the Map interface object. No - the window of the Map interface object will not be displayed above all active applications in case of an alarm from any object of the Map interface object.
Settings Group						
8	X	Enter the value in the box	Defines a coordinate in the X horizontal axis for the upper left corner of the window of the Map interface object on the screen.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.
9	Y	Enter the value in the box	Defines a coordinate in the Y vertical axis for the upper left corner of the window of the Map interface object on the screen.	% of the screen height.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.
10	W	Enter the value in the box	Defines the width of the window of the Map interface object.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.
11	H	Enter the value in the box	Defines the height of the window of the Map interface object.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of video monitors installed.
12	Auto switching	Is identified by the check mark	Activates an auto switch to the Alarm source level in the Map interface object.	Boolean type	Not avail-able	Yes – in case of an alarm from an object, the system will switch to the source level, where the object is located. No – in case of an alarm from an object, the system will not switch to the source level, where

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defa-ult value	Value range
						the object is located.
13	Duplicate	Press the button.	Creates another Map object with all parameters identical to the given object.	-	-	-

g. The name of the element is not displayed in the settings panel of the given object.

11.2.9.8 *Settings panel of the Layer object*

The “Layer” object is designed to create and configure the Map layers with the controlled objects in the Intellect system.

The settings panel of the “Layer” object is shown in Figure 11.2-71.

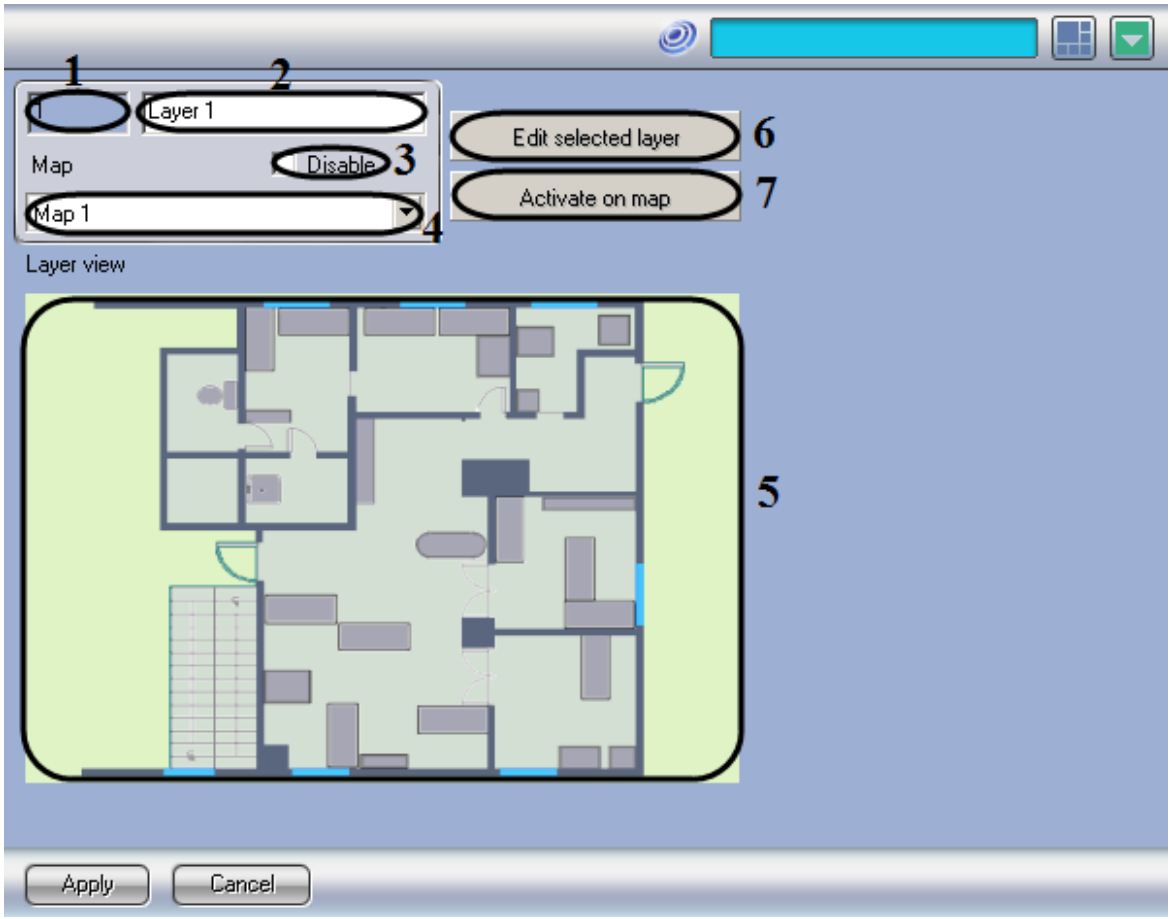


Figure 11.2-71 The settings panel of the “Layer” object

Table 11.2-37 describes the parameters of the settings corresponding to the elements of the settings panel of the “Layer” object.

Table 11.2-37

№	Parameter	Method for enter the parameter	Parameter description	Symbols used	Default value	Value range

№	Parameter	Method for enter the parameter	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Layer object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of Layer objects in the digital distributed video surveillance system
2	Name*	Enter the value in the box	Displays the name of the Layer object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Layer	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Shows the status (connected or diskonnected) of the Layer object in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the Layer object is diskonnected and is not in use No – the Layer object is connected and is in use.
4	Map	Is selected from the list	Defines the parent Map object of the digital distributed system, to which the given Layer object refers.	Name of the Map objects registered in the system.	Name of the parent Map object	Depends on the number of Map objects in the digital distributed video surveillance system
5	Layer view	-	Shows the layout of the controlled territory.	-	-	-
6	Edit selected layer	Press the button.	Displays the panel, which allows to add/remove and configure the symbols of the devices installed in the controlled territory, using the territory layout.	-	-	-
7	Activate on map	Press the button.	Brings forward to the given layer over all other layers in the Map interface object.	-	-	-

h. The name of the element is not displayed in the settings panel of the given object.

11.2.9.9 *Settings panel of the Event Viewer object*

The “Event Viewer” object represents an interface box showing text information about the events initiated by the distributed surveillance system.

The settings panel of the “Event Viewer” object is shown in Figure 11.2-72.

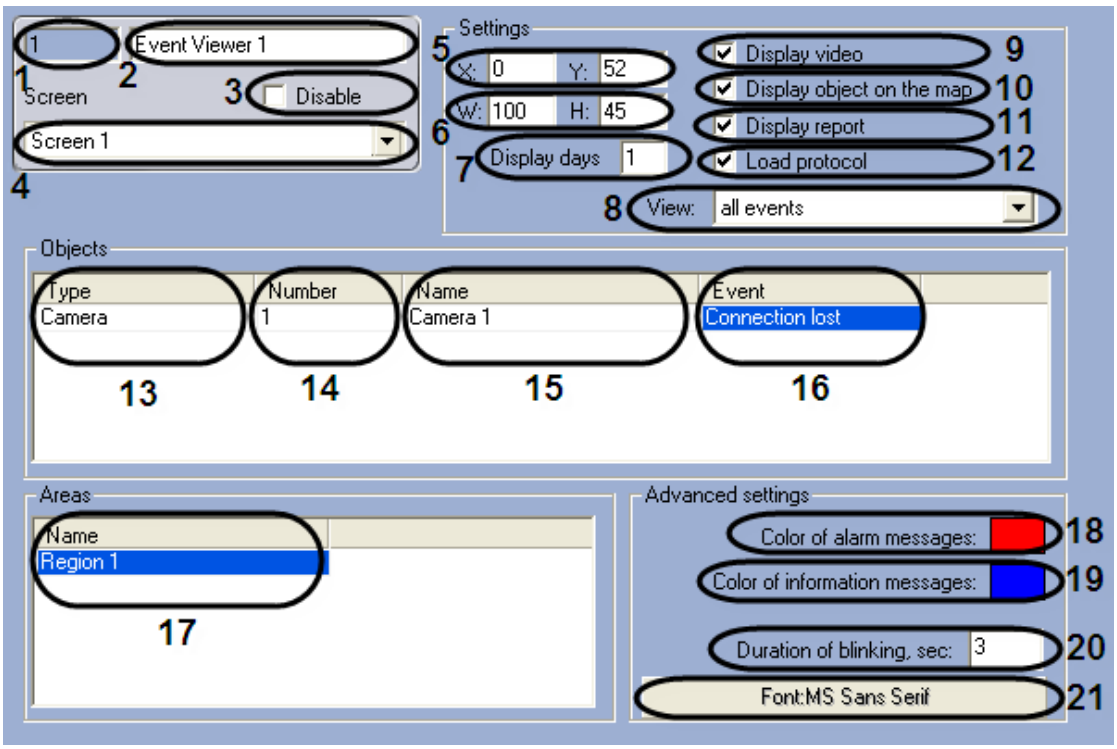


Figure 11.2-72 The settings panel of the “Event Viewer” object

Table 11.2-38 describes the parameters of the settings corresponding to the elements of the settings panel of the “Event Viewer” object.

Table 11.2-38

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
1	Identification number*	Automatically	Displays the identification number of the “Event Viewer” object in the digital distributed video surveillance system.	Sequence of numbers	-	From 1 and above. Depends on the number of “Event Viewer” objects in the digital distributed video surveillance system.
2	Name*	Type-in the value in the field	Sets the name of the “Event Viewer” object in the digital distributed video surveillance system.	Latin, Cyrillic and service characters	Event Viewer	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive Number of symbols – from 1 to 60.
3	Disable	Checkbox	Sets the status of the “Event Viewer” object (enabled or disabled) in the digital distributed video surveillance	Boolean type	No	Yes – the “Event Viewer” is disabled and is not in use. No – the “Event

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
			system.			Viewer” is enabled and is in use.
4	Screen	Select in the list	Specifies the parent “Screen” object of the digital distributed video surveillance system, to which the given “Event Viewer” object refers.	Names of “Screen” objects registered in the system	Name of the parent “Screen” object.	Depends on the number of “Screen” objects in the digital distributed video surveillance system.
The “Settings” group						
5	X	Type-in the value in the field	Sets the coordinate in the X horizontal axis for the upper left corner of the window of the “Event Viewer” interface object on the screen.	% of the screen width	Not set	From 0 to M*100, where M is the number of surveillance monitors installed.
	Y	Type-in the value in the field	Sets the coordinate in the Y vertical axis for the upper left corner of the window of the “Event Viewer” interface object on the screen.	% of the screen height	Not set	From 0 to M*100, where M is the number of surveillance monitors installed.
6	W	Type-in the value in the field	Sets the window width of the “Event Viewer” interface object.	% of the screen width	Not set	From 0 to M*100, where M is the number of surveillance monitors installed.
	H	Type-in the value in the field	Sets the window height of the “Event Viewer” interface object.	% of the screen width	Not set	From 0 to M*100, where M is the number of surveillance monitors installed.
7	Display days	Type-in the value in the field	Sets the number of days to keep the event recording archive in the Intellect database.	Days	1	More than 1
8	View	Select in the list	Sets the events for displaying in the window of the “Event Viewer”.	-	All events	All events – all events are displayed in the “Event Viewer” window Last event – one last event is displayed in the “Event Viewer” window All last events – all last events are displayed for all selected objects

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
9	Display video	Checkbox	Allows Operator viewing archive footage of the events, initiated by the “Event Viewer” as “Record to disk” using the “Event Viewer” box.	Boolean type	No	Yes – Operator is allowed viewing the archive footage using the “Event Viewer” window. No – Operator is not allowed viewing the archive footage using the “Event Viewer” window.
10	Display object on map	Checkbox	Allows Operator viewing objects, displayed in the “Event Viewer” window, on the map.	Boolean type	No	Yes - Operator is allowed viewing the objects, displayed in the “Event Viewer” window, on the map. No - Operator is not allowed viewing the objects, displayed in the “Event Viewer” window, on the map.
11	Display report	Checkbox	Allows Operator creating a printed form of the report and printing out the information about all events registered by the “Event Viewer” within the pre-set period of time.	Boolean type	No	Yes - Operator is allowed creating a printed form of the report and printing out the information about all events registered by the “Event Viewer” within the pre-set period of time. No - Operator is not allowed creating a printed form of the report and printing out the information about all events registered by the “Event Viewer” within the pre-set period of time.
12	Load protocol	Checkbox	Defines, whether or not the latest 1000 events registered by the “Event Viewer” with the latest system start, should be downloaded with the launch of Intellect™ software.	Boolean type	No	Yes - the latest 1000 events registered by the “Event Viewer” with the latest system start, should be downloaded with the launch of Intellect™ software.

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
						No - the latest 1000 events registered by the “Event Viewer” with the latest system start, should not be downloaded with the launch of Intellect™ software.
The “Objects” group						
13	Type	Select in the list	Sets the types of objects to be displayed in the “Event Viewer”. *NOTE. If the field is empty, the “Event Viewer” displays all events for all objects in the system.*	Types of objects registered in the system.	Not set	Depends on the number of types of objects created in the digital distributed video surveillance system.
14	Number	Select in the list	Sets the identification number of the device. *NOTE. If the field is empty, the “Event Viewer” displays all events for all objects of the selected type.*	Sequence of numbers	Not set	Depends on the number of created devices of the selected type in the digital distributed video surveillance system.
15	Name	Automatically	Specifes the name of the device selected in item 14.	Name of the objects of the selected type registered in the system	Name of specified system object	Depends on the number of devices of the selected type in the digital distributed video surveillance system.
16	Event	Select in the list	Specifies which event coming from selected devices is to be logged. *NOTE. If the field is empty, the “Event Viewer” displays all events coming from specified devices.*	Names of event types for selected type of devices.	Not set	Depends on the type of device.
The “Areas” group						
17	Name	Select in the list	Sets the region where the objects to log the events from are located.	Name of the region registered by the	Not set	Depends on the number of “Region” objects created in the digital distributed video surveillance

№	Parameter	Method for setting the parameter	Parameter description	Symbols used	Defa-ult value	Value range
				system.		system.
The “Advanced settings” group						
18	Color of alarm messages	Select in the list or on the “Select color” panel.	Sets the color of the alarm messages in the “Event Viewer” window.	RGB, CMY or HSL.	Red	Corresponds to the standard range of the selected color system.
19	Color of information messages	Select in the list or on the “Select color” panel.	Sets the color of the information messages in the “Event Viewer” window.	RGB, CMY or HSL.	Blue	Corresponds to the standard range of the selected color system.
20	Duration of blinking, sec:	Type-in the value in the field	Sets the duration of alarm message blinking in the “Event Viewer” window.	C	Not set	More than 0
21	Font:<current font>	Click the button	Sets the font of information messages in the “Event Viewer” window	Standard “Font” Windows dialog box	Depends on OS settings	-

*The name of the element is not displayed in the settings panel of the given object.

11.2.9.10 *Settings panel of the Operator protocol object*

The settings panel of the “Operator protocol” object is shown in Figure 11.2-73 and Figure 11.2-74.

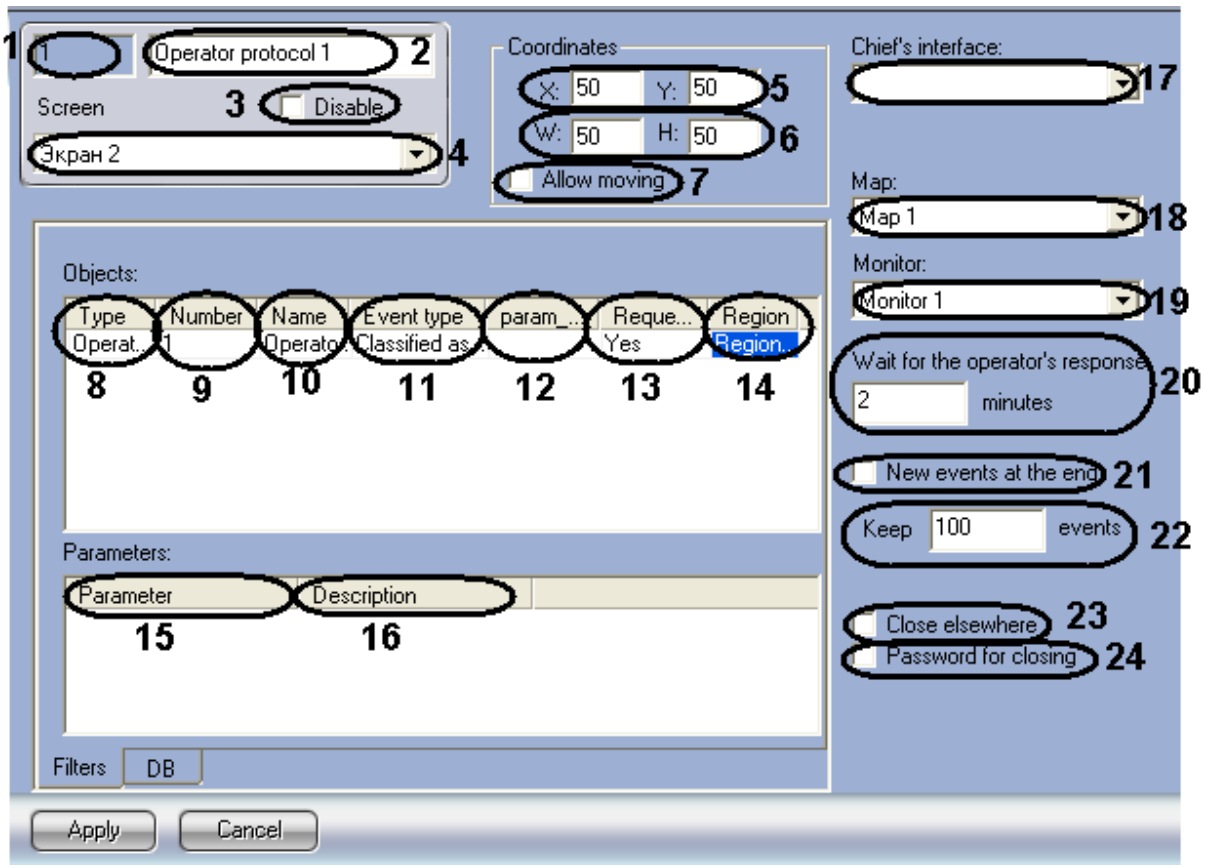


Figure 11.2-73 The settings panel of the “Operator protocol” object. The “Filters” tab

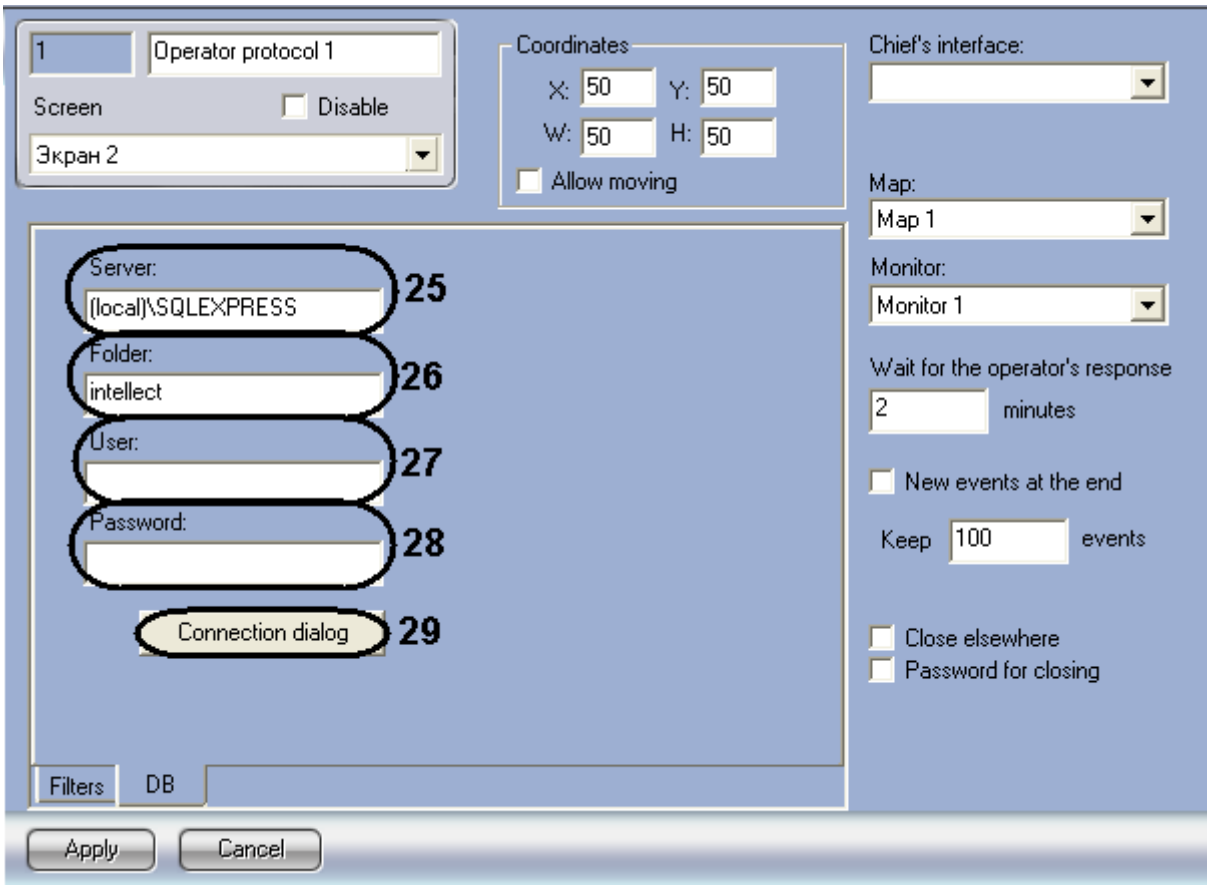


Figure 11.2-74 The settings panel of the “Operator protocol” object. The “DB” tab

Table 11.2-39 describes the parameters of the settings corresponding to the elements of the settings panel of the Operator protocol.

Table 11.2-39

№	Parameter	Method for specifying the parameter	Parameter description	Symbol	Default value	Range of values
The “Filter” tab						
1	The “Identification number” field	Automatically	Shows the identification number of the “Operator protocol” object in the system	Sequence of numbers	-	Depends on the number of “Operator protocol” objects in the system
2	The “Name” field	Type-in the value in the field	Assigns the name to the “Operator protocol” object.	Latin, Cyrillic and service characters	Operator protocol	A line containing a sequence of any symbols (letters, digits, service, characters), non case-sensitive Number of symbols – from 1 to 60.
3	The “Disable” checkbox	Chechbox is set	Shows the status (enabled or disabled) of the “Operator protocol” object in the system	Boolean type	No	Yes – the “Operator protocol” object is disabled and is not in use. No – the “Operator protocol” object is enabled and is in use.
4	The “Screen” dropdown list	Is selected in the list	Assigns the parent “Screen” object, to which the given “Operator protocol” object refers.	Name of the “Screen” objects registered in the system.	Name of the parent “Screen” object	Depends on the number of the “Screen” objects in the system.
5	X:	Type-in the value in the field	Sets the coordinate in the X horizontal axis for the upper left corner of the “Operator protocol” interface object on the screen	% of the screen width	-	From 0 to M*100, where M is the number of surveillance monitors installed.
	Y	Type-in the value in the field	Sets the coordinate in the Y vertical axis for the upper left corner	% of the screen height	-	From 0 to M*100, where M is the number of surveillance monitors installed.

№	Parameter	Method for specifying the parameter	Parameter description	Symbol	Default value	Range of values
			of the Operator protocol interface object on the screen			
6	W	Type-in the value in the field	Sets the window width of the “Operator protocol” interface object	% of the screen width	-	From 0 to M*100, where M is the number of surveillance monitors installed.
	H	Type-in the value in the field	Sets the window width of the “Operator protocol” interface object	% of the screen height	-	From 0 to M*100, where M is the number of surveillance monitors installed.
7	The “Allow moving” checkbox	Chechbox is set	Allows hand shifting of the “Operator protocol” interface box	Boolean type	-	Yes – hand shifting is allowed. No – hand shifting is prohibited.
8	The “Type” dropdrown list	Select in the list	Sets the type of objects which are to be displayed in the “Operator protocol” interface box	Available object types	-	Depends on the registered objects in the system
9	The “Number” dropdrown list	Select in the list	Sets the number of object on which the events are to be displayed in the “Operator protocol” interface box	Sequence of numbers	-	Depends on the number of registered objects of the specified type
10	The “Name” dropdrown list	Automatically	Sets the name of object on which the events are to be displayed in the “Operator protocol” interface box	Named of registered objects in the system	-	Depends on the registered objects in the system
11	The “Event type” dropdrown list	Select in the list	Sets events displayed in the “Operator protocol” interface box	Available events for the selected object	-	Depends on the object type
12	The “param_dic” field	Type-in the value in the field	Sets the additional event parameters	Latin, Cyrillic and service characters	-	Depends on the parameters sent by event

№	Parameter	Method for specifying the parameter	Parameter description	Symbol	Default value	Range of values
			thevalues of which are displayed in the “Operator protocol” interface box			
13	The “Request password” dropdrown list	Select in the list	Defines the necessity of password to process the event	Boolean type	-	Yes – confirmation of the password is required to process the event; No – confirmation of the password is not required to process the event
14	The “Region” dropdrown list	Select in the list	Specifies the “Region” object corresponding to the monitored object	List of created “Region” objects	-	Depends on the number of created “Region” objects
15	The “Parameter” field	Type-in the value in the field	Sets the name of parameter the value of which is to be displayed in the “Operator protocol” interface box	Latin, Cyrillic and service characters	-	Depends on the parameters sent by event
16	The “Description” field	Type-in the value in the field	Type-in the short description of the specified parameter	Latin, Cyrillic and service characters	-	-
17	The “Chief’s interface” dropdown list	Select in the list	Sets the “Operator protocol” object to which the events are to be sent after the time specified in the “Wait for the operator’s response” field	List of available “Operator protocol” objects	-	Depends on the number of created “Operator protocol” objects in the system
18	The “Map” dropdown list	Select in the list	Sets the “Map” interface object to display the monitored object	List of available “Map” objects in the system	-	Depends on the number of created “Map” objects in the system
19	The “Monitor” dropdown list	Select in the list	Sets the “Monitor” object to view the video recordings of events	Names of registered “Monitor” objects in the system	-	Depends on the number of the “Monitor” objects in the system

№	Parameter	Method for specifying the parameter	Parameter description	Symbol	Default value	Range of values
20	The “Wait for the operator’s response” field	Type-in the value in the field	Sets the time after which the event type becomes “Not processed event” or the event is escalated	Minutes	2	More than 0
21	The “New events at the event” checkbox	Chechbox is set	Places the new events at the end of the current events list	-	No	Yes – a new event is placed to the end of the list No – a new event is added to the beginning of the list
22	The “Keep events” field	Type-in the value in the field	Specifies the maximum events that can be displayed simultaneously in the list of current events	Sequence of numbers	100	Integer that is more than 0
23	The “Close elsewhere” checkbox	Chechbox is set	Decides whether to delete the event from other Operator protocols when it is processed in one of the “Operator protocol”	Boolean type	No	Yes – when the event is processed in one of the Operator protocol, it is deleted from other Operator protocols No – when the event is processed in one of the Operator protocol, it stays unprocessed in other Operator protocols
24	The “Password for closing” checkbox	Chechbox is set	Defines the necessity to enter the password to process the event	Boolean type	No	Yes – event processing is to be confirmed with a password; No – password is not required for event processing.
The “DB” tab						
25	The “Server:” field	Type-in the value in the field	Defines the name of DB server in which the required database is stored	Latin, Cyrillic and service characters	Name of Server used by system	-

№	Parameter	Method for specifying the parameter	Parameter description	Symbol	Default value	Range of values
26	The “Folder:” field	Type-in the value in the field	Sets the name of the database in which the events are to be stored	Latin, Cyrillic and service characters	Name of main database used by system	-
27	The “User:” field	Type-in the value in the field	Sets the user name for authorization in the database server	Latin, Cyrillic and service characters	-	-
28	The “Password:” field	Type-in the value in the field	Sets the password for authorization in the database server	Latin, Cyrillic and service characters	-	-
29	The “Connection dialog” button	Click the button	Opens the dialog box of database server connection	-	-	-

11.2.9.11 *Settings panel of the External window object*

The “External window” object displays in the dialog box showing various applications in the pre-defined screen area. Applications in this context shall mean both applications of AxxonSoft and other manufacturers.

The settings panel of the “External window” object is shown in Figure 11.2-75.

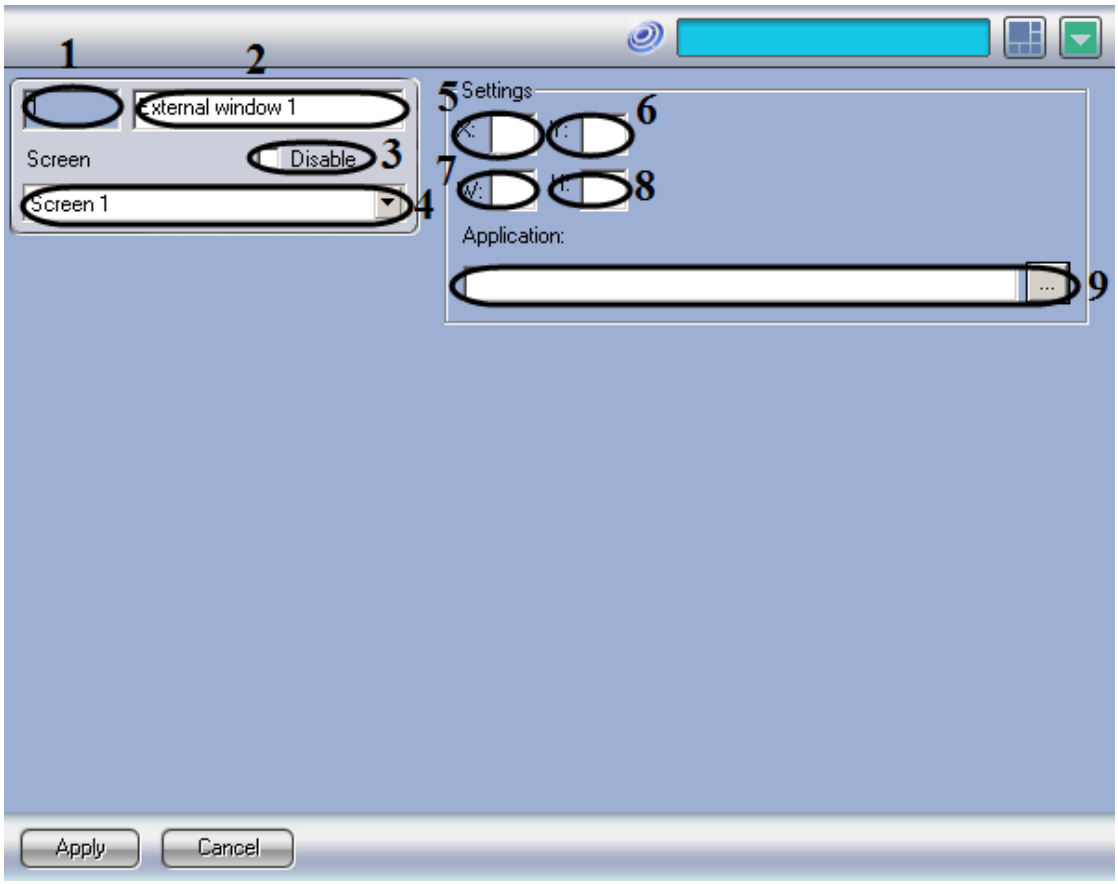


Figure 11.2-75 The settings panel of the “External window” object

Table 11.2-40 describes the parameters of the settings corresponding to the elements of the settings panel of the “External window” object.

Table 11.2-40

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defaul t value	Value range
1	Identification number*	Automatically	Displays the identification number of the External window object.	Sequenc e of numbers	-	From 1 and above. Depends on the number of External window objects.
2	Name*	Enter the value in the field	Defines the name of the External window object.	Latin, Cyrillic and service characte rs	Exter-nal wind-ow	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Defines the status of the External window object (connected or diskonnected).	Boolean type	Not avail-able	Yes – the External window object is diskonnected and is not

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defaul t value	Value range
						in use. No – the External window object is connected and is in use.
4	Screen	Is selected from the list	Defines the parent Screen object, to which the given External window object refers.	Names of the Screen objects register-ed in the system	Name of the parent Screen object.	Depends on the number of Screen objects available.
Settings Group						
5	X	Enter the value in the field.	Defines the coordinate in the X horizontal axis for the upper left corner of the window of the External window interface object on the screen.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of surveillance monitors installed.
6	Y	Enter the value in the field.	Defines the coordinate in the Y vertical axis for the upper left corner of the window of the External window interface object on the screen.	% of the screen height.	Not defin-ed	From 0 to M*100, where M is the number of surveillance monitors installed.
7	W	Enter the value in the field.	Defines the window width of the External window interface object.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of surveillance monitors installed.
8	H	Enter the value in the field.	Defines the window height of the External window interface object.	% of the screen width.	Not defin-ed	From 0 to M*100, where M is the number of surveillance monitors installed.
9	Application	Enter the value in the field	Defines the path to the application, which should be launched.	Latin, Cyrillic and service characte rs.	Is not defin-ed.	A line containing a sequence of symbols (Latin and service characters, digits) not case-sensitive. Number of symbols – from 1 to 250.

17. Name of the element is not shown in the given object settings panel.

11.2.9.12 *Settings panel of the Scene object*

The settings panel of the “Scene” object is shown in (Figure 11.2-76).

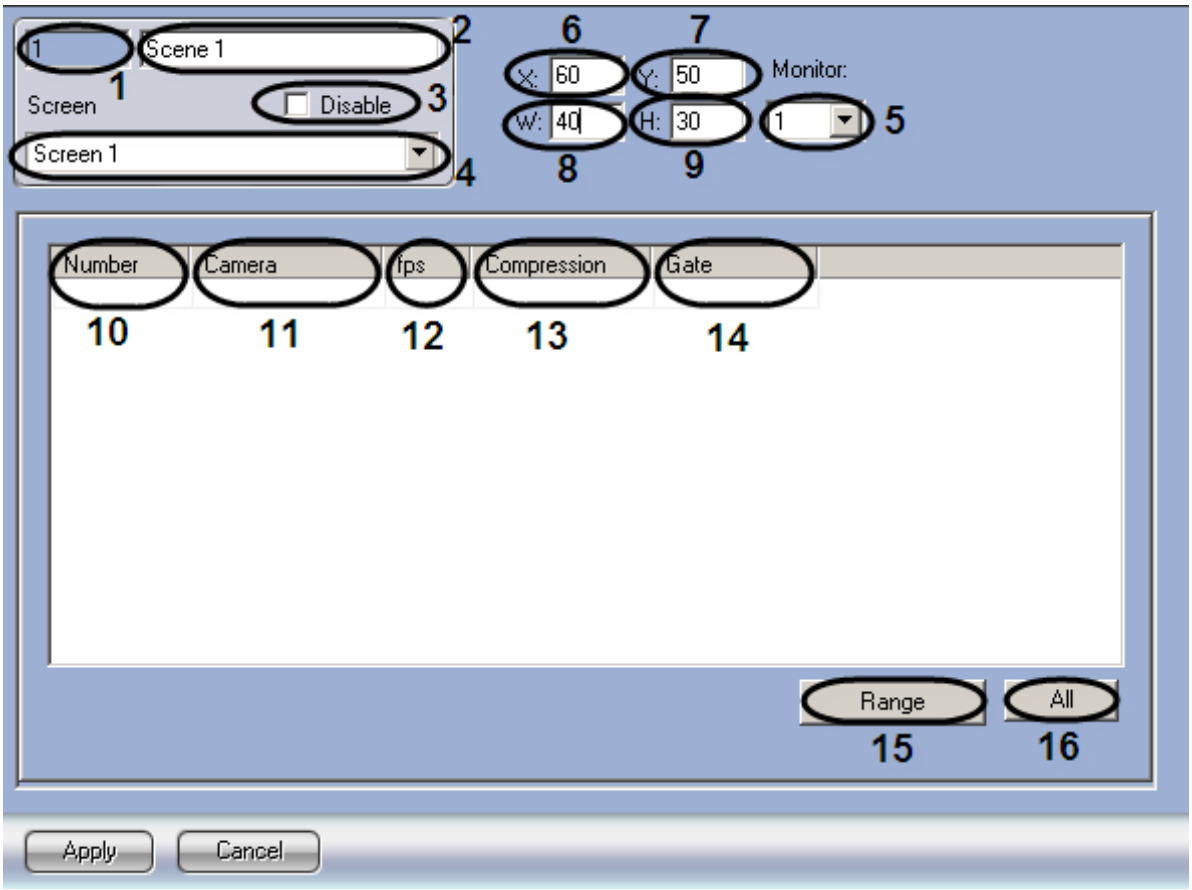


Figure 11.2-76 The settings panel of the “Scene” object

Elements of the settings panel of the “Scene” object are described in Table 11.2-41.

Table 11.2-41 Scene object settings panel

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Scene object.	Sequence of numbers	-	From 1 and above. Depends on the number of Scene object.
2	Name*	Enter the value in the field	Defines the name of the Scene object.	Latin, Cyrillic and service characters	Exter-nal window	A line containing a sequence of any symbols (letters, digits, service characters), not case-sensitive. Number of symbols – from 1 to 60.

3	Disable	Is identified by the check mark	Defines the status of the Scene object (connected or diskonnected).	Boolean type	Not avail-able	Yes – the Scene object is diskonnected and is not in use. No – the Scene object is connected and is in use.
4	Screen	Is selected from the list	Defines the parent Screen object, to which the given Scene object refers.	Names of the Screen objects register-ed in the system	Name of the parent Screen object.	Depends on the number of Screen objects available.
5	Monitor	Is selected from the list	Is designed for video surveilance monitor selection on which the panoramic view window has to be displayed	Sequence of numbers	1	1..9
6	X	Enter the value in the field.	Defines the coordinate in the X horizontal axis for the upper left corner of the window of the External window interface object on the screen.	% of the screen width.	Not defin-ed	From 0 to 100
7	Y	Enter the value in the field.	Defines the coordinate in the Y vertical axis for the upper left corner of the window of the External window interface object on the screen.	% of the screen height.	Not defined	From 0 to 100
8	W	Enter the value in the field.	Defines the window width of the External window interface object.	% of the screen width.	Not defined	From 0 to 100
9	H	Enter the value in the field.	Defines the window height of the External window interface object.	% of the screen width.	Not defined	From 0 to 100
10	Number	Is selected from the list	Set camera's number to be displayed	Latin, Cyrillic and service characters.	Is not defined.	Depends on number of cameras registered in the system

11	Camera	Is selected from the list	Set camera's name to be displayed	Names of cameras registered in the system	-	Depends on number of cameras registered in the system
12	fps	Is selected from the list	Set fps to be transferred to the Scene object	Sequence of numbers	-	1, 2, 3, 4, 6, 8, 12, 16, 20, 25, 30
13	Compression	Is selected from the list	Set the video signal compression level to be transferred to the Scene object. With set value there is additional use of Server's resources	Sequence of numbers	-	In order of greater compression 0, 1, 2, 3, 4, 5 0 – no compression 5 – maximum compression
14	Gate	Is selected from the list	Set the "Gate" object from which the video archive and footage from the selected camera is to be received to the "Scene" object.	Names of the "Gate" objects registered in the system	-	Depends on the number of "Gate" objects registered in the system
15	Range	Click the button	Access to complex selection and editing the cameras parameters to be displayed on Scene object	-	-	-
16	All	Click the button	Selection of all cameras registered in the system to be displayed on the Scene object	-	-	-

11.2.10 The Programming tab

11.2.10.1 *Settings panel of the Common settings object*

The "Common settings" panel is designed to define the common settings of the Intellect™ system. The settings panel of the "Common settings" object is shown in Figure 11.2-77.

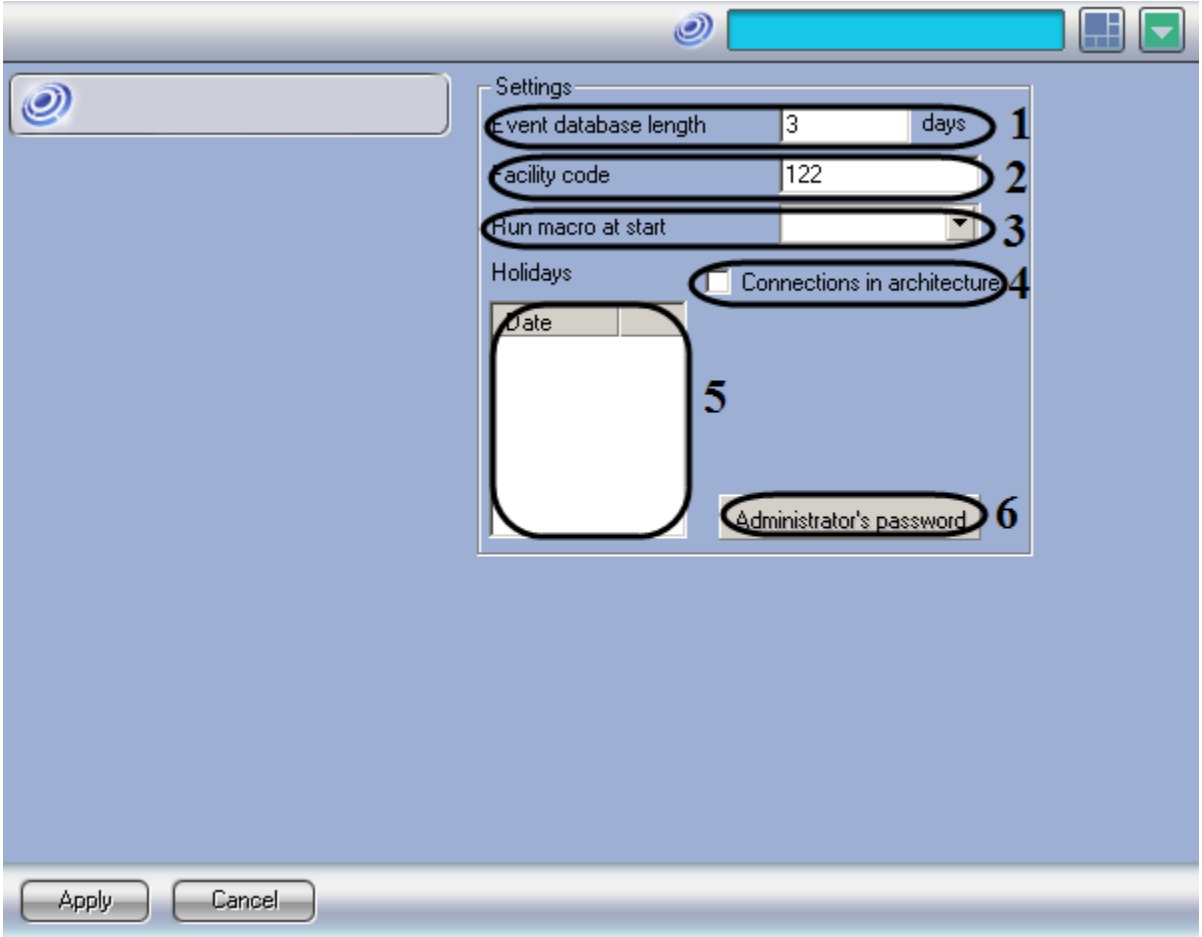


Figure 11.2-77 The settings panel of the “Common settings” object

Table 11.2-42 describes the parameters of the settings corresponding to the elements of the settings panel of the “Common settings” object.

Table 11.2-42

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Default value	Value range
The “Settings” group						
1	Event database length	Type-in the value in the field	Sets the number of days for keeping the information about the events registered by the Intellect™ system and recorded in the Event log. This parameter influences on all computers in the distributed system.	Days	3	More than 1
2	Facility code	Type-in the value in the field	Defines the number of the access control card, which is automatically displayed in the User settings panel, when the object is being created in the Facility code field.	Sequence of numbers	Not defined	More than 1

3	Run macro at startup	Is selected from the list	Defines the macro command, which will be automatically launched with the Intellect™ system startup.	Names of the Macro command objects registered in the system	Not defined	Depends on the number of Macro command objects created in the digital distributed video surveillance system.
4	Connections in the architecture	Is identified by the check mark	Defines the computers for displaying the Computer object, which will be created, either on all computers of the digital distributed video surveillance system, or only on the Computer object, used as a base to create the given object.	Boolean type	Not available	Yes – the object, which will be created, will be shown in the architecture of all computers of the digital distributed video surveillance system. No – the object, which will be created, will be shown only in the architecture of the Computer object used as a base to create the given object.
Holidays group						
5	Date	Type-in the value in the field	Defines the calendar days, which the Intellect™ system will identify as holidays.	Sequence of numbers	Not defined	Data entry format: DD.MM.YY DD – from 1 to 30. MM – from 1 to 12. YY – from 00 to 99.
6	Administrato-r's password	The button is pressed	Gives a command to open a dialog box for assigning the Administrator's password.	-	-	-

i. The name of the element is not displayed in the settings panel of the given object.

11.2.10.2 *Settings panel of the Macro object*

The "Macro" object is designed to support automatic execution of a pre-defined sequence of commands upon occurrence of certain events, registered by the Intellect™ system. The settings panel of the "Macro" object is shown in Figure 11.2-78.

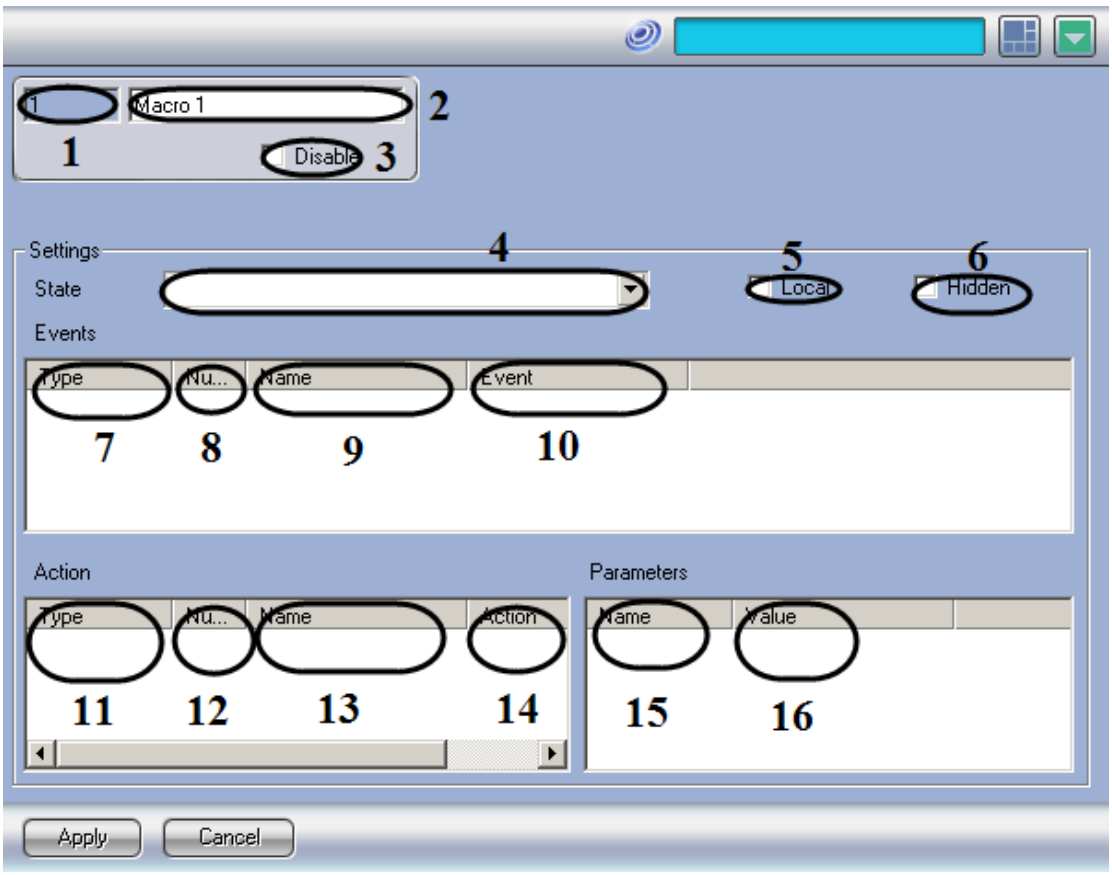


Figure 11.2-78 The settings panel of the “Macro” object

Table 11.2-43 describes the parameters of the settings corresponding to the elements of the settings panel of the “Macro” object.

Table 11.2-43

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Macro command object in the video surveillance system.	Sequence of numbers	-	Depends on the number of Macro command objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the field	Defines the Macro command object name.	Latin, Cyrillic and service characters	Macro comma-nd	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 60.

3	Disable	Is identified by the check mark	Defines the Macro command object status (connected or diskonnected).	Boolean type	Not available	Yes – the Macro command object is diskonnected and is not in use No – the macro command object is connected and is in use.
Settings Group						
4	State	Enter the value in the field	Defines the message displayed in the information board of the main menu of the Intellect system, when the given macro command is running.	Latin, Cyrillic and service character s	Not defined	1. Standard – no message will be displayed in the information board of the main menu of the Intellect system. 2. A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 60.
5	Local	Is identified by the check mark	Defines the computers, which will execute the given macro command (all computers of the digital distributed video surveillance system or only the given computer).	Boolean type	Not available	Yes – the given macro command will be executed by all computers of the digital distributed video surveillance system. No – the macro command will be executed only by the given computer.
6	Hidden	Is identified by the check mark	Defines, whether or not this macro command will be displayed in the main control panel of the Intellect system to be launched manually.	Boolean type	Not available	Yes – no macro command will be displayed in the main control panel of the Intellect system. No – the macro command will be displayed in the main control panel of the Intellect system.
Events Subgroup						

7	Type	Is selected from the list	Defines the type of objects in the digital distributed video surveillance system, in which registration of events initiates macro command execution.	Types of objects registere d in the system.	Empty field	Depends on the total number of types of objects created in the digital distributed video surveillance system.
8	Number	Is selected from the list	Defines the identification number of the object in the digital distributed video surveillance system, in which registration of events initiates macro command execution.	Sequence of numbers	Empty field	Depends on the total number of the given types of objects created in the digital distributed video surveillance system.
9	Name	Automatically	Displays the name of the selected object in the digital distributed video surveillance system.	Name of the objects of the same type registere d in the system	Empty field	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 60.
10	Event	Is selected from the list	Defines the event, which, when registered for the pre-defined object, initiated macro command execution.	Events registere d for the given type of objects.	Empty field	List of events is created separately for each type of object.
Action Subgroup						
11	Type	Is selected from the list	Defines the type of objects in the digital distributed video surveillance system, to which the command is forwarded, when the conditions defined in the Events subgroup for macro command initiation are met.	Types of objects registere d in the system.	Empty field	Depends on the total number of types of objects created in the digital distributed video surveillance system.
12	Number	Is selected from the list	Defines the identification number of the object in the digital distributed video surveillance system, to which the command is forwarded, when the conditions defined in the Events subgroup for macro command initiation are met.	Sequence of numbers	Empty field	Depends on the total number of the given types of objects created in the digital distributed video surveillance system.
13	Name	Automatically	Displays the name of the selected object in the digital distributed video surveillance system.	Name of the objects of the same type registere d in the system	Empty field	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 60.

14	Action	Is selected from the list	Defines the action, which the given device performs, when the conditions for the given macro command initiation are met.	Actions, registered by the system for the given type of objects.	Empty field	List of events is created separately for each type of object.
Parameters Subgroup *NOTE. The given subgroup is not active for all types of objects.*						
15	Name	Automatically	Defines an additional parameter for the selected type of object in the Actions subgroup.	Latin, service characters and digits.	Not defined	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 60.
16	Value	Enter the value in the field	Defines the value for the parameter of the Name column.	Latin, service characters and digits.	Empty field	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 250.

j. The name of the element is not displayed in the User's rights settings panel object.

11.2.10.3 *Settings panel of the Program object*

The "Program" object creates specialized programs in the embedded environment of the INTELLECT™ software. The settings panel of the "Program" object is shown in Figure 11.2-79.

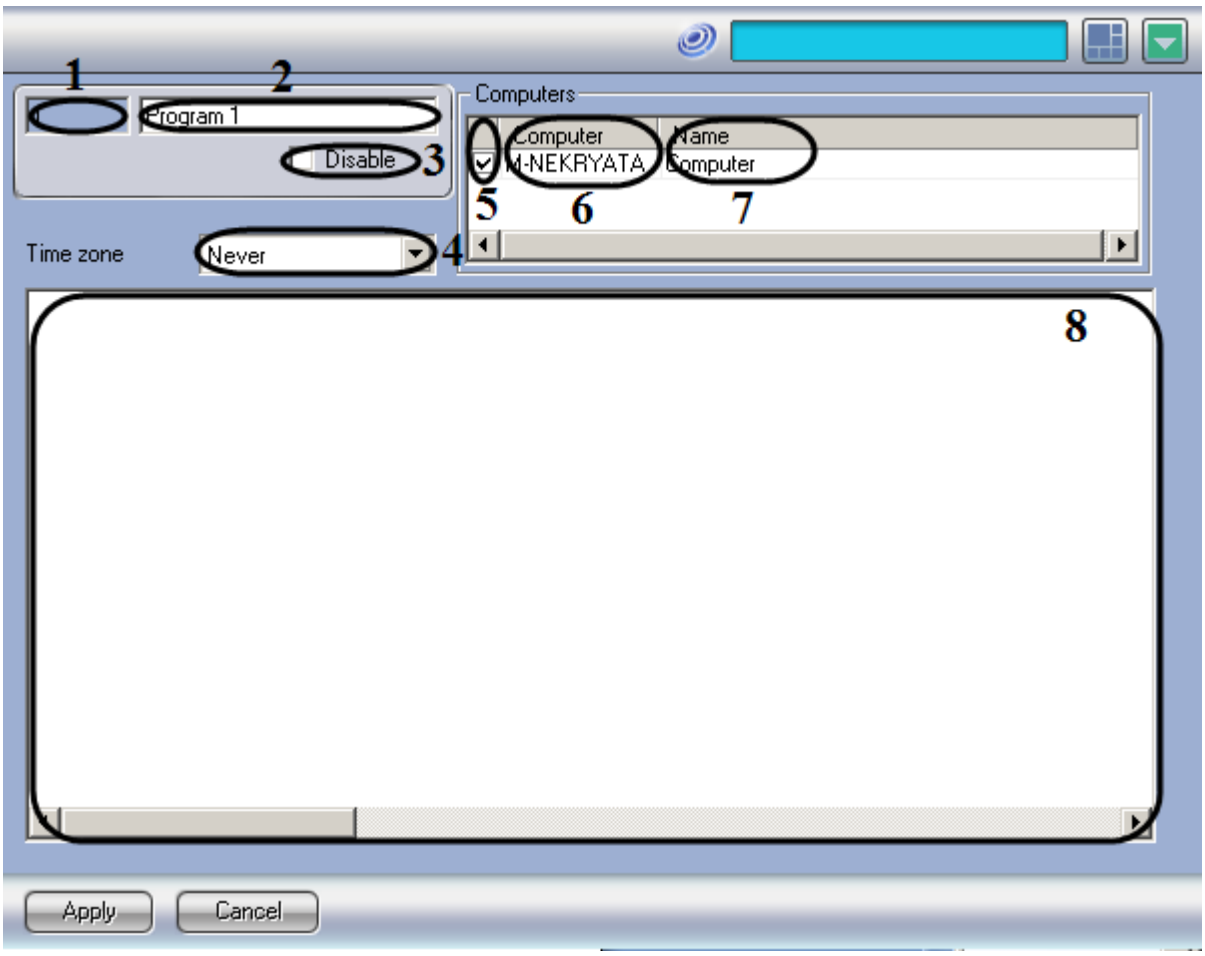


Figure 11.2-79 The settings panel of the “Program” object

Table 11.2-44 describes the parameters of the settings corresponding to the elements of the settings panel of the “Program” object.

Table 11.2-44

№	Parameter	Method for entering the parameter	Parameter description	Sym-bols used	Default value	Value range
1	Identification number*	Automatically	Displays the identification number of the Program object in the video surveillance system.	Seque nce of numb-ers	-	Depends on the number of Program objects in the digital distributed video surveillance system.
2	Name*	Enter the value in the field	Defines the Program object name.	Latin, Cyrill-ic and servi-ce chara-cters	Program	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 60.

3	Disable	Is identified by the check mark	Defines the status of the Program object (connected or diskonnected).	Bool-ean type	Not available	Yes – the Program object is diskonnected and is not in use No – the Program object is connected and is in use.
4	Time zone	Is selected from the list	Defines the time period during which the given program will operate.	Time zone regist-ered by the syste m	Never	Never – this program will never be executed. Always – this program is always in the state of execution. List of created time zones – the program will be executed within a pre-defined time period.
Computers Group						
5	Select an element*	Is identified by the check mark	Defines the computer for the execution of the given program.	Bool-ean type	Not available	Yes – the program will be executed by the pre-defined computer. No – the program will not be executed by the computer.
6	Computer	Automatically	Defines the computer name in the local network.	Com-puter name in the local netwo -rk.	Comput-er name in the local network.	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols - 60.
7	Name	Automatically	Defines the computer name	Name of the Com-puter object regist-ered in the syste m	Name of the Comput-er object register-ed in the system	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols - 60.
Out of the groups						

8	Text editor*	Enter the value in the field	Is used to enter the text of the executed program.	Latin, Cyrill-ic, servi-ce chara-cters and digits.	Not defined	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Unlimited number of symbols.

18. The name of the element is not displayed in the User's rights settings panel object.

11.2.10.4 *Settings panel of the Time zone object*

The "Time zone" object defines the time parameters in the Intellect™ system for any actions, which are to be initiated within certain periods of time. The settings panel of the "Time zone" object is shown in Figure 11.2-80.

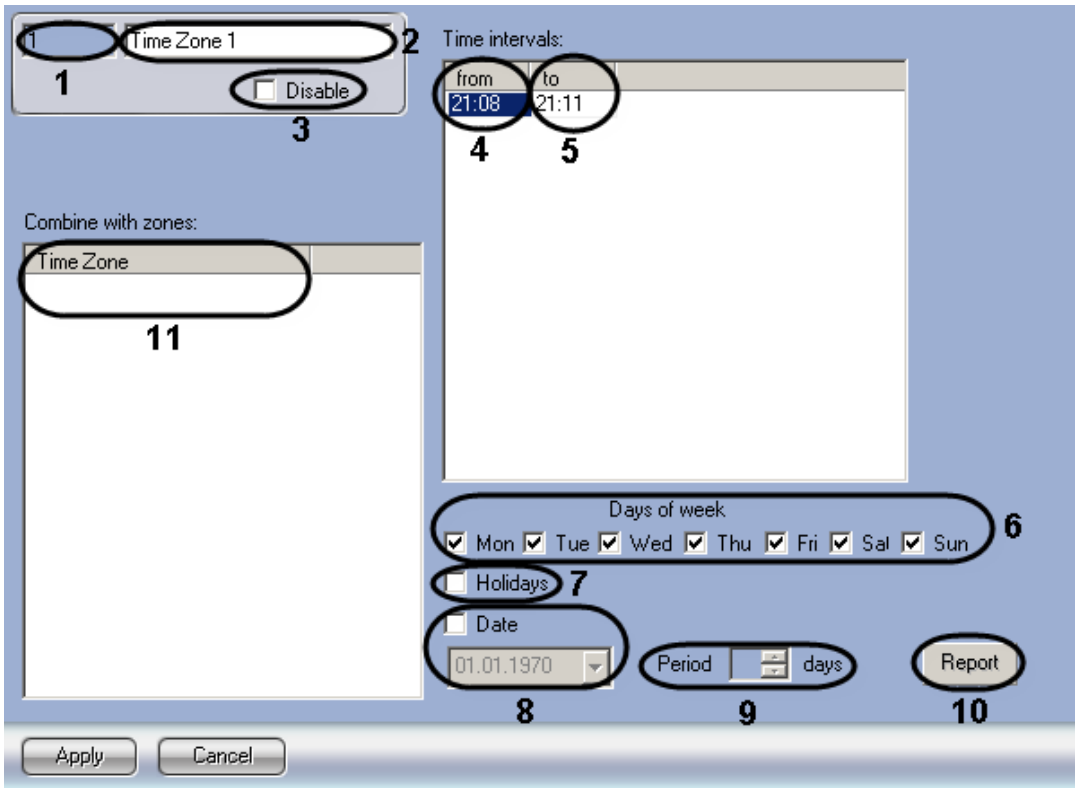


Figure 11.2-80 The settings panel of the "Time zone" object

Table 11.2-45 describes the parameters of the settings corresponding to the elements of the settings panel of the "Time zone" object.

Table 11.2-45

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Defaul t value	Value range

1	Identification number*	Automatically	Displays the identification number of the “Time Zone” object.	Sequence of numbers	-	Depends on the number of the “Time Zone” objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Sets the “Time Zone” object name.	Latin, Cyrillic and service characters	Time Zone	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive. Number of symbols – from 1 to 60.
3	Disable	Checkbox	Sets the state (enabled or disabled) of the “Time Zone” object in the digital distributed video surveillance system.	Boolean type	No	Yes – the “Time Zone” object is disabled and is not in use. No – the “Time Zone” object is enabled and is in use.
The “Settings” group						
The “Time intervals” subgroup						
4	From	Enter the value in the field	Sets the initial point of the time interval.	Sequence of numbers	Not set	Time interval entry format: HH:MM
5	To	Enter the value in the field	Sets the end point of the time interval.	Sequence of numbers	Not set	Time interval entry format: HH:MM
Out of the subgroup						
6	Days of week	Checkbox *NOTE. Is not active, if the “Days” field is checked (item 8)*.	Sets the days of the week, when the given time zone is active.	Boolean type	No	Yes – the time zone is active on the selected day. No – the time zone is not active on the selected day.
7	Holidays	Checkbox *NOTE. Is not active, if the “Days” field is checked (item 8)*.	Gives a command to use the given time zone on holidays.	Boolean type	No	Yes – the given time zone is to be used on holidays. No – the given time zone is not to be used on holidays.

8	Days*	Checkbox	Defines, whether the given time zone should be used permanently or only within a pre-defined period of time.	Boolean type	No	Yes – the given time zone should be used within a pre-defined period of time. No – the given time zone should always be used.
9	Date	Enter the value in the field	Sets the initial point, from which the use of the given time zone is to start.	Sequence of numbers	Not active	Data entry format: DD:MM:YY
	Period	Select in the list	Sets the period of usage of the given time zone	Sequence of numbers	Empty field	From 0 to 100
10	Report	Button	Displays the box with time-zones activity table	-	-	-
11	Time Zone	Select in the list	Sets the time zone that is to be combined with the given time zone	The names of the "Time Zone" objects registered in the system	-	Depends on the number of the "Time Zone" objects registered in the system

* The name of the element is not displayed in the settings panel of the object.

11.2.10.5 *Settings panel of the Script object*

The "Script" object is designed to create specialized programs in JScript language. The settings panel of the "Script" is shown in Figure 11.2-81.

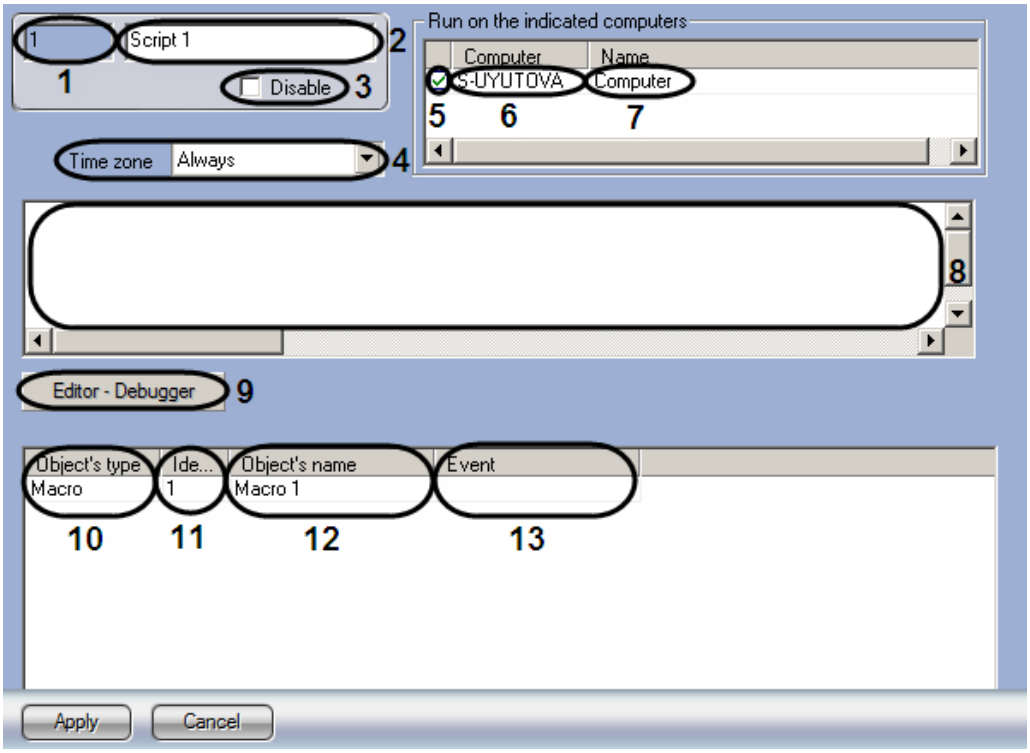


Figure 11.2-81 The settings panel of the "Script" object

Table 11.2-46 describes the parameters of the settings corresponding to the elements of the settings panel of the “Script” object.

Table 11.2-46

№	Parameter	Method for entering the parameter	Parameter description	Symbols used	Default value	Value range
1	Identification number*	Automatically	Shows the identification number of the “Script” object in the digital video surveillance system.	Sequence of numbers	-	Depends on the number of “Script” objects in the digital distributed video surveillance system
2	Name*	Specify the value in the field	Assigns the name to the “Script” object.	Latin, Cyrillic and service characters	Script	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive Number of symbols – from 1 to 60.
3	Disable	Checkbox is set	Sets the state (enabled or disabled) of the “Script” object in the digital distributed video surveillance system.	Boolean type	Not available	Yes – the “Script” object is disabled and is not in use No – the “Script” object is enabled and is in use.
4	Time zone	Select in the list	Specifies the time period for the operation of the given program.	Time zone name registered in the system.	Never	Never – the program will never be executed. Always – the program is always executed. List of created time zones – the programs are executed during the time period as defined by the time zone.
The “Computers” group						
5	Select element*	Checkbox is set	Assigns the computer for the execution of the given script.	Boolean type	No	Yes – the script is executed on the computer. No – the script is not executed on the computer.

6	Computer	Automatically	Specifies the computer name in the local network	Computer name in the local network.	Compute r name in the local network.	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive Number of symbols - 60.
7	Name	Automatically	Specifies the name of the computer in the digital distributed video surveillance system.	Name of the Computer object registered in the system.	Name of the Compute r object registere d in the system.	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive Number of symbols - 60.
No group						
8	Text editor*	Specify the value in the field	Specifies the text of the executed script.	Latin, Cyrillic and service characters	Not set	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive Unlimited number of symbols.
9	Editor - Debugger	Press the button	Gives a command to open a debugging window of the script.	-	-	-
10	Object's type	Select in the list	Sets the type of the object on receiving event from which the script is executed	Types of objects registered in the system	-	Depends on the number of the objects registered in the system
11	Identifier	Select in the list	Sets the identifier of the object on receiving event from which the script is executed	Identifiers of the objects of the selected type registered in the system	-	Depends on the number of the objects of the selected type registered in the system
12	Object's name	Automatically	Sets the name of the object on receiving event from which the script is executed	The name of the object of the selected type with the selected identifier	-	Depends on user's entering

13	Event	Specify the value in the field	Sets the event on receiving which the script is executed	Events supported by the object	-	Depends on events supported by the object. The name of the event is to be specified in upper case.

- The name of the element is not displayed in the settings panel of this object.

11.2.10.6 *Settings panel of the Region object*

The “Region” object is designed to create zones, which break down secured areas into structural elements. The “Region” objects allow:

1. group hardware based on the attributes of a certain region;
2. execute certain operations concurrently with all objects of the same type belonging to the same region.

The settings panel of the “Region” object is shown in Figure 11.2-82.

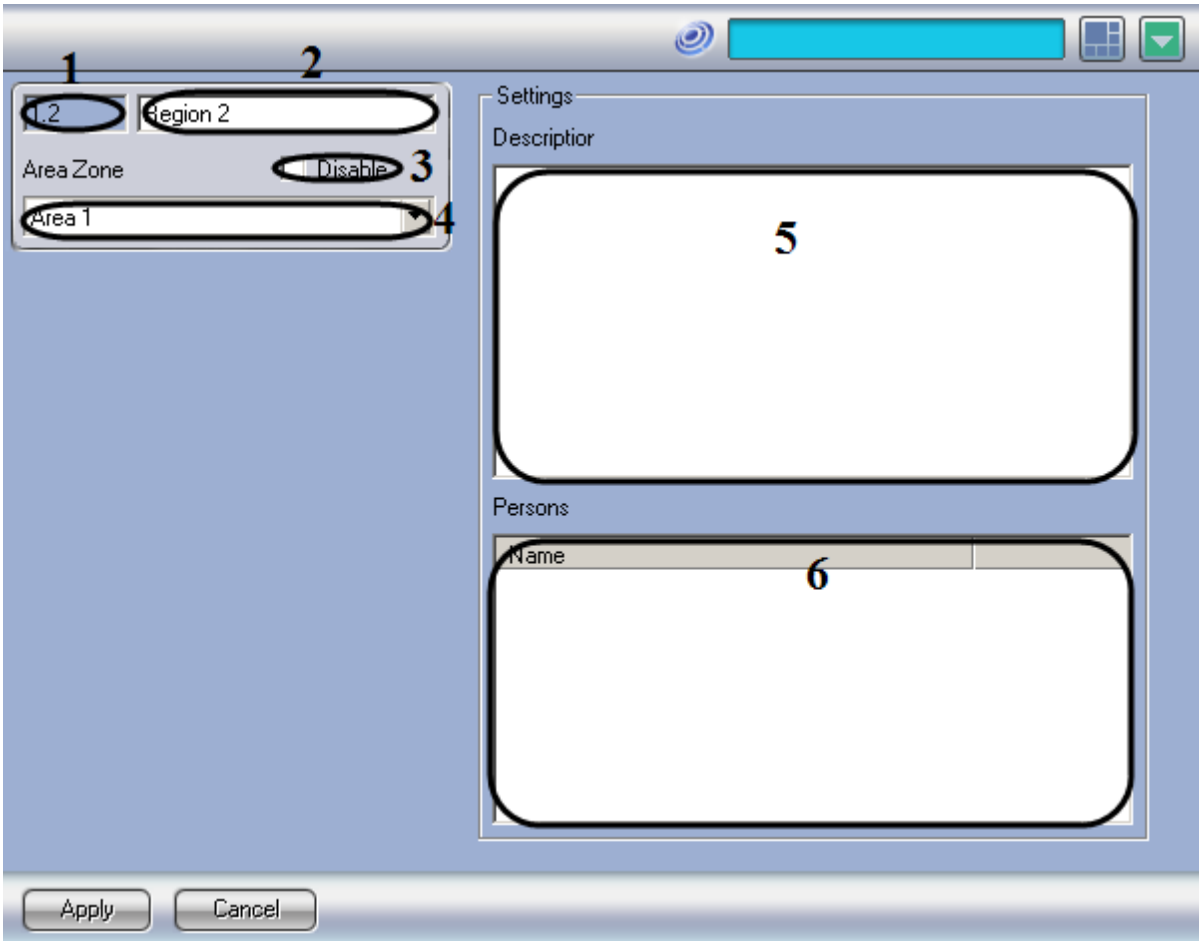


Figure 11.2-82 The settings panel of the “Region” object

Table 11.2-47 describes the parameters of the settings corresponding to the elements of the settings panel of the “Region” object.

Table 11.2-47

№	Parameter	Method for entering the parameter	Parameter description	Sym-bols used	Default value	Value range
1	Identification number*	Automatically	Shows the identification number of the Region object in the digital video surveillance system.	Sequ-ence of numb-ers	-	Depends on the number of Region objects in the digital distributed video surveillance system
2	Name*	Enter the value in the field	Assigns the name to the Region object.	Latin, Cyrill-ic and servi-ce chara-cters	Region	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive Number of symbols – from 1 to 60.
3	Disable	Is identified by the check mark	Shows the status (connected or diskonnected) of the Region object in the digital distributed video surveillance system.	Bool-ean type	Not available	Yes – the Region object is disabled and is not in use. No – the Region object is connected and is in use.
4	Area	Is selected from the list	Assigns the parent Area object, to which the given Region object refers.	Name of the Area object -s regist-ered in the syste m.	Name of the parent Area object	Depends on the number of Area objects in the digital system.
Settings Group						
5	Description	Enter the value in the field	Defines the description of the given region.	Latin, Cyrill-ic and servi-ce chara-cters	Not defined	A line containing a sequence of any symbols (letters, digits, service characters), case-insensitive Number of symbols – from 1 to 60.
6	Description	Is selected from the list	Defines the users registered by the system, responsible for the given region.	Latin, Cyrill-ic and servi-ce chara-cters	Not defined	Depends on the number of users registered by the system.

k. The name of the element is not displayed in the settings panel of the given object

11.2.10.7 *Settings panel of the Rule of states transition object*

The settings panel of the “Rule of states transition” object is shown in Figure 11.2-83.

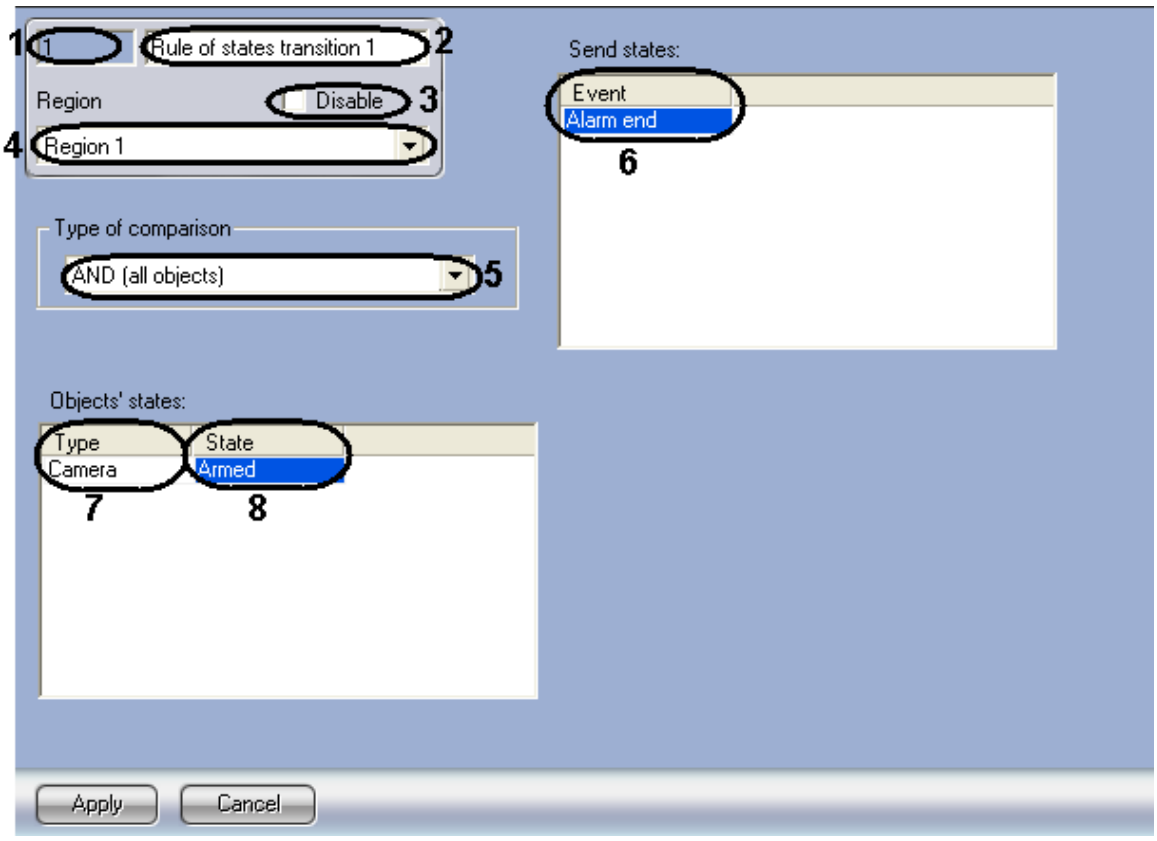


Figure 11.2-83 The settings panel of the “Rule of states transition” object

Table 11.2-48 describes the parameters of the settings corresponding to the elements of the settings panel of the “Rule of states transition” object.

Table 11.2-48

№	Parameter	Method for entering the parameter	Parameter description	Symbol used	Default value	Value range
1	The “Identification number” field	Automatically	Shows the identification number of the “Rule of states transition” object in the digital video surveillance system	Sequence of numbers	-	Depends on the number of “Rule of states transition” objects in the digital video surveillance system
2	The “Name” field	Type-in the value in the field	Assigns the name to the “Rule of states transition” object.	Latin, Cyrillic and service characters	Rule of states transition	A line containing a sequence of any symbols (letters, digits, service, characters), case-insensitive Number of symbols – from 1 to 60.

3	The “Disable” checkbox	Checkbox	Shows the status (enabled or disabled) of the “Rule of states transition” object in the digital video surveillance system	Boolean type	No	Yes – the Rule of states transition object is disabled and is not in use. No – the Rule of states transition object is enabled and is in use.
4	The “Region” drop-down list	Is selected in the list	Assigns the “Region” parent object to which the “Rule of states transition” object relates	Name of the “Region” objects registered in the system	Name of the “Region” parent object	Depends on the number of “Region” objects registered in the digital system
The “Type of comparison” group						
5	The “Type of comparison” drop-down list	Is selected in the list	Sets the limitation of Rule of states transition	List of limitations	AND (all objects)	“AND (all objects)” - rule activates if all objects of selected types pass into the specified states “OR (at least one object)” - rule activates if at least one object passes into the one specified state
The “Send states:” group						
6	The “Event” drop-down list	Is selected in the list	Assigns the event generated by the “Region” object when the rule condition is met	List of events which the “Region” object can generate	-	Alarm end, Armed, Alarm accepted, Alarm in zone, Disarmed
The “Objects’ state:” group						
7	The “Type” drop-down list	Is selected in the list	Assigns the type of objects needed for forming the rule of states transition	List of available types	-	Relay, sensor, camera
8	The “State” drop-down list	Is selected in the list	Assigns the state of objects of specified type when it is needed to change the Region state	List of states which objects of specified type can take	-	Depends on the selected object type

12 Appendix 2. Utilities

12.1 The utility for reading video capture card code and dongle

12.1.1 The purpose of the CodeReader.exe utility

The CodeReader.exe utility is designed to read the dallas code of the cryptochip (chip) of the video capture card, which determines the card type, HID of computer and the number of the Guardant dongle.

Note. For proper operation of the utility INTELLECT™ is to be shut down.

12.1.2 Starting and shutting-down the utility

To start the CodeReader.exe utility, do one of the following:

1. Start the utility from the Windows taskbar. Click “Start”, then “All Programs”, then “Intellect”, then “Tools”, then “Read hardware codes” (Figure 12.1-1). The CodeReader.exe utility is available for the following types of INTELLECT™ installation: Server and Remote Admin Workstation.

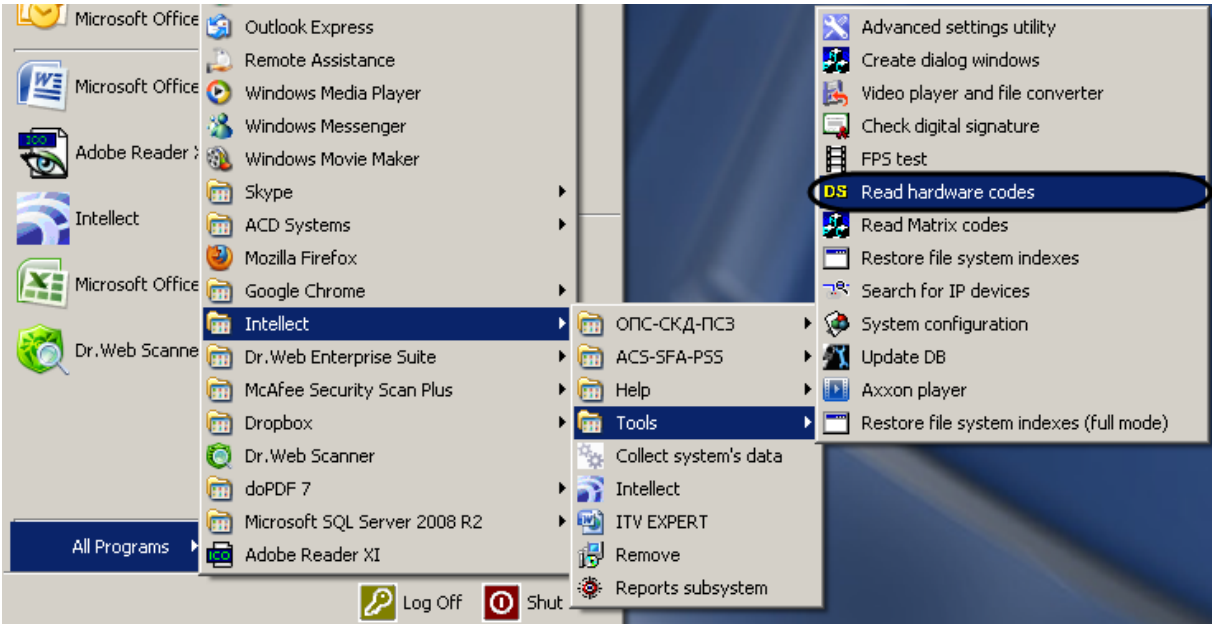


Figure 12.1-1 Starting the utility from the Windows taskbar

2. Start the utility from the “Tools” folder of the “Intellect” folder. Example: C:\ Program Files\Intellect\Tools\CodeReader.exe.

   The “Code Reader” dialog box will open (Figure 12.1-2).

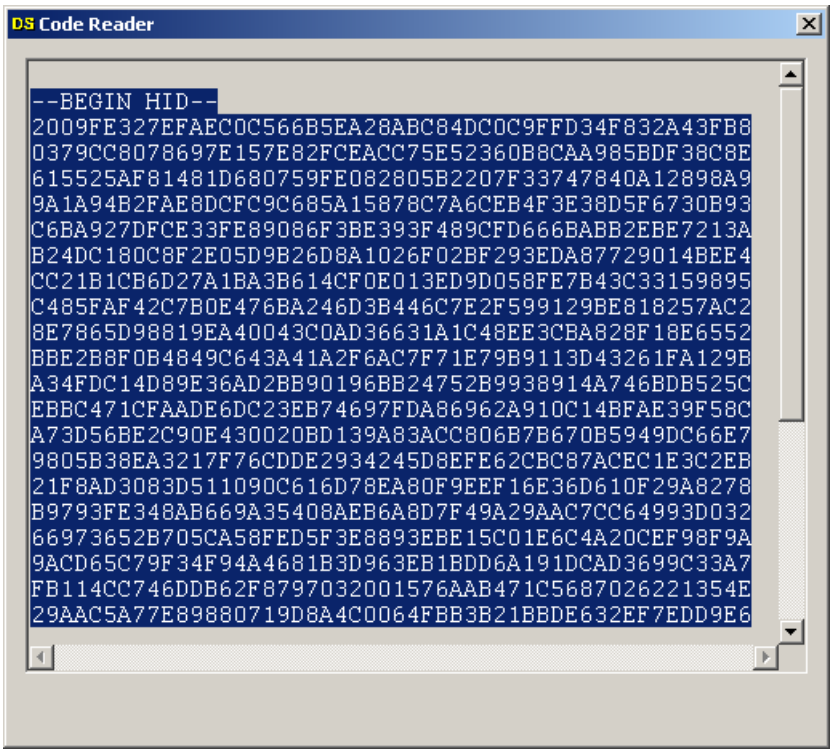


Figure 12.1-2 The “Code Reader” dialog box

To shut down the CodeReader.exe utility, click the “ ” button.

12.1.3 Using the CodeReader.exe utility

The CodeReader.exe utility allows determining the type of installed video capture card by its dallas code(s), HID of computer , as well as the number of the Guardant dongle. To read this information, start the utility (see the “Starting and shutting-down the utility” section). The type of video capture card, its dallas code(s) and the number of the Guardant dongle and HID will be displayed in the “Code Reader” dialog box (Figure 12.1-3).

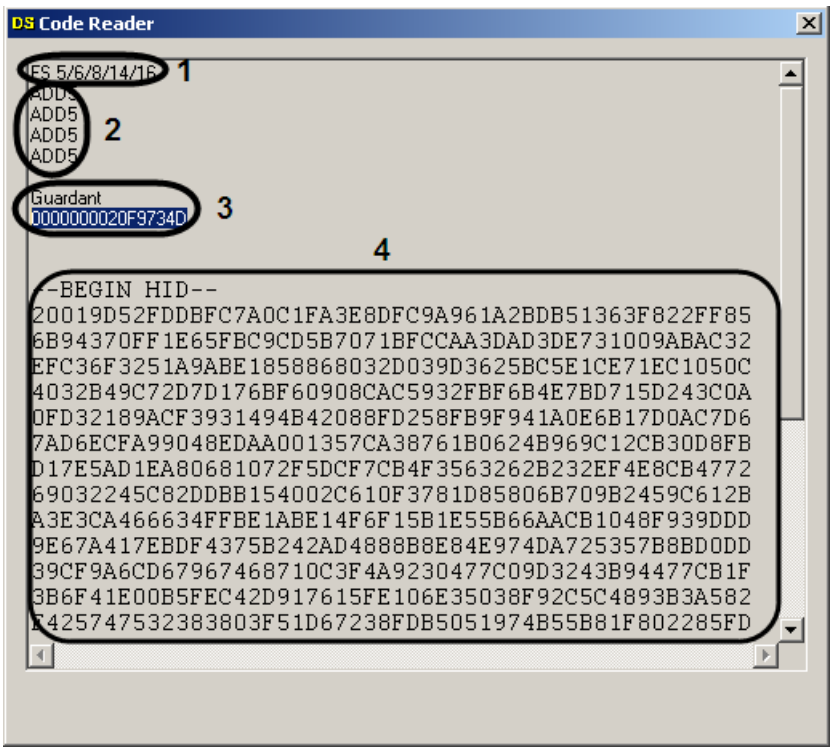


Figure 12.1-3 Information displayed in the "Code Reader" dialog box

The number of dallas codes depends on the number of chips on the video capture card. Figure 12.1-3 shows that the FS6 card with 4 chips has been used.

12.2 Converter.exe utility for converting video and audio archives

12.2.1 The purpose of the Converter.exe utility

The Conveter.exe utility is designed to play video and audio archives, and to convert them to standard formats: MPEG, DivX, MP3, etc.

Besides video and audio playback, Converter.exe utility is used for:

1. converting audio and video files;
2. copying the files from the archive to another folder with no data loss.

NOTE. If video and audio were synchronized at the time of recording, the converted video file will contain sound track.

The utility can be started from the Tools folder of the Intellect program folder or from the Start menu: Start ⇒ Programs ⇒ Intellect ⇒ Utilities ⇒ Playback and Conversion.

The utility dialog box is shown in Figure 12.2-1.

Figure 12.2-1. Archive Converter dialog box

12.2.2 Starting and shutting-down the utility

To start the Converter.exe utility, do one of the following:

1. Start the utility from the Windows taskbar. Click Start, then Programs, then Intellect, then Utilities, then Playback and Conversion (Figure 12.2-2). The Converter.exe utility is available from the Start menu with the following installation types of the Intellect PC: Server, Remote administrator workstation, Remote monitoring workstation.

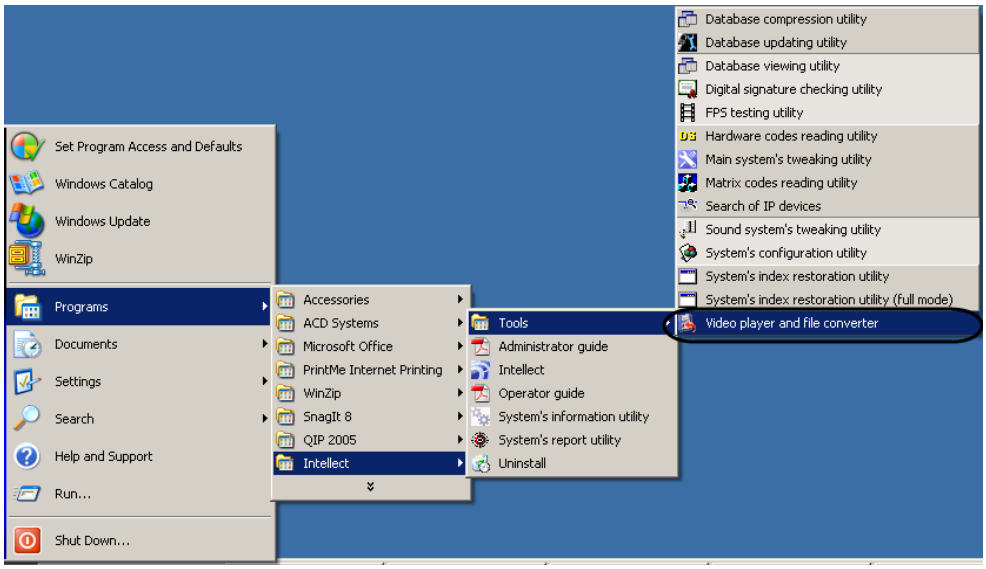


Figure 12.2-2. Start the utility from the Windows taskbar

2. Start the utility from the Tools folder of the Intellect program folder. Example: C:\Intellect\Tools\converter.exe.

Archive Converter dialog box will open (Figure 12.2-3).

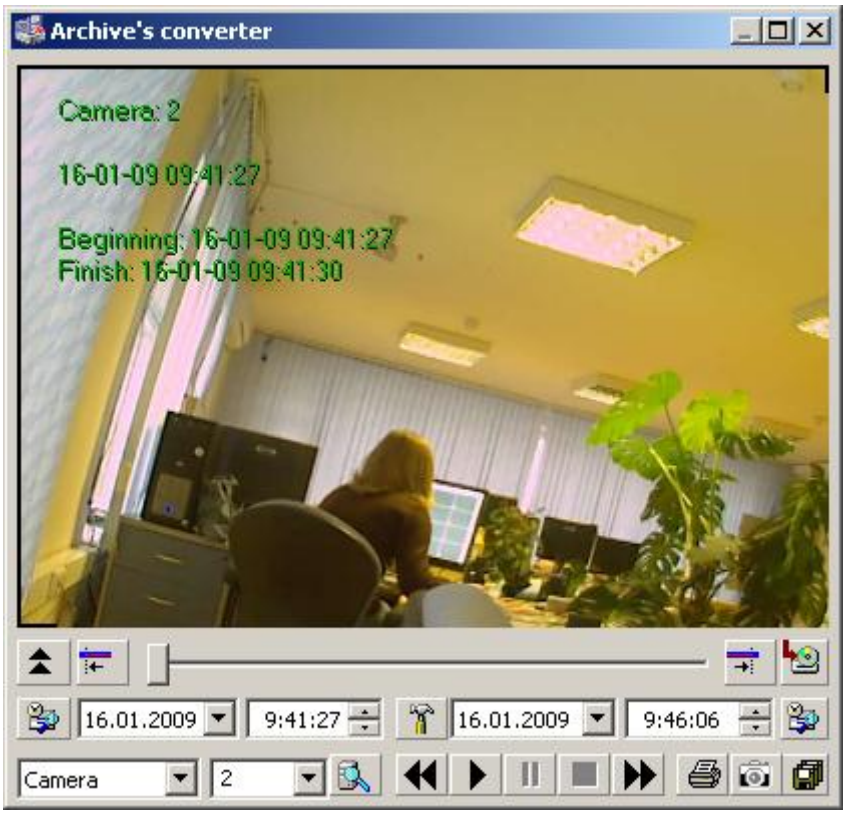


Figure 12.2-3. Archive Converter dialog box

To close the Converter.exe utility, either click the cross button in the top right corner of the dialog box, or press Alt+F4 on the keyboard (Figure 12.2-4).

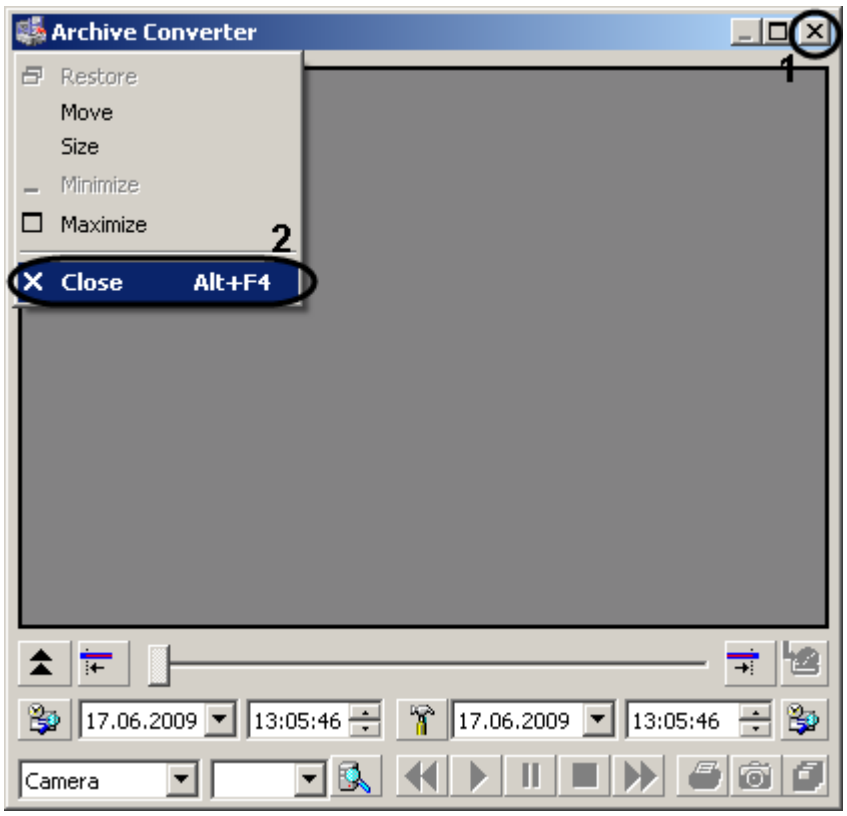


Figure 12.2-4. Shutting-down the Converter.exe utility

12.2.3 Converter.exe interface

12.2.3.1 *Archive Converter dialog box*

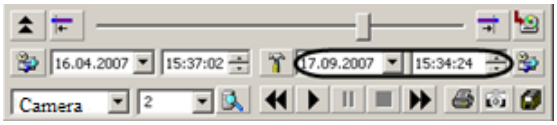
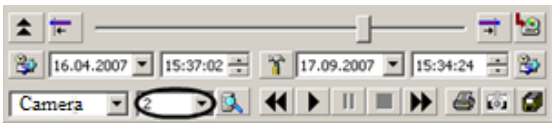
The dialog box of the converter.exe utility is shown in Figure 12.2-5.

Figure 12.2-5. Converter.exe user interface

The Archive Converter dialog box comprises of the following elements:

1. The screen to play back recordings (Figure 12.2-5, 1);
2. The control panel for video and audio recordings playback (Figure 12.2-5, 2). The elements of the control panel are described in Table 12.2-1.

Table 12.2-1

№	Element name	Description	Picture
1	Recording start date and time	Fields for entering the approximate start date and time of the video or audio recording	
2	Recording end date and time	Fields for entering the approximate end date and time of the video or audio recording	
3	Go to first / last frame	Buttons for quick moving of the slider to the beginning or the end of the recording	
4	Device	Drop-down list field for selecting the device (camera, microphone), for which the recording should be found in the archive	
5	Device number	Drop-down list field for selecting the number of the device, for which the recording should be found in the archive	
6	Search	Button for starting the search of a recording in the archive of the chosen device. The recording is searched according to the time interval between the start and end dates/times *NOTE. Several recordings may fit the same time interval.*	
7	Playback panel	The panel consists of standard functions (left to right): fragment back, play, pause, stop, fragment forward.	

№	Element name	Description	Picture
8	Time scale	The scale allows monitoring the playback progress and moving between the frames. To move between the frames, drag the slider or use the playback panel buttons in a per frame playback mode.	
9	Export setup	The button for opening the Export Setup dialog box	
10	Exported recording limits	The buttons for setting up the first and the last frames of the recording fragment to be exported	
11	Hide/show the list	The button for hiding and showing the list of selected recordings	
12	Add to list	The button for placing the selected recording (recording fragment) on the list	
13	Print frame	The button prints the current frame	
14	Frame export	The button exports the current frame in a specified format. A dialog box opens for selecting the folder on the disk and entering the file name.	
15	Export to AVI or archive	The button for starting the export of the recording (fragment) in the specified format. A dialog opens for selecting the device name, which made the recording. On export start, a folder is created for saving the exported recordings (by default, C:\Backup).	

12.2.3.2 *Export Settings dialog box*

To open the Export Settings dialog box, click the button in the Archive Converter window. The Export Settings dialog box will open, allowing to specify export parameters (Figure 12.2-6, Table 12.2-2).

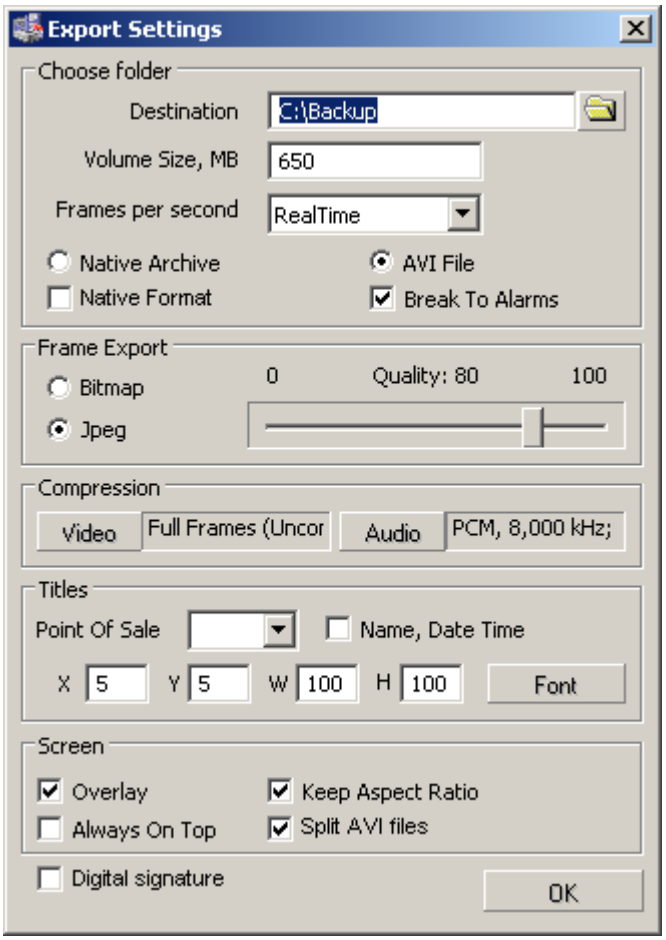


Figure 12.2-6. Export Settings dialog box

Table 12.2-2

No	Parameter name	Field type	Description	Format	Default value	Value range
The "Choose folder" group						
1	Destination	Type-in the value	Type-in the folder on the disk to store the exported files (by default the "Backup" folder is created on disk C:)	-	-	-
2	Volume Size, MB	Type-in the value	Type-in the maximum value of the volume (file) size containing one or more recordings. If the size of recording for export exceeds the set one, then it will not be split. When the recording is added to the volume, the size of recording is expected to equal the mean value of sizes of all added recordings. A new recording is added to the volume if it does not exceed	MB	650	0 to 2000 MB

No	Parameter name	Field type	Description	Format	Default value	Value range
			the volume size. A real size of recording can differ from the assumed one, therefore the volume size can exceed the assumed one. If the “Break To Alarms” checkbox is checked, each volume will contain one recording only. The field is disabled if the “Native Archive” parameter is activated.			
3	Frames per second	Select in a drop-down list	Type-in the amount of scaling of the video recording	fps	RealTime	0.5; 1; 3; 5; 15; 30; RealTime
4	Native Archive AVI File	Select a radio-button	If the “Native Archive” radio-button is selected, then archive fragments will be exported keeping the creation time, but with no AVI conversion. If the “AVI File” rdio-button is selected, then the fragment is converted to the AVI format using the specified codec.	-	AVI File	13. Native Archive 14. AVI File
5	Break To Alarms	Checkbox	The checkbox is for selecting the way of storing the archive export fragments to volumes (files of specified size): the recordings for each alarm will be saved to separate volumes (files).	-	Unchecked	Unchecked – the file (volume) will contain a fragment of the size specified in the “Volume Size, MB” field. Checked – the volume will contain a fragment related to one alarm only.
6	Native Format	Checkbox	If the “Native Format” checkbox is checked, then video recordings are exported to AVI file without recompression, i.e. in the same format as in Intellect archive. To playback these AVI files on the computer without Intellect software package installed, install components from Intellect distributive beforehand:	-	Unchecked	Unchecked – Intellect archive is exported to AVI file with recompression. Checked - Intellect archive is exported to AVI file without recompression.

No	Parameter name	Field type	Description	Format	Default value	Value range
			1. \Redist\VC2005_SP1\vcredist_x86.exe 2. \ipint.driverpack\IPDriverPack.msi *Note. To playback AVI files use Windows Media Player.*			
The "Frame Export" group						
7	Bitmap Jpeg	Select a radio-button	If the "Bitmap" radio-button is selected, then the file is saved in Bitmap format. If the "Jpeg" radio-button is selected, then the file is saved in Jpeg format.			
8	Quality	Set the slider	The parameter specifies the quality level of the exported file. The value of 100% results in no quality loss.	%	80	0 to 100
The "Compression" group						
9	Video	Click the button	The button is for selecting and setting up the video codec used to compress video recordings. If the "Native Archive" radio-button is selected or the "Native Format" checkbox is checked, then this button is disabled.	-		-
10	Field next to the "Video" button	Not to be edited	The field shows the info on selected video codec. If the "Native Archive" radio-button is selected, then this field is disabled.	-	Full Frame (Uncompr-essed), Quality: 0	The list of codecs found by the utility.
11	Audio	Click the button	The button is for selecting and setting up the quality of the exported audio. the "Native Archive" radio-button is selected, then this button is disabled.	-	-	-
12	Field next to the "Audio" button	Not to be edited	The field shows the selected audio format.	-	PCM, 8000 kHz; 16 bit; Mono	The list of quality levels detected.
The "Screen" group						

No	Parameter name	Field type	Description	Format	Default value	Value range
13	Overlay	Checkbox	If the “Overlay” checkbox is checked, there is Overlay II conversion	-	Checked	Checked – use Overlay II for conversion Unchecked – do not use Overlay II for conversion
14	Always On Top	Checkbox	If the “Always On Top” checkbox is checked, then Converter window is always over all other windows	-	Unchecked	Checked – the window is displayed on top. Unchecked – the window is not displayed on top.
15	Keep Aspect Ratio	Checkbox	If the “Keep Aspect Ratio”checkbox is checked, the aspect ratio of Converter window is fixed.	-	Unchecked	Checked – 3:2 ratio is kept when the size of the dialog box is changed. Unchecked – 3:2 ratio is not kept when the size of the dialog box is changed.
16	Split AVI files	Checkbox	Activates export of selected video recordings to the separate AVI files. *Note.If the checkbox is not checked, video recordings from one camera are exported to one AVI file.*	-	Checked	Checked - video recordings are exported to the separate AVI files. Unchecked - video recordings are exported to one AVI file.
17	Digital signature	Checkbox	Activates adding digital signature that is used for checking frame authenticity to exported frames. *Note. Checking frame authenticity is performed using SignCheck.exe utility (see The SignCheck.exe utility for checking the authenticity of exported frames and video recordings section)*	-	Unchecked	Checked – digital signature is added. Unchecked - digital signature is not added.

If a microphone was selected as a device in the dialog box of Converter.exe utility, only the “Audio” button and the “Screen” group are enabled.

12.2.3.3 *A dialog box for choosing the video codec*

The Video button in the Export Setup dialog box opens a dialog box for choosing a video codec to be used for video compression (Figure 12.2-7).

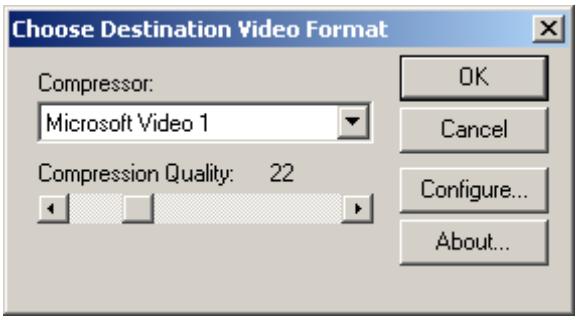


Figure 12.2-7. The dialog box for choosing video codec

Table 12.2-3

No	Parameter name	Field type	Description	Format	Default value	Value range
1	Compression program	Select from drop-down list	The button allows selecting and setting up the video codec used to convert and compress the video image.	Codec name	Full frames (no compre-ssion)	All video codecs recognized by the operating system
2	Compression quality	Drag the slider	The slider allows setting the compression level. The zero position of the slider represents the highest compression and lowest quality. Changing this parameter is enabled if the codec is selected in the Compression Program field.	%	0	0 to 100
3	Setup ...	Click the button	The button opens the settings panel of the video codec. See the codec manual for details.	-	-	-
4	About	Click the button	The button opens an information box with codec details.	-	-	-

NOTE. If AVI format is used, the resultant file size should not exceed 2 GB.

12.2.3.4 *A dialog box for selecting audio format*

The Sound button in the Export Setup dialog box opens a dialog box for choosing an audio format (Figure 12.2-8).

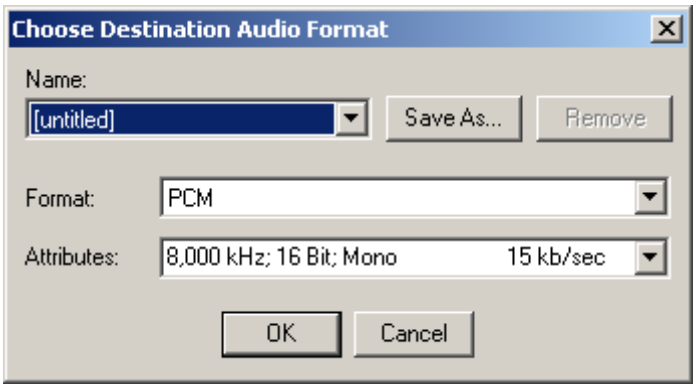


Figure 12.2-8. A dialog box for choosing audio format

Table 12.2-4

No	Parameter name	Field type	Description	Format	Default value	Value range
1	Name	Select from drop-down list	The field allows choosing the name for the selected audio format.	Format name	Untitled	Untitiled CD Quality Radio Quality Telephone Quality Compact disk
2	Format	Select from drop-down list	The field for selecting the format	Format name	PCM	The list of audio formats used by the utility.
3	Attributes	Select from drop-down list	The list of sound characteristics: playback/recording frequency (8000 kHz), digitizing level (8, 16, etc bits), channel type (mono/stereo)	Parame-ter values	PCM, 8000 kHz, Mono	The list of characteristics, recognized by the operating system
4	Save as...	Click the button	The button allows creating a unique name for the selected format. To save a format under a unique name: 1. Select Untitled in the Name field. 2. Select the values in the Format and Attributes fields. 3. Click the Save As button 4. Enter a unique name in the Save This Format As field and click OK. The newly created name will appear in the Name drop-	String	-	-

No	Parameter name	Field type	Description	Format	Default value	Value range
			down list.			

12.2.4 Using the Converter.exe utility

12.2.4.1 *General description*

The Converter.exe utility is designed to convert and play back audio and video recordings from the archive and save them to a specified folder.

Using the Converter.exe utility includes:

1. Starting the utility (see the Starting and Shutting-down the Utility section).
2. Selecting an archive.
3. Finding a recording in the selected archive.
4. Playback of the recording.
5. Finding the required recording fragment or frame.
6. Setting the export or conversion parameters.
7. Exporting the fragment or printing the frame.
8. Shutting-down the Converter.exe utility.

12.2.4.2 *Selecting an archive to be played or converted*

To search an archive for a recording, do the following:

1. Select the device the recording was made by, and its number (Figure 12.2-9).
2. Specify the time limits in the date/time fields.
3. Click the Search button.

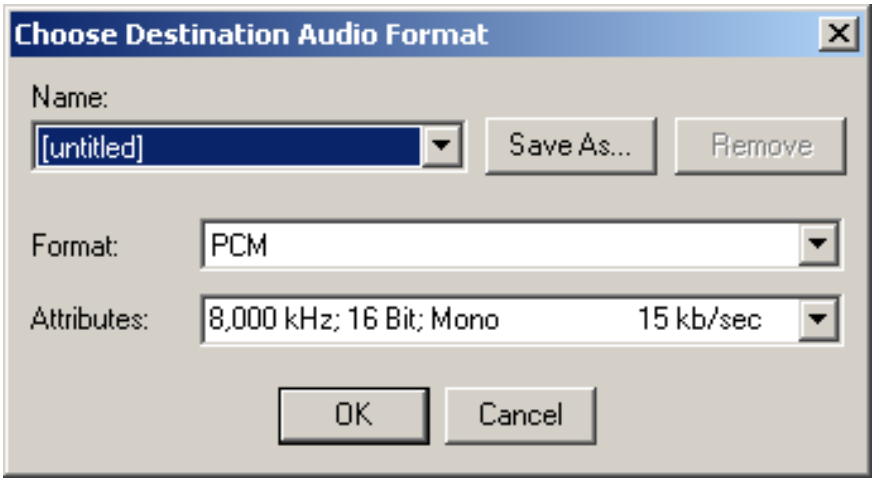


Figure 12.2-9. Selecting an archive

4. Select the location of the archive (folder with archives for specific date and time) on an appropriate disk (Figure 12.2-10).

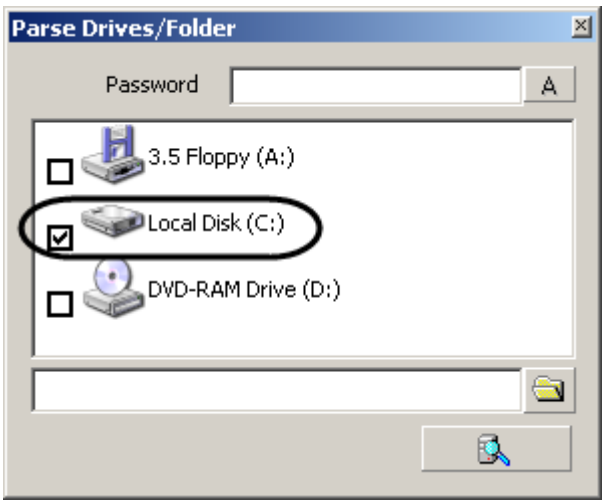


Figure 12.2-10 Selecting the location of the archive

5. Click the button.

The first frame of the required recording will be displayed in the video playback screen.

NOTE. In case of searching for an audio recording, no visible signs of finding the recording will be shown. To check that a recording was found, play it.

12.2.4.3 *Looking for a video fragment*

After the approximate time interval is selected using the date/time fields, and the required archive is found, it may be necessary to find a particular fragment or frame to be played or exported.

12.2.4.4 *Looking for a fragment in a recording*

To find the required video fragment in the selected recording, do the following:

1. Click the Play ( ) button in the playback control panel.
2. When the required fragment appears, click the Pause ( ) button.
3. Click the Fragment Start ( ) button to make the current frame the start of the fragment.
4. Click the Play ( ) button in the playback control panel.
5. When the required fragment ends, click the Fragment End ( ) button to make the current frame the end of the fragment. All subsequent frames will be omitted.

The resultant recording fragment will then be available for conversion or export, maintaining the format and the creation date.

12.2.4.5 *Looking for a frame in a recording*

To find a particular frame in the selected recording, do the following:

1. Click the Play ( ) button in the playback control panel.

2. When the required frame appears, click the Pause ( ) button to enter the per frame playback mode.

Note. If the recording is to be played back in the per frame playback mode starting with the first frame, then click the Pause ( ) button instead of the Play ( ) button.

3. Keep clicking the Fragment Forward ( ) and Fragment Back ( ) buttons, to browse the frames until the required frame appears on the screen.

The resultant frame may be printed or used as a starting frame for a fragment (see "Looking for a fragment in a recording" section).

Note. To quit the per frame playback mode, click the Pause ( ) button once more.

12.2.4.6 *Recording playback*

The recording selected by date and time, can be played in Converter.exe player using the playback control panel (Figure 12.2-11).

Figure 12.2-11 Playback panel

The panel contains five control buttons (left to right on Figure 12.2-12): Fragment Back, Play, Pause, Stop, Fragment Forward, allowing to play, pause, stop and browse the fragments.

1. When the Stop button is down (clicked), clicking the Fragment Forward or Fragment Back buttons moves to the next or previous fragment.

2. Clicking the Play button plays the fragment from beginning to end. If the recording contains several fragments, the Play button should be clicked to play each of them.

3. To play the whole recording consisting of several fragments, in one go, click the Play button, then click it again and hold for 3 seconds. The button then changes its appearance from to .

4. To play the recording in the per frame mode: a) click Play, b) click Pause, c) keep clicking Fragment Forward or Fragment Back to view frames one by one.

To play the fragment in fast forward mode, click Play, then double-click to double the playback speed, or click it three times to triple the speed.

12.2.4.7 *Converting video and audio archives to AVI files*

Video and audio archives are converted into AVI format according to Converter.exe settings, using the Export Setup dialog box. The level of compression of the exported recording is determined by the following parameters:

1. Frames Per Second parameter – setting the value of scaling of the recording;
2. Video button – selection of the video codec, in case of video archive export;
3. Sound button – set the sound quality parameters (frequency, bitrate, etc), in case of audio archive export.

NOTE. If AVI format is used, the resultant file size should not exceed 2 GB.

12.2.4.8 *Exporting recordings and frames*

Export of the recordings is one of the main functions of the Converter.exe utility. There are two ways of exporting records from an archive:

1. Export to AVI option converts (compresses) a recording and breaks it down into volumes (files of the size specified in the Export Setup dialog box).

To export the recording as AVI, do the following:

a. Find the recording in an archive (see the Selecting an Archive to be Played or Converted section).

b. In the Export Setup dialog box, select the Export to AVI radio-button.

c. Click the Video or Sound button to specify the conversion parameters. Click the OK button.

d. Click the Export to AVI/Archive button ( ) to start exporting.

e. Enter the name of the device folder to save the recording to (Figure 12.2-12, 1), then click Continue (Figure 12.2-12, 2).

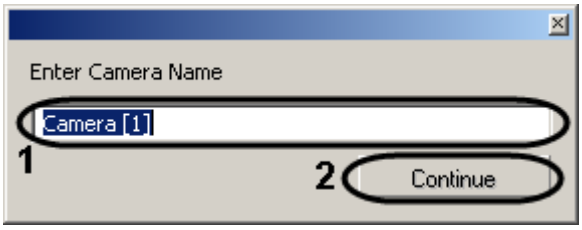


Figure 12.2-12. A dialog box for entering the device for recording export

The export progress will be shown in the title bar of the Converter.exe window (Figure 12.2-13).

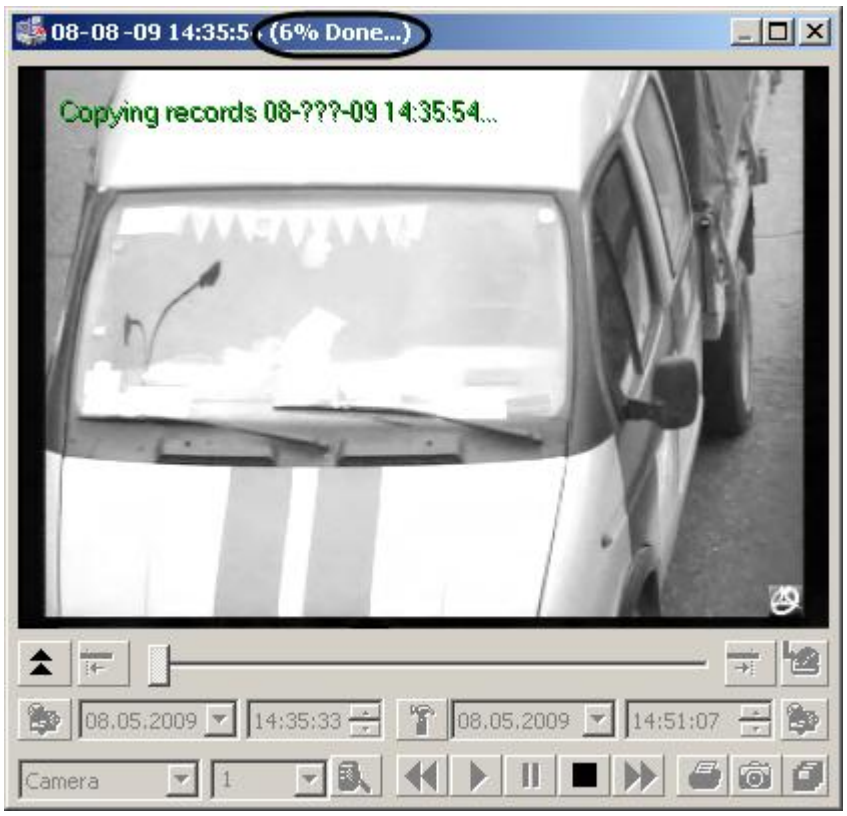


Figure 12.2-13. Export progress

The title bar will read Complete, when exporting is completed. To verify the results, open the Backup folder (see Table 64, Folder Selection group) and find the file named after the device from which archive the recording was exported.

f. The Export to Archive option allows copying the files from an archive to another location on the disk with no conversion, maintaining the recording creation date and an option for breaking it down into volumes.

To export a recording in the same format as it is stored in the archive, do the following:

1. Find the recording in the archive (see the Selecting an Archive to be Played or Converted section).
2. In the Export Setup dialog box, select the Export to Archive radio-button.
3. Specify volume size in the Export Setup dialog box. Click the OK button.
4. Click the Export to AVI/Archive button ( ) to start exporting.

NOTE. If AVI format is used, the resultant file size should not exceed 2 GB.

The Converter.exe utility allows exporting frames into bitmap and JPEG formats. Do the following:

1. Find the required frame (see the Looking for a Frame in a Recording section).
2. In the Export Setup dialog box, specify the parameter values in the Frame Export group. Click the OK button.

3. Click the Export Frame button ( ).

4. Specify the location to save the exported file to in the Save As dialog window (Figure 12.2-14).

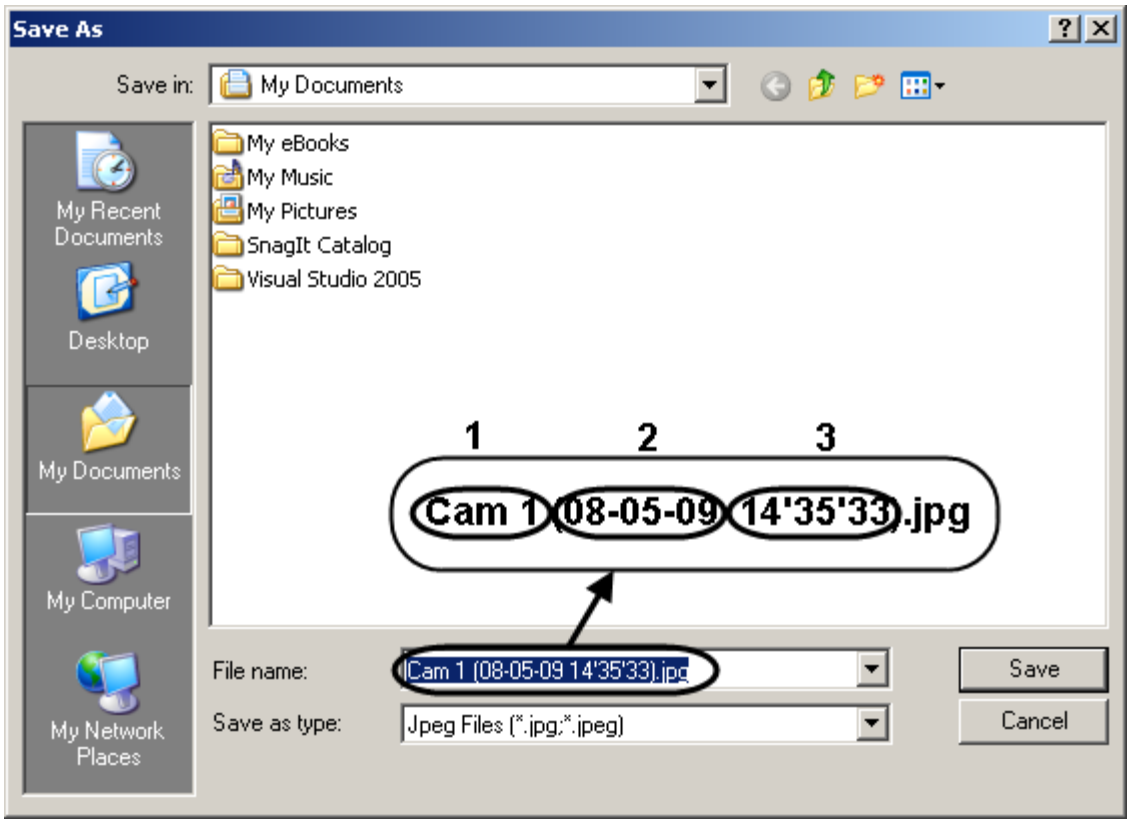


Figure 12.2-14. Saving an exported frame

The file name will be generated automatically in the following format: 1) name and number of the camera where the frame comes from; 2) creation date; 3) creation time. The file extension corresponds to the file format selected in the Export Setup dialog box.

5. Click the Save button.

12.2.4.9 *Using a command prompt to work with the Converter.exe utility*

Video and frames can be exported with the help of a command prompt using the following commands:

Converter.exe Disk:\File,Number_Cam,StartDate StartTime,StopDate StopTime

Table 12.2-5 describes the command parameters.

Table 12.2-5

Parameter	Description
Disk	Disk for storing exported files
File	Name of a catalogue or file.

	Note 1. If the catalogue or file specified in the command does not exist, it will be created automatically. *Note 2. To export archive (video record in the original format) only catalogue name is to be specified.*
Number_Cam	Number of a camera which performs the recording
StartDate	Date of record start (dd-mm-yy)
StartTime	Time of record start (hh:mm:ss)
StopDate	Date of record end (dd-mm-yy). *Note. Parameter is not in use while exporting the separate frames*
StopTime	Time of record end (hh:mm:ss) *Note. Parameter is not in use while exporting the separate frames*

The example of using the command prompt to export files is shown in Figure 12.2-15.

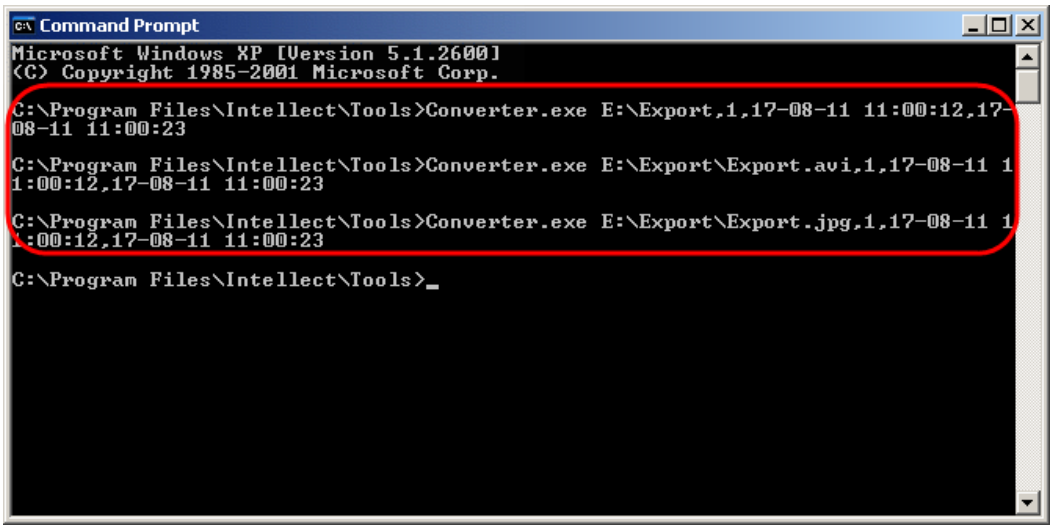


Figure 12.2-15 The example of using the command prompt to export files

As a result the “export” folder containing the exported files is created on the local disk “E” (Figure 12.2-16).

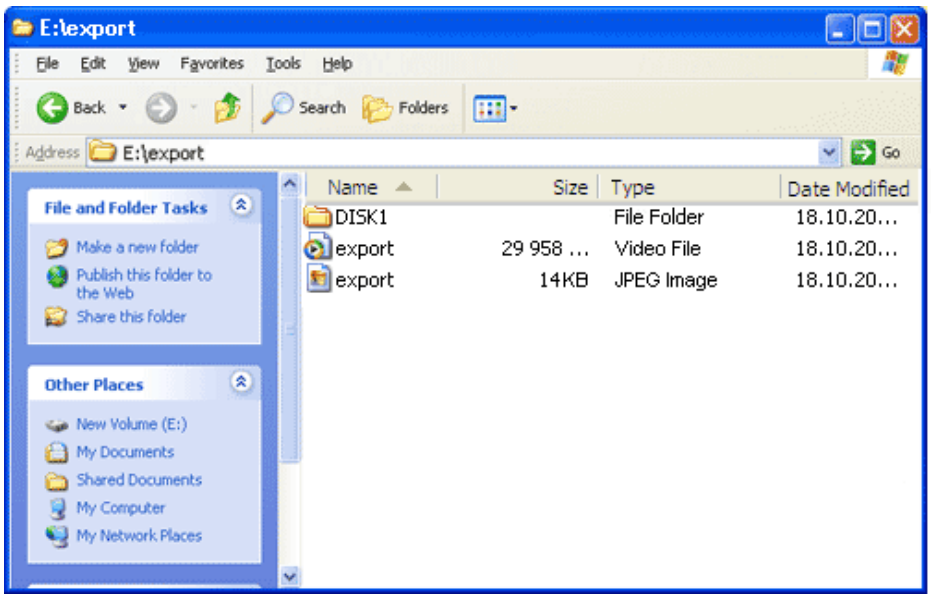


Figure 12.2-16 The result of the command execution

12.2.4.10 *Printing a frame*

To print a frame, do the following:

1. Find the required frame (see the Looking for a Frame in a Recording section).
2. Click the Print Frame button ( ).
3. A standard dialog box for printing and printer setup will be opened.

12.2.4.11 *Video export with titles*

Video export with titles is done in the following way:

- Run the Converter.exe utility(see Starting and shutting-down the utility).
- Call for Export Settings dialog window in the opened window of Converter.exe utility and set its groups Choose folder, Frame Export, Compression and Screen (see. Interface description of Export settings dialog window).
- Set the titles displaying in the Titles group in the dialog window Export Settings (Figure 12.2-17; Table 11.2-13 shows parameters description of the given).

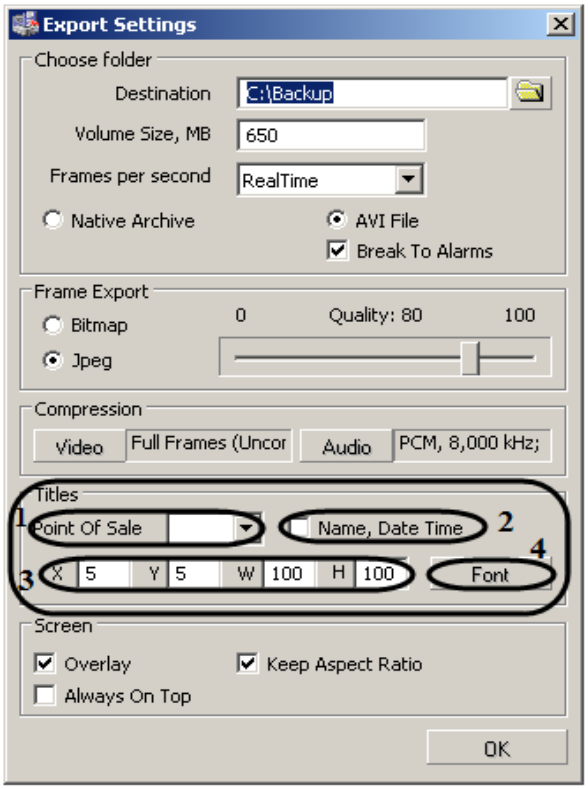


Figure 12.2-17 Setting up the titles displaying

Table 12.2-6

№	Parameter name	Parameter description	Value range
1	Point of sale dropdown list	Name of cash terminal, titles from which should be laid over the video recording while viewing and exporting the frames and recordings with the help of Converter.exe utility.	Empty value– titles from all the titrates overlay function . «no» - overlay function is off. Number of cash terminal (from one and above) – function of displaying the titles concerning the given cash terminal.
2	Checkbox«Name, Date, Time»	When the given checkbox is activated , lines, containing name and number of a camera, date and time of creation of the given video frame , will be laid over the video recording.	Yes – lines, containing name and number of a camera, date and time of creation of the given video frame , will be laid over the video recording. No – lines, containing name and number of a camera, date and time of creation of the given video frame , will not be laid over the video recording.
3	Editing text fields «X», «Y», «W», «H»	Coordinates and area size , taken by titles in the video recording. Is expressed in percentage relative to the screen size of video recording playback.	From 0 and above. Depends on the screen size of video recording playback.
4	Font button	Font selection of titles displaying.	-

Note. If the cash terminal is selected, its value will not be saved with the repeated run of Converter.exe utility. On default displaying titles from all the titers is set.

- To apply the settings it is necessary to click «OK» button. To cancel settings one should click the cross mark in the upper right corner of Export Settings dialog window.
- Dialog window of Converter.exe utility for exporting the required file will open in result (see. Exporting recordings and frames).

Export of video recordings with titles is completed.

12.3 Tweaki.exe utility for advanced setup of the Intellect software system

12.3.1 The purpose of tweaki.exe utility

The tweaki.exe utility is designed for configuring the Intellect system by editing the HKLM/SOFTWARE/AxxonSoft and HKCU/SOFTWARE/AxxonSoft sections of the Windows registry, where the setup parameters for the Intellect core and modules are stored.

Attention! Specifying invalid values of the registry keys may lead to system failure.

The Tweaki.exe utility provides the following functionality:

1. Setup of Intellect system start-up;
2. Enabling the debug mode;
3. Advanced setup of the video surveillance monitor;
4. Advanced setup of events logging;
5. Advanced setup of video signal processing by Server;
6. Advanced setup of distributed architecture;
7. Changing netnames and IP-addresses in the configuration database;
8. Compressing MS Access database;
9. Limiting the RAM used by MS SQL server;
10. Advanced setup of audio or video recording to an archive;
11. Re-indexing audio and video archives;
12. Selecting the analog video out operation mode;
13. Testing the operability of video capture cards;
14. Advanced setup of PTZ devices;
15. Displaying versions of Intellect modules.

12.3.2 Starting and shutting-down the utility

To start the tweaki.exe utility, do one of the following:

1. Start the utility from the Windows taskbar. Click Start => All Programs => Intellect => Tools => Advanced settings utility. The tweaki.exe utility is available from the Start menu with the following installation types of Intellect: Server, Remote administrator workstation, Remote monitoring workstation.
2. Start the utility from the “Tools” folder of the Intellect program folder: C:\Intellect\Tools\Tweaki.exe.

The “Intellect Advanced Setup” dialog box appears after running the tweaki.exe utility (Figure 12.3-1).

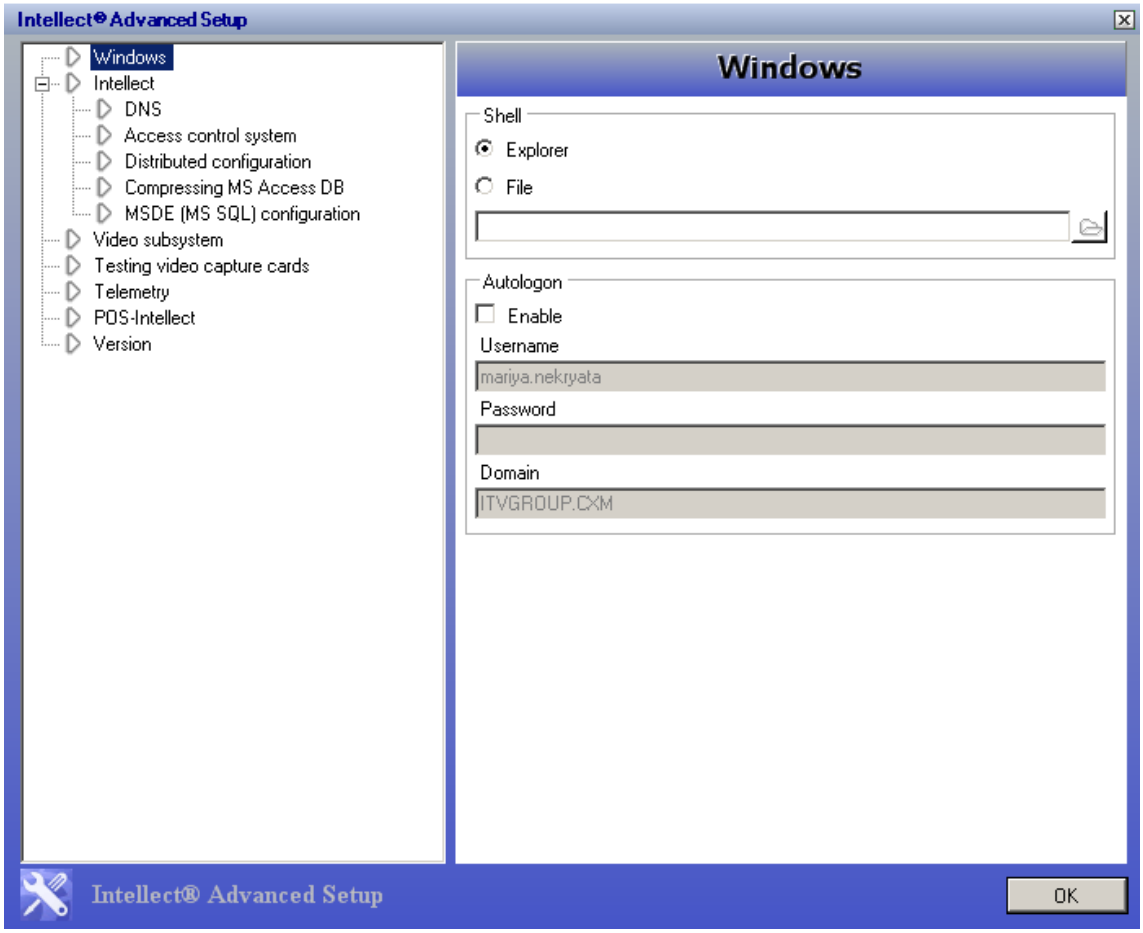


Figure 12.3-1. The tweaki.exe dialog box

To shutdown the tweaki.exe utility and save the changes click OK (Figure 12.3-1). To shutdown the tweaki.exe utility without saving the changes, click ☒ (Figure 12.3-1).

12.3.3 Interface of the tweaki.exe utility

The user interface of the tweaki.exe utility consists of two interrelated elements:

a. Tree of sections (Figure 12.3-2, 1).

b. Settings panel for each section (Figure 12.3-2, 2).

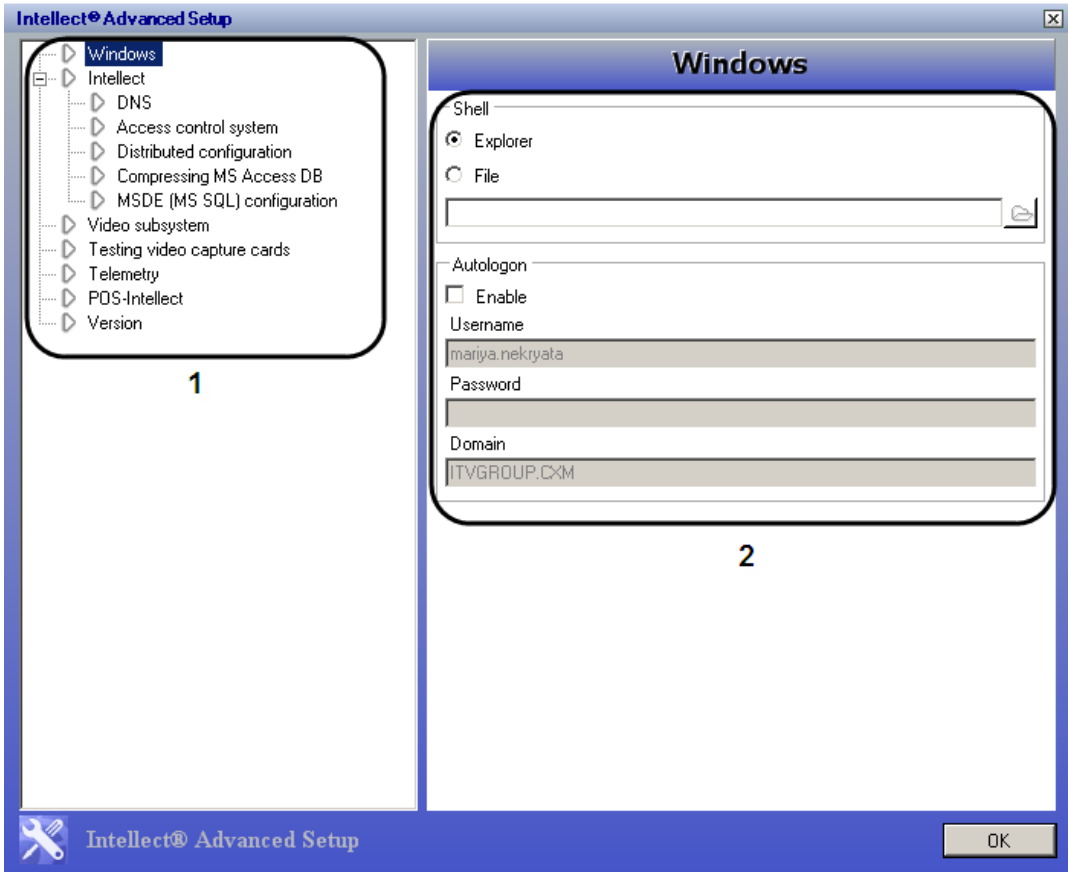


Figure 12.3-2 User interface of the tweaki.exe utility

Sections tree of the tweaki.exe dialog box has static structure and is used for navigation in the utility. To access the settings panel for the required section, left-click the corresponding tree tab.

12.3.3.1 *The settings panel for the Windows section*

The Windows section is used to set Windows running Windows OS. The settings panel for the Windows section is shown in Figure 12.3-3.

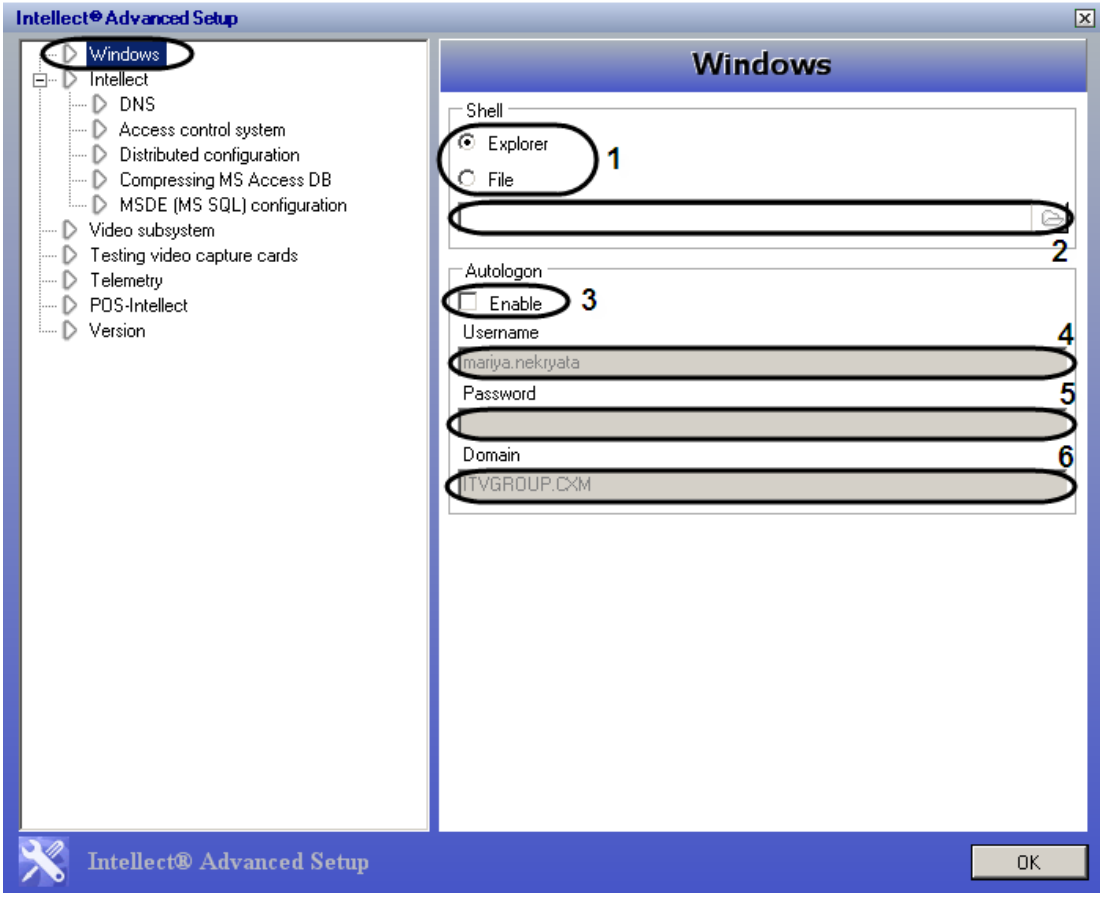


Figure 12.3-3. The Windows settings panel

The parameters of the Windows setting panel are described in Table 12.3-1.

Table 12.3-1 Description of the Windows setting parameters

No	Parameter name	Field type	Description	Representation	Default value	Value range
The Shell group						
1	The Explorer/ File switch	Set in the position	Selection of Windows working shell	-	Explorer	Explorer – Microsoft Explorer is loaded as working Windows OS shell(corresponds to standard Windows OS settings) File – Intellect starts as a working shell of Windows OS.
2	The File field with button. Active for the File switch position	Button is pressed	Opens standard Windows window «Open» to select shell file of OS Windows. Full path to the file is displayed in the field.	-	-	The intellect.exe executive file is selected as a shell

No	Parameter name	Field type	Description	Representation	Default value	Value range
The Autologon group						
3	The Enable checkbox	Checkbox	Activates automatic log on of the user to OS Windows	Boolean type	No	Yes – automatic log on of the user is activated No– automatic log on of the user is not activated
4	The Username field	Type-in the value	Set the username for logging on the OS Windows	-	-	Up to 64 characters. Depends on the settings of Windows user account (stored locally or on domain server)
5	The Password field	Type-in the value	Set the password for logging on the OS Windows	-	-	8 to 14 characters Depends on the settings of Window's user account (stored locally or on domain server)
6	The Domain field	Automatically	Displays the name of domain server (if there is any), where data concerning user account is stored (user name and password)	-	-	Depends on domain net settings (net settings of OS Windows correspondingly)

12.3.3.2 *The settings panel for the Intellect section*

The Intellect section is used for Intellect advanced setup. The settings panel for the Intellect section is shown in Figure 12.3-4.

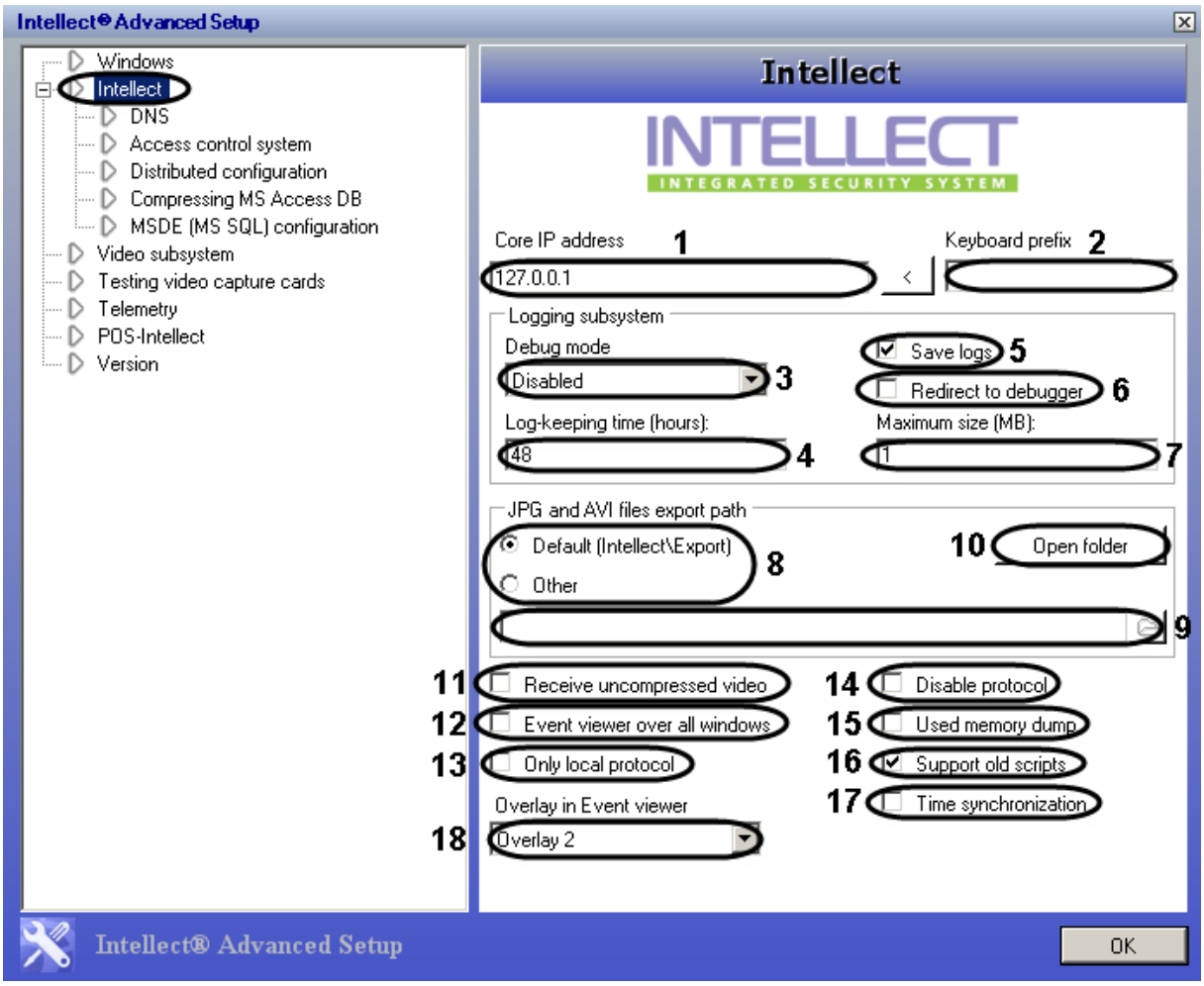


Figure 12.3-4. The Intellect settings panel

The parameters of the Intellect settings panel are described in Table 12.3-2.

Table 12.3-2 Description of the Intellect setting parameters

No	Parameter name	Field type	Description	Representation	Default value	Value range
1	The Core IP address field with button. Is set on the Client	Type-in the value in the field/use the button	Set the IP address of the Intellect server to which the slave.exe module is connected by default. In case of pressing button, IP address of the local computer is set.	IP address	127.0.0.1	Depends on net settings of the Server. In case of connection failure dialog window requiring IP address is displayed
2	The Keyboard prefix field	Type-in the value in the field	Set the prefix for a special key-board. When a button is pressed on this key-board the Intellect detects when the button was pressed on this very key-board	Symbol	-	Usually, a tilde (“~”), code 126

No	Parameter name	Field type	Description	Representation	Default value	Value range
The Logging subsystem group						
3	The Debug mode dropdown list	Drop-down list item	Set the mode of the Intellect Debug window displaying	List of available modes of Debug windows displaying	None	None – Debug window is not displayed. Debug 1 – Debug window is displayed and a log-file containing recordings about modules errors is created. Debug 2 – Debug window is displayed and a log-file containing recordings about modules errors and alerts is created. Debug 3 – Debug window is displayed and a log-file containing recordings about all the modules events is created. Debug 4 – Debug window is displayed and a log-file containing recordings about all the modules events, and also additional menu that is individual for each module (used by programmers) are created.
4	The Log-keeping time (hours) field	Type-in the value in the field	Set the time of keeping log files	Sequence	48 hours	> 0
5	The Save logs checkbox	Checkbox	Enables logs saving	Boolean type	Yes	Yes – logs are saved. No – logs are not saved.
6	The Redirect to debugger checkbox	Checkbox	Enables the debugger	Boolean type	None	Yes –the debugger is in use. No – the debugger is not in use.
7	The Maximum size (MB) field	Type-in the value in the field	Defines the maximum size of RAM that log files can use	Sequence	1 MB	> 0
The JPG and AVI files export path group						

No	Parameter name	Field type	Description	Representation	Default value	Value range
8	The Default (Intellect\Export)/Other switch	Set in the position	Set the folder for exported files from Intellect video archive	-	Default (Intellect \Export)	Default (Intellect\Export) – exported to the folder «<Intellect settings directory\Export>» Other – exported to the selected folder
9	The Other field with the button	Click the button/type-in the value in the field	Set the pathname to the folder, where files from video archive are to be exported when the switch is set in the Other position	Pathname	-	-
10	The Open folder button	Click the button	Opens the current folder to export the files	-	-	-
No group						
11	The Receive uncompressed video checkbox	Checkbox	Enables receiving uncompressed video from the Server. As a rule is set on the Client	Boolean type	No	Yes – Client receives uncompressed video from the Server No – Client receives compressed video from the Server
12	The Event viewer over all windows checkbox	Checkbox	Enable displaying the Event viewer window over all windows.	Boolean type	No	Yes – the Event viewer window is displayed over all windows. No - the Event viewer window is displayed if a corresponding screen is selected
13	The Only local protocol checkbox	Checkbox	Enables logging the events registered in the given computer to the Events protocol database. *Note. This parameter can be set on the settings panel of the "Computer" object – see "Configuring the "Event Viewer" database" section.*	Boolean type	No	Yes – events registered in the given computer are recorded to the Events protocol database No – all required events are recorded to the Events protocol database
14	The Disable protocol checkbox	Checkbox	Disables events logging to the "Event viewer" database on this	Boolean type	No	Yes – events are not logged to the "Event viewer" database

No	Parameter name	Field type	Description	Representation	Default value	Value range
			computer. *Note. This parameter can be set on the settings panel of the "Computer" object – see "Configuring the "Event Viewer" database" section.*			No – events are logged to the "Event viewer" database
15	The Used memory dump checkbox	Checkbox	Enables logging .dmp file with a copy of main memory with incorrect shutting down at least one of the system modules to the Intellect root folder	Boolean type	No	Yes-memory dump is created No – memory dump is not created
16	The Support old scripts checkbox	Checkbox	Set the support of program tools in Intellect	Boolean type	No	Yes-both scripts and programs are supported No-only scripts are supported
17	The Time synchronization checkbox	Checkbox	Set time synchronization of all computers in the distributed system with system time of this computer. Time is automatically synchronized at midnight every 24 hours or when INTELLECT™ is started on the Server that is the source of time synchronization.	Boolean type	No	Yes – synchronization is enabled No – synchronization is disabled
18	The Overlay in Event viewer dropdown list	Drop-down list item	Set the overlay mode for processing the video signals that can be viewed with the help of the Event viewer object	Names of overlay modes	Overlay 2	None – video signals are not processed by video card Overlay 1 – video signals are processed as a single video stream Overlay 2 – video signals are processed independently from each other

12.3.3.3 *The settings panel for the DNS section*

The DNS section is used for setting the automatic connection between the Client and reserve Servers in case of connection loss with the main Server. In the DNS section it is necessary to specify netnames and IP-addresses of reserve Servers as they are not listed in the Windows registry by default.

The settings panel for the DNS section is shown in Figure 12.3-5.

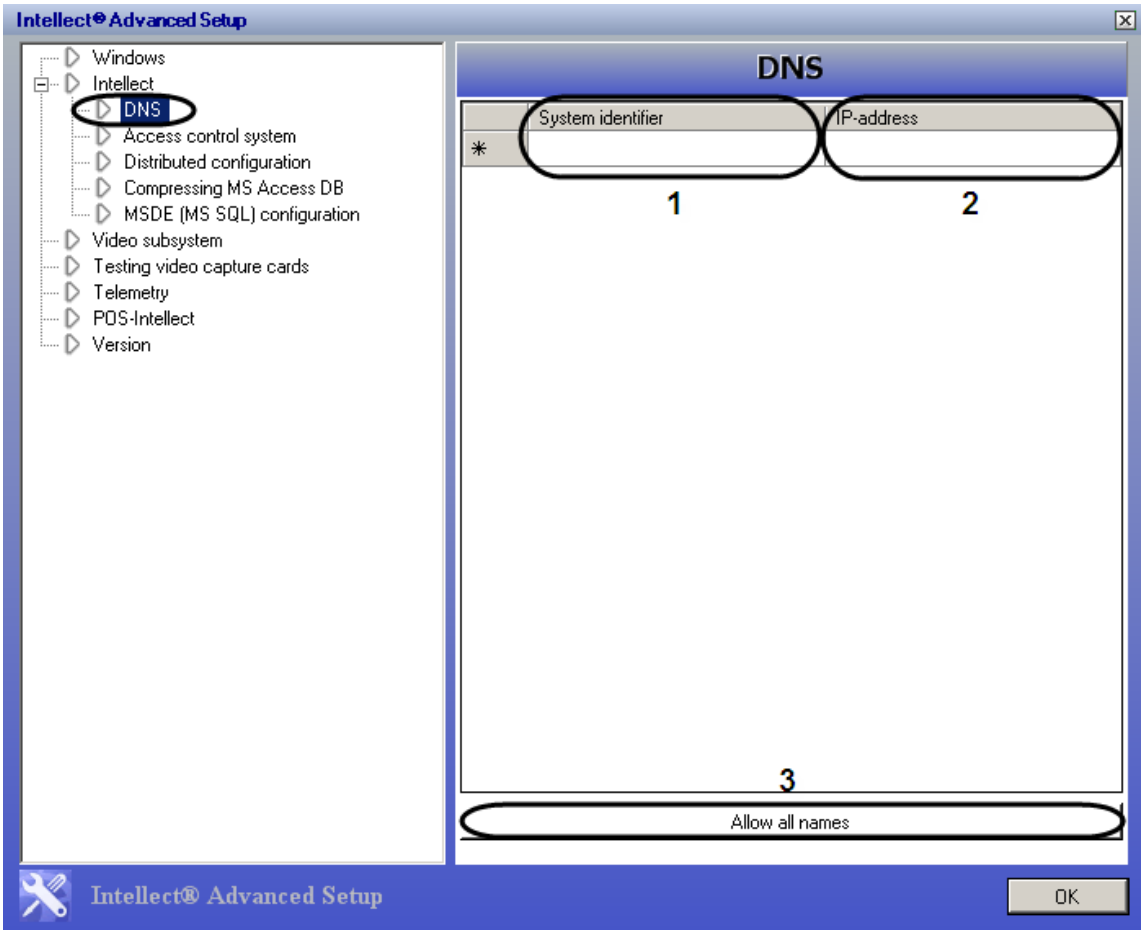


Figure 12.3-5. The DNS settings panel

The parameters of the DNS settings panel are described in Table 12.3-3.

Table 12.3-3 Description of the DNS settings parameters

№	Parameter name	Field type	Description	Representation	Default value	Value range
1	The System identifier column	Type-in the value in the field	Set the netname of the reserve video Server if the connection with main Server is lost	-	-	Depends on net settings of reserve video server
2	The IP-address column	Type-in the value in the field.	Set the IP-address of the selected reserve video Server	IP-address	-	Depends on net settings of

№	Parameter name	Field type	Description	Representation	Default value	Value range
						reserve video Server
3	The Allow all names button	Click the button	Computer's IP-addresses, set in the System identifier column, are automatically added to the IP-address column, if these addresses are enabled and identified	-	-	-

12.3.3.4 *The settinsg panel for the Access control system section*

The Access control system section is designed for creating common photo database of the Access control system module (is not included into Intellect base configuration). In this section it is necessary to specify netnames of computer where the photos are to be stored. Photos are to be stored in the "Person" folder (<Intellect >\Bmp\Person) (Figure 12.3-6).

Note. The "Person" folder is automatically created when the "Access control system" module is installed.

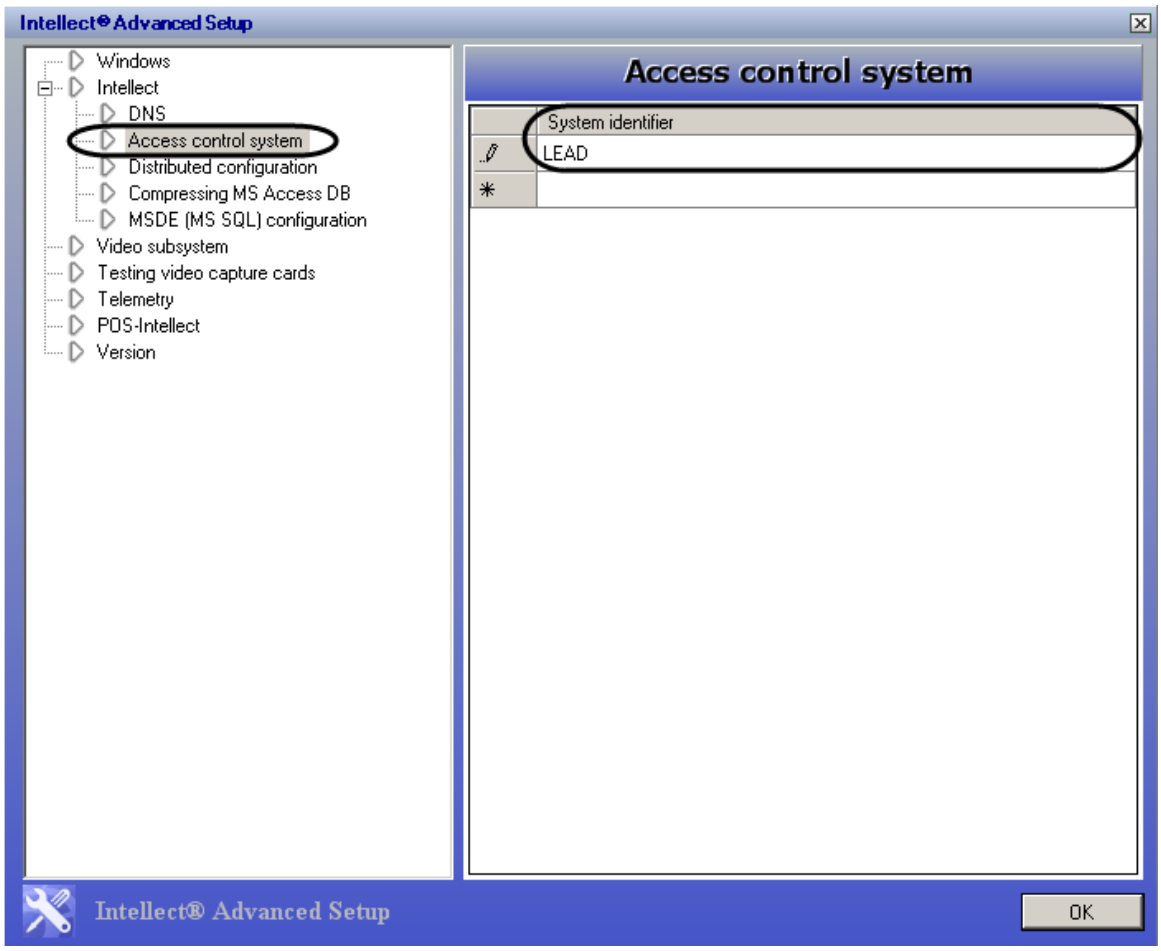


Figure 12.3-6 The Access control system section

12.3.3.5 *The settings panel for the Distributed configuration section*

The Distributed configuration section is for Intellect commom database adjustment when real computer netnames do not coincide with the names in the database (for instance when the computer with the database is replaced). The section is also used for adjusting IP-address of selected computer in the database.

The settings panel for the Distributed configuration section is shown in Figure 12.3-7.

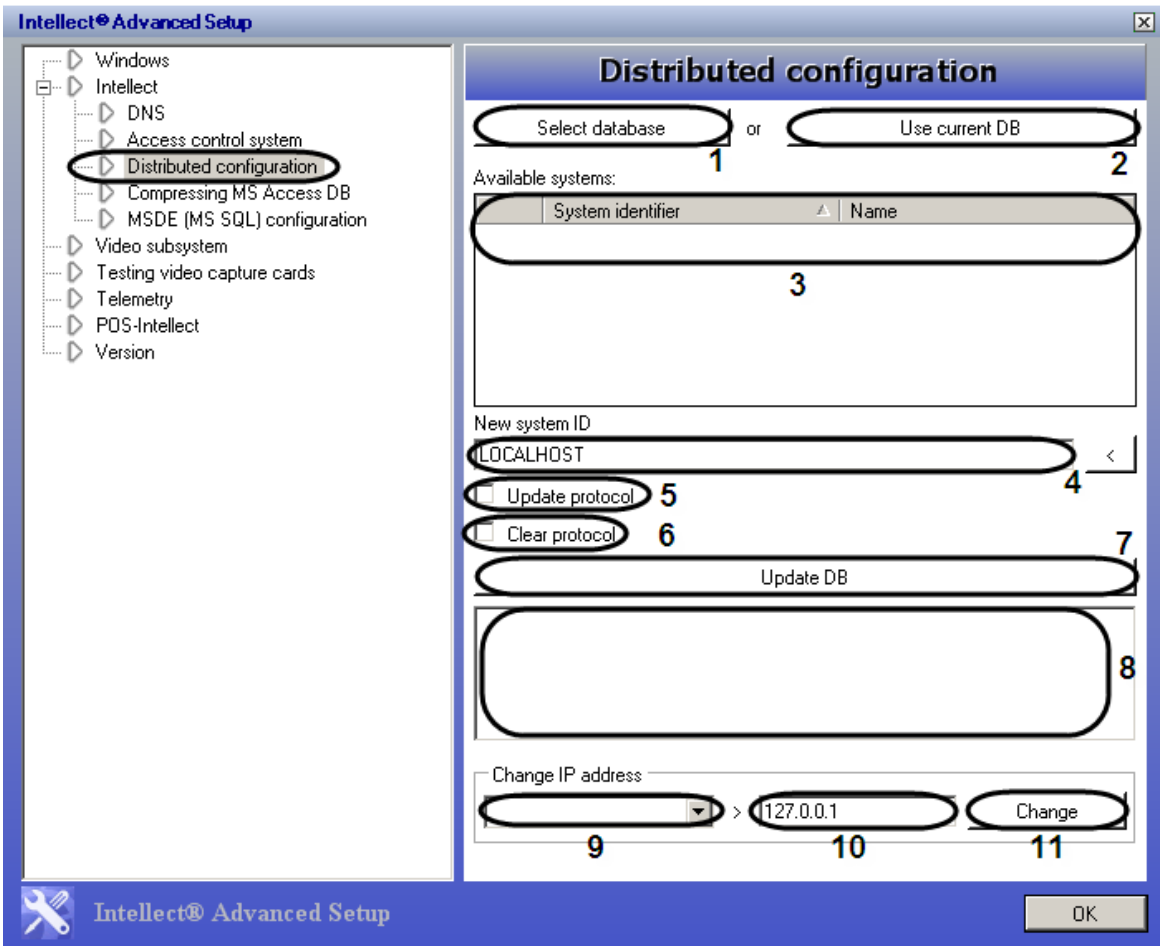


Figure 12.3-7. The Distributed configuration settings panel

The parameters of the settings panel are described in Table 12.3-4.

Table 12.3-4 Description of the Distributed configuration settings parameters

№	Parameter name	Field type	Description	Representation	Default value	Value range
1	The Select database button	Click the button	Opens the standard Data Link Properties dialog box to choose the database, where netname and/or IP-address are to be changed.	-	-	-
2	The Use current DB	Click the	Selection of main Intellect			

№	Parameter name	Field type	Description	Representation	Default value	Value range
	button	button	database			
3	The Available systems table	Automatically	Displays the list of netnames of computers that are in selected database	-	-	Netnames of computers connections between which are set on the Architecture tab
4	The New system ID field with button	Button is clicked and value is selected from the list/ typed in the field.	Specifies a new netname of a computer selected in the Available systems table	-	-	Depends on the current net settings of the required computer
5	The Update protocol checkbox	Checkbox	Replaces the computer's netname in the Events protocol table of the selected main Intellect database	Boolean type	None	Yes– computer's netname is replaced in the Events protocol table No – computer's netname is not replaced in the Events protocol table
6	The Clear protocol checkbox	Checkbox	Clears the event log from the Events protocol table of the selected main Intellect database	Boolean type	None	No – the list of registered events is not cleared. Checked – the list of registered events is cleared.
7	The Update DB button	Click the button	Runs the process of updating the selected database in accordance with given settings	-	-	-
8	The Update protocol field	Automatically	Displays updating process of the selected database	-	-	Depends on the structure of the selected database and the given settings
The Change IP address group						
9	The dropdown list with IP-	Select from the list	Specifies IP-address that is to be changed in the selected	IP-addresses of	-	Depends on the number of computers

№	Parameter name	Field type	Description	Representation	Default value	Value range
	addresses		database	computers in the selected database		connections between which are set on the Architecture tab
10	Field of setting IP-address	Type-in the value in the field	Specifies a new IP-address to be changed in the selected database	IP-address	127.0.0.1	Depends on the current net settings of the required computer
11	The Change button	Click the button	Changes the IP-address of the required computer in the selected database	-	-	-

12.3.3.6 *The settings panel for the Compressing MS Access DB section*

The Compressing MS Access DB section is designed for compressing the Intellect database of MS Access format.

Expansion of data in the database of MS Access format is caused by logical deleting of files, temporary and hidden tables (i.e. they are marked as deleted but stay physically in the database). Data compression is recommended to enhance the performance of the Intellect system. Compression means physical deleting of files marked as deleted.

The settings panel for the Compressing MS Access DB section is shown in Figure 12.3-8.

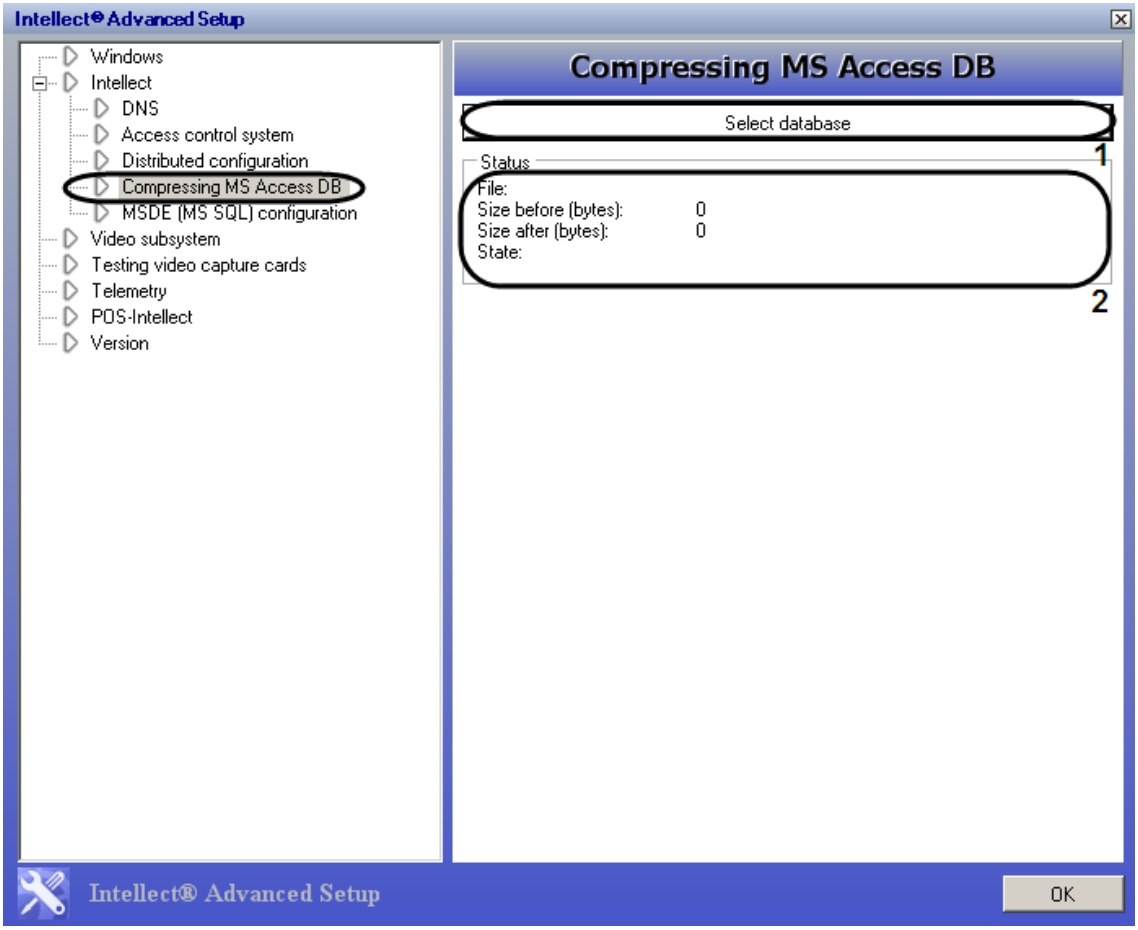


Figure 12.3-8. The Compressing MS Access DB settings panel

The parameters of the settings panel are described in Table 12.3-5.

Table 12.3-5 Description of the Compressing MS Access DB settings parameters

No	Parameter name	Field type	Description	Representation	Default value	Value range
1	The Select database button	Click the button	Opens the standard Data Link Properties dialog box for choosing the database of MS Access format that has to be compressed. Runs the compressing process.	-	-	-
2	The Status table	Automatically	1. The “File” line displays the full pathname to the database 2. The “Size before (bytes)” line displays the database size before compression. 3. The “Size after (bytes)” line displays the database size after compression. 4. The “State” line displays current status of compression (processing, compression	-	-	-

No	Parameter name	Field type	Description	Representation	Default value	Value range
			finished, compression failed)			

12.3.3.7 *The settings panel for the MSDE (MS SQL) configuration section*

The MSDE (MS SQL) configuration section is designed for setting the limits of RAM space for MS SQL Server operation with databases of SQL format. This limitation enhances the performance of the system.

The settings panel for the MSDE (MS SQL) configuration section is shown in Figure 12.3-9.

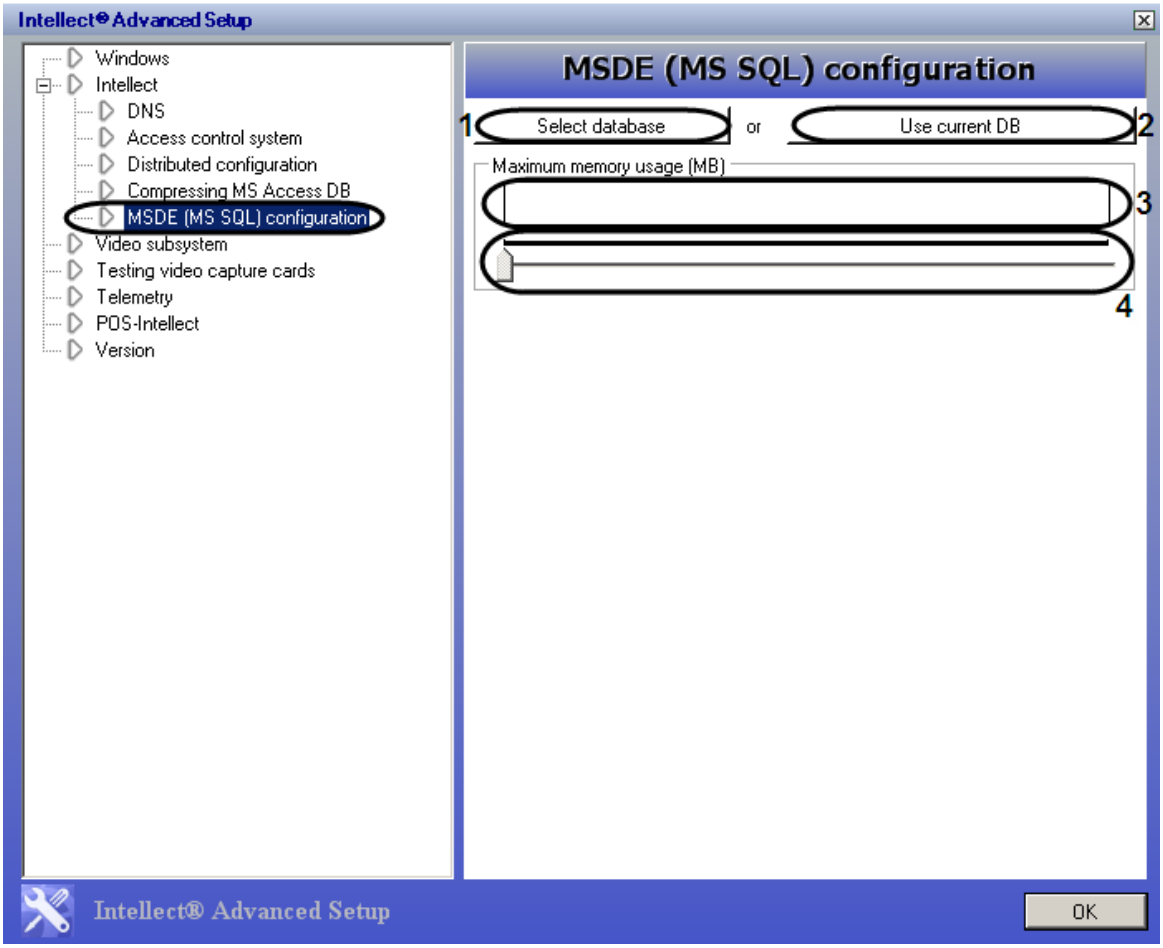


Figure 12.3-9. The MSDE (MS SQL) configuration settings panel

The parameters of the settings panel are described in Table 12.3-6.

Table 12.3-6 Description of the MSDE (MS SQL) configuration settings parameters

№	Parameter name	Field type	Description	Representation	Default value	Value range
1	The Select database	Click the button	Opens the standard Data Link Properties dialog box for choosing the database of MS	-	-	-

№	Parameter name	Field type	Description	Represe ntation	Default value	Value range
	button		SQL format the RAM space for which is to be limited.			
2	The Use current DB button	Click the button	Selects the main Intellect database.	-	-	-
3	The Maximum memory usage (MB) indicator	Automatically	Displays the relative (red strip) and absolute(in MB) space of RAM for SQL Server operation	%, MB	-	Depends on full space of RAM
4	The Maximum memory usage (MB) slider	Set in the position	Specifies the required space of RAM for SQL Server operation	-	Correspon ds to the indicator's state.	Depends on full space of RAM

12.3.3.8 *The settings panel for the Video subsystem section*

The Video subsystem section is designed for advanced setup of the video subsystem in order to enhance the performance of the Intellect system.

The settings panel for the Video subsystem section is shown in Figure 12.3-10.

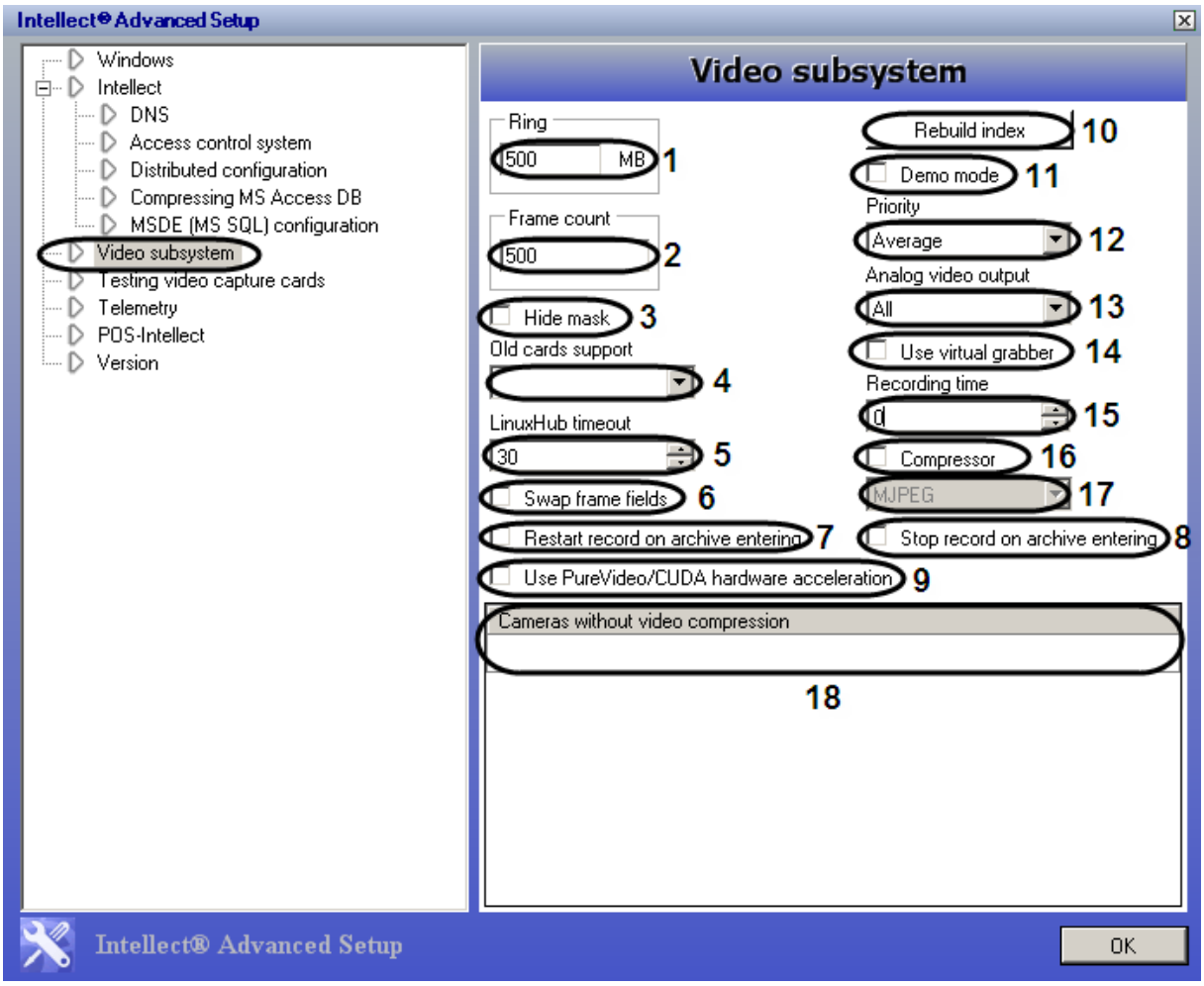


Figure 12.3-10. The Video subsystem settings panel

The parameters of the settings panel are described in Table 12.3-7.

Table 12.3-7 Description of the Video subsystem settings parameters

No	Parameter name	Field type	Description	Representation	Default value	Value range
1	The Ring field	Type-in the value	Sets the disk space to be left free for recording temporary files not for video archive. When this limit is reached, the archive will be recorded as follows: the earliest recordings will be deleted. New video archive files will be recorded instead of them. In case when two or more disks are in use for video recording, transfer to the next disk is implemented when no free space is left. When all disks are full, the system starts rewriting the oldest recordings. As a result, the recordings will form a loop	MB	1000	Depends on the disk space

No	Parameter name	Field type	Description	Represe ntation	Default value	Value range
			(Ring). The size of free disk space can not be less than it is set by the “FreeMbCritical” line parameter in the “HKEY_LOCAL_MACHINE\SOFTWARE\AXXONSOFT\Intellect\VIdeo” registry for 32-bit system and “HKEY_LOCAL_MACHINE\Software\Wow6432Node\AXXONSOFT\Intellect\Video” for 64-bit system (100 MB by default). This means that when the limit set by the “Ring” parameter is reached, the maximum size of the temporary file is “FreeMbCritical”. Video can contain less frames, then it is set by the “Frame count” parameter.			
2	The Frame count field	Type-in the value	Sets the maximum number of frames in one recording file.	frame	500	10 to 999. It is not recommended to change the default value.
3	The Hide mask checkbox	Checkbox	Prohibits displaying video hidden with the motion detector mask. Video area marked with motion detector mask will be grey-filled. This feature supports only uncompressed video from FS or FX video capture cards.	Boolean type	No	No — video hidden with the mask is displayed Yes – video hidden with the mask video is not displayed
4	The Old cards support dropdown list	Select in the list	Specifies the types of video capture cards that are phased out, but supported by the Intellect system. To support a phased out video capture card in the Intellect system, select the FS5 card type, while setting up the Video Capture Card object and specify the actual card type in the tweaki.exe settings. Otherwise, the card is not to be recognized by the Intellect system. This parameter operates only on 32-bit OS.	Type of phased out video capture cards	-	KV1999, KV2001, KV2002, KV2003, LinuxHub (models produced before 2003)

No	Parameter name	Field type	Description	Represe ntation	Default value	Value range
5	The LinuxHub timeout list	Type-in the value/select from the list	Sets the maximum timeout for Intellect system to maintain the response of LinuxHub server	sec	30	0 to 400000
6	The Swap frame fields checkbox	Checkbox	Switches Intellect from basic to additional driver if there are video artifacts while using basic driver	Boolean type	None	No – Intellect operates with basic driver Yes – Intellect operates with additional driver
7	The Restart record on archive entering checkbox	Checkbox	Enables restarting record on archive entering.	Boolean type	None	Yes – patch that has been recorded on archive entering is stopped and a new one starts. As a result the user who enters the archive sees a freeze frame corresponding to that on exiting. No – recording is not stopped on archive entering
8	The Stopt record on archive entering checkbox	Checkbox	The Pause button is pressed on archive entering	Boolean type	None	Yes – the Pause button is pressed on archive entering, archive navigation using arrow keys. No – the Pause button is not pressed on archive entering.
9	The Use PureVideo/CUDA hardware acceleration checkbox	Checkbox	Enables PureVideo/CUDA support on the Server while decompressing video from IP devices if PureVideo HD card of the 2nd or 3rd generation (Nvidia VP2 and VP3) is installed. Used to reduce Server load due to resources of graphics processor	Boolean type	Yes	No – PureVideo/CUDA is not in use Yes – PureVideo/CUDA is in use
10	The Rebuild Index button	Click the button	Deletes the database index file. After deleting the index, restart the Intellect system for a new index to be created.	-	-	-
11	The Demo mode checkbox	Checkbox	Runs the Intellect system in demo mode. One channel is opened for video playback. This can be any of the video archive files located in the root of the Intellect folder.	Boolean type	No	No – demo mode is disabled Yes – demo mode is enabled

No	Parameter name	Field type	Description	Represe ntation	Default value	Value range
12	The Priority dropdown list	Select the value from the list	Sets the priority of all Intellect video system processes	Names of priority processe s	Below normal	Realtime, High, Above normal, Normal, Below normal, Low.
13	The Analog video output dropdown list	Select the value from the list	Selects analog output operation mode.	Names of availiabl e modes	All	All - video signals from all the analog outputs are displayed on one screen One – video signal from one analog output is displayed on one screen
14	The Use virtual grabber checkbox	Checkbox	Allows access to virtual video capture cards settings (grabber) in Intellect	Boolean type	No	Yes – the Virtual value is available from the Type dropdown list on the settings panel of the Video capture card objects No – the Virtual value is not available for the Video capture card objects
15	The Recording time list	Type-in the value/select from the list	Sets the length of the file in seconds, restricting fragment's size not by number of frames but by time of its recording.	Time in sec	0	Unlimited
16	The Compressor checkbox	Checkbox	Enabling/disabling video conversion into Motion Wavelet/MJPEG format	Boolean type	None	Yes – conversion is enabled. No – conversion is disabled.
17	The Compressor dropdown list	Select the value from the list	Selects format into which video is to be converted	Available video formats	MJPEG	MJPEG, Motion Wavelet
18	The Camera without video compression table	Type-in the value in the field	Specifies the numbers of cameras connected to the video capture cards with compression. There is no compression for these cameras, i.e. the compressor settings in Intellect are ignored.	Camera's serial number	-	Depends on the number of cameras registered in the system

Note. Setting the non-zero value to the "Recording time" parameter does not exclude the "Frame count" parameter. If the values for both parameters are set, then the file recording will be performed in accordance with the value which comes first. For instance, if the value of "Recording time" is equal to 10 seconds and "Frame count" is equal to 500 frames (by default) and in ten seconds the fragment consists of 80 frames, then 80-frame file is recorded.

12.3.3.9 *The settings panel for the Testing video capture cards section*

The Testing video capture cards section is designed to test the connection of the cameras to the video capture card.

Note. To use this functionality Intellect is to be logged off. Otherwise there is "Cards not found" message.

The settings panel for the Testing video capture cards section is shown in Figure 12.3-11.

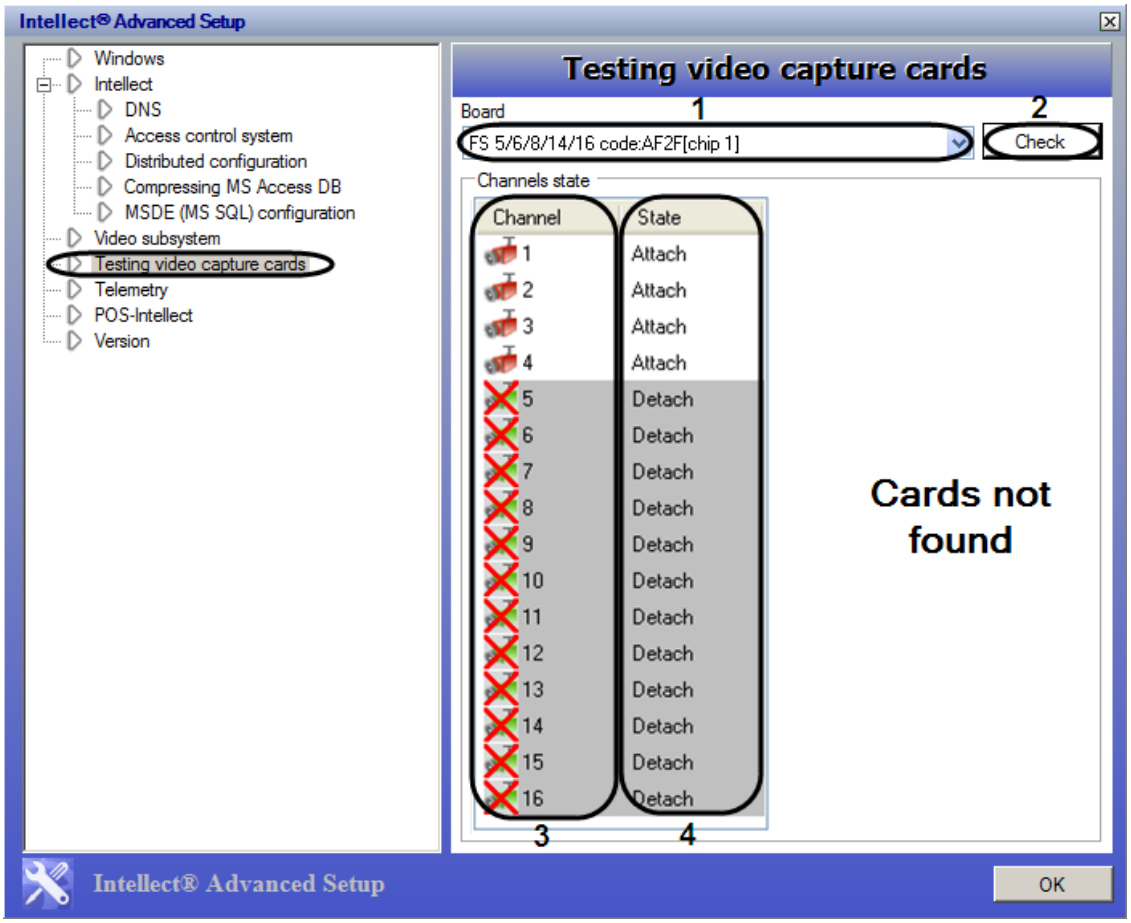


Figure 12.3-11. The Testing video capture cards settings panel

The parameters of the settings panel are described in Table 12.3-8.

Table 12.3-8 Description of the Testing video capture cards settings parameters

No	Parameter name	Field type	Description	Representation	Default value	Value range
1	The Board dropdown list	Dropdown list	Specifies the video capture card which camera	List of video capture	-	Depends on the number of installed

No	Parameter name	Field type	Description	Representation	Default value	Value range
			connections are to be checked	cards		video capture cards
2	The Check button	Click the button	Starts the testing process of the video capture card. The Intellect system is to be closed at the time of testing.	-	-	-
The Channels state table						
3	The Channel column	Automatically	Displays the channels numbers of the selected video capture card	-	-	From 1 to 16
4	The State column	Automatically	Displays the state of camera connections to the channels of the selected video capture cards			Attach – camera is connected Detach – camera is diskonnected

12.3.3.10 *The settings panel for the Telemetry section*

The Telemetry section is used for setting the telemetry control elements.

The settings panel for the Telemetry section is shown in Figure 12.3-12.

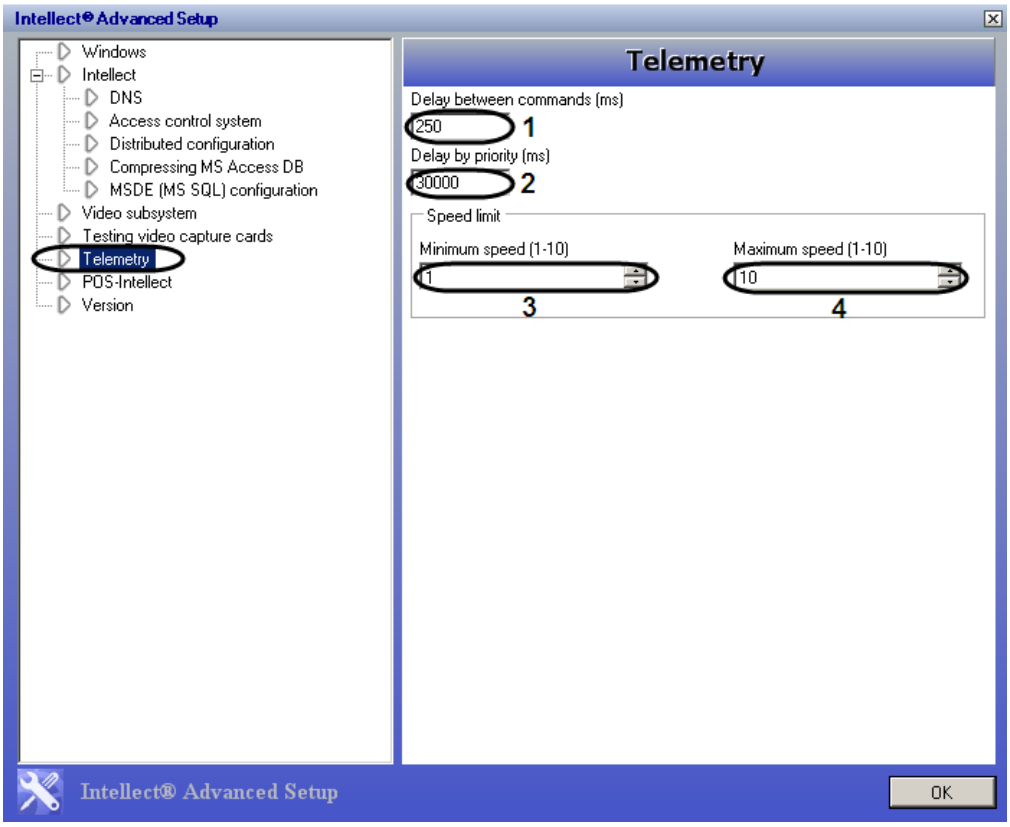


Figure 12.3-12 The settings panel for the Telemetry section

The parameters of the settings panel for the Telemetry section are described in Table 12.3-9.

Table 12.3-9 Description of the Telemetry settings parameters

No	Parameter name	Field type	Description	Representation	Default value	Value range
1	The Delay between commands (ms) field	Type-in the value	Sets the delay time between executing the commands for PTZ devices	ms	250	No limitations. It is not recommended to change the default value
2	The Delay by priority (ms) field	Type-in the value	Sets the delay time between switching from the PTZ control to an interface with lower priority	ms	30000	No limitations. It is not recommended to change the default value
The "Speed limit" group						
3	The Minimum speed (1-10) field	Type-in the value	Sets the minimum rotation speed of PTZ devices	Speed in standard units	1	1-10
4	The Maximum speed (1-10) field	Type-in the value	Sets the maximum rotation speed of PTZ devices	Speed in standard units	10	1-10

12.3.3.11 *The settings panel for the POS section*

The POS section is designed for setting the POS module for controlling cashier operations (is not included in INTELLECT™ basic version).

12.3.3.12 *The settings panel for the Version section*

The Version section provides information about INTELLECT™ software modules: versions, paths to executable files and .dll libraries, file sizes and dates of creation and modification.

The settings panel for the Version section is shown in Figure 12.3-13.

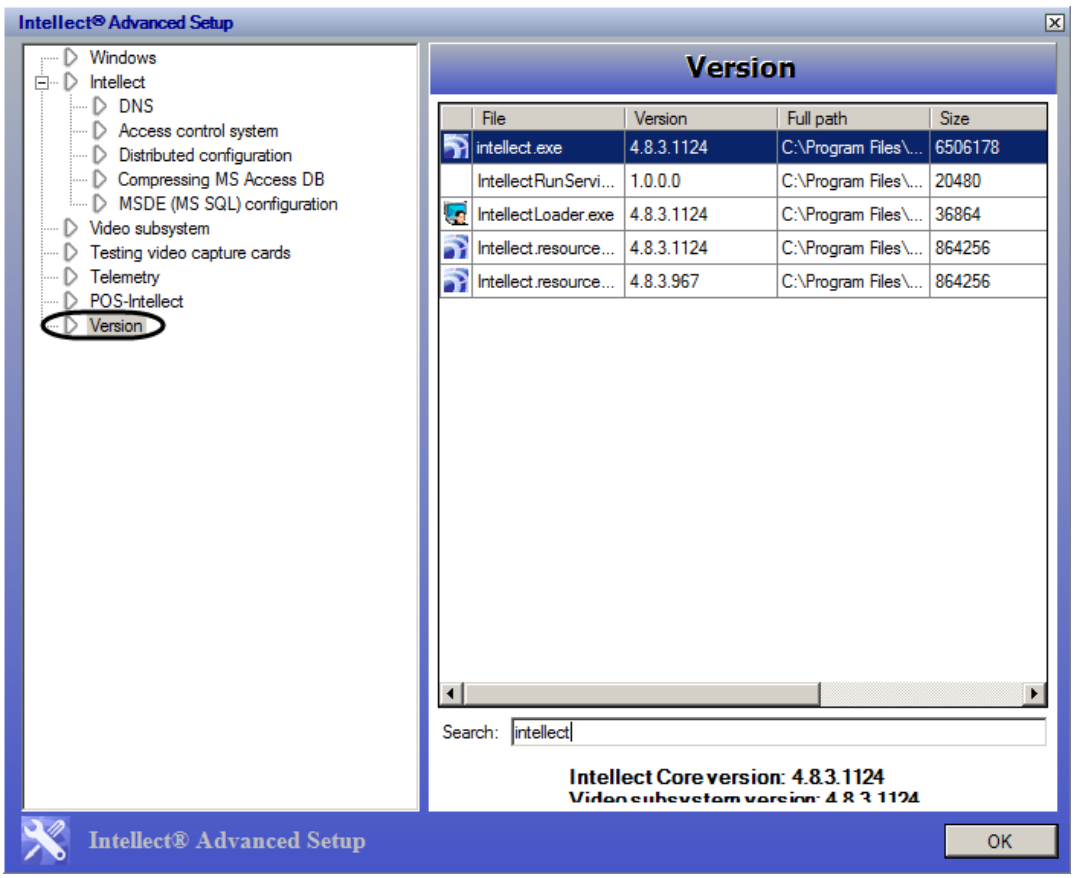


Figure 12.3-13. The Version settings panel

12.3.4 Typical tasks concerning system extended settings

12.3.4.1 *Selecting and enabling the debug mode of Intellect software*

Debug mode is a special operation mode when the Debug Window is open, and is designed for analyzing the progress of Intellect software operation and for prompt debugging in case errors occur (Figure 12.3-14).

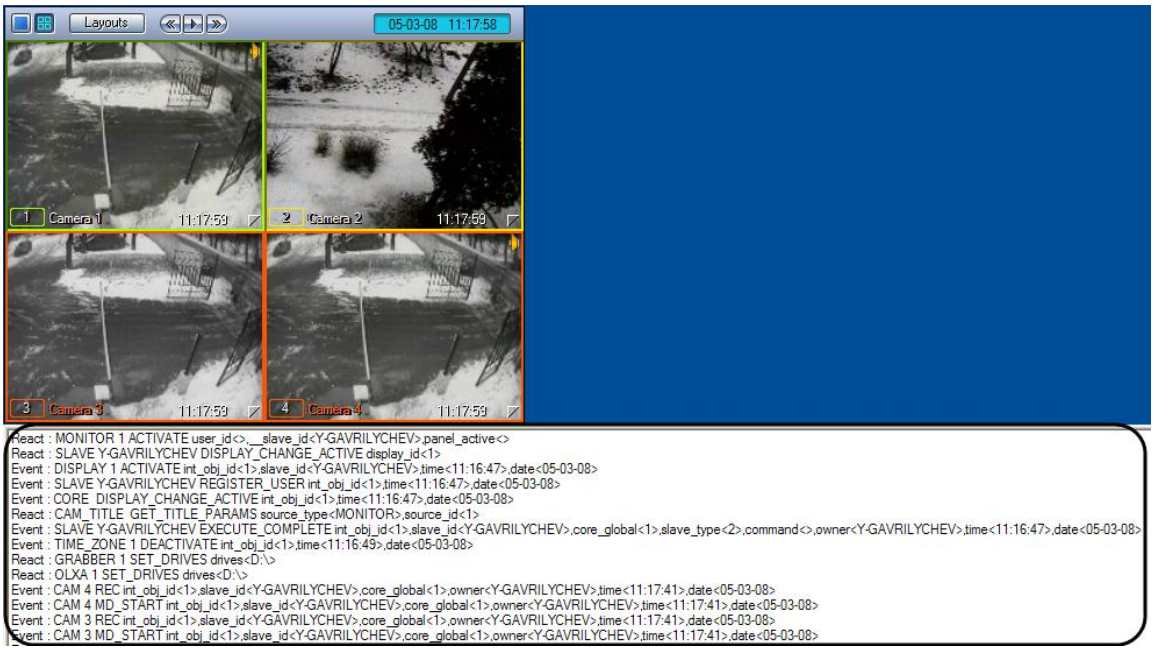


Figure 12.3-14. Debug mode. Debug window

By default, debug mode is disabled. To enable debug mode, do the following:

1. Close the Intellect software.
2. Start the Tweaki.exe utility (see the Start and Shut down the Utility)
3. Select the Intellect node in the tree on the left side of the utility dialog box.
4. Change the parameter Debug Mode from None to Debug 1, Debug 2 or Debug 3 (see Windows section settings panel).
5. Click the OK button.
6. Start the Intellect system.

The Debug Window item will appear in the Intellect main control menu (Figure 12.3-15).

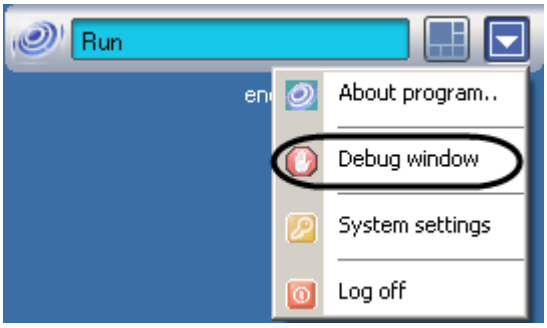


Figure 12.3-15. Debug Window item in the main control menu

7. Select Debug Window in the main control menu to open the Debug window (Figure 12.3-15). The selected item will be marked with a tick (Figure 12.3-16).

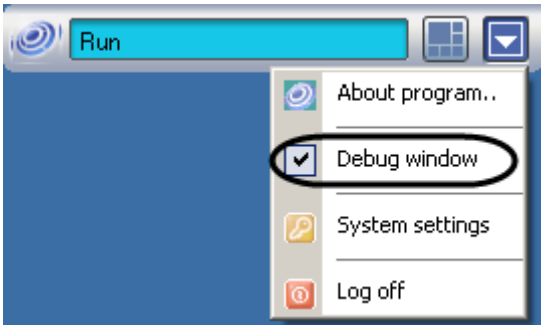


Figure 12.3-16. Debug Window item is selected

To hide the Debug window, select the Debug Window item in the menu once more.

NOTE. The debug mode slows the system down and uses a lot of system resources. We strongly recommend to enable debug mode for debugging purposes only and to disable it when all the settings are completed.

12.3.4.2 *Extended setup of the distributed architecture*

The Tweaki.exe utility allows enabling the mode for sending video over the network with no compression. To enable this mode, do the following:

1. Close Intellect software if it was open.
2. Start the Tweaki.exe utility (see the Start and shut down).
3. Select the Intellect node in the tree on the left side of the utility dialog box (Figure 12.3-17, 1).
4. Check the Receive Uncompressed Video checkbox (Figure 12.3-17, 2).
5. Click OK.

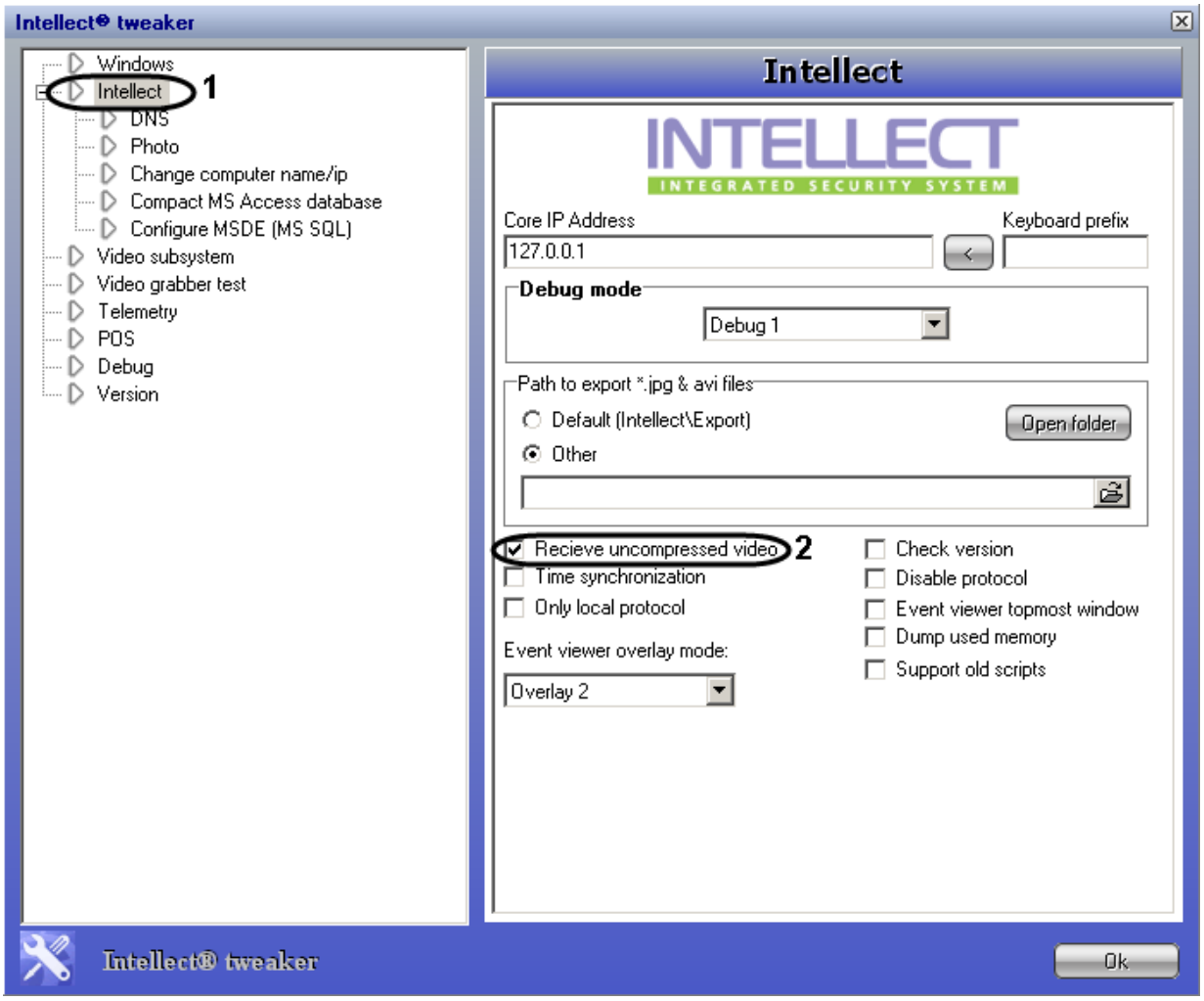


Figure 12.3-17. Enabling receiving uncompressed video

12.3.4.3 *Changing computer names and IP-addresses in the configuration database of the Intellect system*

The Change Computer Name/IP node allows changing the computer name and/or IP-address in the Intellect database.

To change the computer name in the configuration database, do the following:

1. Close the Intellect software if it is open.

2. Start the Tweaki.exe utility (see the Start and Shut down)

3. Select the Change Computer Name/IP node in the tree on the left side of the utility dialog box.

4. Select the database containing the computer name to be changed (see the Selecting an SQL Database and Setting up Its Parameters section).

In result the Available Slaves table will show all computer names registered in the selected database (Figure 12.3-18).

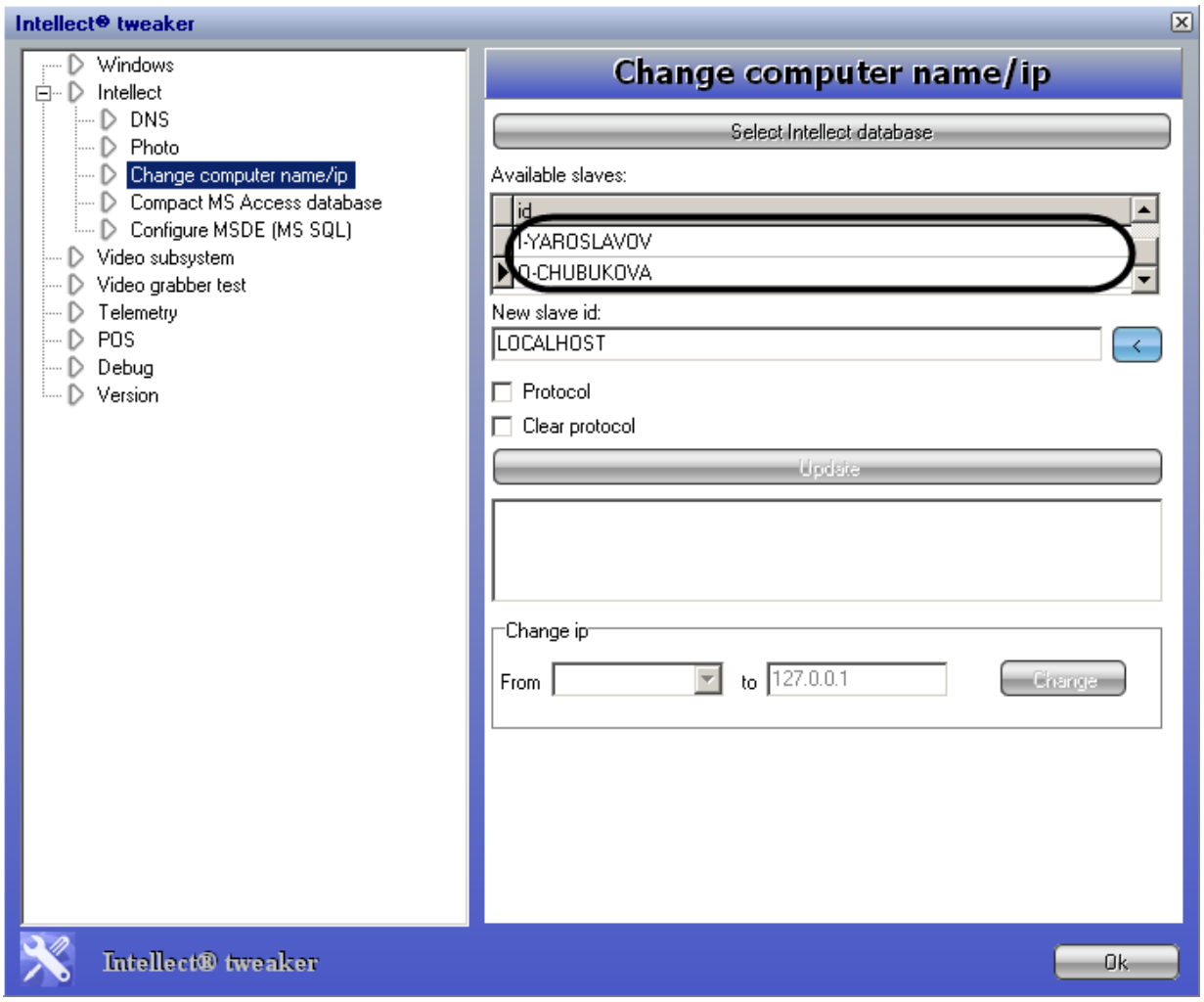


Figure 12.3-18. The list of computer names in the selected database

5. To select the computer name to be changed in the Available Slaves table, right-click an appropriate row. The row will be highlighted (Figure 12.3-19).

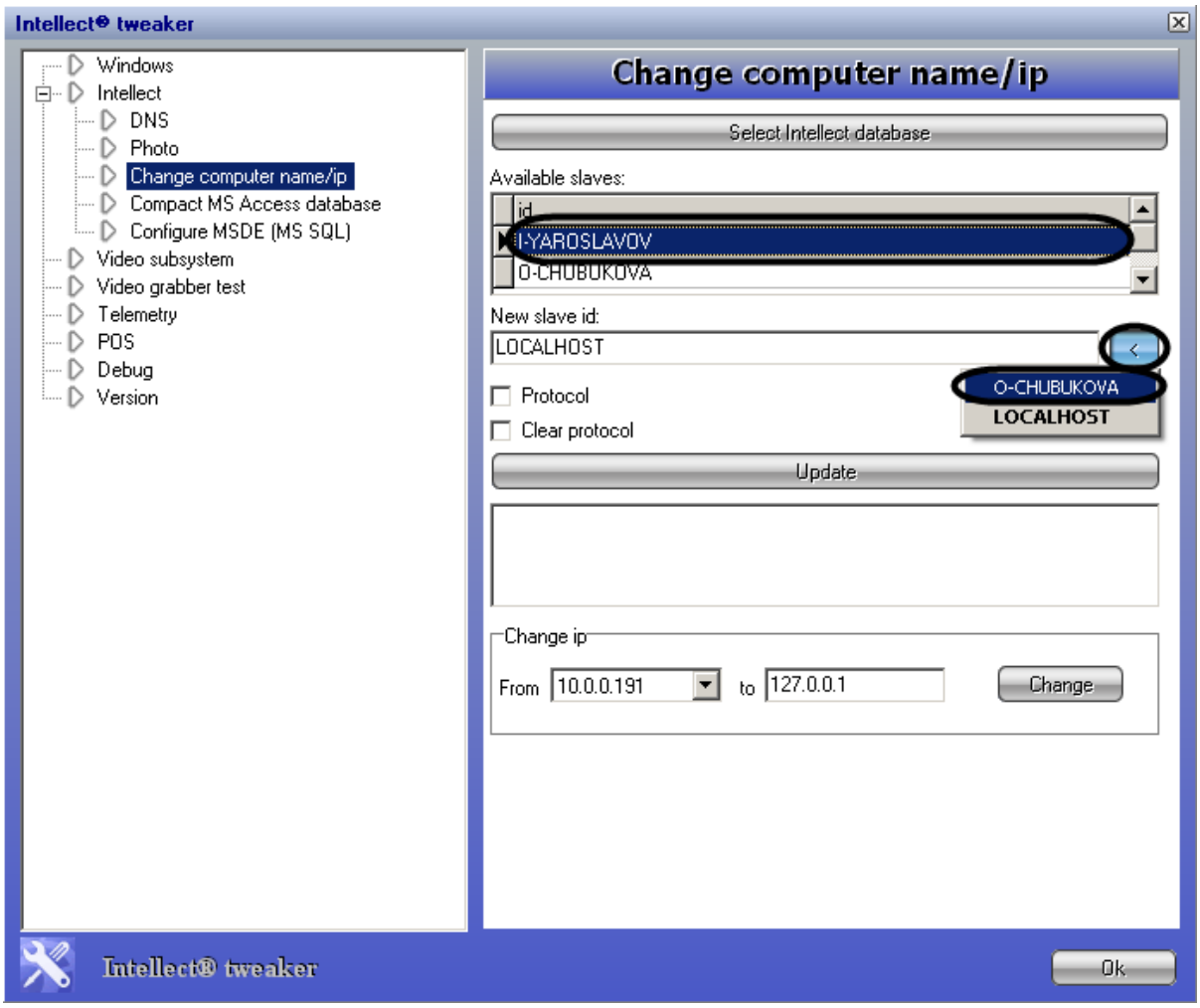


Figure 12.3-19. Selecting a computer name

6. Click the button next to the New Slave ID field to see the drop-down list of available computer names.

7. Select the required computer name in the list. The selected name will appear in the New Slave ID field (Figure 12.3-20, 1).

8. Check one of the following checkboxes: Check the Protocol checkbox to replace the computer name in the events log, or the Clear Protocol checkbox to delete all records in the log. Only one of two checkboxes should be checked (Figure 12.3-20, 3).

9. Click the Update button (Figure 12.3-20, 4). The progress of replacing computer names for a new one will be displayed in the field below the Update button (Figure 12.3-20, 5).

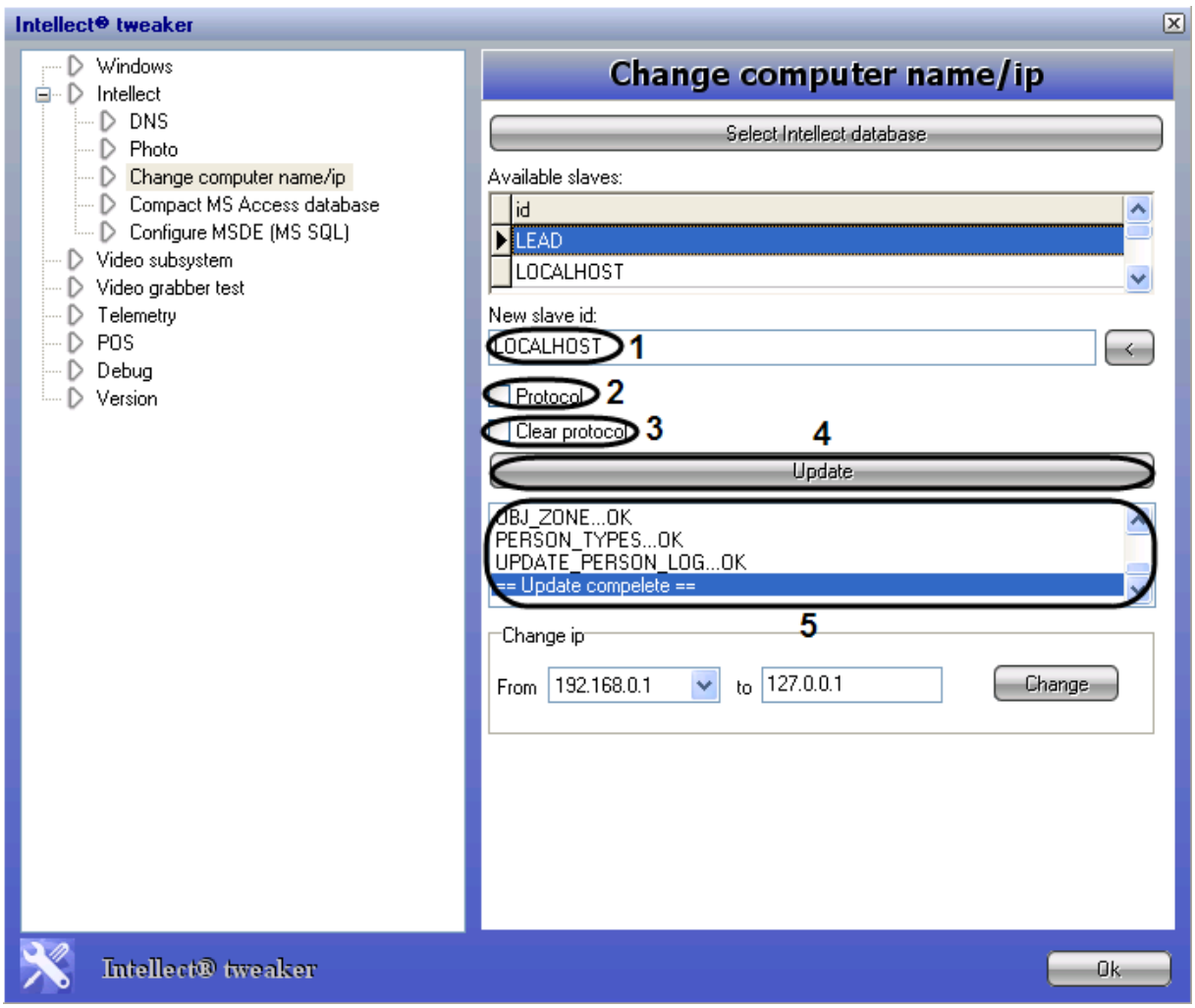


Figure 12.3-20. Updating the database

To change the IP-address in the configuration database, do the following (Figure 12.3-21):

1. Do steps 1-4 of the previous instructions (Figure 12.3-21, 1).
2. Select the IP-address to be replaced from the From drop-down list (Figure 12.3-21, 2).
3. Enter a new IP-address into the To field, or leave the default LOCALHOST value (Figure 12.3-21, 3).
4. Click the Change button (Figure 12.3-21, 4).

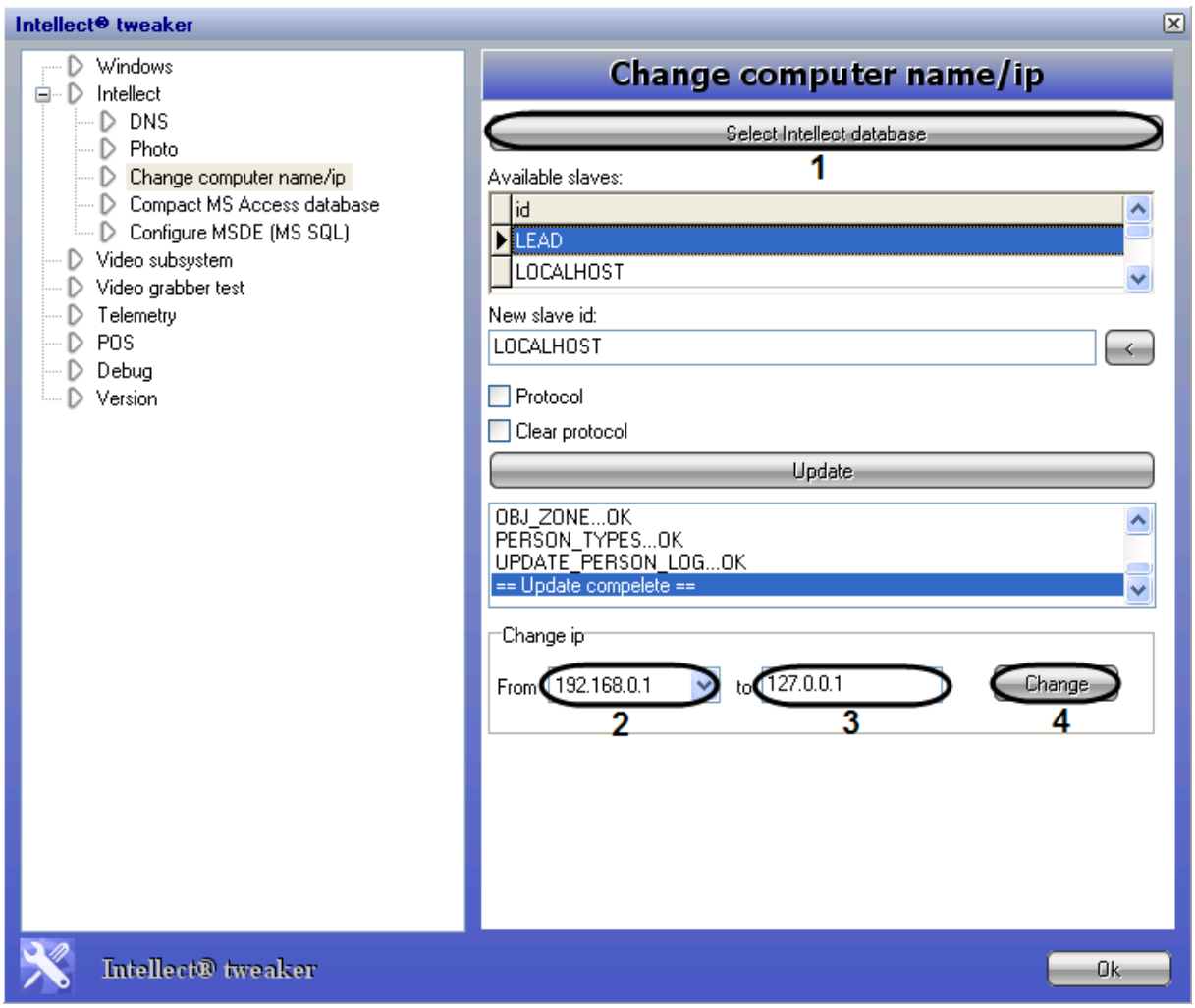


Figure 12.3-21. Replacing an IP-address in the database

The IP-address in the From field and in the database will be changed.

12.3.4.4 *Limiting memory usage by an MS SQL server*

A certain amount of disk space is allocated for the SQL server for storing its data, functions and other internal structures. Allocated RAM is determined by default by the total RAM resources available for the SQL server in the system. The Tweaki.exe utility allows limiting the amount of RAM allocated for the SQL server. Do the following:

a. Close the Intellect software if it is open.

b. Start the Tweaki.exe utility (see the Start and Shut down)

c. Select the Configure MSDE (MS SQL) node in the tree on the left side of the utility dialog box (Figure 12.3-22, 1).

d. Select the MS SQL database to limit the allocated RAM by doing one of the following (Figure 12.3-22, 2):

1. Click the Select MS SQL Server button (see the Selecting an SQL Database and Setting up Its Parameters section);

2. Click the Use Current Intellect Database button.

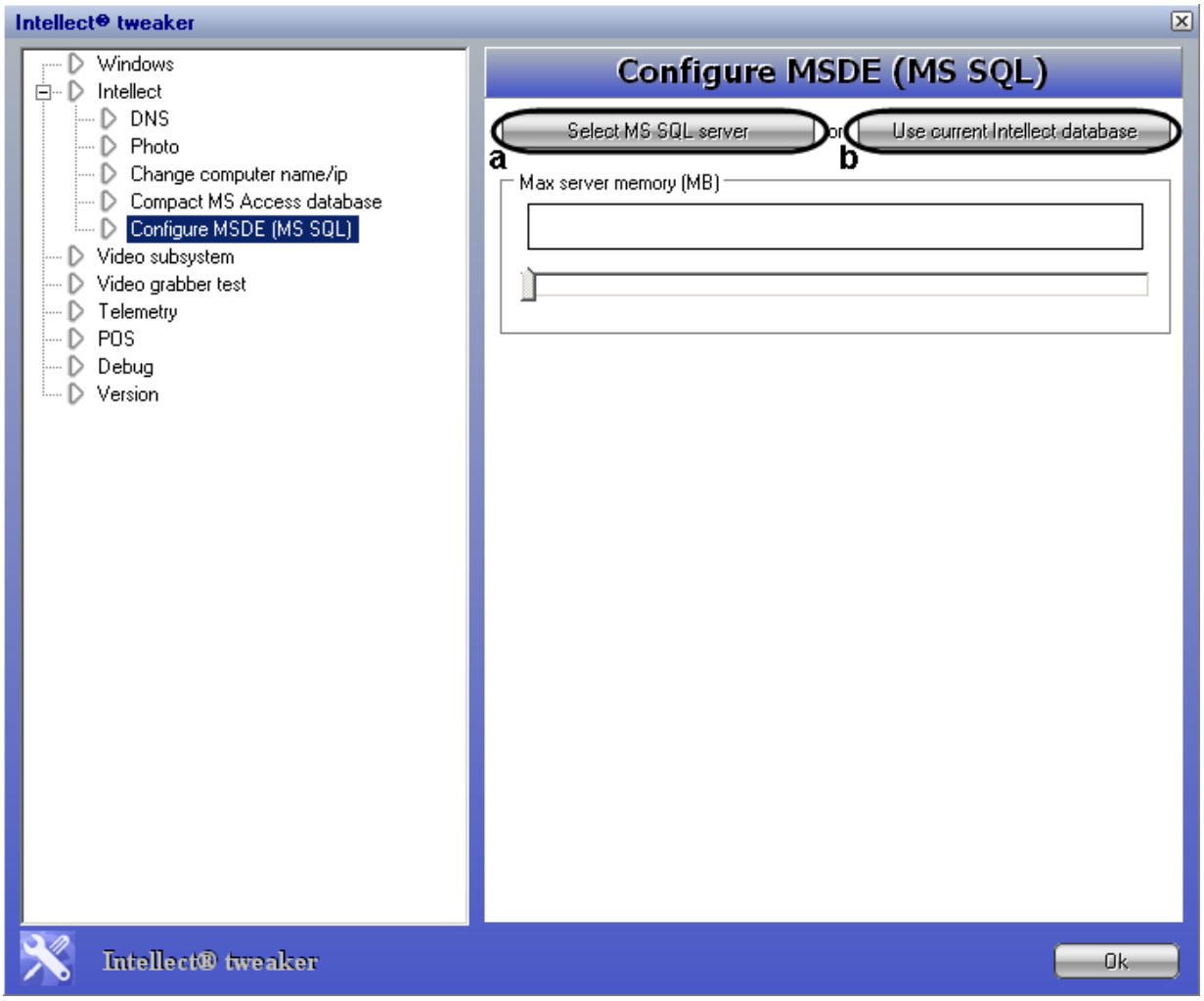


Figure 12.3-22. Click one of the buttons to select the database

The Max Server Memory (MB) group will display the amount of space allocated for the selected database (Figure 12.3-23, 1).

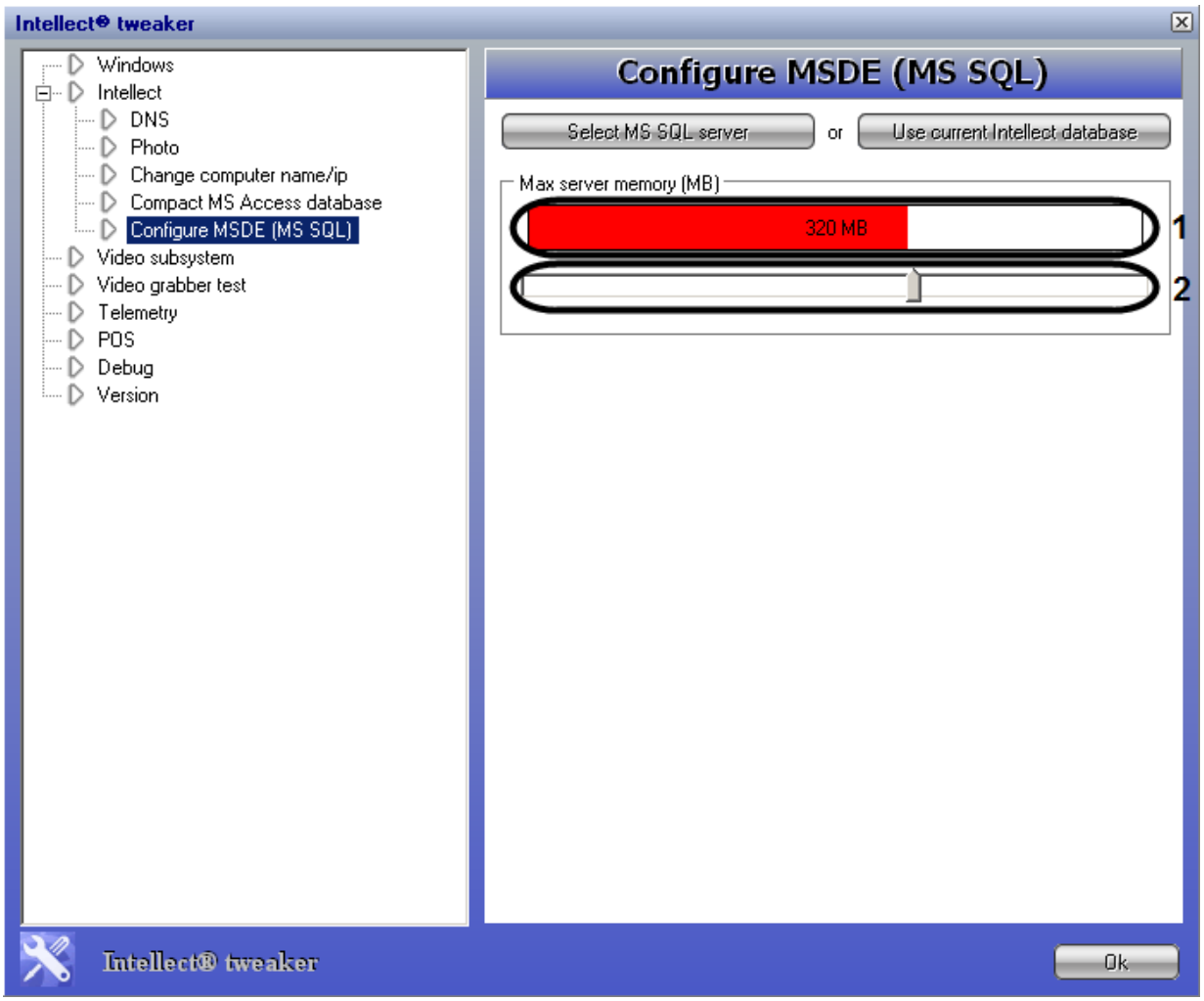


Figure 12.3-23. Current memory usage by the selected database

e. Drag the slider to a position representing the required amount of memory to be allocated for the SQL server (Figure 12.3-23, 2).

f. Click OK.

12.3.4.5 *Re-indexing the audio and video recordings archive*

To re-index the audio and video archives, do the following:

1. Close the Intellect software if it is open.
2. Start the Tweaki.exe utility (see the Start and Shut down)
3. Select the Video Subsystem node in the tree on the left side of the utility dialog box (Figure 12.3-24, 1).
4. Click the Rebuild Index button to delete the INDEX folder with .idx files containing the indexes to the video recording files in the archive (Figure 12.3-24, 2).

Note.Pressing the button «Rebuild index» sets the value of parameter Rebuild Index=1 in the register's branch of OS Windows: HKLM\SOFTWARE\AxxonSoft\INTELLECT\VIDEO. Afterarchive reindexing the value of the parameter Rebuild Index=0 is automatically set.

*Whwn Intellect PC is run together with Rebuild Index=1 parameter, the archive is reindexed without any attmpt to reas it from *.idx files.*

5. Click OK.
6. Start the Intellect system again. A new INDEX folder will be created in the video archive folder, containing new indexes.

This completes re-indexing of the database.

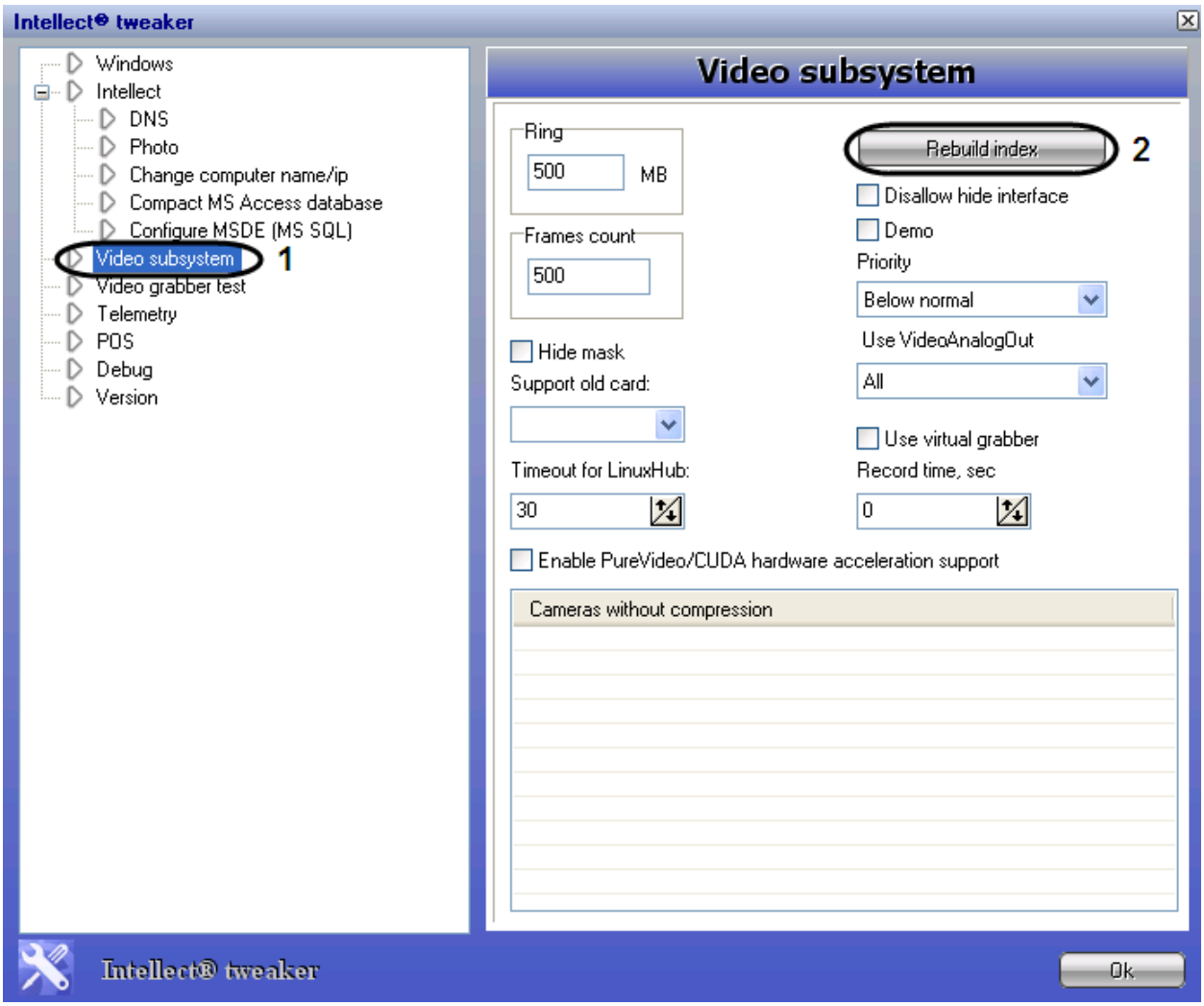


Figure 12.3-24. Deleting the INDEX folder

12.3.4.6 *Enabling the Pure video/CUDA hardware acceleration*

It is possible to enable the PureVideo/CUDA hardware acceleration when video signals are decompressed from IP devices. In this case decompression may be carried out by Server's graphics processor and this reduces the load on CPU.

Attention! It is recommended to update the driver of the card that supports the PureVideo/CUDA hardware acceleration. Drivers are available for downloading at the official web page of Nvidia (www.nvidia.com).

Note.Detailed information about the PureVideo/CUDA hardware acceleration is given in reference manual of Nvidia company.

The PureVideo/CUDA hardware acceleration functionality is implemented correctly when Server meets the following requirements of the software platform:

1. Is managed by OS Windows XP/Vista/7
2. The PureVideo HD video card of the second or third generation is installed (Nvidia VP2 and VP3)

Note1. Widespread models of video cards that support the PureVideo/CUDA:

1 Nvidia GeForce GTX 295;

2 Nvidia GeForce GTX 285;

3 Nvidia Quadro NVS 450;

4 Nvidia GeForce 9800 GT;

5 Nvidia Quadro NVS 420;

6 Nvidia Quadro NVS 295.

Note2. In the Intellect software package (version 4.7.6) the PureVideo/CUDA hardware acceleration is applied only for video signals' decompression in H264 codec.

Note3. If the resolution more than 1920x1088 is set in the camera, then the PureVideo/CUDA hardware acceleration is not used for video signals' decompression.

To enable the PureVideo/CUDA hardware acceleration, do the following:

1. Shutdown the Intellect software package if it was run on the computer.
2. Run the "Tweaki.exe" utility (See the "Starting and shutting-down the utility" section).
3. Select the "Video subsystem"section in the tree in the upper left corner of the utility's dialog box (Figure 12.3-25, 1).

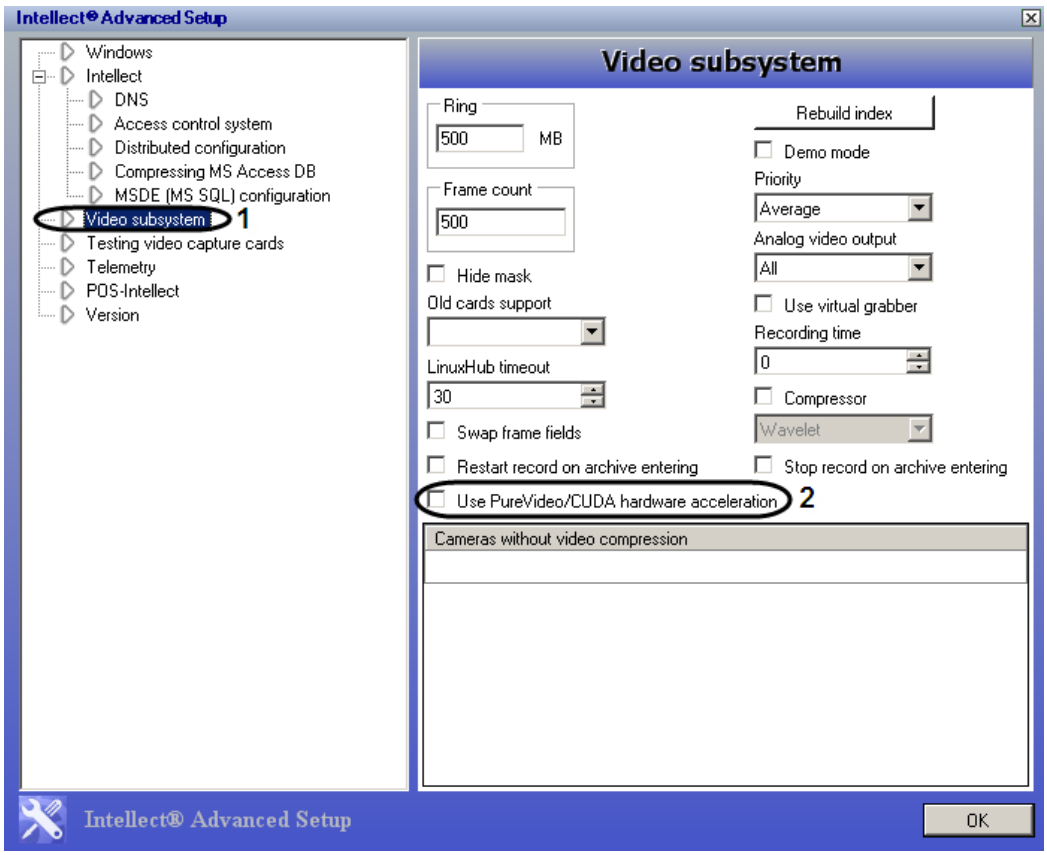


Figure 12.3-25 Enabling the PureVideo/CUDA hardware acceleration

4. Set the “Enable PureVideo/CUDA hardware acceleration” checkbox (Figure 12.3-25, 2).

5. Click the “OK” button.

6. Go to the settings panel for the “Camera” object (Figure 12.3-26).

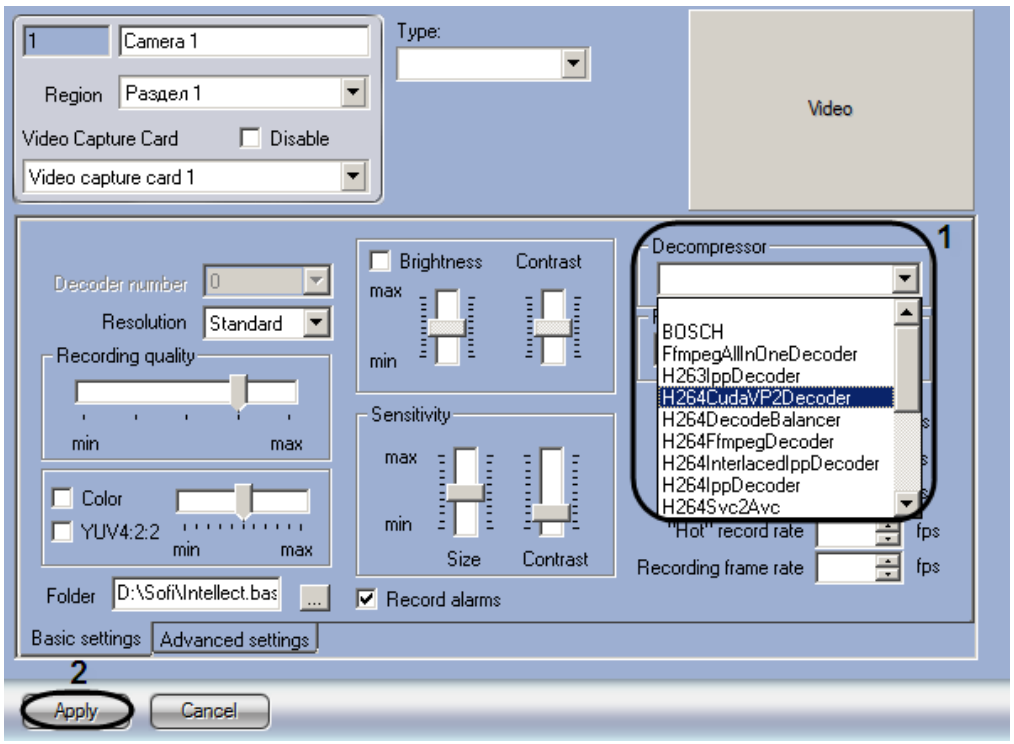


Figure 12.3-26 The decompressor selection

7. In the “Decompressor” drop-down list select the “H264CudaVP2Decoder” value (Figure 12.3-26, 1).
8. Click the “Apply” button (Figure 12.3-26, 2).

The PureVideo/CUDA hardware acceleration is now enabled.

12.3.4.7 *Testing operability of video capture cards*

To test the operability of a video capture card, its channels should be tested using the Video Grabber Test module of the Tweaki.exe utility. Do the following:

1. Close the Intellect software if it is open.
2. Start the Tweaki.exe utility (see the Starting Tweaki.exe Utility section)
3. Select the Video Graber Test node in the tree on the left side of the utility dialog box (Figure 12.3-27).

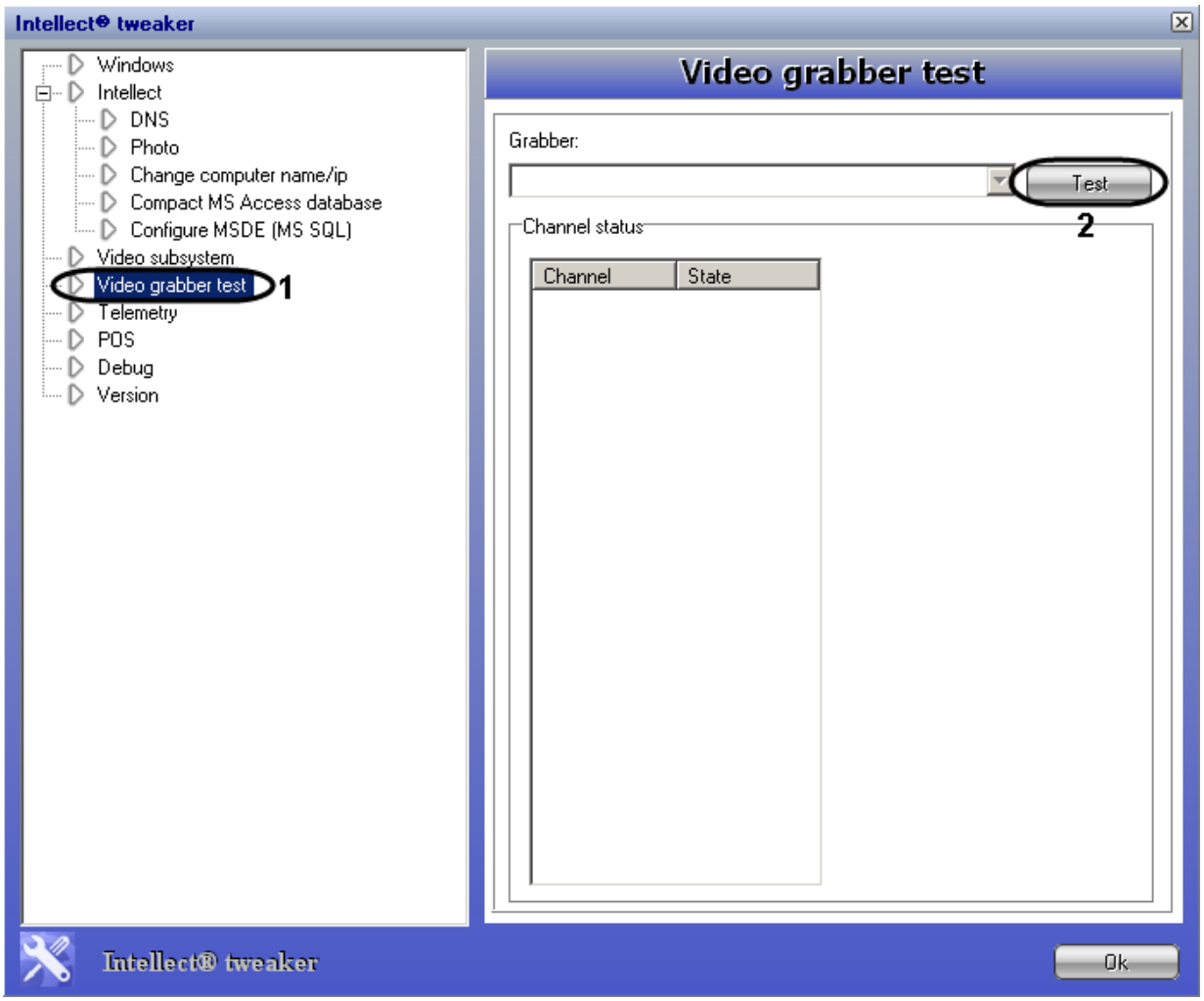


Figure 12.3-27. Testing channels of the video capture card

The Grabber field will display the name of the video capture card, and the Channel Status table will show the information about each channel of the card (number and status). The confirmation of successful testing will be displayed to the right of the Channel Status table (Figure 12.3-28).

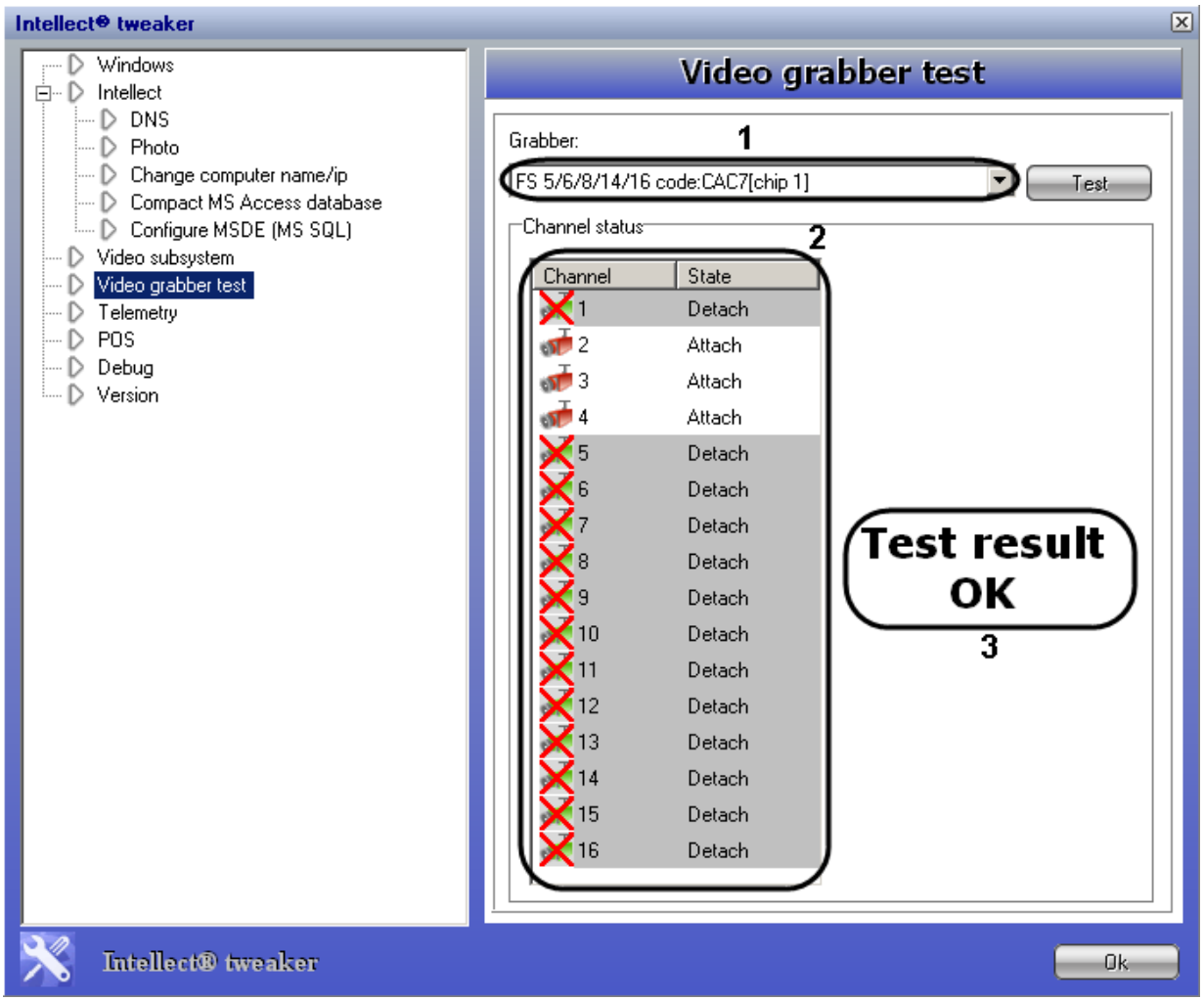


Figure 12.3-28. The result of testing the video capture card channels

If the Intellect system was not closed before starting the test, a dialog box will open requiring to close the Intellect system (Figure 12.3-29).

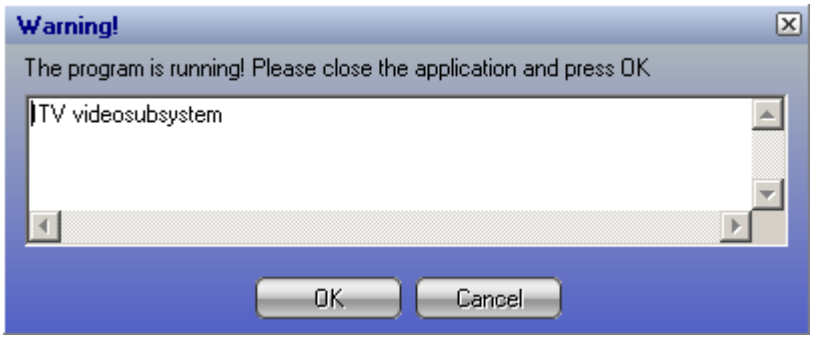


Figure 12.3-29. A dialog box requiring to close the system

To continue using the Video Grabber Test module, close the Intellect system and click OK.

12.4 The utility for collecting configuration data on servers and RWS for the Technical Support

12.4.1 The purpose of the Support.exe utility

The Support.exe utility is designed for collecting information about the configuration and operating status of the hardware, OS Windows and the INTELLECT™ system. The utility generates an archive that can be used by AxxonSoft Technical Support Service for troubleshooting purposes. In case of system malfunction or errors in the INTELLECT™ system, do the following:

1. Go to the AxxonSoft tech support server: https://support.axxonsoft.com/
2. Register a new account on the tech support server or log in the registered account.
3. Create an issue for tech support. Attach an archive generated by Support.exe utility.

Information on the issue progress will be sent to the email specified at registration.

12.4.2 Starting and shutting-down the utility

To run Support.exe utility, use one of the following methods:

- Fron the «Start» menu of OS Windows: «Start» -> «All programs» -> «Intellect» -> «System's information gathering utility »
- From the Tools folder of the Intellect program folder: «<Intellect>\Tools\Support.exe»

After running the Support.exe , Support –system's information gathering utility dialog box will be displayed on the screen (Figure 12.4-1).

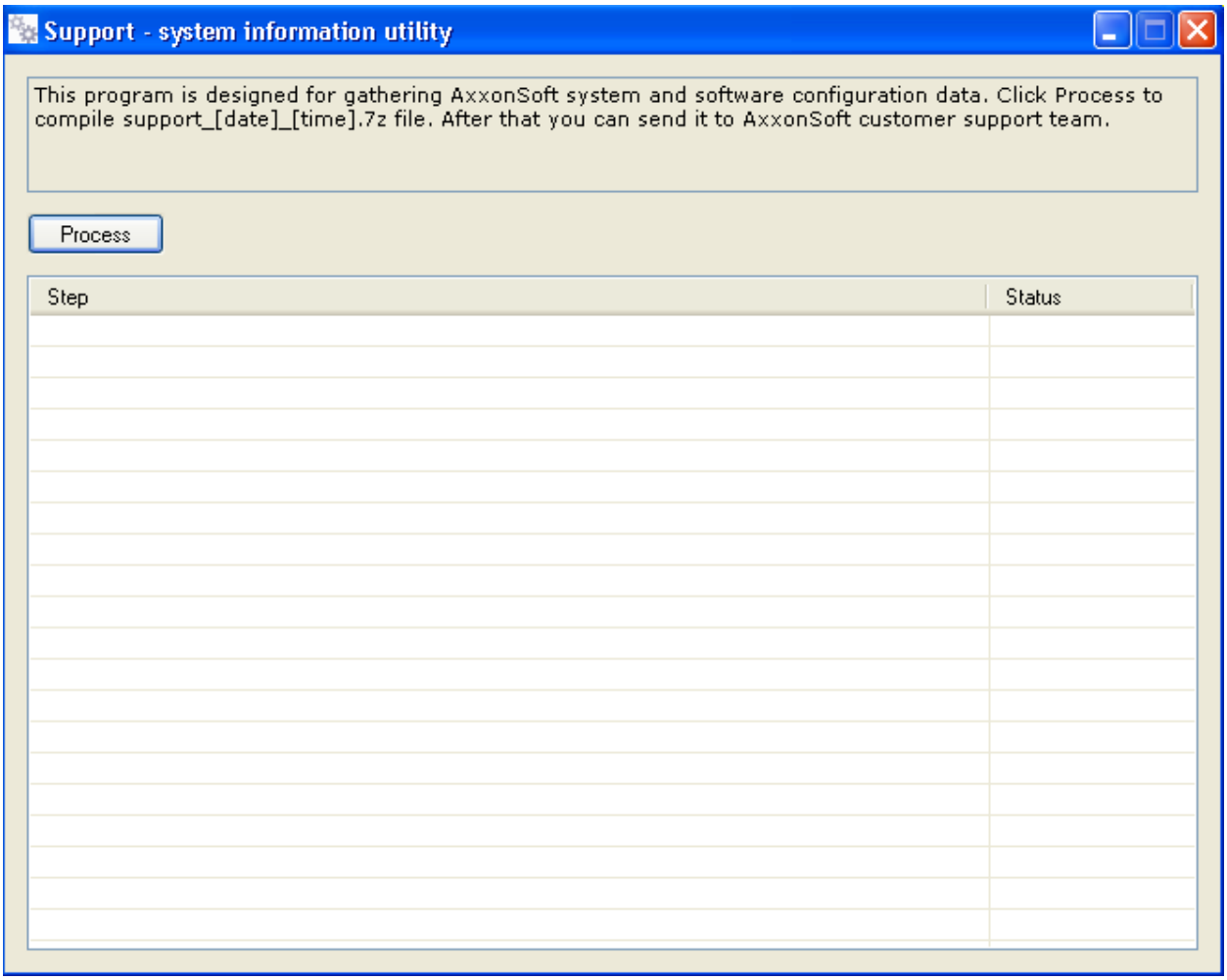


Figure 12.4-1. The Support dialog box

To close the Support.exe utility, click the Close button ( ).

12.4.3 The Support interface description

Support.exe utility interface includes the following elements:

1. Short directions for using the Support.exe (Figure 12.4-2, 1).
2. Process button to run the process of gathering information (Figure 12.4-2, 2).
3. Filed of displaying the information (Figure 12.4-2, 3).
4. Tale of displaying the process of gathering information, it includes two columns Step ans Status. In the Step column there is displayed short characteristic of undergoing process while the information is being gathered. In the Status column there is displayed process-bar and time, spent on information gathering (Figure 12.4-2, 4).

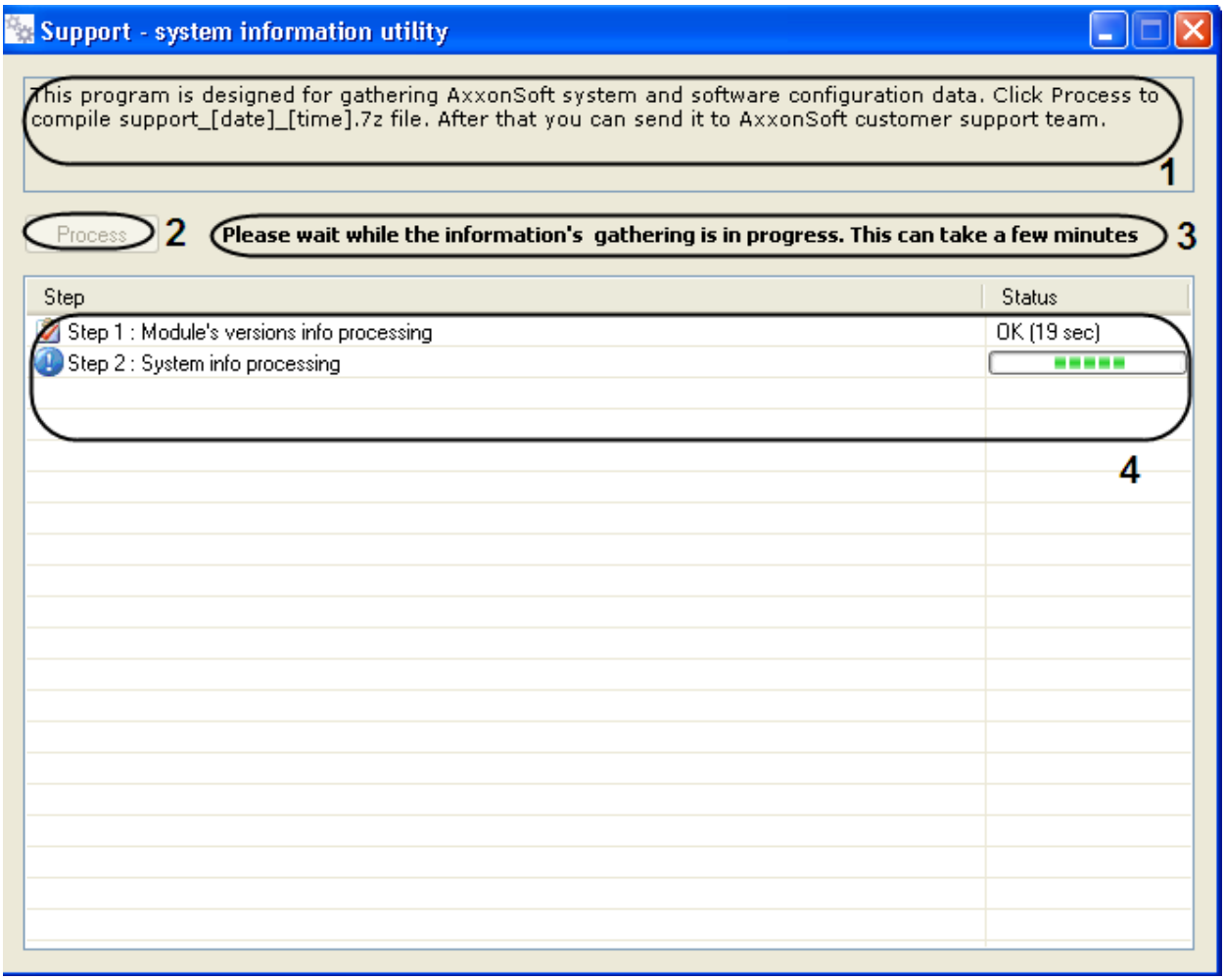


Figure 12.4-2. The Support dialog box

To close the Support.exe utility, click the Close button ( ).

12.4.4 Collecting information about videoservers and remote workstations using the Support.exe utility

To collect the information using the Support.exe utility, do the following:

1. Start the utility.
2. Click the Collect button.

The data collection process will start. Upon completion, the "Completed!" message will be displayed in the Step column, while the information area will show the link to the newly generated file – support.7z (Figure 12.4-3).

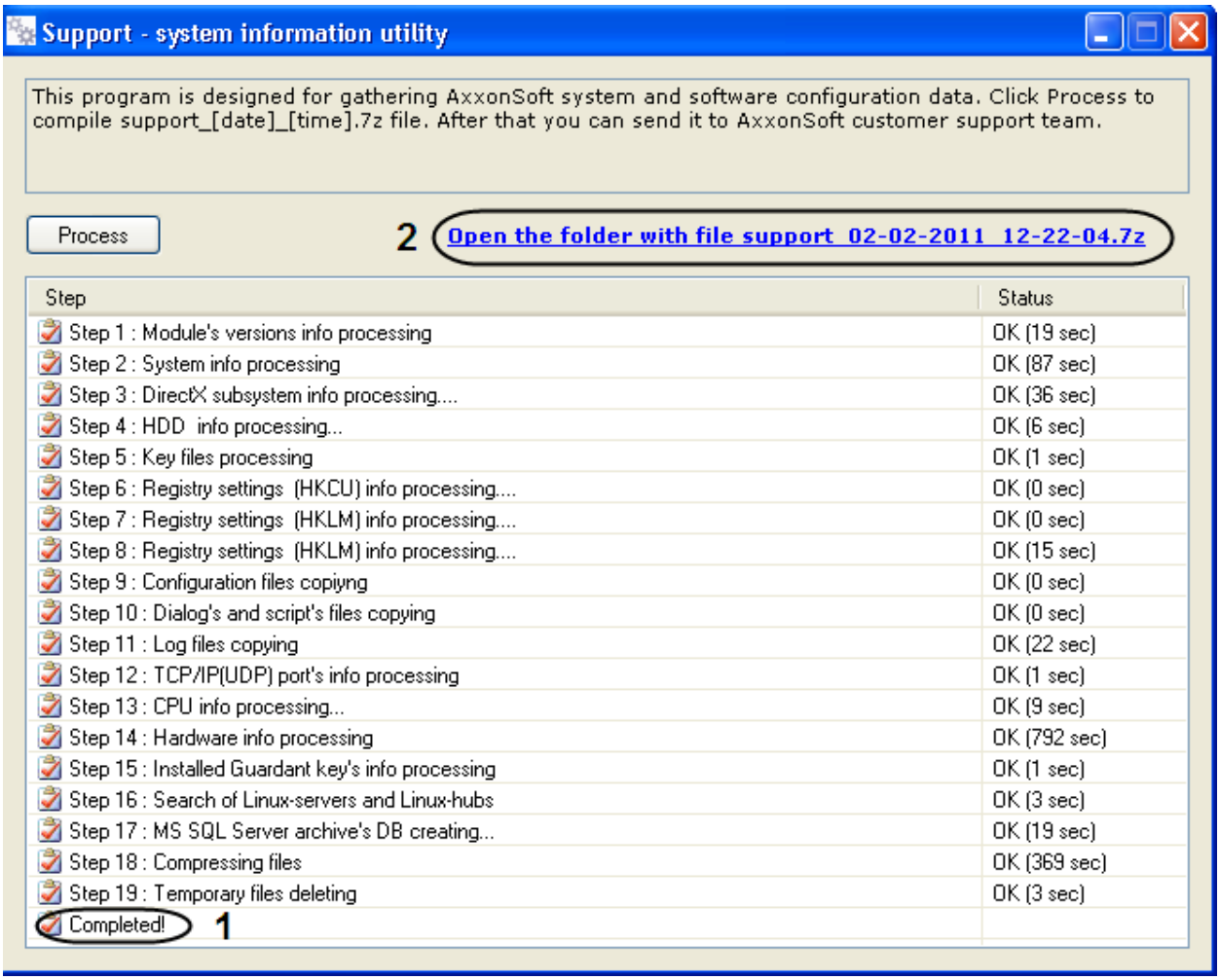


Figure 12.4-3. Completion of data collection

3. Follow the Open Folder with Support.7z File link to view the archive (Figure 12.4-4).

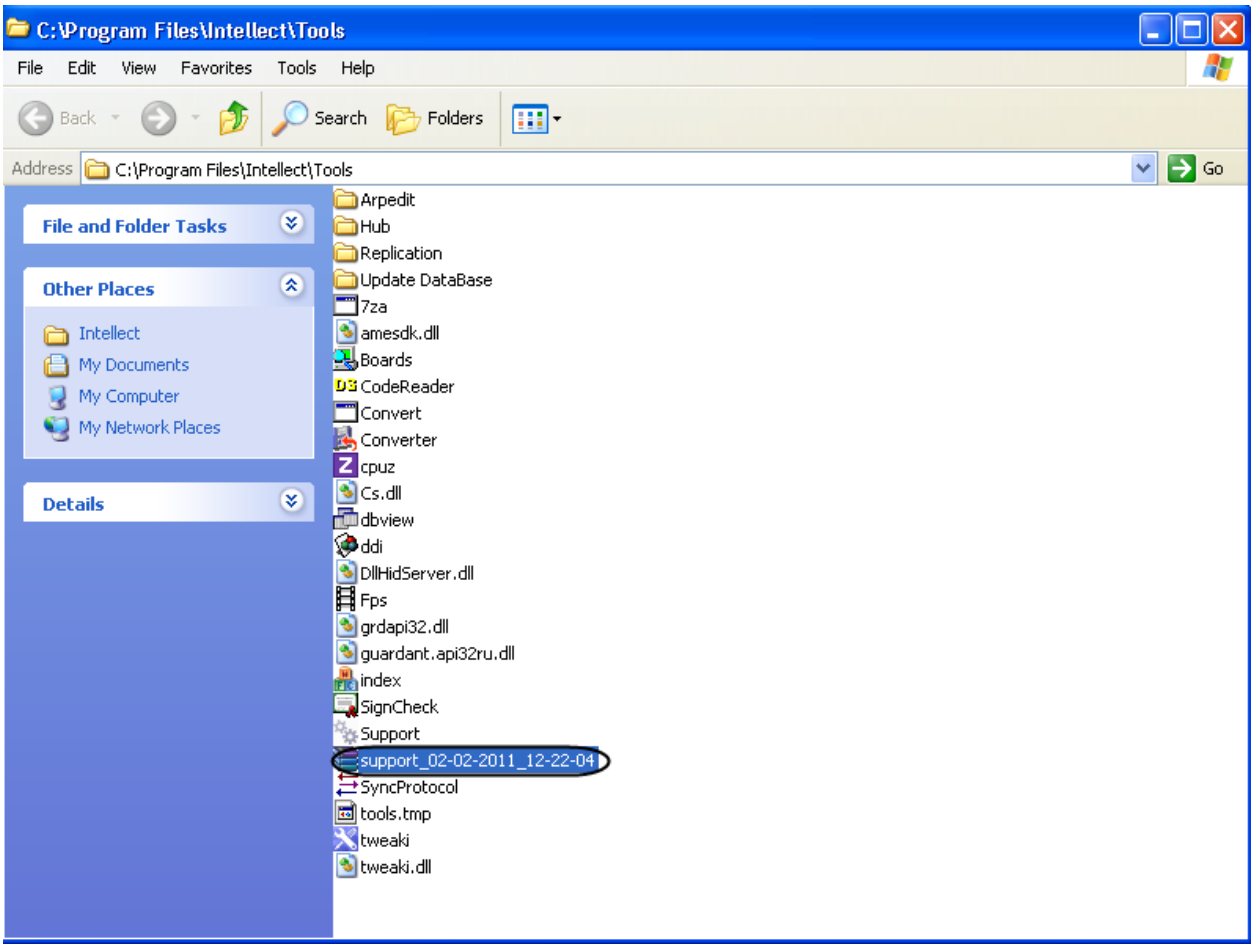


Figure 12.4-4. Newly generated support.7z archive

12.5 The Fps.exe utility for productivity estimation

12.5.1 The purpose of the Fps.exe utility

Productivity measurement fps.exe utility is used to estimate productivity of video processing.

Estimation is done in the following way:

1. Segmentation of the given video fragment for a set of frames in jpeg format.

Note.If the video fragment is not set, the utility generates pattern set of frames. When necessary the utility may store the created set for fames to the selected directory.

2. Compression and/or decompression of the created frame set.

3. Calculation of productivity parameters- number of processed fps with defined resolution and colour.

NOTE. Compression is not available on the Cilent. Playback of a previously recorded video, or a video being received over the network in real time, is available.

12.5.2 Starting and shutting-down the utility

To start fps.exe, do one of the following procedures:

1. Start the utility from the Windows taskbar. Click Start, then Programs, then Intellect, then Tools, then FPS testing utility.

   The fps.exe utility is available from the Start menu with the following installation types of the Intellect PC: Server, Remote administrator workstation, Remote monitoring workstation.

2. Start the utility from the Tools folder of the Intellect program folder: «<Intellect>\Tools\fps.exe» .

After starting the fps.exe utility there will be a dialog window «Video processing FPS tester»(Figure 12.5-1).

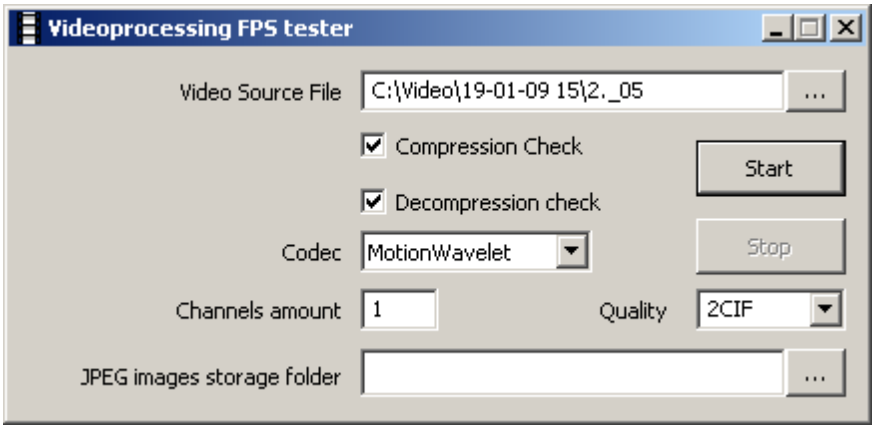


Figure 12.5-1. Dialog window of fps.exe.utility

To close fps.exe utility click « » in the right upper corner of the utility's dialog window (Figure 12.5-1).

12.5.3 Using the Fps.exe utility

To check productivity of video processing, do the following:

1. Start the fps.exe utility (see Starting and shutting-down the utility).

2. To set the file of video fragment click « » button in the field Images storage folder anf in the Open standard Windows dialog window, that will open, select with a double mouse click the required file (Figure 12.5-2,1).

Note. To emulation the pattern set of framen, the field Video Source File is not entered.

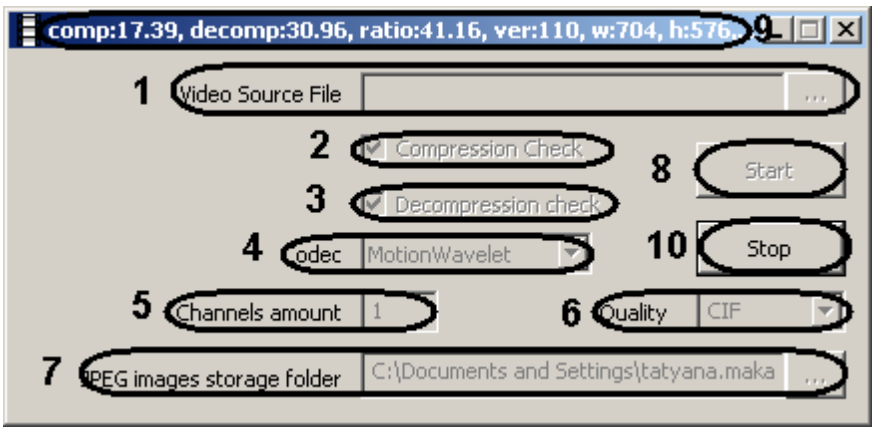


Figure 12.5-2. Video processing FPS tester

3. Activate Compression check checkbox to check how many fps the given computer can compress (Figure 12.5-2, 2).

4. Activate Decompression check checkbox to check how many fps the given computer can decompress(Figure 12.5-2, 3).

5. Select thr requiret compressor version from the dropdown list Codec (Figure 12.5-2, 4).

6. Enter the required number of emulated cameras in the field Channels amount (Figure 12.5-2, 5).

Note. This setting is actual only with emulation of pattern set of channels.

7. Select the required value of frames compression from the dropdown list Quality (inversely to compression level) (Figure 12.5-2, 6).

8. When necessary set the directory, where frames extracted from the video would be decompressed with the help of « ... »button of the field « Jpeg images storage folder»(Figure 12.5-2, 7).

9. To start video processing tester click Start button (Figure 12.5-2, 8).

10. As the result parameters of video processing productivity will be displayed in the title bar of the utility window (Table 12.5-1, Figure 12.5-2, 9).

Table 12.5-1 Parameters of video processing productivity

Productivity parameter	Description of parameter
comp	total number of frames that can be compressed in one second
decomp	total number of frames that can be decompressed in one second
ratio	compression ratio
ver	selected version of the compressor
w	frame width
h	frame height
color	if the frame is in color
count	number of compressor instances per CPU

11. If step 8 is compeleted, the frames for testing video processing will be recorded to thefiles jpeg storage folder (Figure 12.5-3).

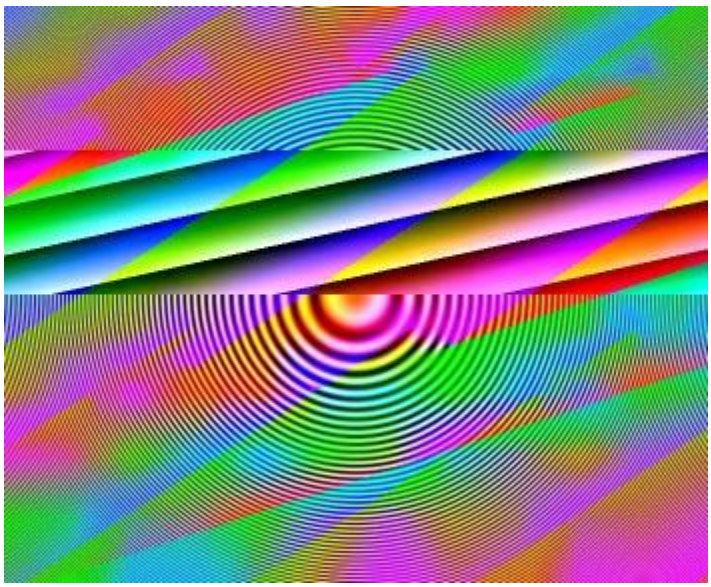


Figure 12.5-3. Example of emulated frame

12. To stop the testing process, click the Stop button (Figure 12.5-3, 10).

Testing productivity of video processing is completed.

12.6 The SignCheck.exe utility for checking the authenticity of exported frames and video recordings

12.6.1 The purpose of the SignCheck.exe utility

The SignCheck.exe utility is designed for checking the authenticity of a frame exported into BMP or JPEG format using the Converter.exe utility.

12.6.2 Starting and shutting-down the utility

To start the SignCheck.exe utility, do one of the following:

1. Start the utility from the Windows taskbar. Click Start, then Programs, then Intellect, then Tools, then Check of the Digital Signature (Figure 12.6-1).

   The SignCheck.exe utility is available from the Start menu with the following installation types of the Intellect PC: Server, Remote administrator workstation, Remote monitoring workstation.

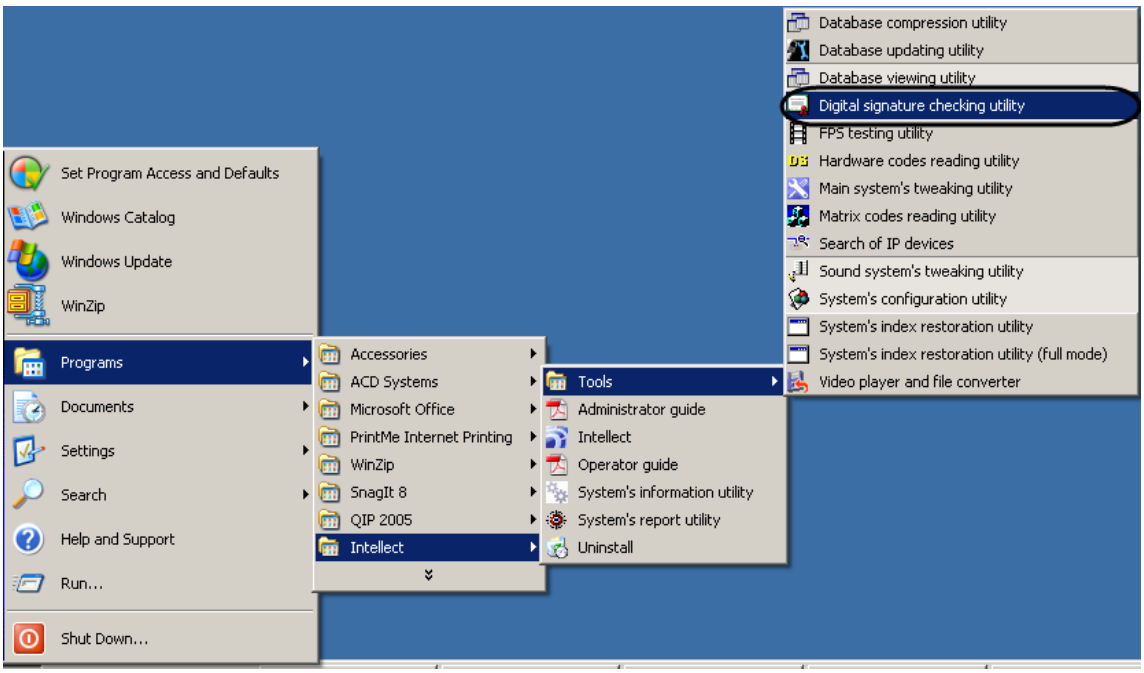


Figure 12.6-1. Starting the utility from the Windows taskbar

2. Start the utility from the Tools folder of the Intellect program folder. Example: C:\Intellect\Tools\SignCheck.exe.

The SignCheck dialog box will open (Figure 12.6-2).

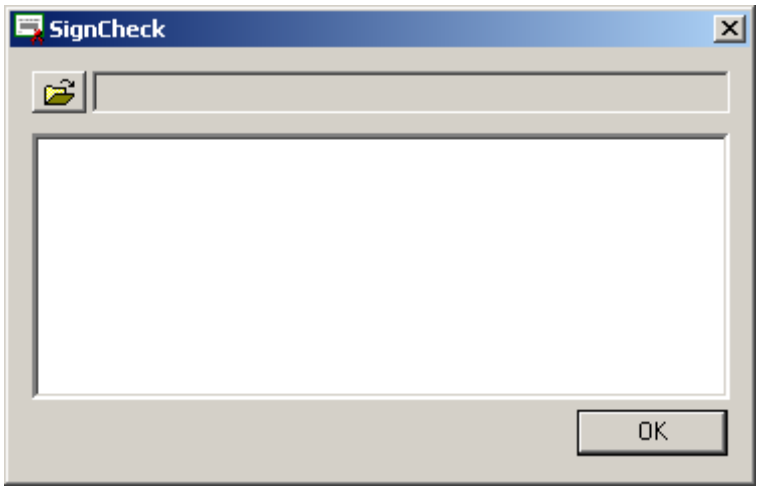


Figure 12.6-2. The SignCheck dialog box

To close the SignCheck.exe utility, click the Close button (✕).

12.6.3 Using the SignCheck.exe utility

To verify the frame authenticity, do the following:

1. Start the utility (see Starting the SignCheck.exe Utility section).

2. Select the file with exported frame to check, using the button and a standard dialog box for opening files.

The SignCheck window will show the information about the selected frame (Figure 12.6-3).

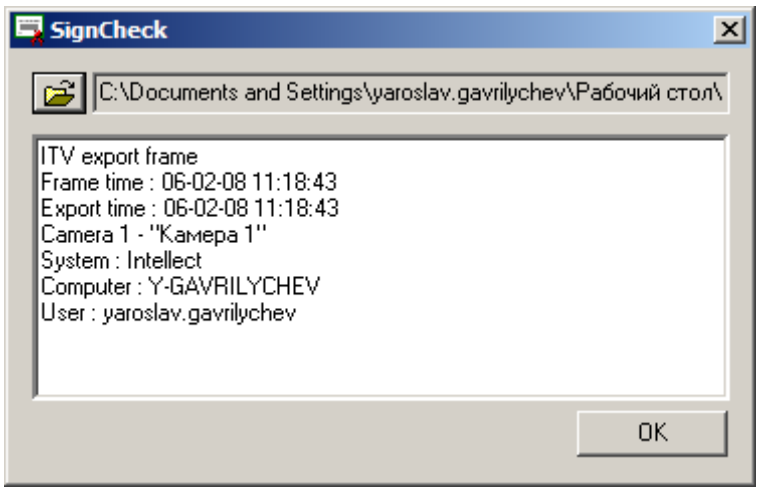


Figure 12.6-3. Information about the selected frame

The following information is displayed:

1. AxxonSoft export frame – digital signature title
2. Frame time – date and time stamp of this frame in the recording
3. Export time – date and time of exporting this frame to a file
4. Camera – ID of the camera from which the recording was made
5. System – the software that made the recording
6. Computer – name of the computer this software is installed on
7. User – user name of this computer.

If the frame cannot be authenticated, or the digital signature is missing, the “Verification failed” message will be displayed.

12.7 The Convert.exe utility for correcting modification dates of video archives

12.7.1 The purpose of the Convert.exe utility

The Convert.exe utility is designed for restoring changed creation dates of video archive files. For example, file creation dates may be changed (corrupted) while transferring an archive from one computer to another. This may lead to incorrect playback of the archive.

12.7.2 Starting and shutting-down the utility

Start the utility from the Tools folder of the Intellect program folder. Example: C:\Intellect\Tools\Convert.exe.

The Convert.exe utility is available from the Start menu with the following installation types of the Intellect PC: Server, Remote administrator workstation.

The Convert.exe utility dialog box will open (Figure 12.7-1).

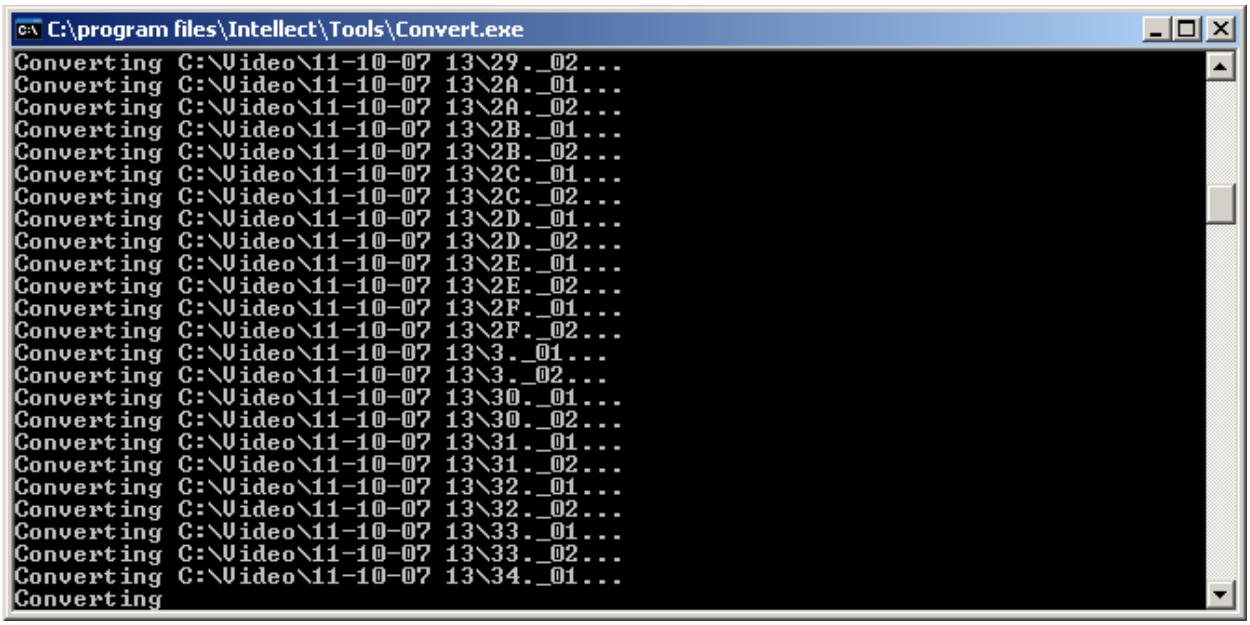


Figure 12.7-1. The Convert.exe dialog box

To shutdown the Convert.exe utility, click the Close button (✕).

12.7.3 Restoring changed creation dates using the Convert.exe utility

The Convert.exe utility allows restoring the creation date of a video archive file.To make the restoration, start the utility (see the *Starting the Convert.exe Utility* section). A console window will open starting the process of searching the Video folder on each of the available disks. Then, replacing of modification date for creation date will start automatically. This process will take some time depending on the archive size. For example, restoring dates in a 500 MB archive will take about 10 seconds. When all dates are replaced, the Convert.exe window will close by itself.

12.7.4 Working with the Convert.exe utility using the command prompt

One can work with the Convert.exe utility using Windows command prompt. The following startup parameters are in use:

1. TZ +hh:mm – changing date of file creation and modification for hh hours and mm minutes.
2. PATH – specifies the path to the archive folder with files date of creation (modification) of which is to be restored.
3. FULLMODE – running the utility in order to correct the date of creation and modification.

Examples of commands for working with the Convert.exe utility using the command prompt:

1. Convert.exe PATH "H:\Video\03-09-12 15" FULLMODE

Running this command the Convert.exe utility will restore the date of file creation and modification in H:\Video\03-09-12 15 folder.

2. Convert.exe TZ +01:00

Running this command the time of file creation and modification will change for an hour. For instance, the “17-09-12 13” folder will be renamed as “17-09-12 14”.

Note. These examples assume using a command prompt in <Intellect>\ Tools folder.

12.8 The ddi.exe utility for editing database templates and external settings files

The ddi.exe utility is designed for editing external system settings files (*.ddi) and the templates of the main database (intellect.dbi and intellect.ext.dbi).

The ddi.exe utility is started from the “Start” ⇒ “All Programs” ⇒ “Intellect” ⇒ “Tools” ⇒ “System configuration” menu.

The ddi.exe utility is available from the “Start” menu with the following installation types of Intellect: Server, Remote administrator workstation, Remote monitoring workstation.

The utility can also be started from the “Tools” folder of the Intellect program folder.

After the changes are made to *.ddi and/or *.dbi files, update the main database. For this use the idb.exe utility (see “The idb.exe utility for converting databases, selecting database templates and making backup copies of databases” section).

Note. If changes were made to .ddi or .dbi files using the ddi.exe utility and these files were installed along with Intellect, then these files will be deleted while deleting with configuration upload. .ddi and .dbi files added manually will be saved.

12.8.1 Editing intellect.dbi and intellect.ext.dbi database templates using the ddi.exe utility

To edit the template of the main database, open it using the “File” ⇒ “Open” menu. The template files are stored in the root of the Intellect program folder.

Note 1. To open the recently used file, select the “Last files” item in the “File” menu or open the context menu in the “Names” tab.

Note 2. The “Paste from file” item in the “File” menu allows opening several files by adding tables, described in other dbi files, to the open dbi file.

Intellect.dbi file contains the list of main tables and fields of the database. User-defined tables and fields are stored in a separate file – intellect.ext.dbi. This file is made separate from the main file, to eliminate the need to re-insert user-defined tables and fields into the main file, in case of Intellect system update. The contents of these files are merged upon Intellect start-up.

To view the database template, open the DBI tab in the top left corner of the window. The list of the tables of the main Intellect database will be displayed in the left panel. The right panel will show the list of fields of the selected database (Figure 12.8-1).

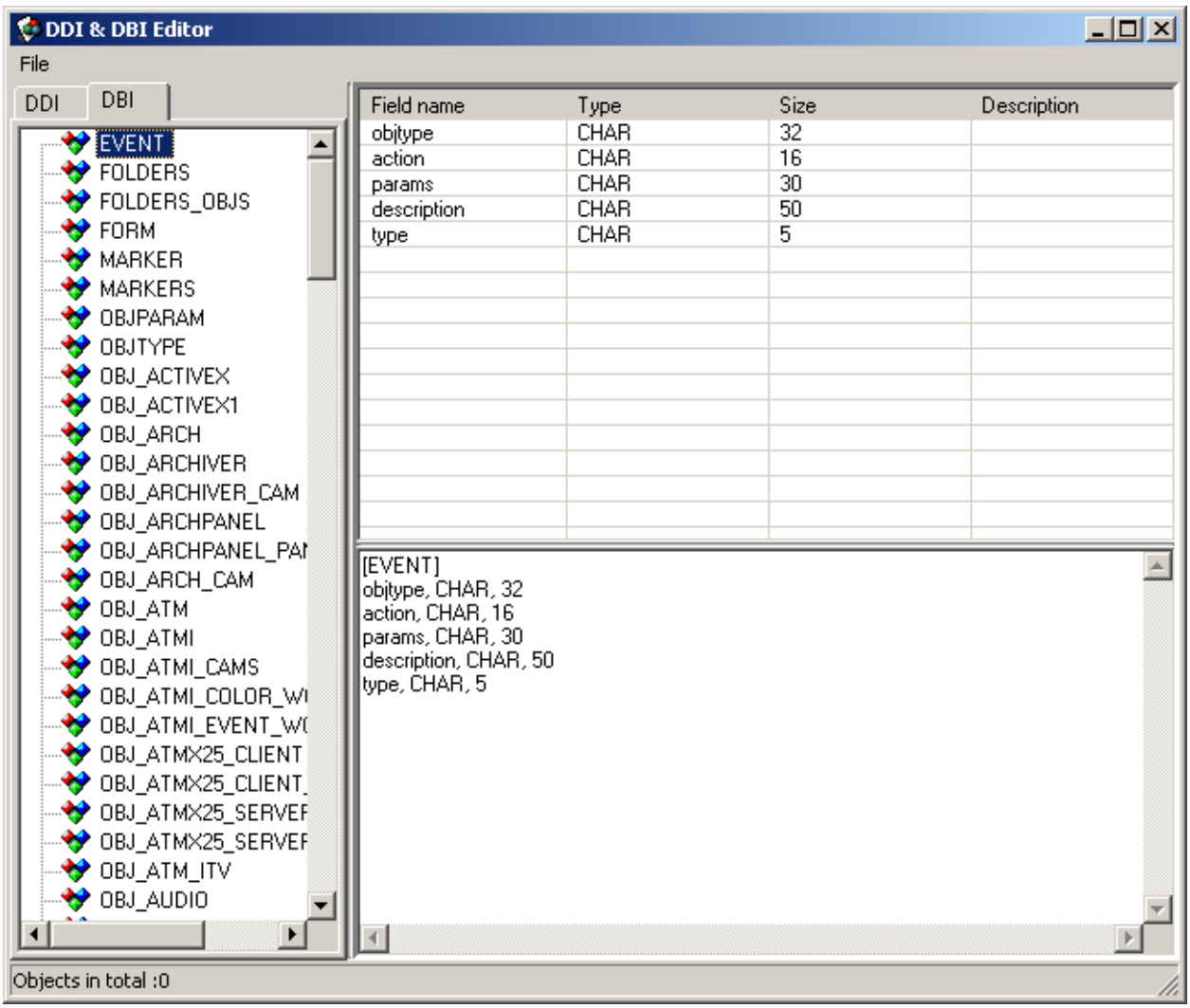


Figure 12.8-1 The Ddi.exe interface box

To delete, add, edit or copy object fields, use the table on the left of the utility box.

The following parameters of the table fields are displayed:

1. Field name – the name of the field in the database.
2. Type – data type of the field contents. Available types:
    - 2.1. BIT – checkboxes taking logical values Yes and No;
    - 2.2. CHAR – fields with a few symbols;
    - 2.3. DATETIME – date and time in the following format: date – dd-mm-yyyy, time – hh:mm:ss;
    - 2.4. DOUBLE, INTEGER, SMALLINT – numerical fields of corresponding types;
    - 2.5. TEXT – fields with the text.
3. Size – maximum number of units of the specified format in a field.

4. Description – field name shown in the interface.

The database is to be refreshed after the changes were made.

12.8.2 Editing the external setting file (intellect.ddi) using the ddi.exe utility

To edit the external settings file (intellect.ddi), open it using the "File" ⇒ "Open" menu. This file is stored in the root of the Intellect program folder.

Note 1. To open the recently used file, select the "Last files" item in the "File" menu or open the context menu in the "Names" tab.

Note 2. The "Paste from file" item in the "File" menu allows opening several files by adding tables, described in other dbi files, to the open dbi file.

The external settings file contains the information about objects and events loaded into the system configuration, graphical symbols for various object states on the map, and the transition rules from one object state to another.

The purpose of editing can be software localization or expanding/limiting its functionality (for example, removing unused objects from the system).

NOTE. Changing the external settings file may lead to system failure. Create a backup copy of the file before editing it.

The database is to be refreshed after the changes were made.

12.8.2.1 *General information*

To start using the utility, open the "DDI" tab in the top left corner of the utility dialog box.

The left side of the dialog box will display all system objects loaded into the configuration. The right side of the dialog box shows the properties panel for the selected object. This panel consists of several tabs: Names, Events, Reactions, Icons, States, and Transition rules.

To delete, add, edit or copy object properties, right-click a cell in the tab or the list of system objects to open the context menu.

To edit the object properties, use the tables on the right of the ddi.exe utility box.

12.8.2.2 *The Names tab*

This tab contains the table with three fields (Figure 12.8-2):

1. Object – object ID in the system.
2. Name – the name of the object in the system.
3. Group name – the name of the group the object will be assigned to upon creation. If this field is left blank, no group will be created.

By default all objects, the description of which the ddi file contain, are displayed in the table. To find an object, type-in the object name or ID in the "Search by name" field. As a result the table will contain all object names in the system that exactly or partially match the word typed in this field.

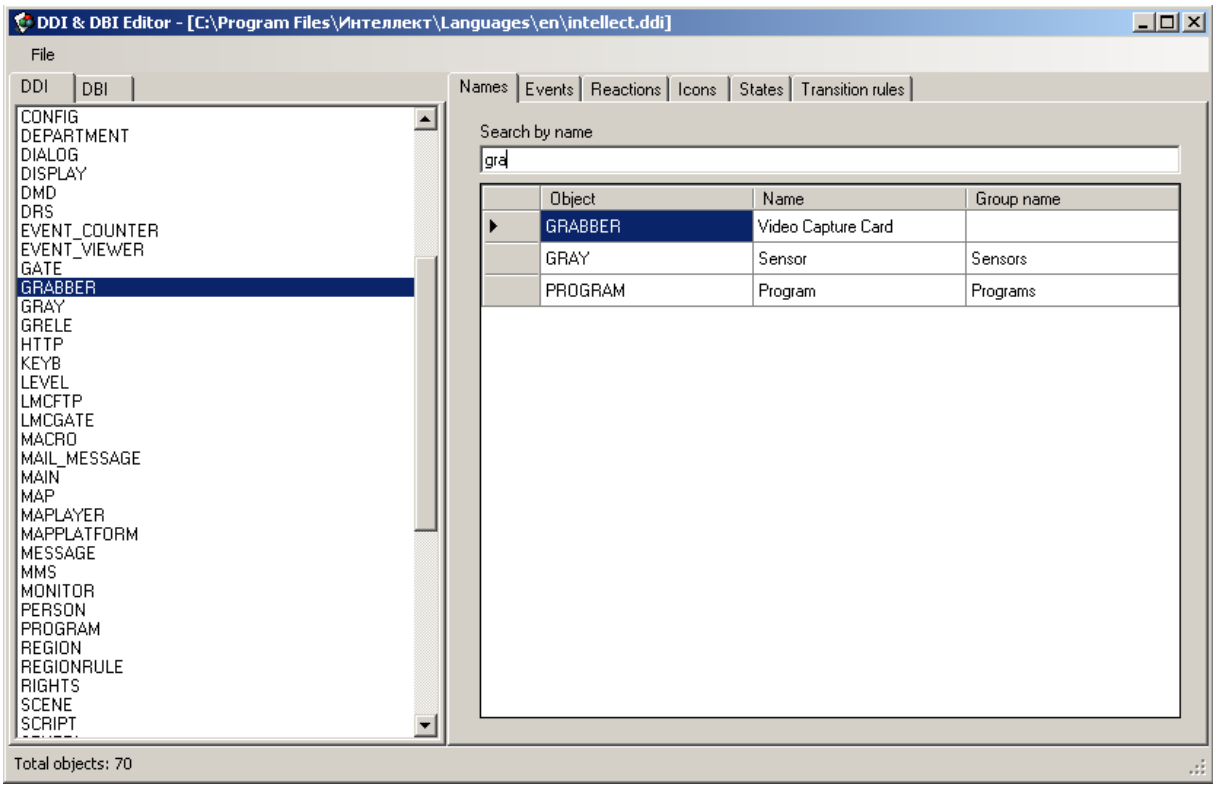


Figure 12.8-2 The "Names" tab

12.8.2.3 *The Events tab*

This tab contains the list of system events that the selected object can create (Figure 12.8-3). Each event has the following editable parameters:

1. Name – event identifier.
2. Description – short description of the event.
3. Processing messages – type of window to open on event occurrence: alarm window or information window.
4. Support audio – attached .wav files to be played when the event occurs.
5. Disable network connection – local event only. If this checkbox is set checked, other computers on the net will not be notified when the event occurs.
6. Disable logging –by default, all events are logged. Set the checkbox checked not to log the event.
7. Windows log – set the checkbox checked to log the event to Windows log. If the event is not logged, then it cannot be logged to Windows log.

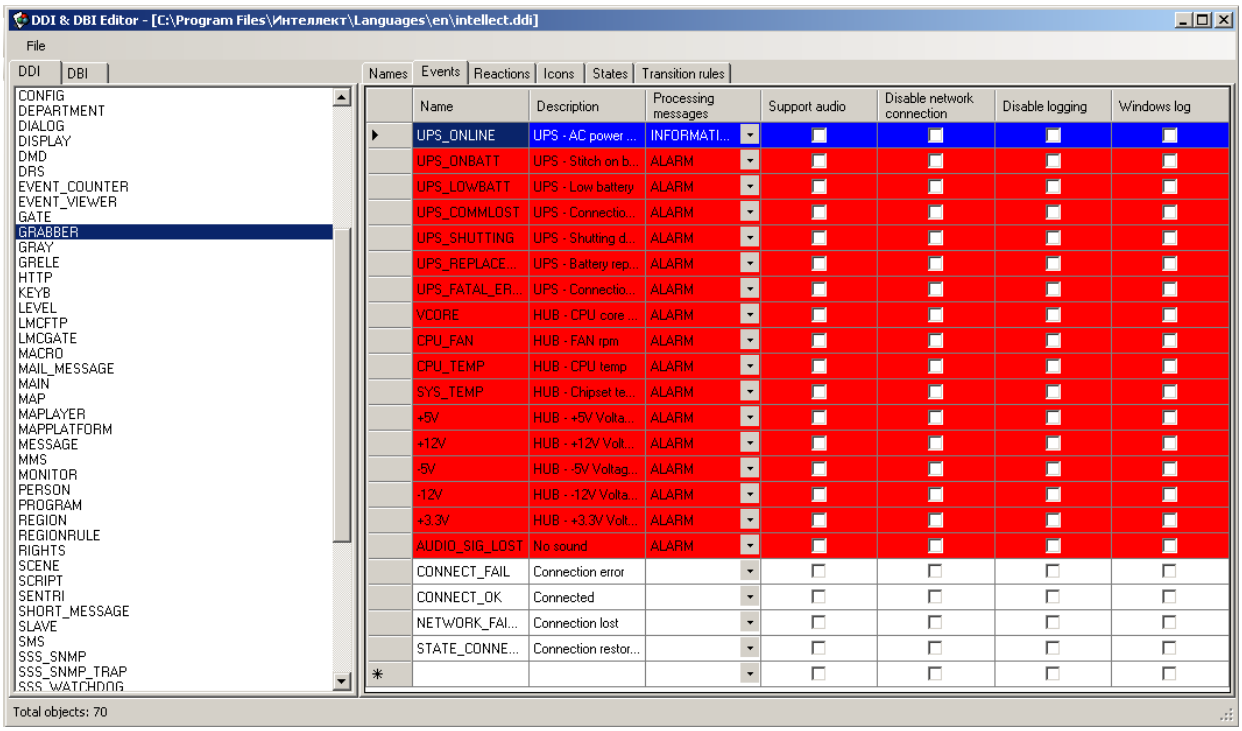


Figure 12.8-3 The "Events" tab

Note. You can create only the events that are available for the selected object (created at the stage of system programming). Initially all of them are in the intellect.ddi file.

12.8.2.4 *The Reactions tab*

This tab lists all reactions that the object can make in response to events (Figure 12.8-4). Each reaction has the following properties:

1. Reaction – reaction ID.
2. Description – short description of the reaction.
3. Arming – additional property of the reaction, arming a region.

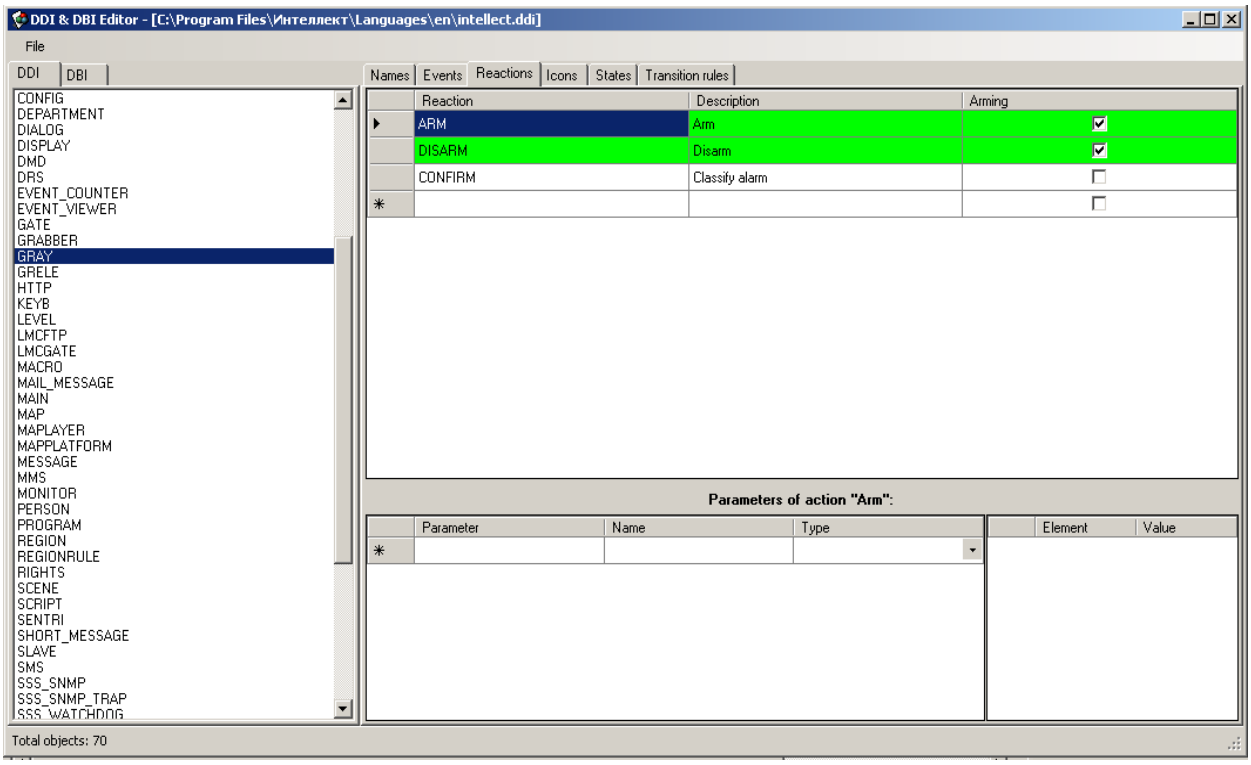


Figure 12.8-4 The “Reactions” tab

Note. You can create only the reactions that are available for the selected object (created at the stage of system programming). Initially all of them are in the intellect.ddi file.

12.8.2.5 *The Icons tab*

This tab lists the graphical symbols (icons) that represent the selected object on the map (Figure 12.8-5). The part of the name used for identifying the file in the .bmp format is specified in the “File name” column. Image files are to be stored in the “Bmp” folder in the Intellect program folder (for example, C:\ Program Files\Intellect\Bmp).

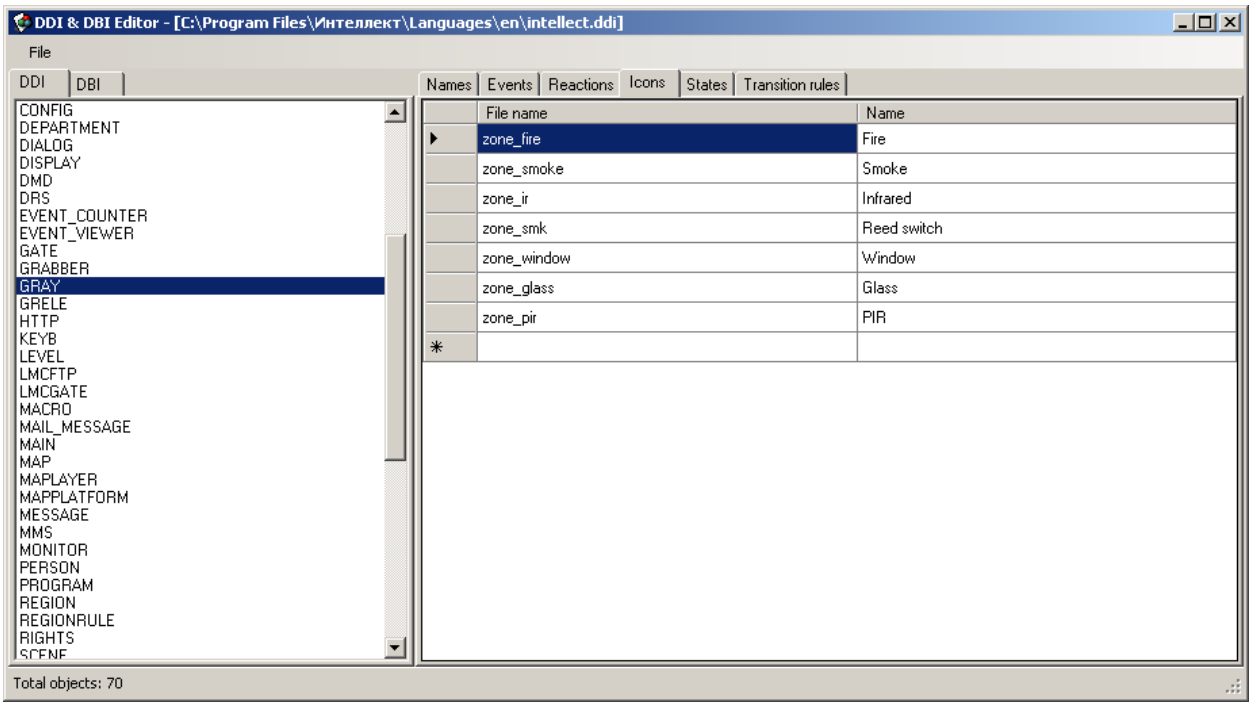


Figure 12.8-5 The “Icons” tab

12.8.2.6 *The States tab*

This tab lists all states of the selected object (Figure 12.8-6). The states have the following properties:

1. Name – state ID.

2. Image – part of the name in the .bmp format that represent the object state on the map. For example, if the “zone_fire” file name was selected in the “Icons” tab, and the image of the selected ARMED state is “arm”, then the “zone_fire_arm.bmp” file will be in the “Bmp” folder.

Note. If the file ID is not set in the “Icons” tab, then the file name will consist of the object ID and part of the file name specified in the “Image” column.

3. Description – short description of the state.

4. Flicker when alarm – option of displaying object state - flickering.

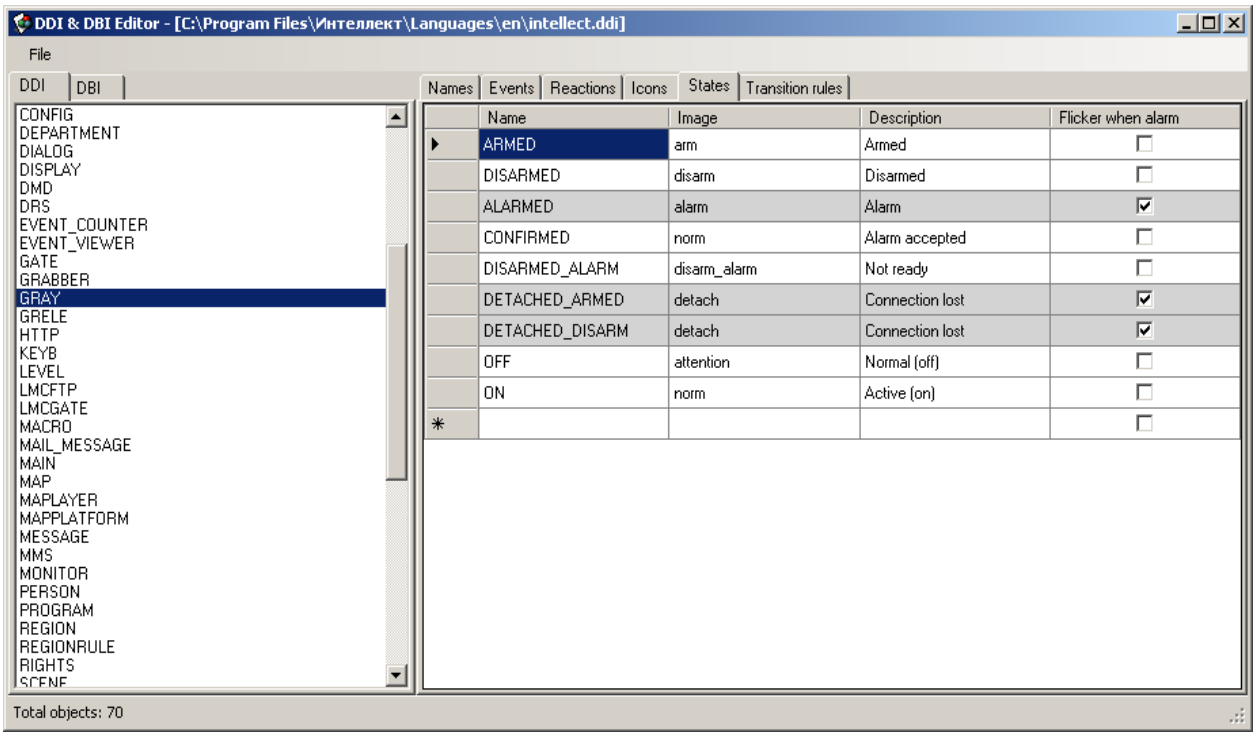


Figure 12.8-6 The “States” tab

12.8.2.7 *The Transition rules tab*

Transition rules connect the events generated by objects, and the states of these objects. Each rule consists of the starting state of the object, an event, and an ending state that the object will take after the event.

The table lists the transition rules from one object state to another (Figure 12.8-7). Each rule has the following properties:

1. Event – identifier of the event triggering the transition.
2. Transition from state – identifier of the object state before the event took place. If this field is left blank, the rule will apply to all starting states.
3. Transition to state – identifier of the resultant state of the object.

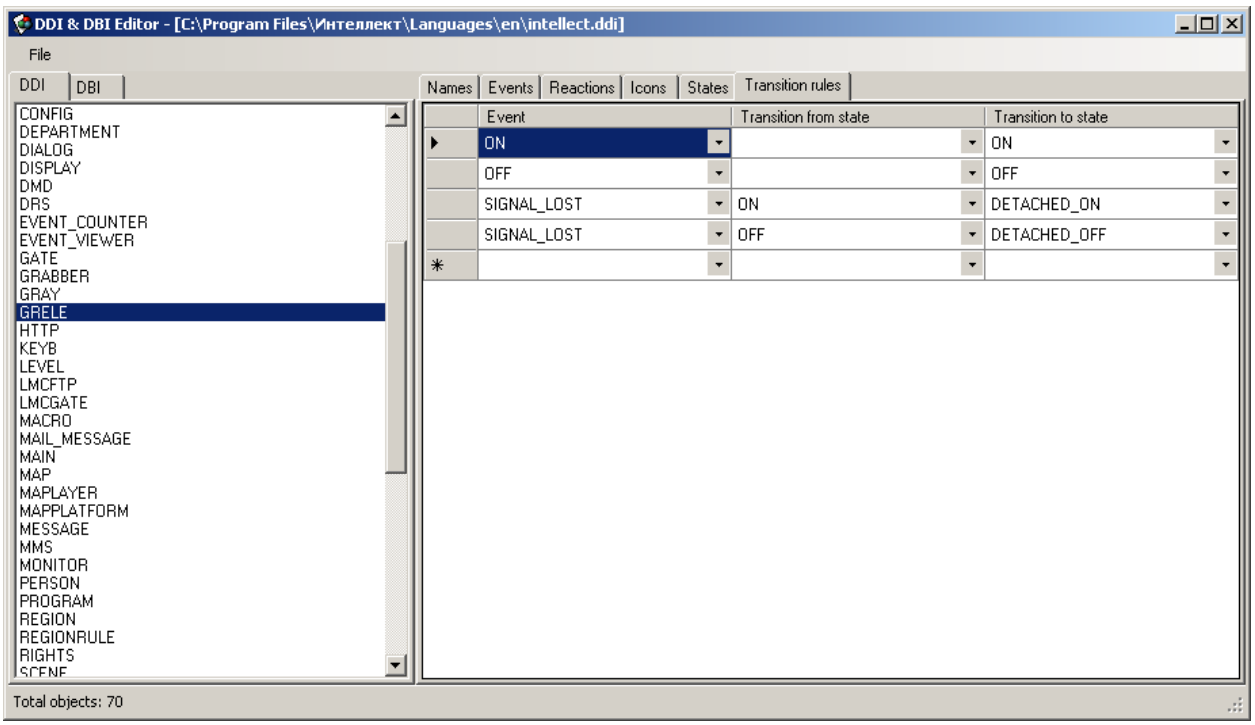


Figure 12.8-7 The “Transition rules” tab

12.9 The Arpedit.exe utility for creating user dialog windows

The Arpedit.exe utility is designed for creating dialog boxes. It allows tailoring Intellect™ system to particular monitoring and security tasks of the customer.

The Arpedit.exe utility is in the “Arpedit” folder (<Installation directory> \Intellect\Tools\ Arpedit). Detailed information on the utility is given in “User’s manual for ArpEdit”.

12.10 The idb.exe utility for converting databases, selecting database templates and making backup copies of databases

12.10.1 The purpose of the idb.exe utility

The idb.exe utility is designed for database administration in INTELLECT™ software. It provides the following functionality:

1. Converting MS Access databases to MS SQL format.
2. Connecting to the Intellect database.
3. Setting up the database synchronization.
4. Creating backup copies of a database.
5. Restoring a database from its backup copy.
6. Changing the database template.
7. Separating the events log into an individual database.

12.10.2 Running and shutting-down the utility

Shut down the INTELLECT™ system before running the idb.exe utility.

The idb.exe utility is run from the Intellect installation directory. For example: «C:\ Program Files \Intellect\idb.exe».

The idb.exe dialog box will open (Figure 12.10-1).

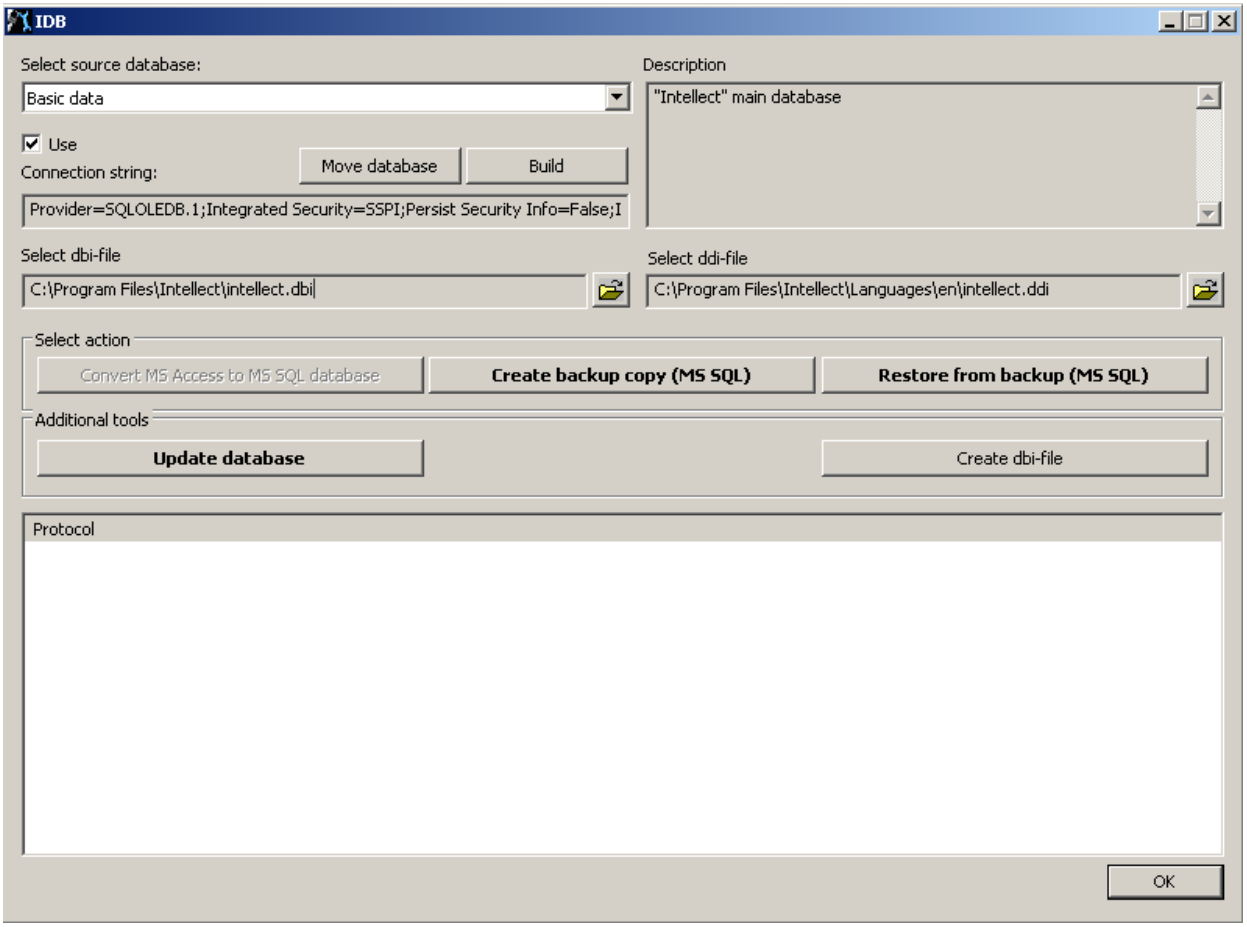


Figure 12.10-1. The Idb.exe dialog box

To confirm the changes and shut down the utility, click the “OK” button. To shut down the utility without saving the changes, click the “Close” button (☒).

12.10.3 Interface elements of the idb.exe utility

Figure 12.10-2 shows the idb.exe dialog box.

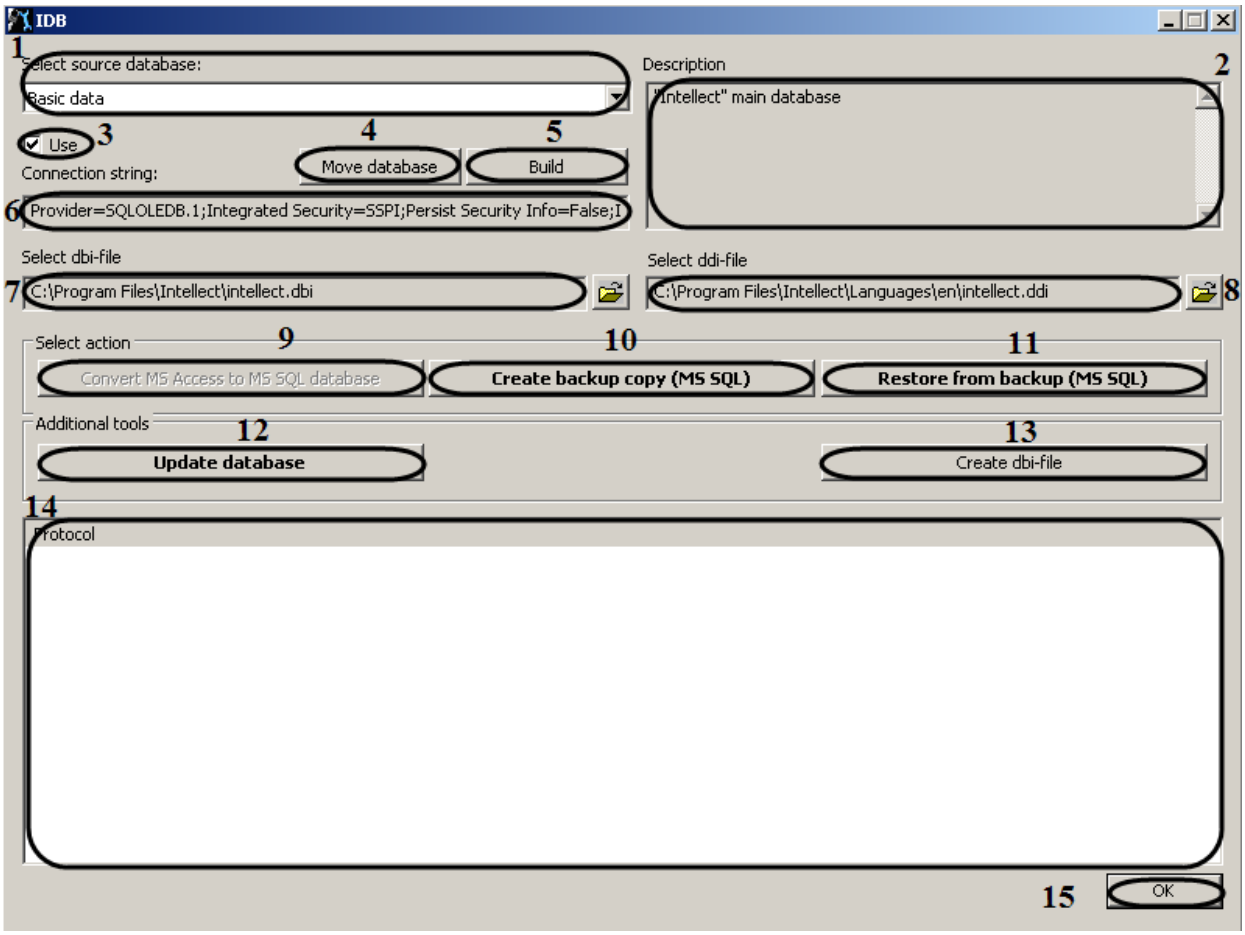


Figure 12.10-2 Idb.exe dialog box

Table 12.10-1 describes the elements of the idb.exe utility.

Table 12.10-1

№	Element name	Description	Default value	Allowed values
1	Select source database	A drop-down list for selecting the database: local, events log, or remote.	Basic data	Basic data – local configuration database Synchro source – remote database for synchronization Protocol – events log database Other values are not used.
2	Description	An information field showing the description of the selected source database.	Base for a configuration system Intellect	Base for a configuration system Intellect – Main configuration database of the

№	Element name	Description	Default value	Allowed values
				Intellect system Remote database for synchronization Events log database Other values are not used.
3	Use	A checkbox for enabling/disabling database usage. When checked, the Build button becomes enabled which is used for setting up the connection to the database.	Checked	Checked – database connected Unchecked – database not connected
4	Move database	A button for starting the process of creating an .mdf file in MS SQL format to be transferred to another MS SQL server later.	Enabled	Enabled – idb.exe utility is connected to an MS SQL database Disabled – idb.exe utility is not connected to an MS SQL database
5	Build	A button for opening the Data Link Properties dialog box for database connection setup. This button is enabled if the Use checkbox is checked.	Enabled	Enabled – idb.exe utility is connected to the database Disabled – idb.exe utility is not connected to the database
6	Connection string	An information field showing the summary about the database connection	Depends on database connection parameters and server/workstation configuration	Shows the following parameters: Provider, Integrated Security, Persist Security Info, Data Source. The Provider parameter can take the following values: SQLOLEDB.1 – MS SQL database Microsoft.Jet.OLEDB.4.0 – MS Access

№	Element name	Description	Default value	Allowed values
				database; other values are not used. The Integrated Security parameter can take the following values: SSPI – authentication on MS SQL server using Windows account information; parameter not shown – authentication on MS SQL server using login/password, or MS Access database is used. The Persist Security Info parameter can take the following values: True – allow saving the password for automatic connection to the database; False – do not allow saving the password for automatic connection to the database; The Data Source parameter can take the following values: the name of an MS SQL server used for controlling the database; full pathname of the .mdb file of an MS Access database.
7	Select .dbi file	An information field and a button for selecting and displaying a database structure file (.dbi).	C:\Program Files\Intellect\intellect.dbi	Full pathname of the .dbi file

№	Element name	Description	Default value	Allowed values
		The updated database will have the structure specified in this file.		
8	Select .ddi file	An information field and a button for selecting and displaying the name of the .ddi file with system objects, events and actions.	C:\Program Files\Intellect\Languages\ru\intellect.ddi	Full pathname of the .ddi file
9	Convert MS Access to MS SQL database	A button for starting the conversion of an MS Access database to MS SQL format. This button is enabled if the utility is connected to an MS Access database.	Disabled	Enabled – idb.exe utility is connected to an MS SQL database Disabled – idb.exe utility is not connected to an MS Access database
10	Create backup copy (MS SQL)	A button for starting the process of creating a backup copy of the database. This button is enabled if the utility is connected to an MS SQL database.	Enabled	Enabled – idb.exe utility is connected to an MS SQL database Disabled – idb.exe utility is not connected to an MS SQL database
11	Restore from backup (MS SQL)	A button for restoring the database from a backup.	Enabled	Enabled – idb.exe utility is connected to an MS SQL database Disabled – idb.exe utility is not connected to an MS SQL database
12	Update database	A button for starting the process of updating the database structure. The structure is updated according to the .dbi file specified in the Select .dbi File field.	Enabled	Enabled – idb.exe utility is connected to the configuration database Disabled – idb.exe utility is not connected to the configuration database
13	Create dbi-file	A button for creating a database structure file (.dbi template).	Enabled	Enabled - .dbi file creation is allowed.
14	Protocol	An information area displaying the progress of database	Empty	An information area displaying the progress of the

№	Element name	Description	Default value	Allowed values
		processing: converting, structure updating, creating backup copy, etc.		database processing. A blue “i” marks the notifications about successful completion of each processing step. A red “!” marks the notifications about the errors in a processing step. A blue tick marks the completion of the processing.
15	OK	A button for saving the database connection parameters and shutting-down the idb.exe utility.	Enabled	Enabled – saving database connection parameters and shutting-down the utility is allowed. Disabled – the utility is still processing the database.

Note. It is necessary to enter the parameter BackupFolder in the system register OS Windows HKLM\\SOFTWARE\\AxxonSoft\\INTELLECT if the folder for database recording can not be changed. (see. «Work with system register OS Windows»).

12.10.4 Using the idb.exe utility

The idb.exe utility allows the administration of the databases of the Intellect system. Instructions on how to use the utility for administering databases are given in “Database administration” section.

Note. The Windows Firewall/ICS service is to be enabled to use the idb.exe utility.

12.10.5 Work with idb.exe utility with the use of keys

It is possible to run idb.exe utility with keys. For this click “Start” ⇒ “Run”. Type the path to idb.exe utility and the required key after “/” in the appeared window(Figure 12.10-3).

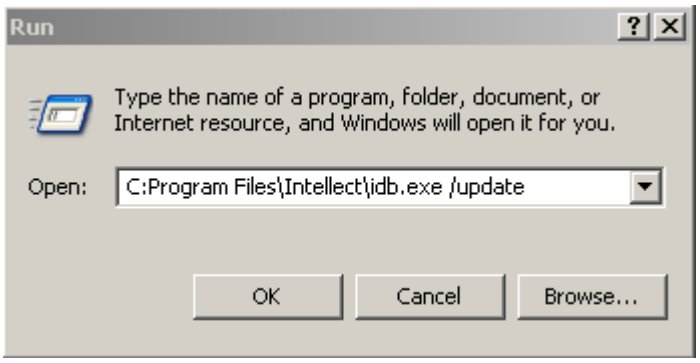


Figure 12.10-3 Working with idb.exe via the command prompt

To display keys, supported by the utility, use the command «idb.exe /?» (Figure 12.10-4).

Figure 12.10-4 The result of «idb.exe/?» command

idb.exe utility supports the run with the following keys:

1. «/update» - the key of running the hidden updating of database (uses intellect.dbi file).
2. «/sync» - the key of database synchronization with the source of data.
3. «/backup» - the key of running the process of creation the backup copy of Intellect database. The backup copy is created to the address «C:\Documents and Settings\USER2\My documents\AxxonSoft\Intellect\Data\intellect.sql.bak». It is used when the idb.exe utility is connected to MS SQL database.
4. «/restore» - the key of running the database recover from the previously created backup copy. It is used when the idb.exe utility is connected to MS SQL database.
5. «/set_cs "key=value"» - the key of saving the connection string to the system registry (summary on parameters of connection to database).
6. «sql_convert:db_name mssql2000|mssql2005» - the key of running the database conversion process from MS Access to MS SQL format. It is used when the idb.exe utility is connected to MS Access database.

Example. To convert MS Access to MS SQL database using the key, do the following:

1. Use the "Run" command ("Start" ⇒ "Run"), specify the key: "C:\Program Files*Intellect*\idb.exe" /sql_convert".
2. Click the "OK" button. As a result the dialog box of the idb.exe utility is displayed.
3. Select MS Access database in the "Select data source" dropdown list
4. Click the "Convert MS Access to MS SQL database" button.
5. As a result the box suggesting to select MS SQL server is displayed (Figure 12.10-5). Click the "OK" button to continue.

Figure 12.10-5 Selecting MS SQL Server

6. As a result the "Data Link Properties box" is displayed (*Figure 12.10-6*). Un this box you are to:

6.1. select the Server name in the dropdown list;

6.2. specify the user name and password to log in the Server;

6.3. set the "Allow saving password" checkbox checked;

6.4. click the "Test Connection" button;

6.5. click the "OK" button to save the changes.

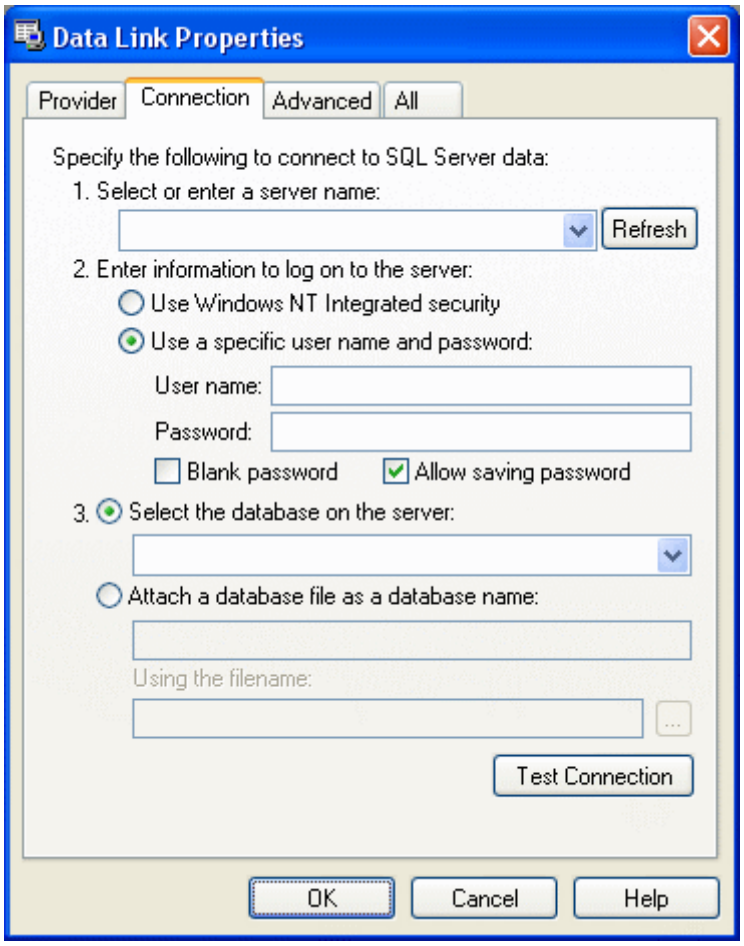


Figure 12.10-6 Connecting to MS SQL Server

7. As a result the dialog box suggesting to enter the database name is displayed (Figure 12.10-7).

Figure 12.10-7 Database name

8. Enter the database name or leave the name suggested by the system. Click the "OK" button.

9. As a result the process of converting MS Access into MS SQL database starts. The progress of the process is displayed in the "Protocol" table of the idb.exe utility.

10. When the database is converted, shut down the idb.exe utility (see "Running and shutting-down the utility" section).

MS Access database is now converted to the MS SQL format.

12.10.6 Extracting event protocol into an individual database

External event protocol is created with the help of the idb.exe utility. To enable external event protocol, do the following:

1. Run the idb.exe utility (see "Running and shutting-down the utility" section).

2. Select the "Protocol" administration database in the "Select source database:" dropdown list (Figure 12.10-8).

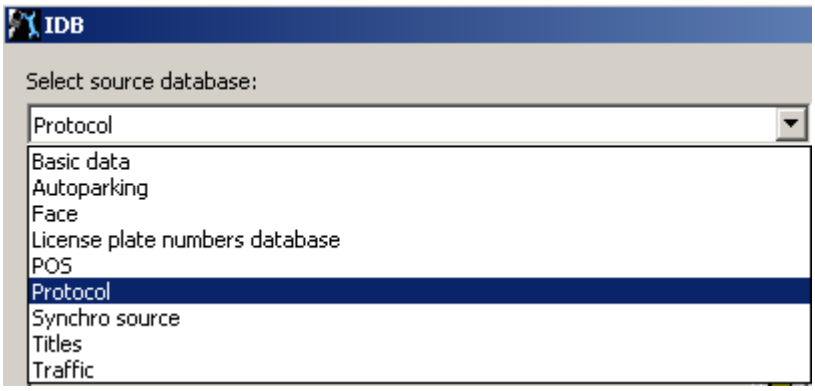


Figure 12.10-8 Selecting the source database

3. To enable the "Protocol" database, set the "Use" checkbox (Figure 12.10-9, 1).

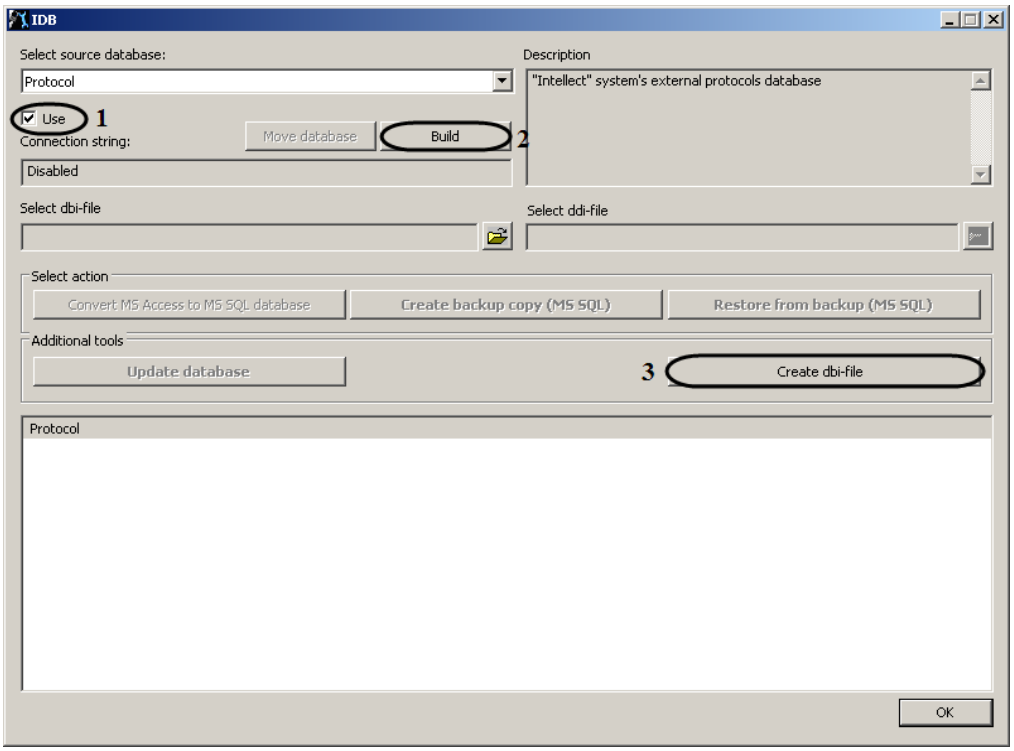


Figure 12.10-9 Configuring the “Protocol” database

4. As a result the “Build” button becomes active (Figure 12.10-9, 2). To connect to the “Protocol” database, click the “Build” button.

5. As a result the “Data link properties” dialog box appears. Go to the “Provider” tab.

6. Select the “Microsoft OLE DB Provider for SQL Server” item in the “OLE DB Provider(s)” list (Figure 12.10-10, 1).

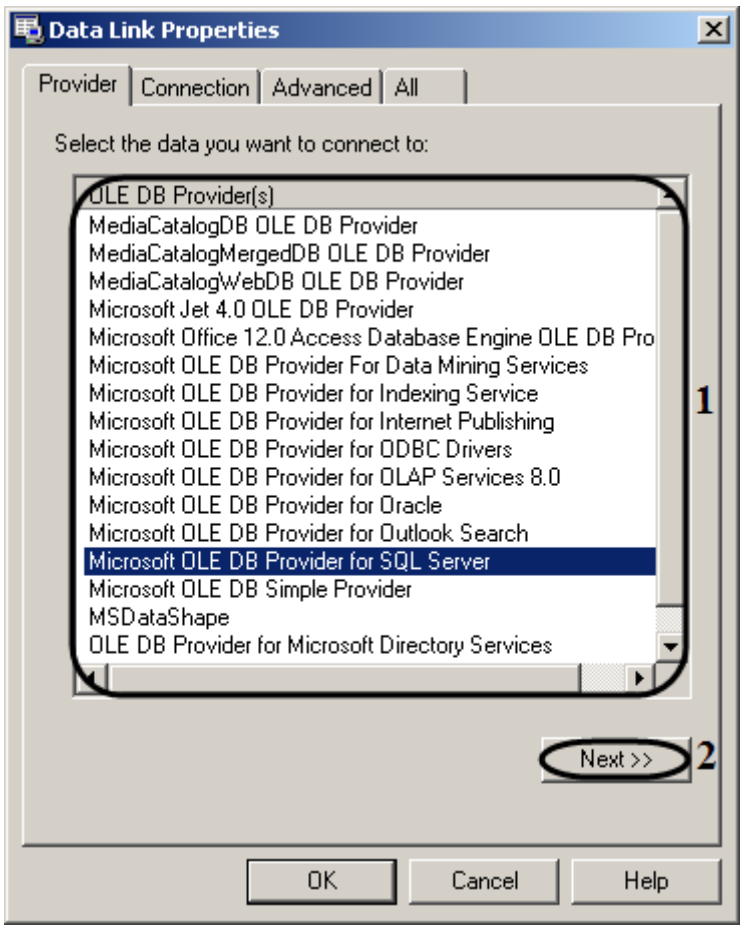


Figure 12.10-10 The "Provider" tab

7. Click the "Next" button (Figure 12.10-10, 2).

8. There is an auto switch to the "Connection" tab.

9. Do the following in the "Connection" tab:

   9.1. Select a server name in the "Select or enter a server name" dropdown list (Figure 12.10-11, 1).

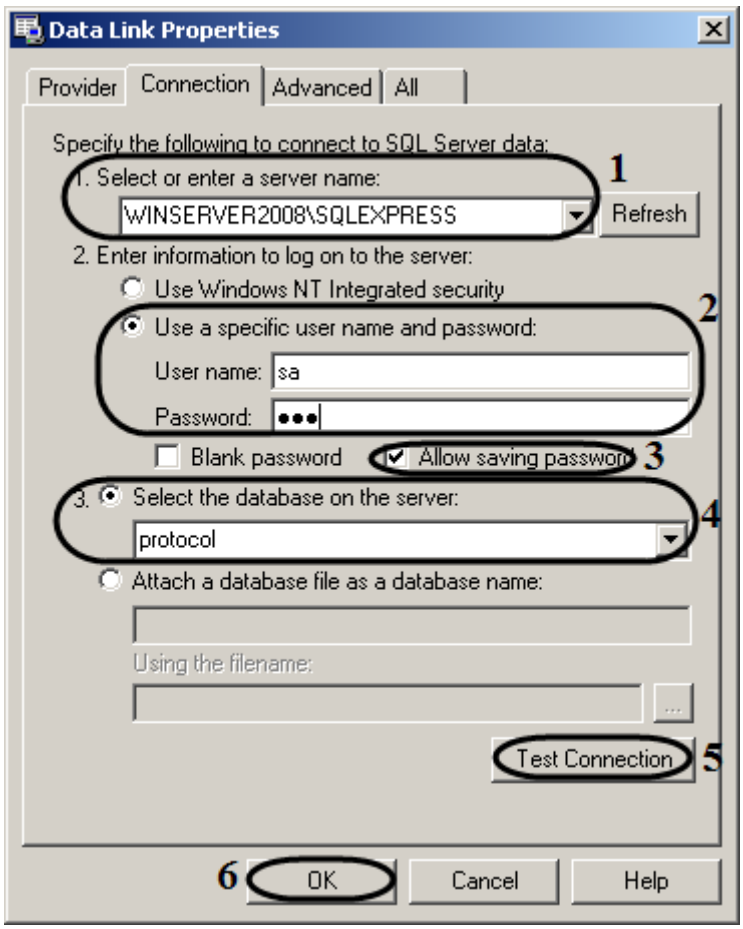


Figure 12.10-11 Connecting to SQL Server

9.2. Specify the user name in the “User name” field and specify the password in the “Password” field (Figure 12.10-11, 2).

9.3. Set the “Allow saving password” checkbox (Figure 12.10-11, 3).

9.4. Select the “protocol” database in the “Select the database on the server” dropdown list (Figure 12.10-11, 4).

Note. The “protocol” database is to be created beforehand with the help of MS SQL Server program. For this:

1. *Open Microsoft SQL Server Management Studio Express;*
2. *Select the “Databases” (Figure 12.10-12);*

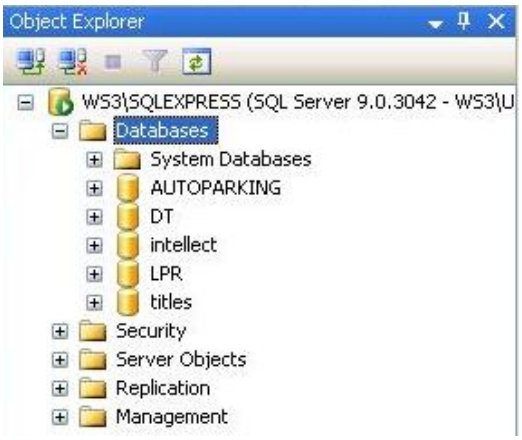


Figure 12.10-12 Selecting the "Databases"

3. *Right-click and select the "New Database…";*

4. *Specify the "protocol" database name in the "Database name" line in the "New Database" box (Figure 12.10-13);*

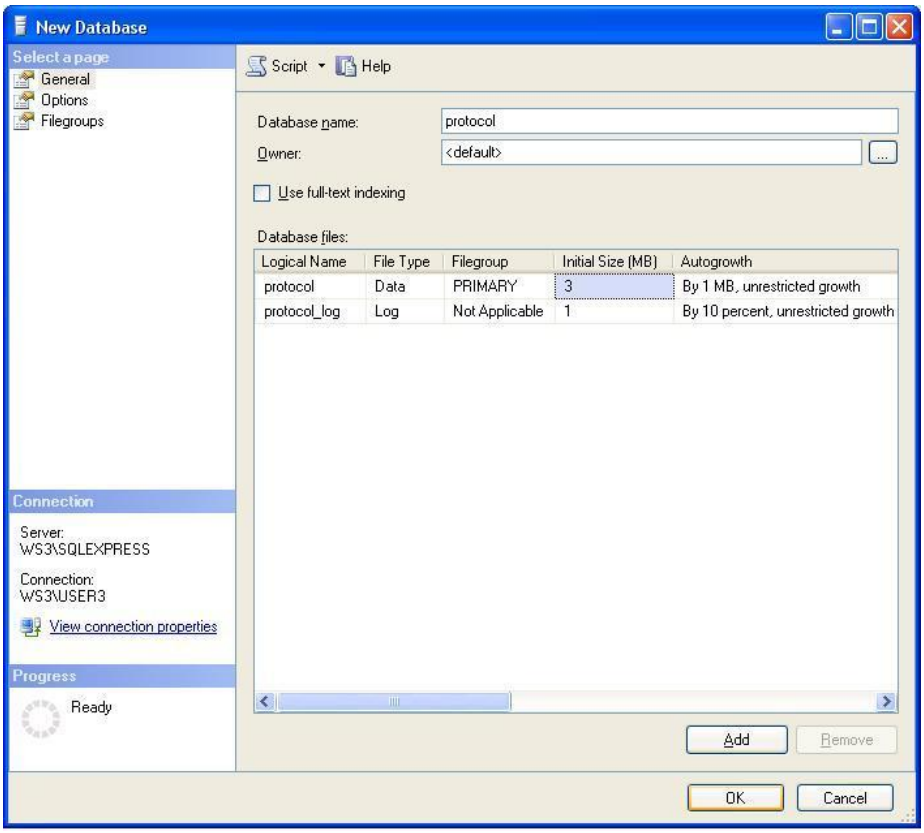


Figure 12.10-13 Creating a new database

5. *To create a new "protocol" database, click OK;*

6. *Shut down Microsoft SQL Server Management Studio Express by clicking the "⊠" button in the upper right corner of the box.*

As a result the "protocol" database is created.

9.5. Click the "Test connection" button (Figure 12.10-11, 5)

9.6. If connection to MS SQL server succeded, then the “Test connection succeeded” message appears (Figure 12.10-14).

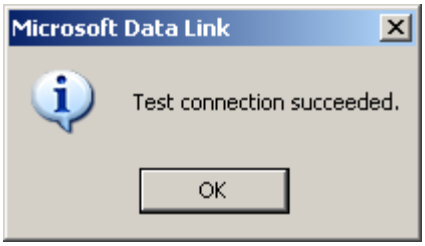


Figure 12.10-14 Message confirming the connection

9.7. Click the “OK” button in the message box; the box closes automatically.

10. Select the dbi file. Click the button next to the “Select dbi file” information field.
11. As a result the “Open” box appears (Figure 12.10-15).

12. Select the “C:\Program Files\Intellect\intellect.dbi” file

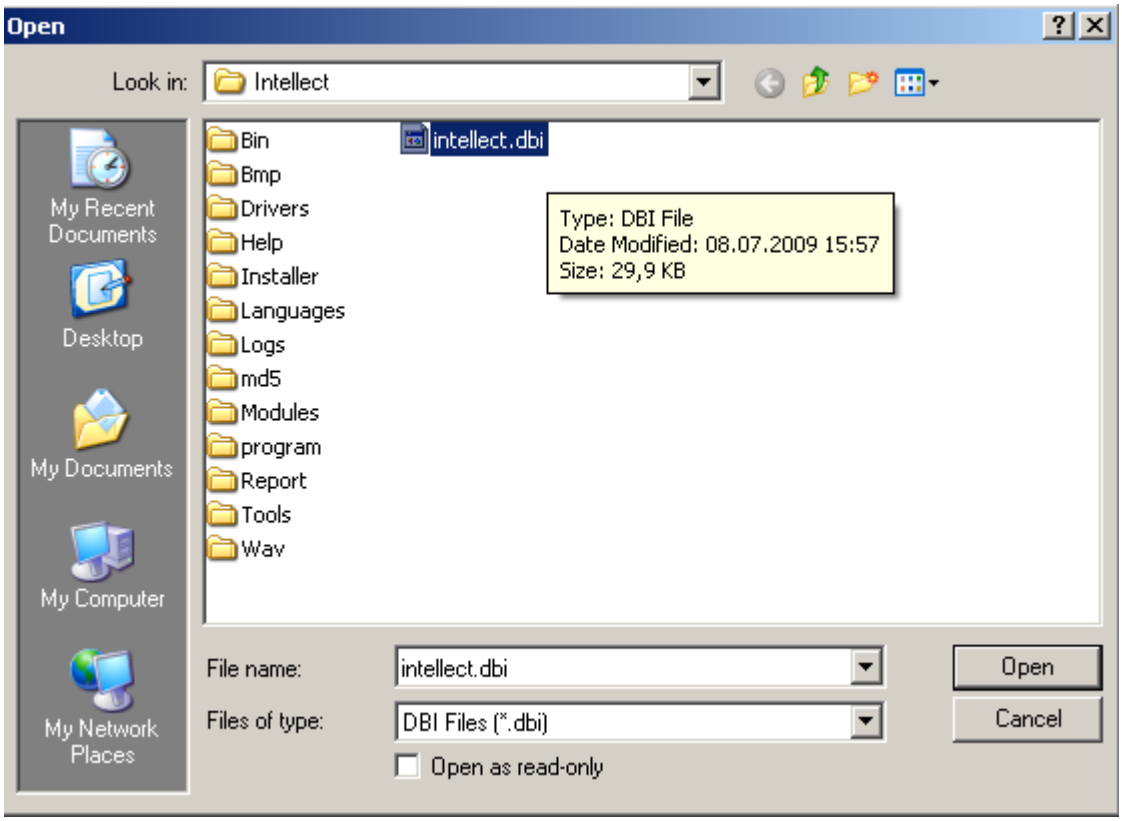


Figure 12.10-15 Openning the dbi.file

13. To update the database in accordance with the intellect.dbi file specified in the “Select dbi file” field, click the “Update database” button (Figure 12.10-16).

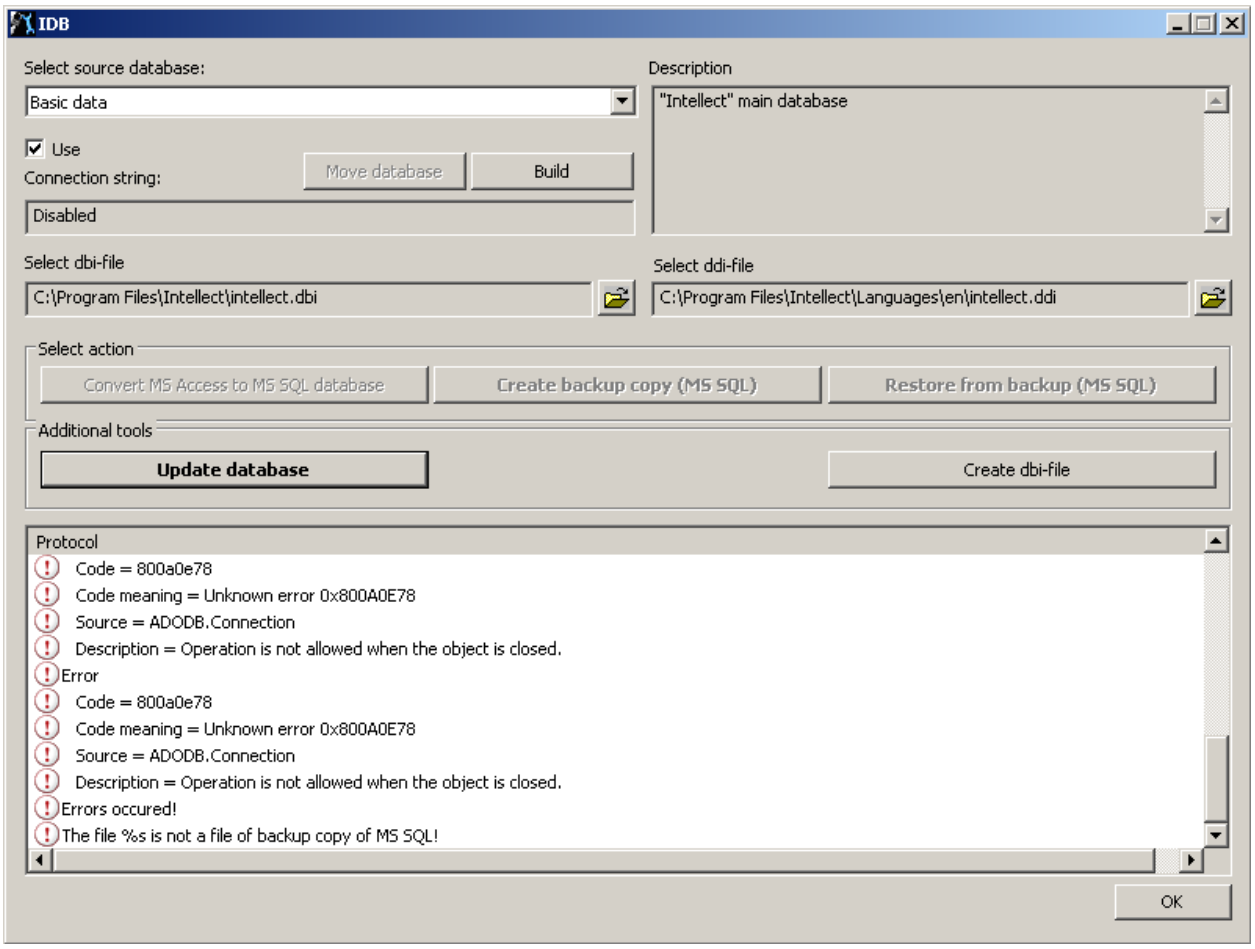


Figure 12.10-16 Updating the database

14. As a result database updating will start. Information about this process is displayed in the "Protocol" table.

15. Database is updated, when there is the "Database updating is finished" message in the "Protocol" table.

16. To save INTELLECT™ connection parameters to the "Protocol" database, click the "OK" button. As a result the box closes automatically.

External event protocol is created and enabled.

12.10.7 Creating the database backup copy

To create the MSSQL database backup copy, use the idb.exe utility. To create the backup copy, do the following:

1. Run the idb.exe utility (see "Running and shutting-down the utility" section).
2. Select the "Basic data" MSSQL database in the "Select data source:" dropdown list.
3. Click the "Create backup copy (MS SQL)" button.
4. As a result the "Save as" box appears (Figure 12.10-17). Select the address and type-in the name of saving backup copy.

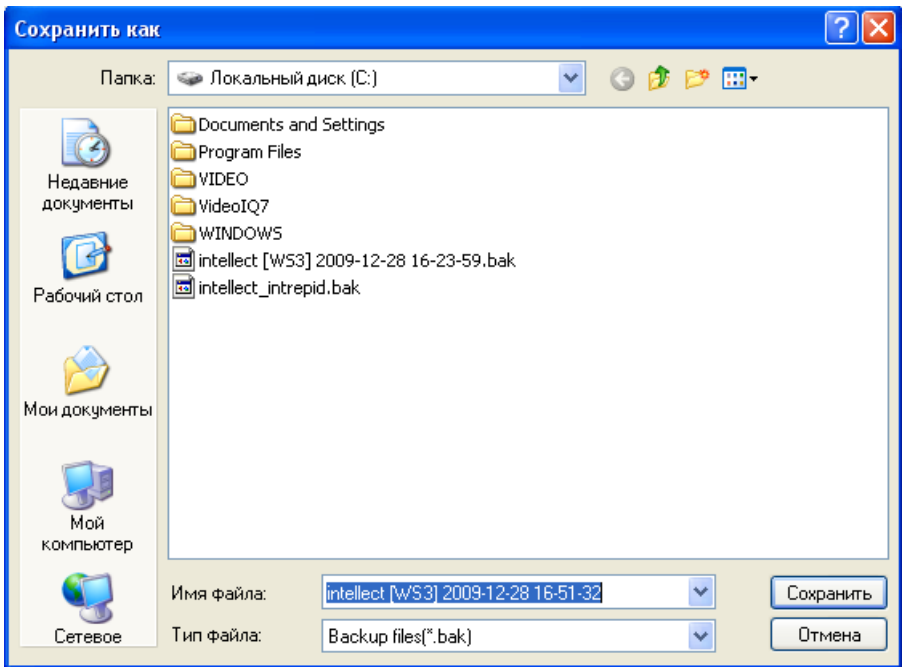


Figure 12.10-17 Saving a backup copy

5. As a result the process of backup copy creation starts. Information on this process is given in the “Protocol” information table.

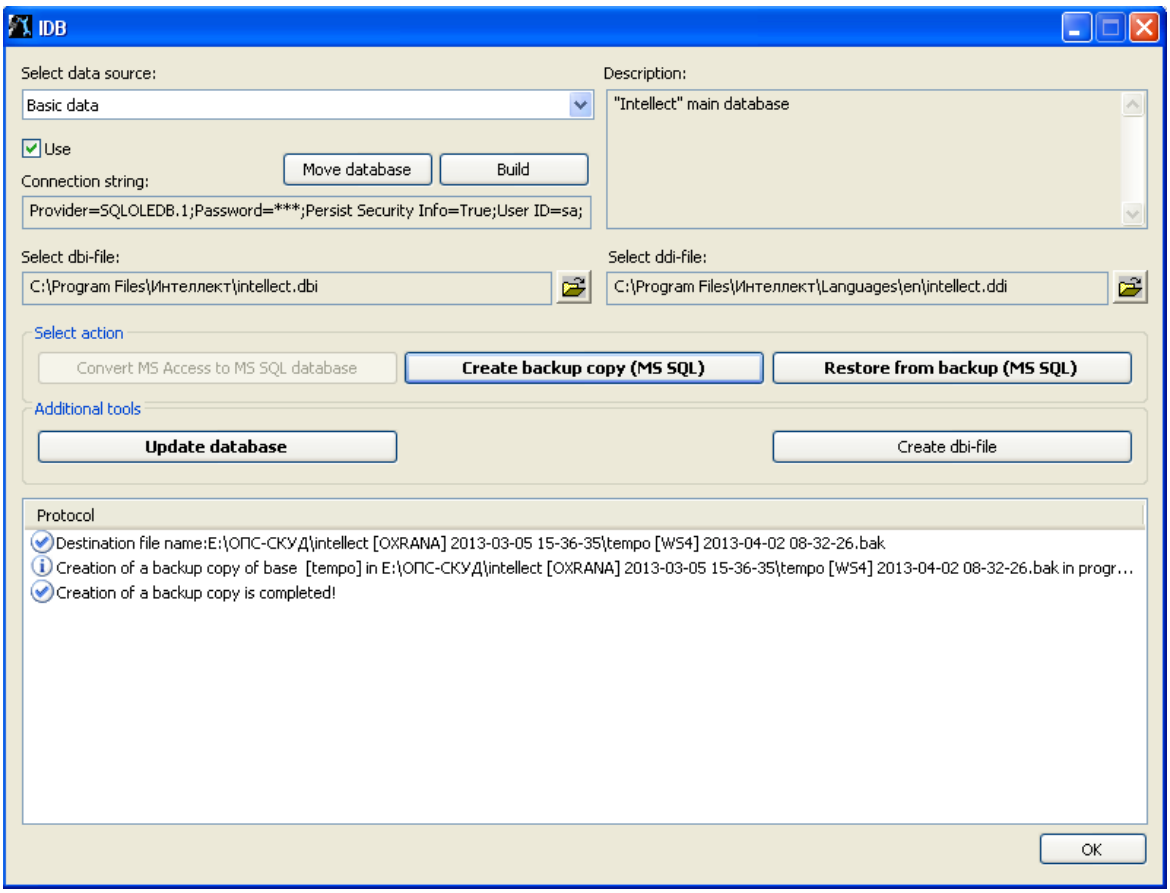


Figure 12.10-18 Creating a backup copy

6. The backup copy is created when the “Creation of a backup copy is completed!” message appears in the “Protocol” table.

Note. The backup copy (MS SQL) can be created using the macro.

7. Click the “OK” button. The box closes automatically.

The MSSQL database backup copy is created.

Note. By default the database backup copy is created at: “C:\Documents and Settings\USER2\My documents\ITV\Intellect\Data\intellect.sql.bak”. If one cannot change the folder for storing the database backup copy while the backup copy creation, do the following:

1. *Call the “Run” function (“Start” - > “Run”). Type-in the “regedit” in the opened box.*
2. *Click the “OK” button. As a result the “Registry editor” box opens.*
3. *Create the string parameter with the “BackupFolder” name in the «HKLM\SOFTWARE\ITV\INTELLECT» registry thread (see “Adding string parameters to the registry” section).*
4. *Set the value of the “BackupFolder” parameter – type-in the address of the folder for storing the database backup copy(e.g. “C:\ Documents and Settings\AVP\Desctop\Backup”).*
5. *As a result the string parameter of the key with the specified value is created (Figure 12.10-19).*

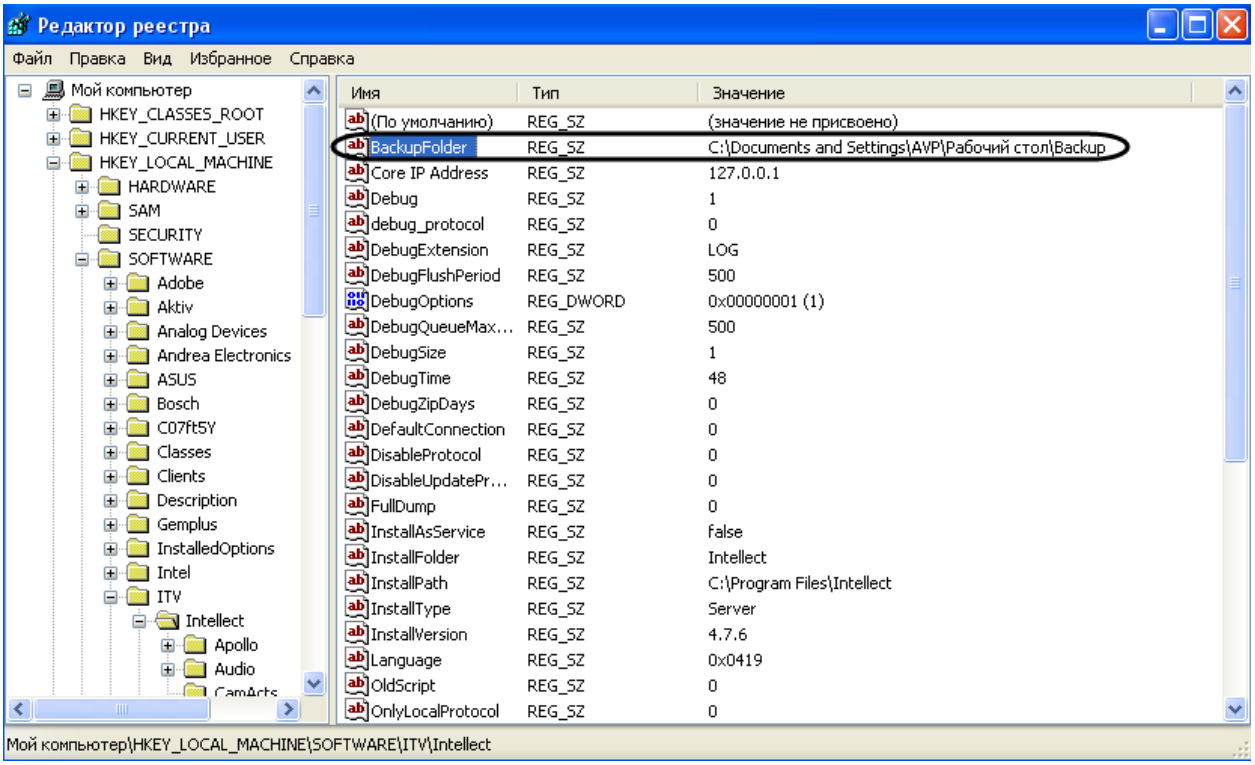


Figure 12.10-19 Creating the “BackupFolder” parameter

6. *Call the “Run” function (“Start” - > “Run”). Type-in the «”C:\Program Files\Intellect\idb.exe” /backup» key in the opened box.*
7. *Click the “OK” button.*

As a result the "intellect.sq.l.bak" database backup copy is created in the folder specified as the value of the "BackupFolder" parameter («C:\ Documents and Settings\AVP\Desctop\Backup»).

12.11 The HubSearch.exe utility for searching IP-devices

12.11.1 The purpose of the HubSearch.exe utility

The HubSearch.exe utility is designed for searching IP-devices, such as Wave Hub, Matrix LH and Matrix LS and also for changing net settings(for example changing the IP address, address mask etc.) of a found device.

12.11.2 Starting and shutting-down the utility

To start the HubSearch.exe use one of the following ways:

- Run the utility from Windows start menu. Foe this click «Start» ⇒ «Programs» ⇒ «Intellect» ⇒ «Tools» ⇒ «Search of IP devices».

  The HubSearch.exe utility is available from the Start menu with the following installation types of the Intellect PC: Server, Remote administrator workstation, Remote monitoring workstation.

- Run the utility from Tools folder of Intellect installation catalogue. For example: «C:\Program Files\Intellect\Tools\ Hub\HubSearch.exe».

In result dialog window of the HubSearch.exe utility will open (Figure 12.11-1).

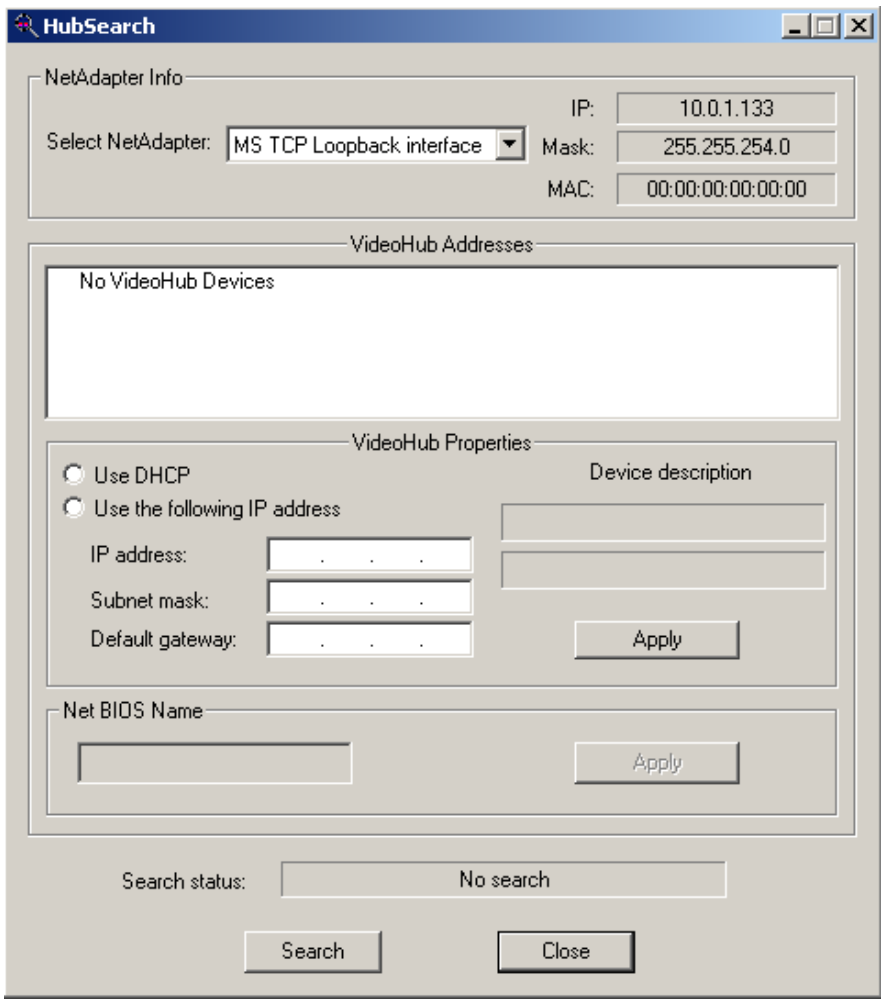


Figure 12.11-1 HubSearch.exe utility dialog window

To close the HubSearch.exe utility use one of the following ways:

1. Click the button in left upper corner of Close dialog window (Figure 12.11-2,1);
2. Press a combination of keys «Alt»+«F4» (Figure 12.11-2,2);
3. Click the “Close” button at the bottom of dialog window (Figure 12.11-2,3).

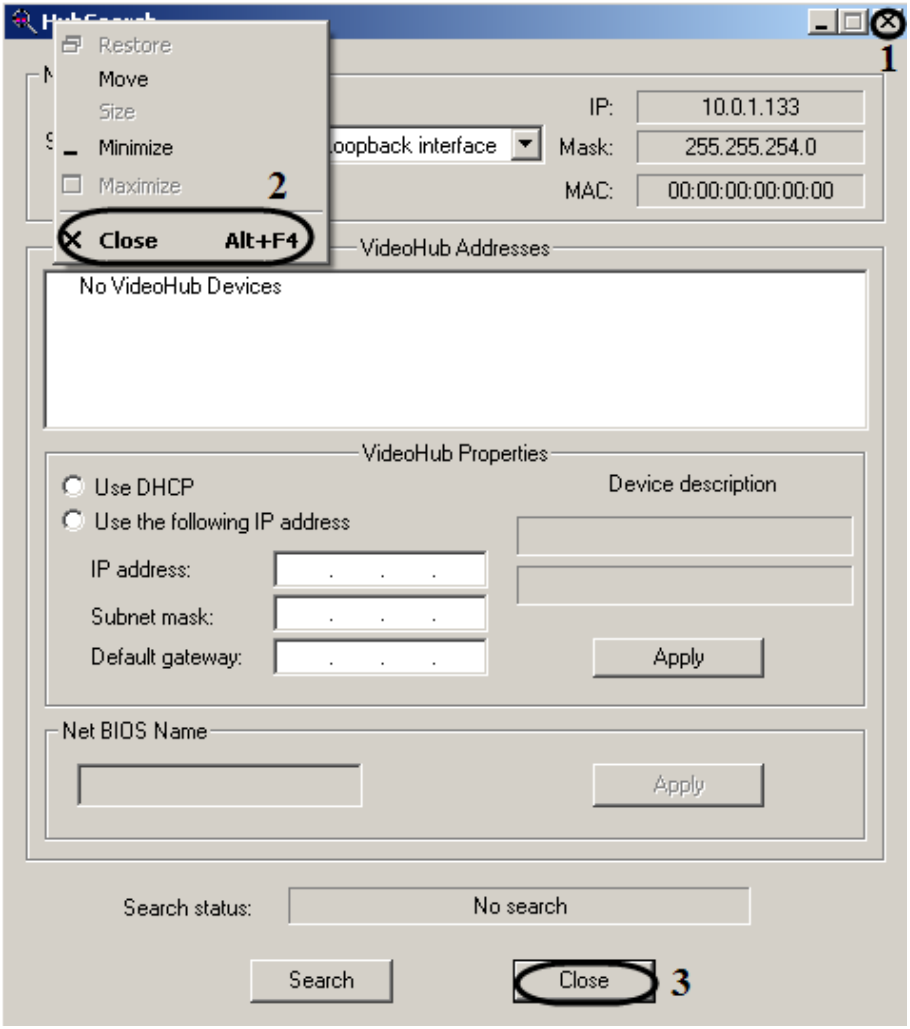


Figure 12.11-2 Shutting-down the HubSearch.exe utility

12.11.3 Interface elements of HubSearch.exe utility window

User interface (dialog window) of HubSearch.exe utility is shown in Figure 12.11-3.

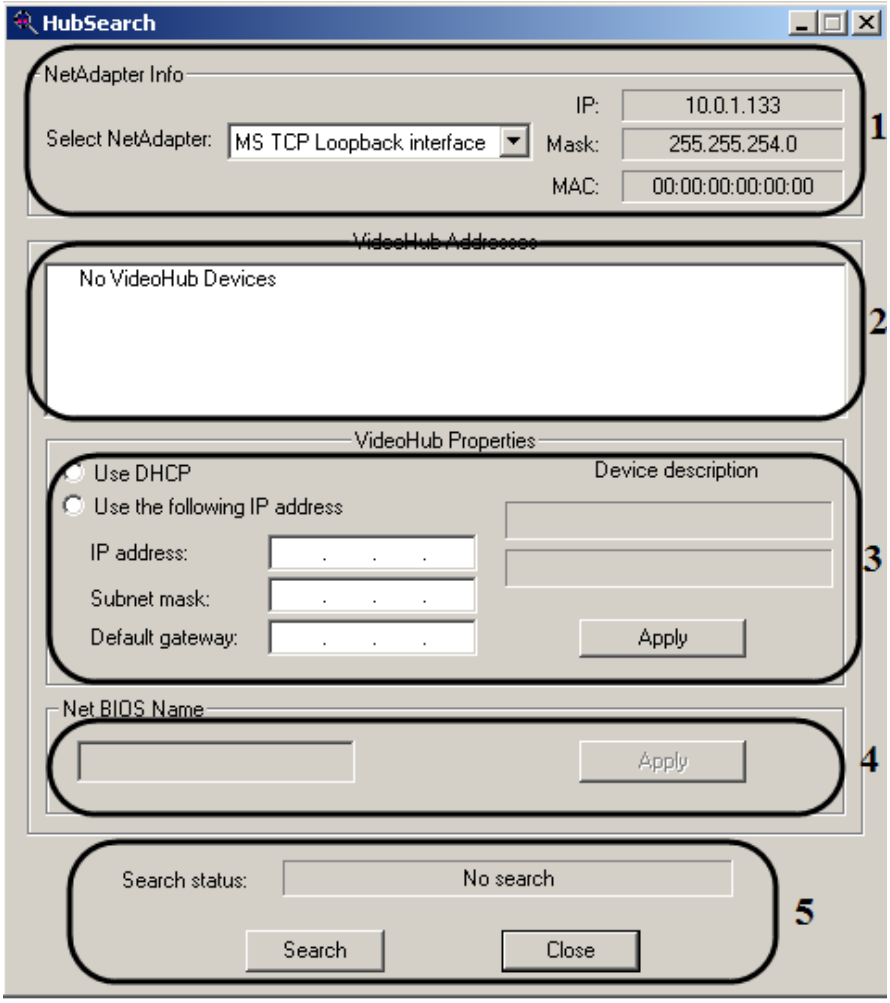


Figure 12.11-3 User interface of HubSearch.exe utility window

Table 12.11-1 shows the content of HubSearch.exe utility user interface.

Table 12.11-1

Group №	group	Element's name	description
1	NetAdapter Info	Dropdown list «Select NetAdapter»	Selection of net adapter
		Display-only field «IP»	Displays IP-address of computer's netcard
		Display-only field «Mask»	Displays mask of computer's netcard
		Display-only field «MAC»	Displays MAC-address of computer's netcard
2	VideoHub Addresses	Field «VideoHub Addresses»	Displays found devices
3	VideoHub Properties	Switch «Use DHCP»	Enables protocol of dynamic site configuration
		Switch «Use the following IP address»	Enables net settings
		Field «IP address»	Set IP address of the device
		Field «Subnet mask»	Set address mask of the device

Group №	group	Element's name	description
		Field «Default gateway»	Set the gate
		2 Display-only fields «Device Description»	Displays parameters of the device
		Button«Apply»	Is used for applying the new settings
4	Net BIOS Name	Field «Net BIOS Name»	Set the netname of the device
		Button« «Apply»	Is used for applying the new settings
5	Search status	Display-only field «Search status»	Displays status of device search
		Button« «Search»	Serves to start the search
		Button« «Close»	Closes dialog window

12.11.4 Using the HubSearch utility

Using the HubSearch.exe utility is done in the following way:

1. Run the HubSearch.exe utility.
2. To search for device click «Search» (Figure 12.11-4).

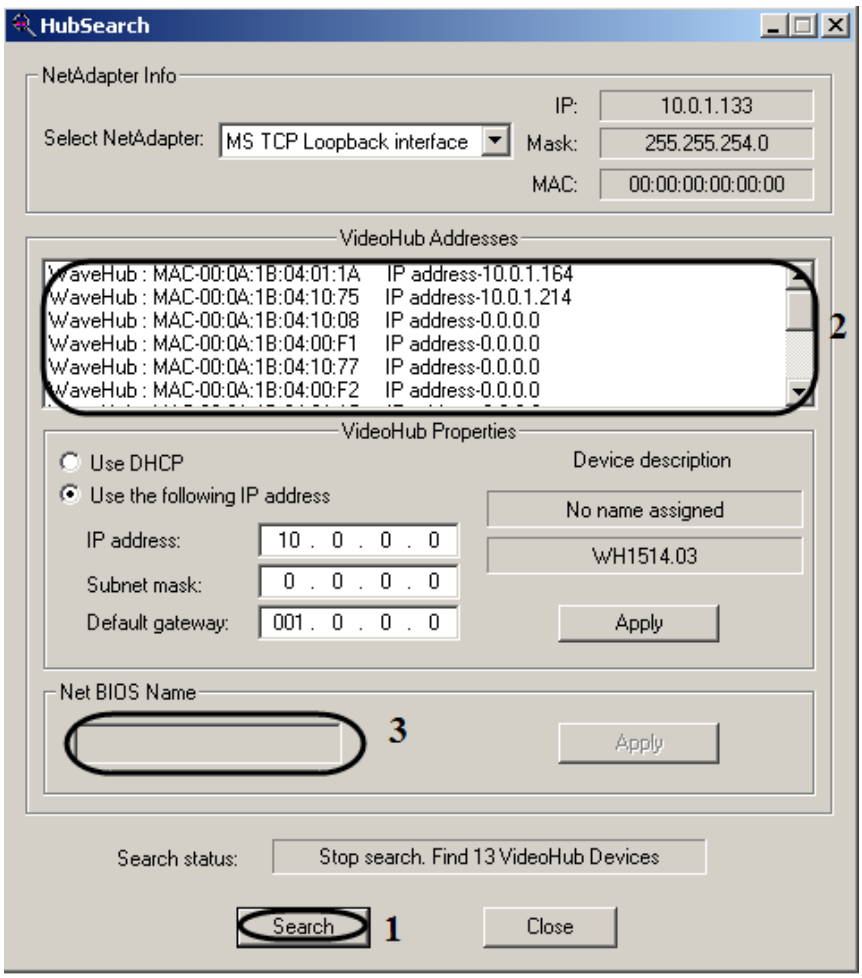


Figure 12.11-4 Using the HubSearch.exe utility

3. From the list «VideoHub Addresses» select the requires net device (Figure 12.11-4,2)

4. When protocol of site dynamic configuration is used, set the switch to the position «Use DHCP». To change net settings set the switch to the position «Use the following IP address»

5. Click «Apply» button of «VideoHub Properties» group to save the changes.

6. If necessary change the net name of the device in the field «Net BIOS Name» (Figure 12.11-4,3).

7. Click «Apply» button of «Net BIOS Name» group to save the changes(Figure 12.11-4,1).

8. Close the HubSearch.exe utility(see. section «Start and finishing the utility»).

Work with HubSearch.exe utility is completed.

12.12 The MatrixCodeReader.exe utility

12.12.1 The purpose of MatrixReader.exe utility

The MatrixCodeReader.exe utility is designed for getting dallas-codes of video capture cards' cryptochips on Matrix devices.

12.12.2 Starting and shutting-down the utility

To start the, MatrixCodeReader.exe do one of the following:

1. Start the utility from the Windows taskbar. Click Start, then Programs, then Intellect, then Tools, then MatrixCodeReader.exe.

   The MatrixCodeReader.exe utility is available from the Start menu with the following installation types of the Intellect PC: Server, Remote administrator workstation, Remote monitoring workstation.

2. Run the utility from the folder «Tools\Hub» of Intellect installation directory catalogue. For example: «C:\Program Files\Intellect\Tools\ Hub\ MatrixCodeReader.exe».

MatrixCodeReader.exe dialog window will be displayed in result (Figure 12.12-1).

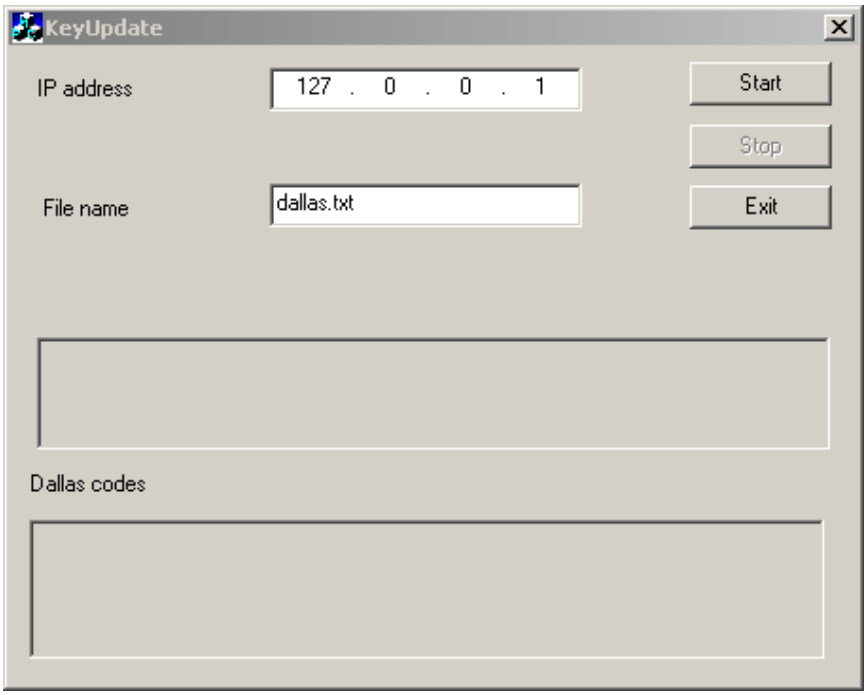


Figure 12.12-1 MatrixCodeReader.exe dialog window

To close MatrixCodeReader.exe do one of the following:

4. Click the button in right upper corner of Close dialog window (Figure 12.12-2,1);

5. Press a combination of keys «Alt»+«F4» (Figure 12.12-2,2);

6. Click «Exit» button in the dialog window (Figure 12.12-2,3).

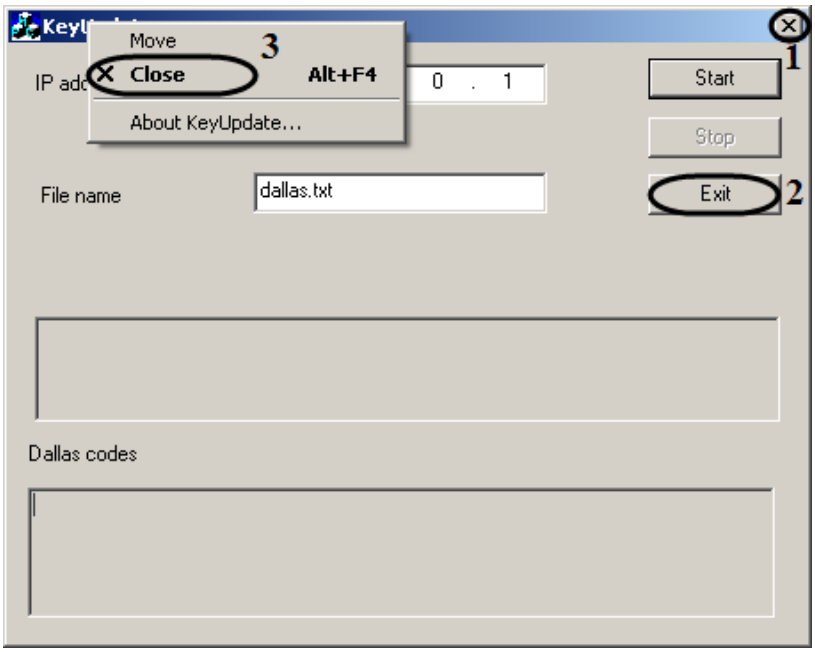


Figure 12.12-2 Shutting-down the MatrixCodeReader.exe

12.12.3 Interface elements of the MatrixCodeReader.exe

The user interface of MatrixCodeReader.exe is shown in Figure 12.12-3.

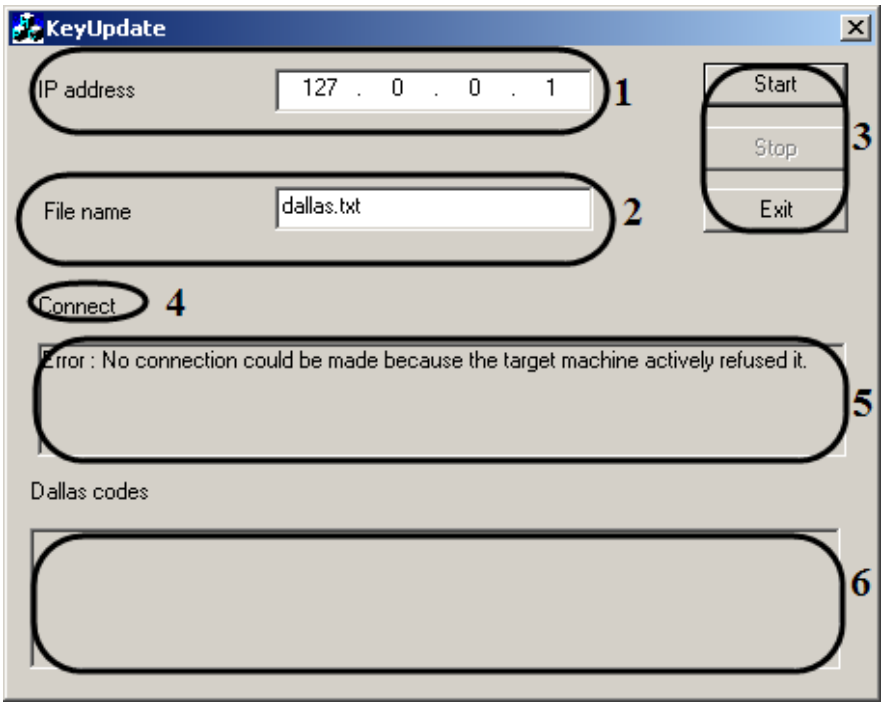


Figure 12.12-3 MatrixCodeReader.exe user interface

MatrixCodeReader.exe user interface has the following elements:

1 Entry field «IP address» of device's IP address (Figure 12.12-3, 1).

2 Entry field «File name» of file's name, containing dallas-code of video capture card's cryptochip. Is set by default(Figure 12.12-3, 2).

3 Start button of running and receiving the dallas-code, Stop button and Exit buttin to quit the utility (Figure 12.12-3, 3).

4 State line (Figure 12.12-3, 4). May contain the following information (Table 12.12-1).

Table 12.12-1

State	Image of inerface's elements
1. Empty line, when the utility is run	
2. Connection at the beginning or when an error has occured	Error: no connection could be made because the target machine actively refused it
3. Update finished successfully	Update finished successfully

5 Area of error's displaying (Figure 12.12-3, 5).

6 Area of displaying the dallas-code (Figure 12.12-3, 6).

12.12.4 Work order with MatrixCodeReader.exe

Work with MatrixCodeReader.exe is done in the following way:

1. Run MatrixCodeReader.exe (see Start and shutting-down the utility)
2. Enter IP of the device in the field IP-address (Figure 12.12-4, 1)
3. Click «Start» (Figure 12.12-4, 2)
4. Dallas codes of the boards will appear in the area Dallas codes in result (Figure 12.12-4, 3)
5. Finish work with MatrixCodeReader.exe (see Start and shutting-down the utility).

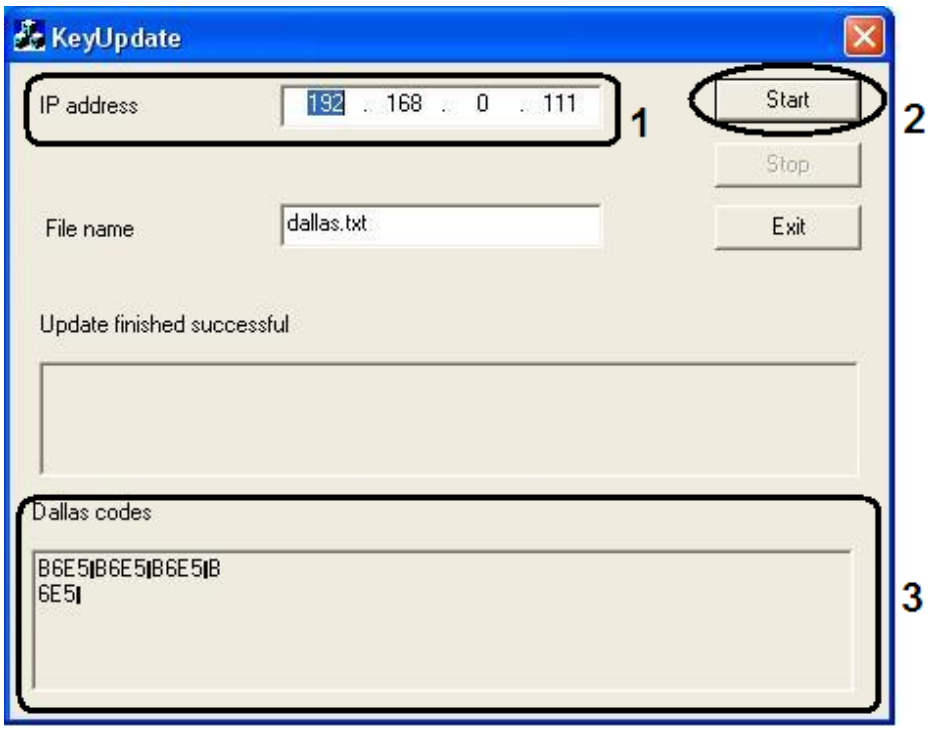


Figure 12.12-4Work with MatrixCodeReader.exe

Work with MatrixCodeReader.exe is over.

12.13 The Boards.exe utility

12.13.1 The purpose of the Boards.exe utility

Boards.exe utility is designed for setting the devices of video digitization, installed on the Server, in Intellect program.

12.13.2 Starting and shutting-down the utility

Boards.exe is run from «Tools» folder of Intellect program installation directory. For example: «C:\Program Files\Intellect\Tools\ Boards.exe» (Figure 12.13-1).

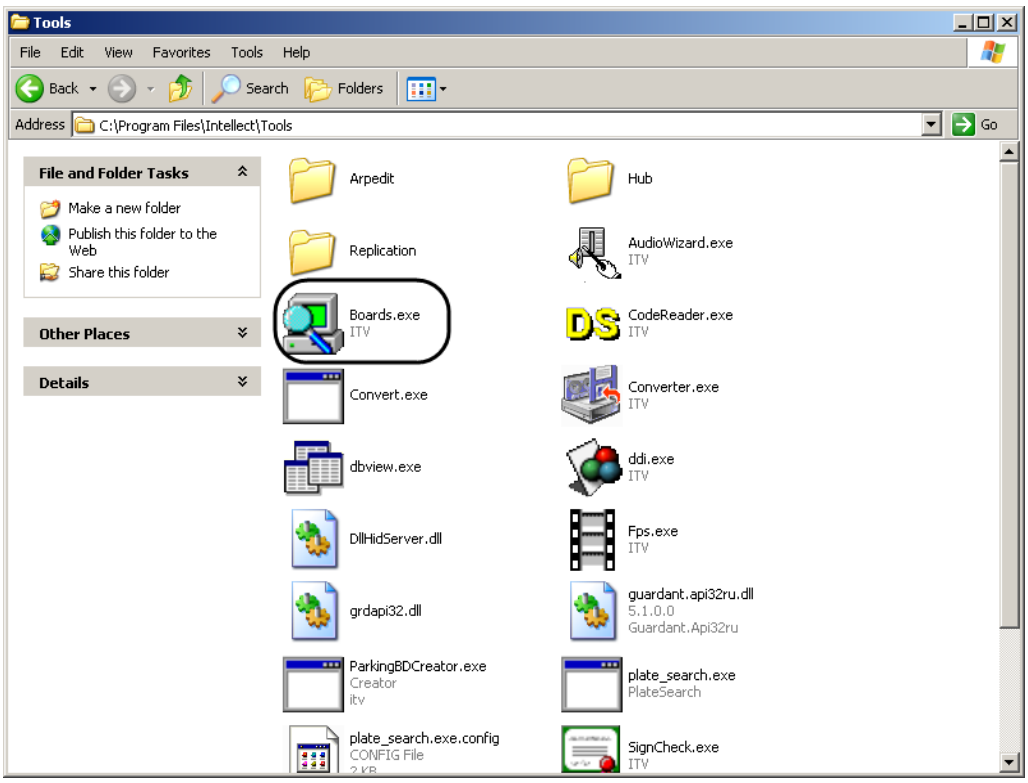


Figure 12.13-1 Starting the Boards.exe

Boards.exe dialog window will be displayed in result(Figure 12.13-2).

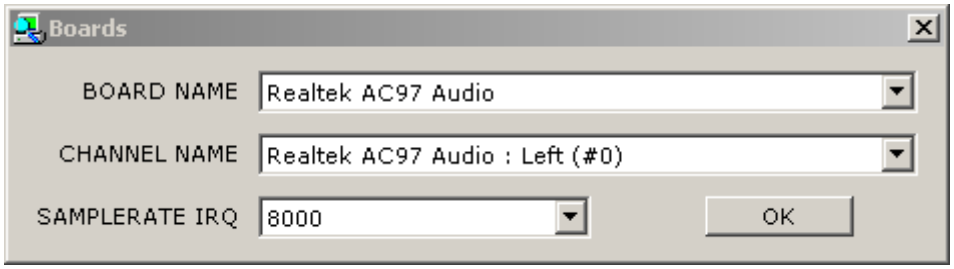


Figure 12.13-2 Boards.exe dialog window

One can quit Boards.exe using one of the following ways:

7. Press a combination of keys «Alt»+«F4»(Figure 12.13-3,1).
8. Click the button in right upper corner of Close dialog window (Figure 12.13-3,2);
9. Click «OK» after changes (Figure 12.13-3,3).

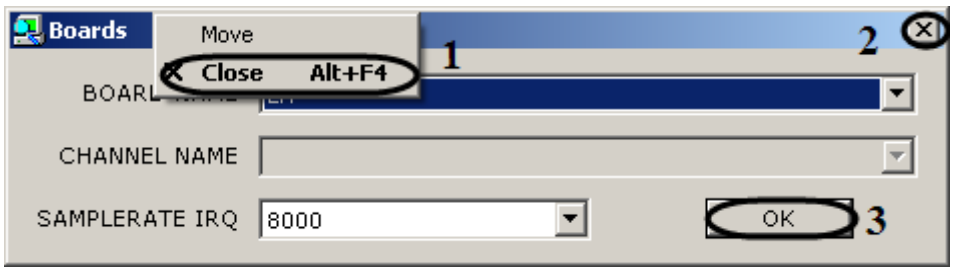


Figure 12.13-3 Shutting-down Boards.exe

12.13.3 Interface elements of Boards.exe

User interface (dialog window) of Boards.exe is shown in Figure 12.13-4.

Figure 12.13-4 Interface of Boards.exe

Boards.exe user interface has the following elements that are shown in Table 12.13-1.

Table 12.13-1

Element №	Element of user interface	Description
1	Dropdown list «BOARD NAME»	Set the type of sound digitization device. Depends on type and number of devices of audio signal digitization installed on the Server.
2	Dropdown list «CHANNEL NAME»	Set the number of audio input channel in accordance with RCA-F pin number, to which microphone is connected. Depends on board type of audio signal digitization.
3	Dropdown list «SAMPLERATE IRQ»	Set the sample rate by the device. Influences on quality of played back and recorded audio signal and size of audio recording. For video capture cards' ADC – 8000, 16000, 32000.
4	Button «OK»	Is used for applying the changes and shutting-down the Boards.exe.

Note. For video capture cards' ADC of AxxonSoft company: 0 – Left channel; 1 – Right channel.
The more the level of digitization, the better the quality of audio signal and consequently the more efficiency of audio control.

12.13.4 Using the Boards.exe

Using the Boards.exe utility is done in the following way:

1. Run Boards.exe (see section Start and shutting-down the utility).

2. Select the name of the board from the dropdown list «BOARD NAME» (Figure 12.13-5).

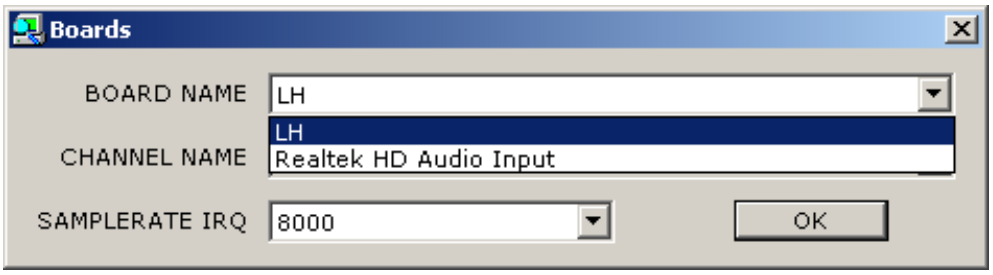


Figure 12.13-5 Changing the board name

3. Select the channel name from the dropdown list «CHANNEL NAME» (Figure 12.13-6).

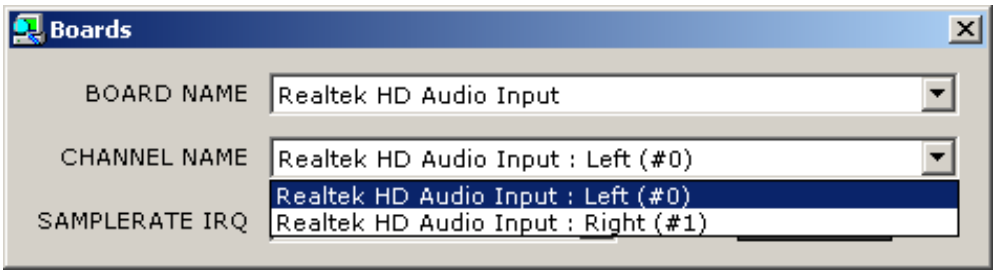


Figure 12.13-6 Changing the Channel name

4. Select the rate of audio signal digitization from the dropdown list «SAMPLERATE IRQ»(Figure 12.13-7).

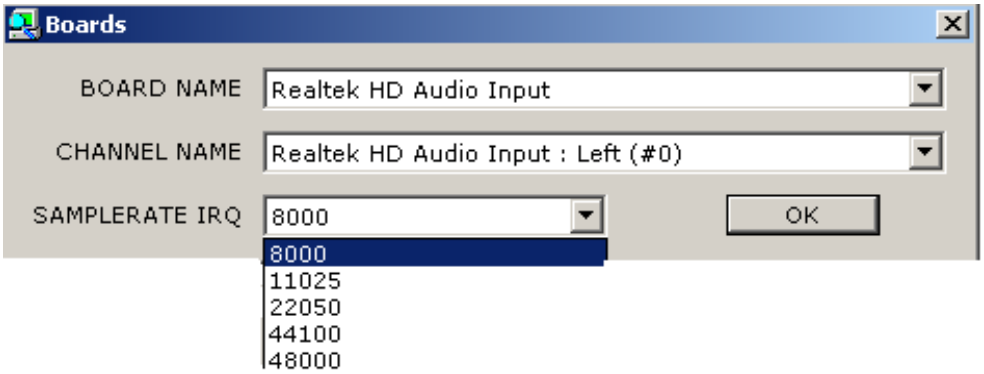


Figure 12.13-7 Changing the «SAMPLERATE IRQ»

5. Click «OK» to save the changes. The utility window will automatically close.

Work with Boards.exe is completed.

12.14 Configuration check tool

The “Configuration check” tool is designed for checking the settings of all created objects in the INTELLECT™ software and restoring the correct configuration if any changes occurred. Restoring is performed from the configuration template which can be created at any moment in accordance with current settings.

12.14.1 Starting and shutting down the tool

To start the “Configuration check” tool, do the following:

10. Go to the “Interfaces” tab of the “System settings” dialog box (Figure 12.14-1).

Figure 12.14-1 The “Interfaces” tab

11. Create the “Configuration check” object on the base of the “Screen” object (Figure 12.14-2).

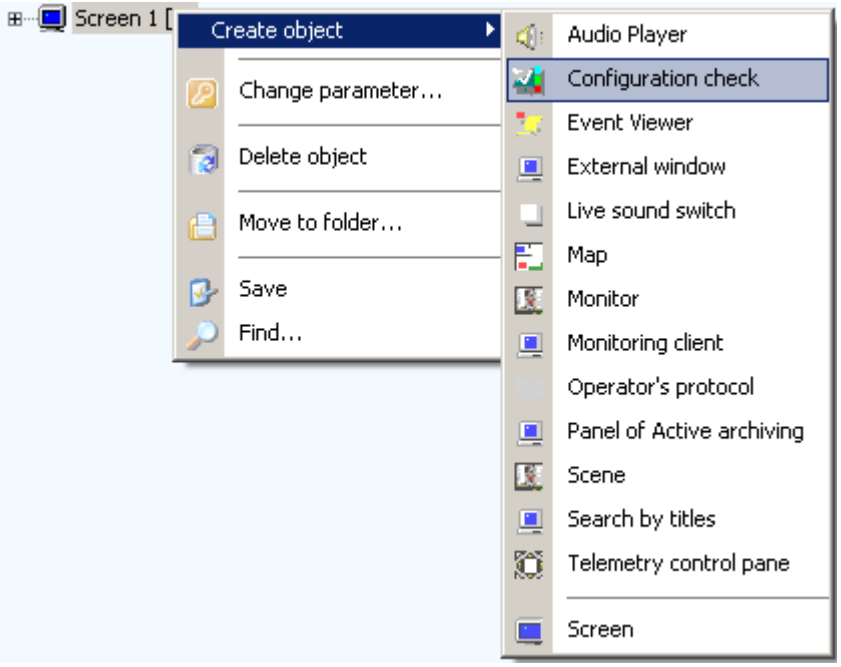


Figure 12.14-2 Creating the “Configuration check” object

12. Go to the settings panel for the “Configuration check” object (Figure 12.14-3).

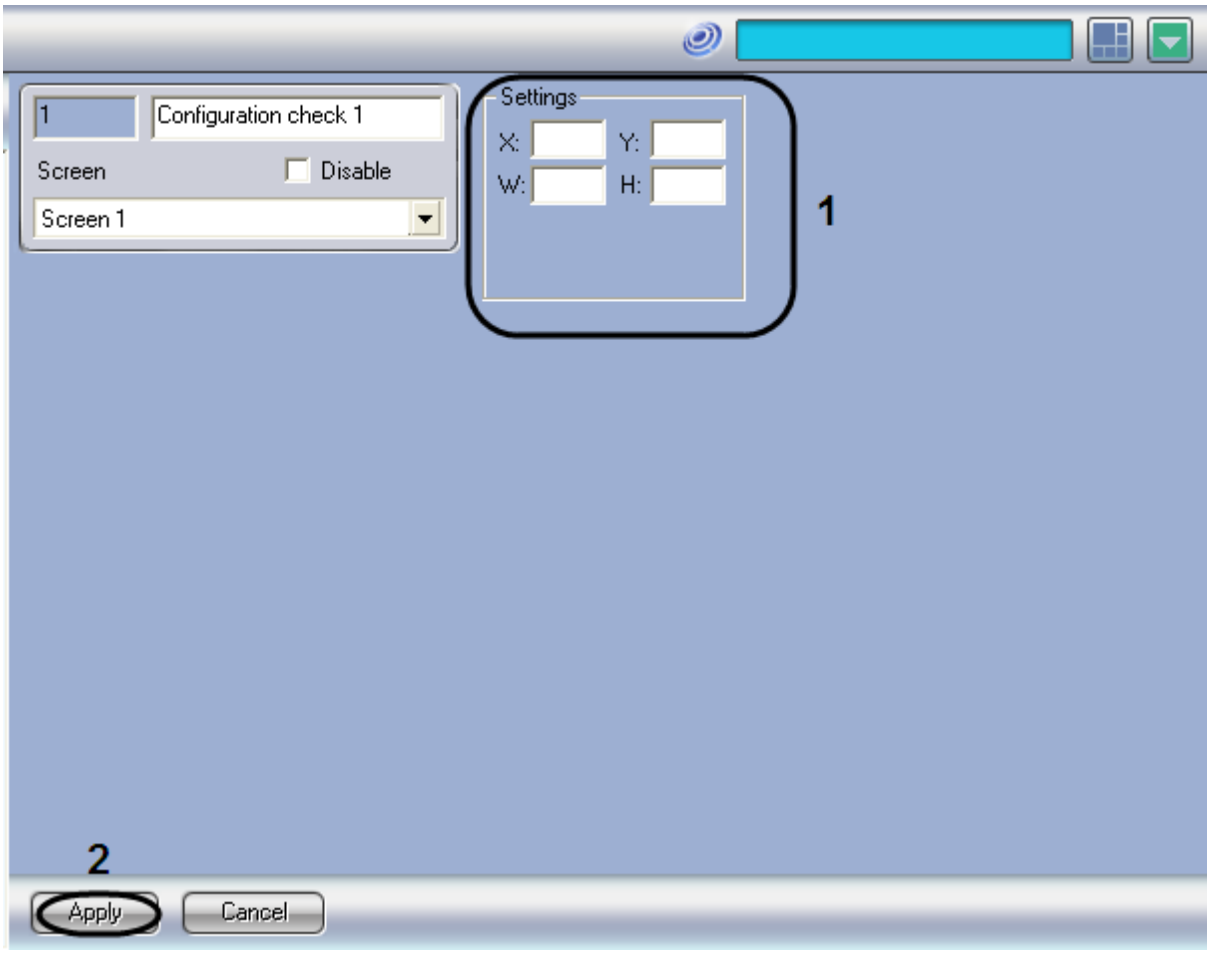


Figure 12.14-3 The settings panel for the “Configuration check” object

13. To configure the position of the “Configuration check” object, set the coordinates of upper left corner in “X:”, “Y:” fields and values of window’s width and height in “W:”, “H:” fields (Figure 12.14-3, 1).
14. To save the changes, click the “Apply” button (Figure 12.14-3, 2).

As a result the “Verifying configuration tool” dialog box is displayed (Figure 12.14-4).

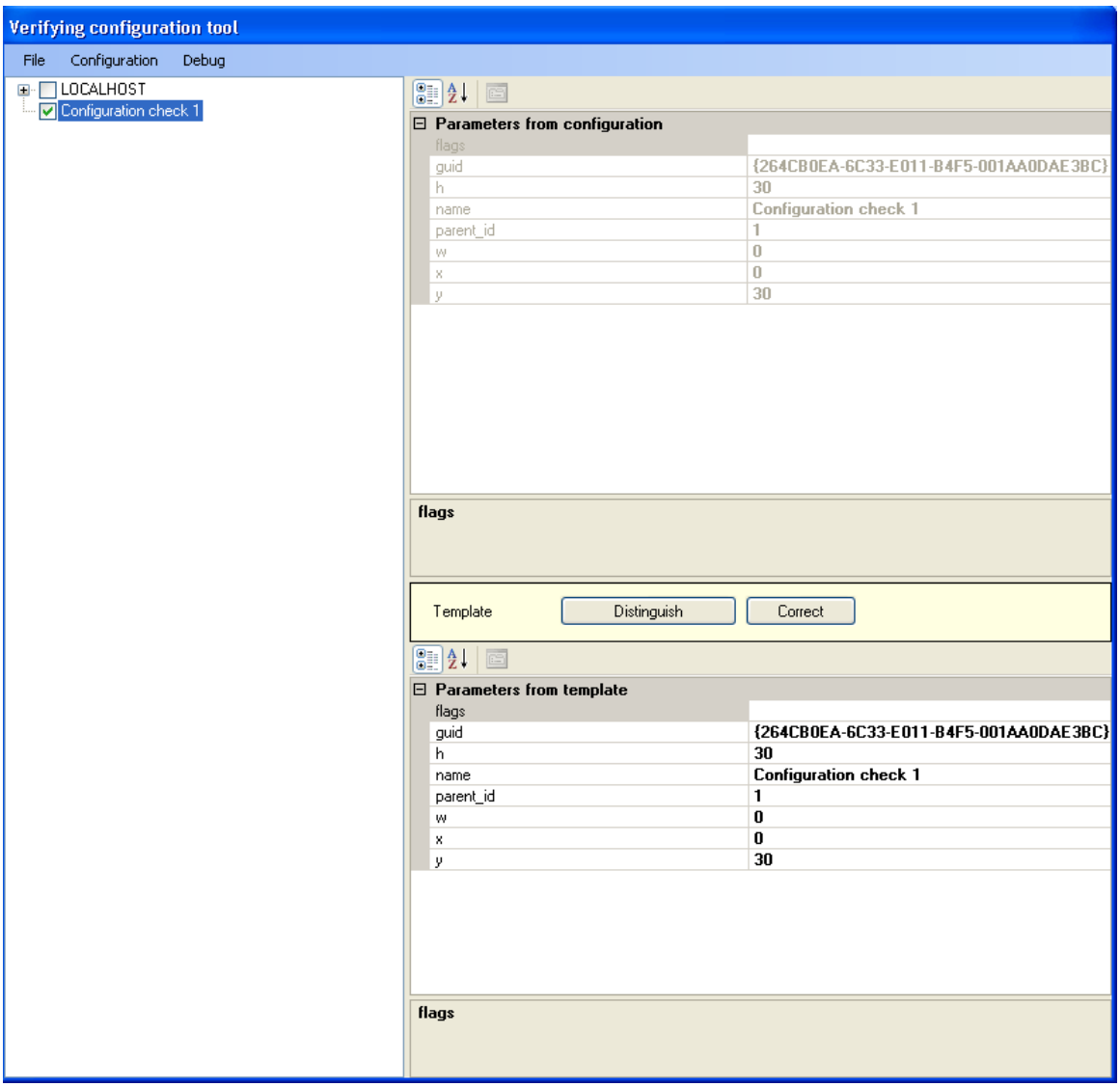


Figure 12.14-4 The "Verifying configuration tool" dialog box

To shut down the tool, click the button on the main control panel of INTELLECT™ software and select the "Close all" menu item (Figure 12.14-5);

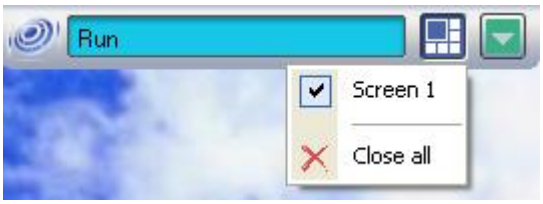


Figure 12.14-5 Shutting down the "Configuration check" tool

12.14.2 Interface description

The dialog box of the "Configuration check" tool has four main interface elements:

1. The toolbar (Figure 12.14-6, 1).
   The tool's control menu is located here.

2. The objects tree of INTELLECT™ software (Figure 12.14-6, 2).

The objects tree of INTELLECT™ software is displayed here. Clicking the left mouse button on any object in the objects tree, the configuration of its parameters is displayed in parameters field (points 3-4).

3. The field of object parameters from INTELLECT™ configuration (Figure 12.14-6, 3).
   The current configuration is displayed in this field. These parameters are not available for editing.

4. The field of object parameters from a template (Figure 12.14-6, 4).
   Parameters of the selected object from the configuration template field are displayed here. These parameters are available for editing.

Note. At the first start of the "Configuration check" tool, the current configuration of selected object is displayed in this field.

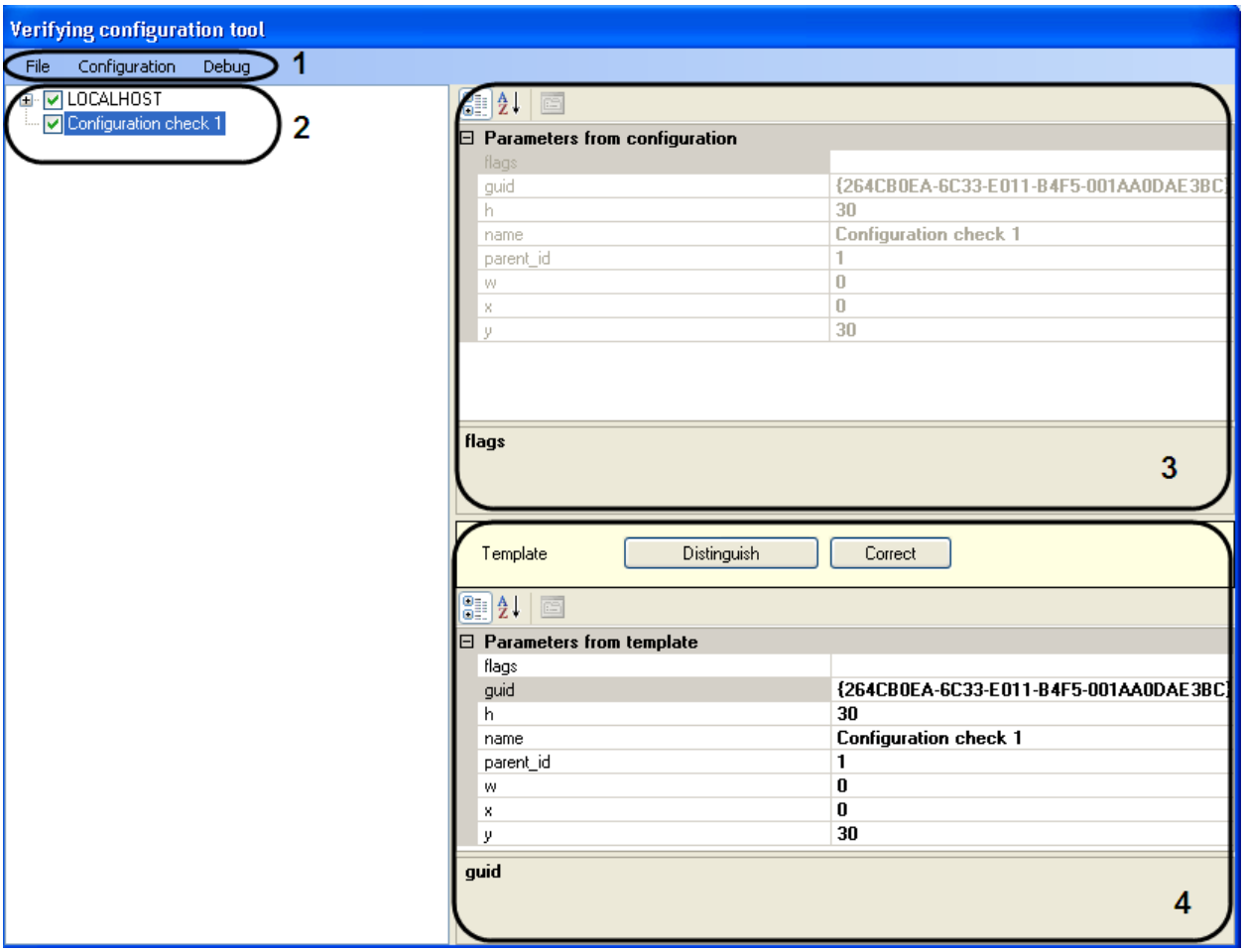


Figure 12.14-6 The "Configuration check" tool

12.14.3 The Configuration check tool operation

To start the operation, start the "Configuration check" tool (see the "Starting and shutting down the tool" section).

12.14.3.1 *Creating a template*

To create a template in the "Configuration check" tool, do the following:

1. In the objects tree, set the checkboxes next to those objects which parameters configuration will be included in a template (Figure 12.14-7).

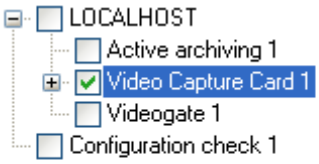


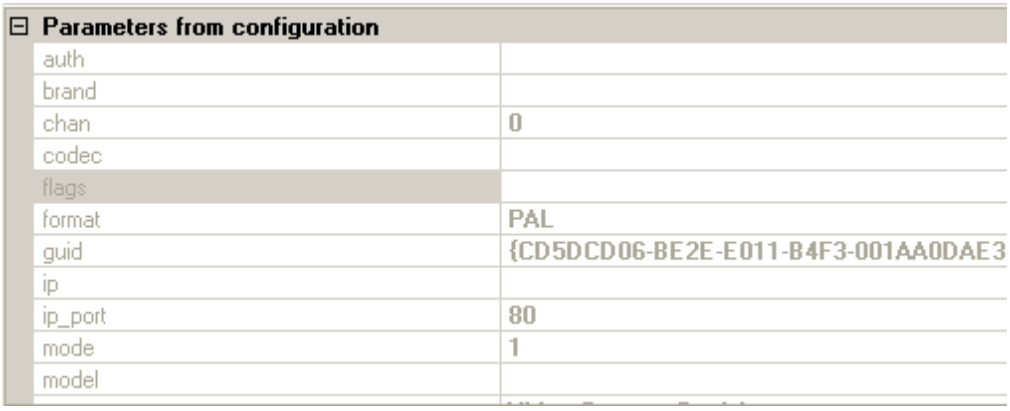
Figure 12.14-7 The "Configuration check" objects tree

2. Click the left mouse button upon the object which parameters configuration is to be edited.

Note. The set checkbox next to the required object is an obligatory term in order to edit the parameters.

As a result there is a list of object parameters with values, available for editing in the parameters from template field (Figure 12.14-9).

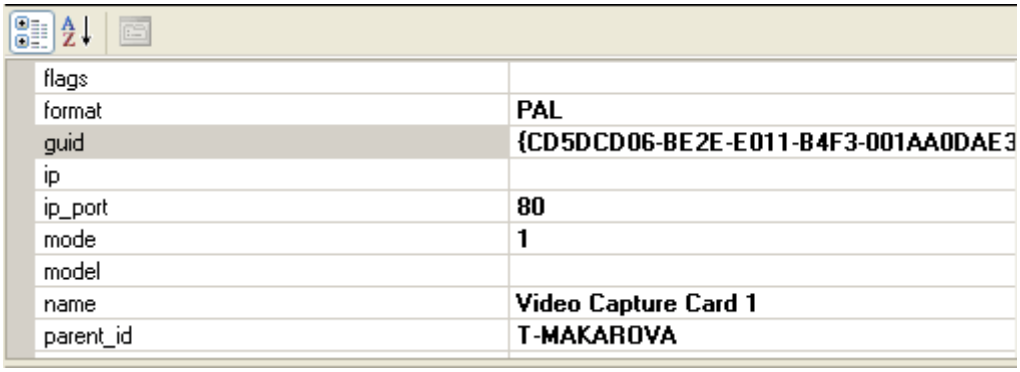
*Note 1. In the parameters from INTELLECT configuration field there is a list of object parameters with values set in INTELLECT software. They can not be edited (*Figure 12.14-8*).*



Parameters from configuration	
auth	
brand	
chan	0
codec	
flags	
format	PAL
guid	{CD5DCD06-BE2E-E011-B4F3-001AA0DAE3
ip	
ip_port	80
mode	1
model	

Figure 12.14-8 The "Parameters from configuration" field

Note 2. At the first start of the "Configuration check" tool, the current configuration of selected object is displayed in this field.



flags	
format	PAL
guid	{CD5DCD06-BE2E-E011-B4F3-001AA0DAE3
ip	
ip_port	80
mode	1
model	
name	Video Capture Card 1
parent_id	T-MAKAROVA

Figure 12.14-9 The "Parameters from template" field

3. Edit the object parameters. To edit the selected parameter, click the left mouse button upon the corresponding line with its value and edit it.
4. Repeat steps 3-4 for all objects, which parameters configurations are to be edited.
5. Go to the “File” menu of the control panel and select the “Save template” item (Figure 12.14-10).

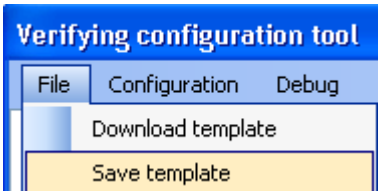


Figure 12.14-10 Save template

6. Name a file and select the storage directory in the appeared window (Figure 12.14-11).

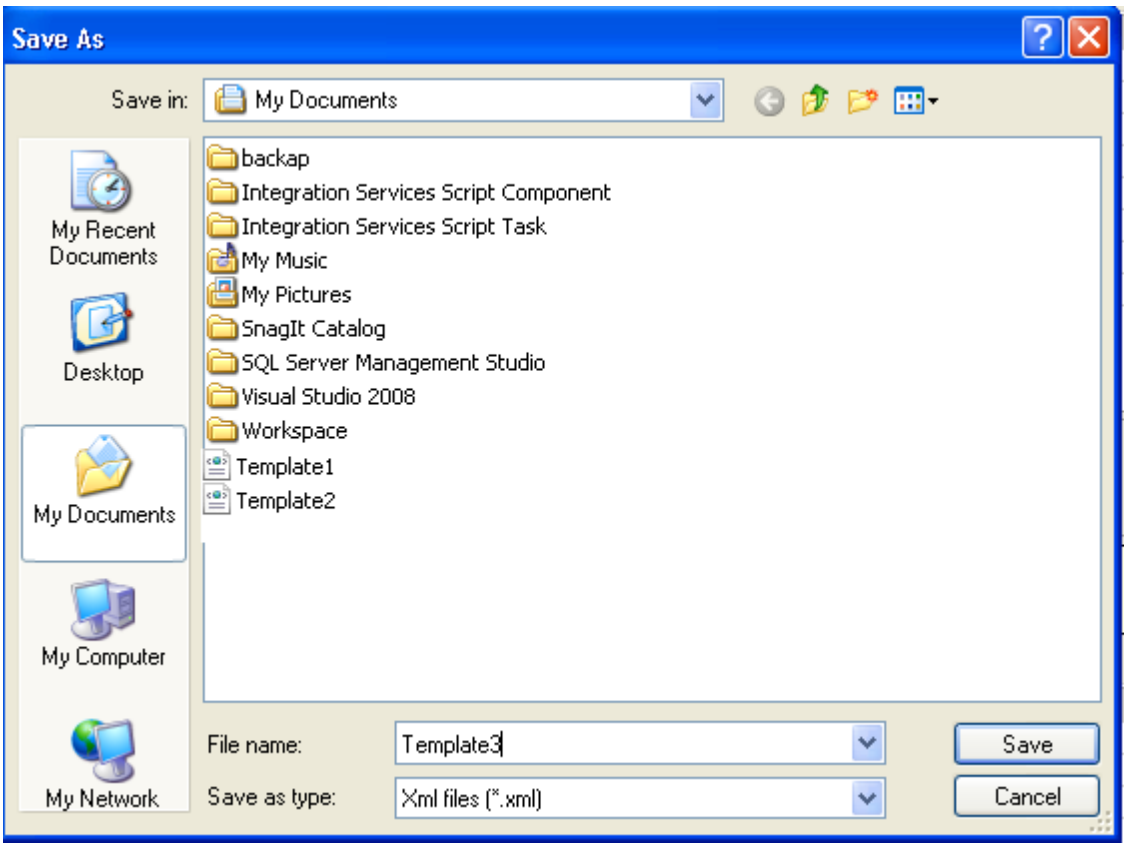


Figure 12.14-11 Selecting the file name and storage directory

7. Click the “Save” button (Figure 12.14-11).

The template is now created.

12.14.3.2 *Downloading and editing the template*

To download and edit the template, do the following:

1. Go to the “File” menu on the control panel and select the “Download template” item (Figure 12.14-12).

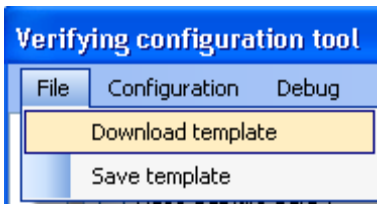


Figure 12.14-12 Download template

2. Select a template file in the appeared window and click the “Open” button (Figure 12.14-13).

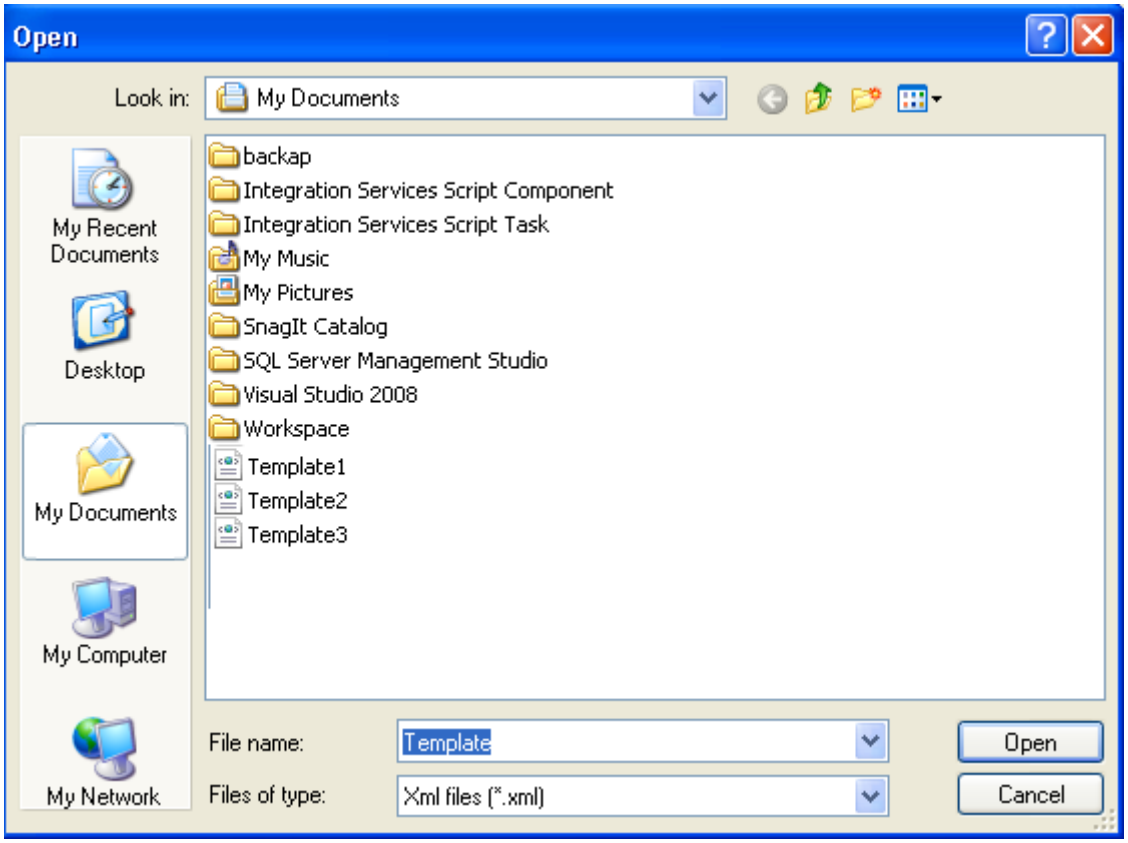


Figure 12.14-13 Template file selection

The objects tree is displayed as a result. The active checkbox is next to the objects which configuration has been saved in the template (Figure 12.14-14).

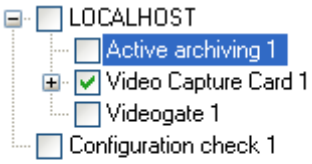


Figure 12.14-14 The objects tree

3. To edit the template, repeat steps 1-7 of the “Creating a template” section.

The template is now downloaded and edited.

12.14.3.3 *Verifying and correcting the configuration*

To verify the current configuration of objects in INTELLECT software and restore it from the template, do the following:

1. Download the template for which the object configuration is to be verified in INTELLECT software (see the “Downloading and editing the template” section).
2. Go to the “Configuration” menu on the control panel and click the “Verify” button (Figure 12.14-15).

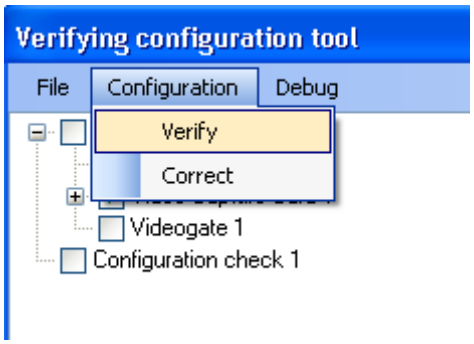


Figure 12.14-15 Verifying the objects in INTELLECT software

As a result the objects which current configuration in INTELLECT software differs from that one in the template will be marked red in the objects tree (Figure 12.14-16).

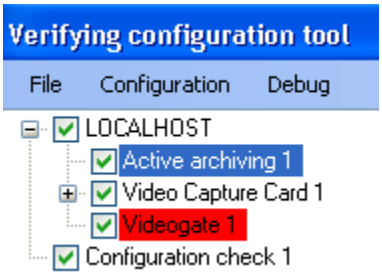


Figure 12.14-16 Marked objects in the objects tree

3. To view object parameters in the template which values are different from those ones in the INTELLECT software, click the left mouse button upon the object marked red in the objects tree and go to the parameters from the template field.
4. Click the “Distinguish” button in the “Template” field (Figure 12.14-17).

Figure 12.14-17 Distinguishing the differences in the object configuration template

As a result the parameters which values are different from those ones in INTELLECT software are moved to the “Differences” list (Figure 12.14-18).

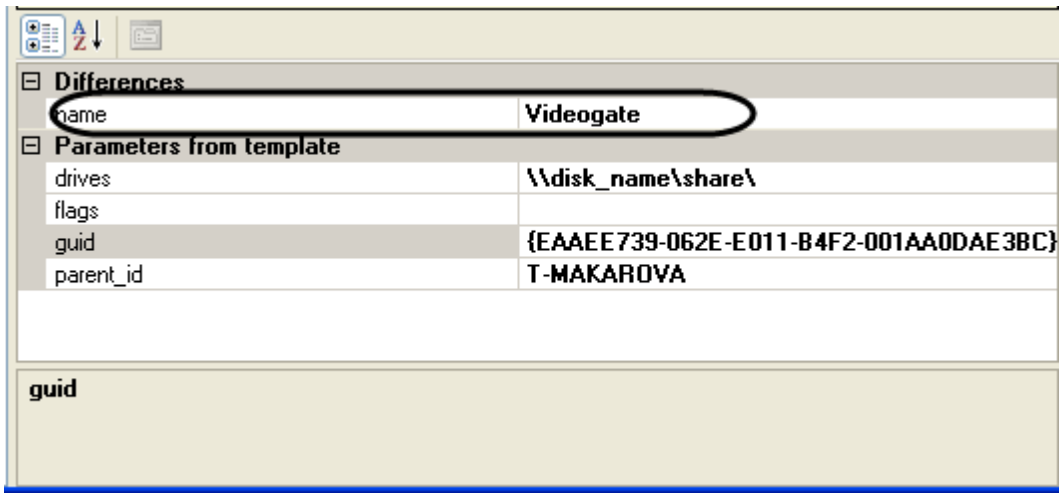


Figure 12.14-18 Parameters from template that differ from parameters from configuration

5. Correction (if necessary) of these parameter in INTELLECT software for those ones from the template may be performed in two ways:
   5.1 Click the “Correct” button in the “Template” field (Figure 12.14-19).

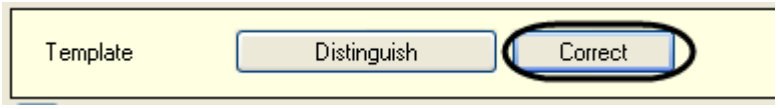


Figure 12.14-19 Correcting the configuration in INTELLECT software

   5.2 Go to the “Configuration” menu on the control panel and select the “Correct” item (Figure 12.14-20).

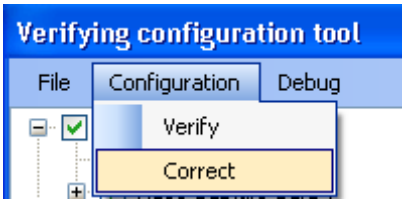


Figure 12.14-20 Correcting the INTELLECT configuration

The parameter configuration from INTELLECT templates is now verified and corrected.

12.15 Index.exe utility for reindexing archive files

12.15.1 The purpose of Index.exe utility

Index.exe utility reindexes archive files with big data array without restarting the INTELLECT™ software. Using this utility you can still have the access to the archive at the time of reindexing.

12.15.2 Starting and shutting down the utility

To start reindexing utility run *index.exe* executive file *index.exe* in the *Tools folder* that is in the catalogue of the INTELLECT™ software installation, for example, «C: \Program Files\Intellect \Tools» (Figure 12.15-1).

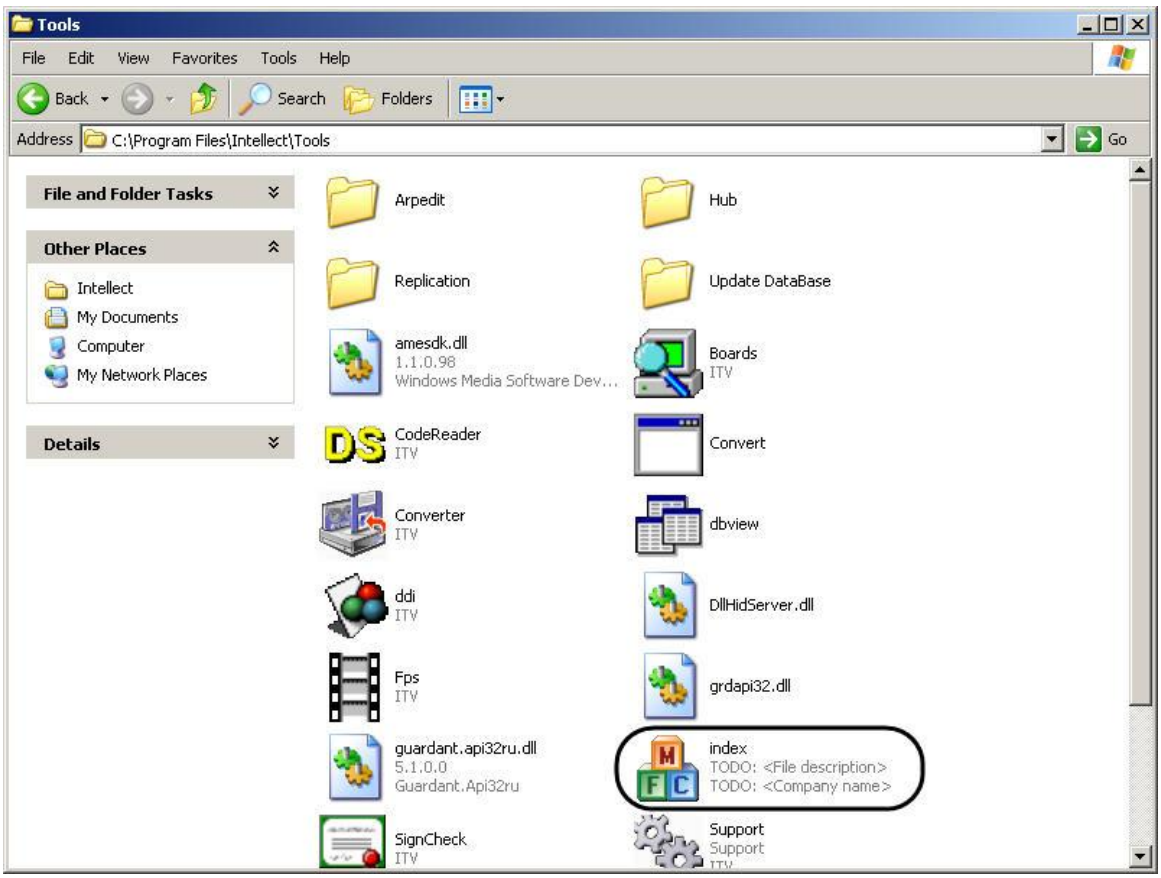


Figure 12.15-1 Index.exe in the window of Tools catalogue

As a result the window of *index.exe* utility is displayed (Figure 12.15-2)

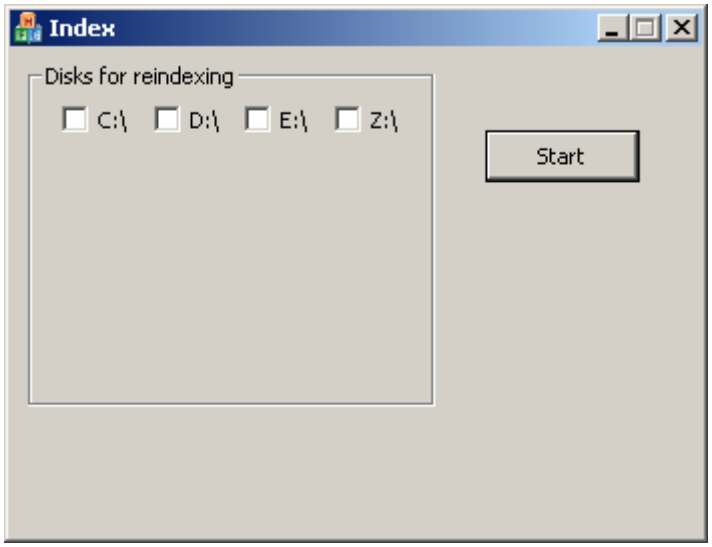


Figure 12.15-2 Window of *index.exe* utility

To stop working with *index.exe* utility click «Close» - «☒».

12.15.3 Working with index.exe utility

Attention! Before you start working with the utility check the value of IndexRebuilding parameter in HKLM/SOFTWARE/AxxonSoft/INTELLECT/Video section of OS Windows list: by default it should

be 0. If the parameter value differs from the value by default, you should change it to 0, otherwise the utility will not idex the archive.

To reindex archive files after its changing (for example, after copying new video recordings to one or several archive disks), do the following:

1. Start *index.exe* utility (see "Starting and shutting down the utility" section).
2. In appeared window select archive disks for reindexing by setting checkbox next to required disks (Figure 12.15-3, 1).
3. To start reindexing click the "Start" button (Figure 12.15-3, 2).

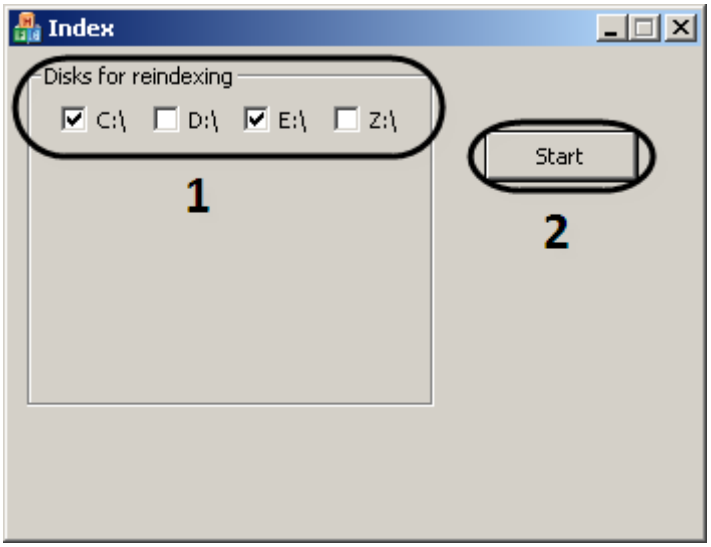


Figure 12.15-3 Reindexing of archive disks

Note. At the time of reindexing all the elements of utility window are not active.

4. When you finish reindexing, shut the window of utility.

Reindexing of archive files is completed.

To reindex archive files without using the dialog box, in the command line start *index.exe* utility with parameters, for instance, "index.exe C, D" command will reindex archive files on disks "C" and "D". To reindex archive files on all disks, use the "all" parameter.

12.16 The shedule.exe utility for creating a replication query file

12.16.1 The purpose of the shedule.exe utility

The shedule.exe utility is designed for creating a query file on the Server-Receiver while replicating the archive on unconnected Servers (see "Replicating archive from unconnected servers using the removable storage" section).

12.16.2 Starting and shutting-down the utility

To start the utility start the schedule.exe file in the Tools\Replication folder of the INTELLECT™ installation directory. For example (Figure 12.16-1):

C:\Program Files\Intellect\Tools\Replication\shedule.exe .

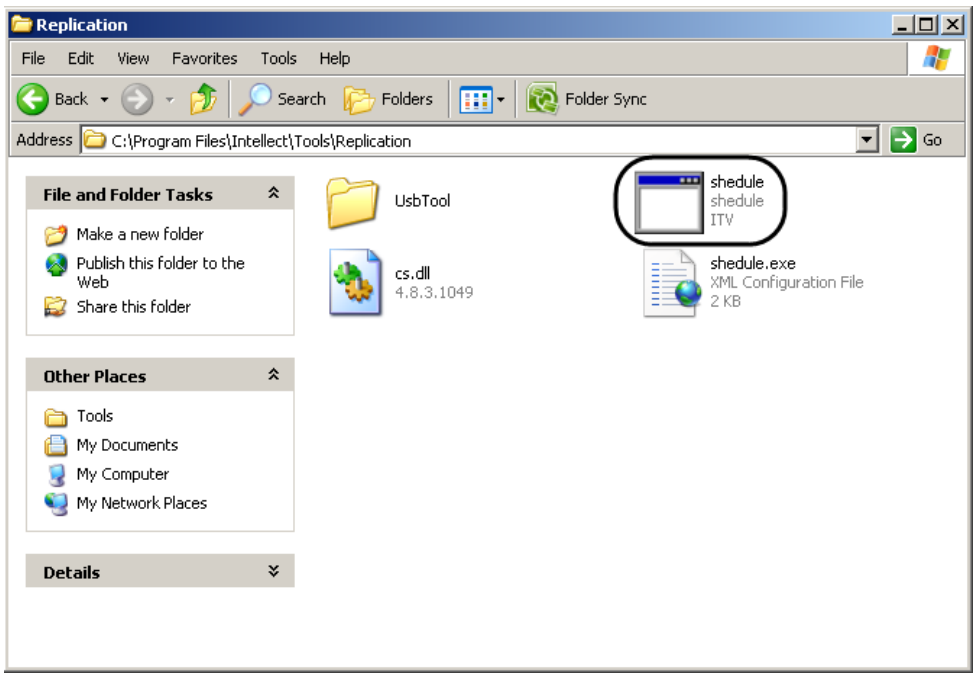


Figure 12.16-1 The shedule.exe utility in the Replication directory

As the result the dialog window of the schedule.exe utility is opened (Figure 12.16-2).

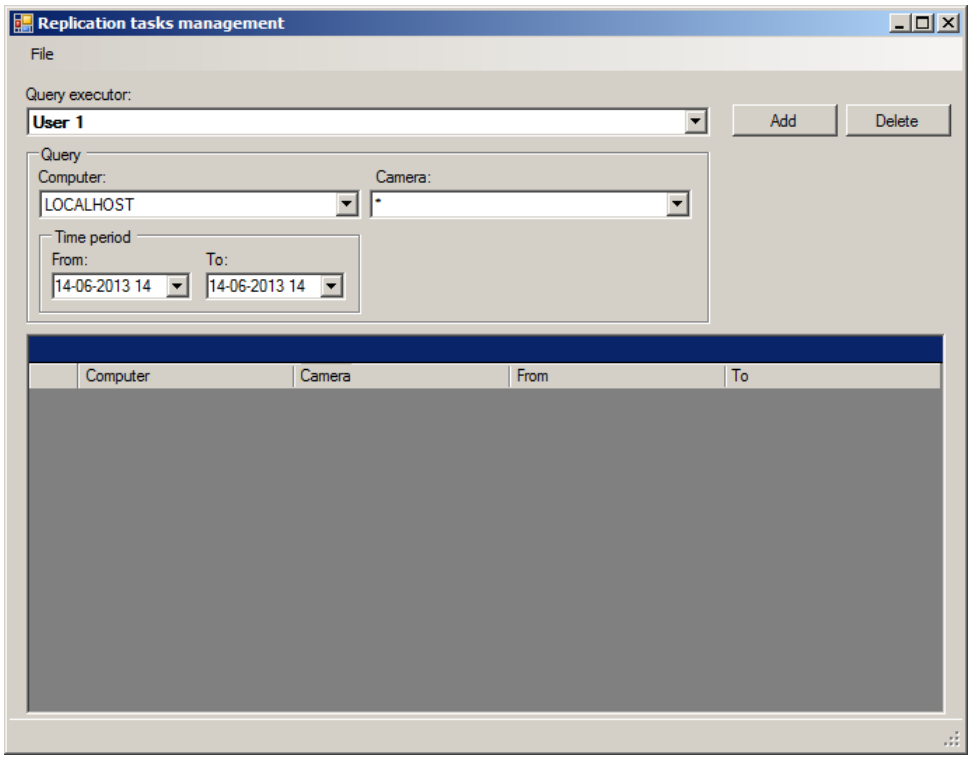


Figure 12.16-2 The shedule.exe utility window

Note. The error message is displayed at opening the schedule.exe utility when users or the ***Camera*** *objects are not created in the INTELLECT™ software under the* ***Computer/LOCALHOST*** *object corresponding to the Receiver. It is needed to create required objects and restart the system.*

To close the *schedule.exe* utility, click the button or select “Exit” in the “File” menu (Figure 12.16-3).

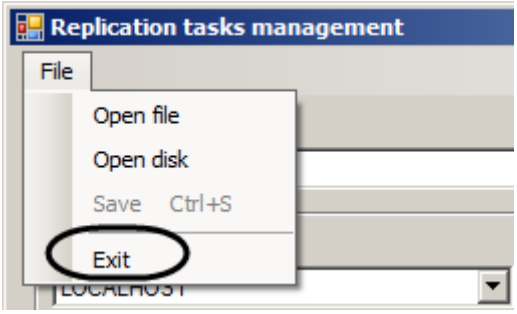


Figure 12.16-3 Shutting-down the shedule.exe utility

12.16.3 Working with the schedule.exe utility

12.16.3.1 *Creating the query file*

To create the query file do the following:

1. Connect the removable storage to the Receiver.

2. Select the user registered the INTELLECT™ software in the “Query executor” drop-down list (Figure 12.16-4, 1).

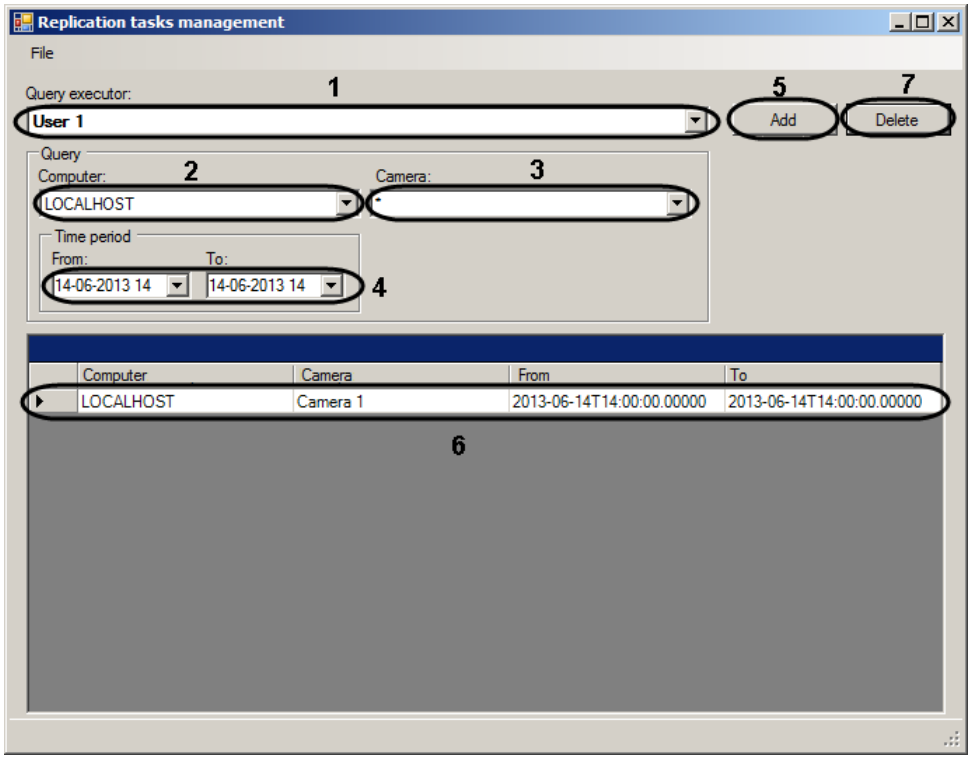


Figure 12.16-4 Creating the query file

3. Select the “Computer” object corresponding to the Data source in the “Computer” drop-down list (Figure 12.16-4, 2).

4. In the corresponding drop-down list select the “Camera” object the archive of which is to be copied (Figure 12.16-4, 3).

5. Specify the time period for which the archive from selected camera is to be copied in the "From:" and "To:" fields using the mask or calendar that is displayed by clicking the button (Figure 12.16-4, 4).

6. Click the "Add" button (Figure 12.16-4, 5).

   The task is added to the list (Figure 12.16-4, 6).

   Note. Select the task and click the "Delete" button to delete it from the list (Figure 12.16-4,7).

7. Repeat steps 2-6 for all required Sources.

8. Save the query file.

The query file is now created.

12.16.3.2 *Saving the query file*

To save the query file do the following:

1. Select "Save" in the "File" menu (Figure 12.16-5).

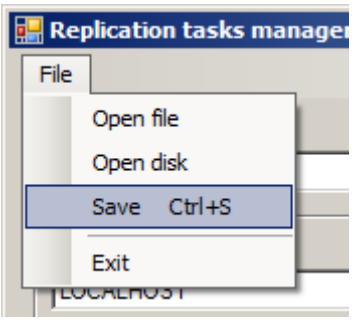


Figure 12.16-5 Saving the query file

2. Select the removable disk where the query file is to be saved in the drop-down list of the opened dialog box (Figure 12.16-6, 1).

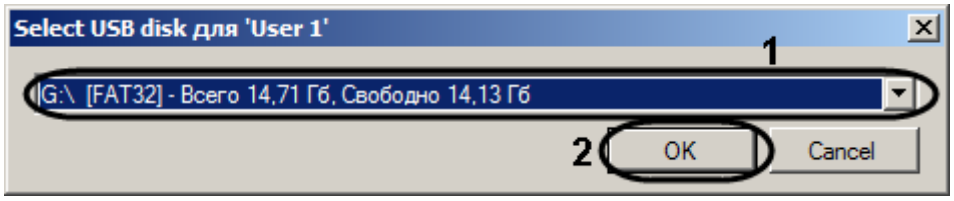


Figure 12.16-6 Selecting the disk for saving the query file

Note 1. The "Removable disks are not found" message will be displayed if the removable storage is not found while saving the query file.

Note 2. If there is the "IntellectBackup" folder on the removable storage, then the dialog box asking to delete this folder is displayed. Click the "OK" button (Figure 12.16-7).

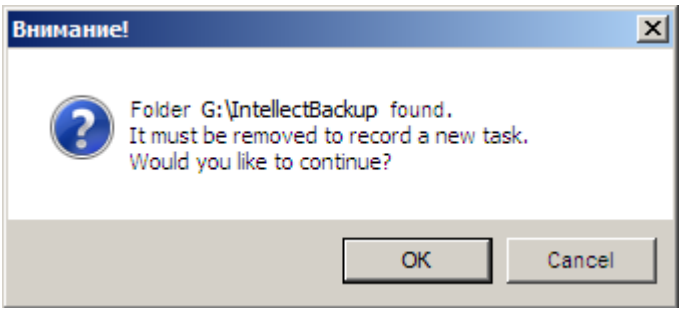


Figure 12.16-7 Warning about deleting the folder

3. Click the “OK” button (Figure 12.16-6, 2). The query file is saved on the selected disk.

The query file is now saved.

12.16.3.3 *Opening the query file*

To open the query file do one of the following:

1. Specify the disk where the query file is. For this:

1. Select “Open disk” in the “File” menu (Figure 12.16-8).

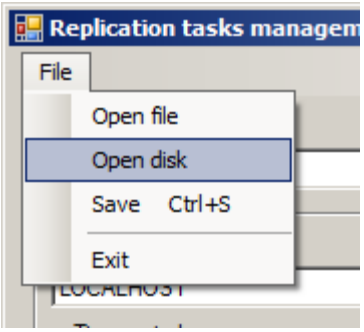


Figure 12.16-8 Opening the query file on the disk

1.2 Select the query file in the drop-down list (Figure 12.16-9, 1).

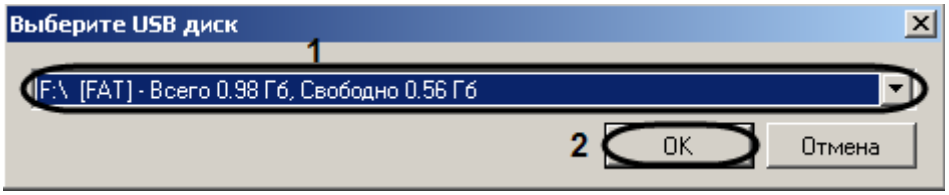


Figure 12.16-9 Selecting the disk with the query file

Note. The “Removable disks are not found“ message will be displayed if the removable storage is not found while openning the query file.

1.3 Click the “OK” button (Figure 12.16-9, 2).

The utility detects and opens the query file which is in the root of selected disk.

2. Select the query file manually. For this:

1.1 Select “Open file” in the “File” menu (Figure 12.16-10).

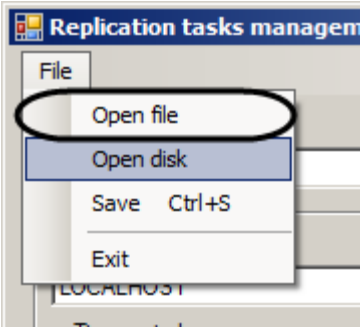


Figure 12.16-10 Opening the query file manually

2.2 Select the *itv_task.xml* file containing the query parameters using the standard opening dialog.

The query file is now opened.

12.17 The AxxonPlayer.exe utility for viewing and converting the video archive

12.17.1 Purpose of the AxxonPlayer.exe utility

The “AxxonPlayer.exe” utility is designed for viewing and converting the video archive recorded with the INTELLECT™ software package.

12.17.2 Hardware requirements for the AxxonPlayer.exe utility

For proper operation of the “AxxonPlayer.exe” utility the graphics card installed on the computer is to support Direct3D or OpenGL 1.2 functionality.

12.17.3 Starting the AxxonPlayer.exe utility

To start the “AxxonPlayer.exe” utility, do one of the following:

1. Run the executive file in the “Tools” folder from the INTELLECT™ software installation directory: “<Intellect>\Tools\ AxxonPlayer.exe”.
2. Select in the menu “Start -> All Programs -> Intellect -> Tools -> AxxonPlayer”.

The “Axxon Player” window opens after starting the AxxonPlayer.exe utility (Figure 12.17-1).

Figure 12.17-1 The AxxonPlayer.exe utility

The “AxxonPlayer.exe” utility is now started.

12.17.4 Opening video files

There are three ways to open video files with the “AxxonPlayer.exe” utility:

1. Double left-click on the archive file (file of *._* type) in the VIDEO folder.
2. Specifying the path using which the access to archive files is to be performed in the utility.
3. Using the command prompt.

Note. If files that are to be opened were not recorded, but copied, then start the Convert.exe utility to open the archive (see “The Convert.exe utility for correcting modification dates of video archives” section).

12.17.4.1 *Opening video files by specifying the path in the utility*

The following ways are to be used to specify the path to archive files:

1. Disk - access is performed to all files stored on the specified disk;
2. Folder - access is performed to all files stored in the specified folder;
3. File - the separate file is to be viewed.

To open archive files which are to be viewed with the “AxxonPlayer.exe” utility, do the following:

1. Click the button in the “Axxon Player” window (Figure 12.17-2).

Figure 12.17-2 Opening the playback setting panel

The playback settings panel is opened (Figure 12.17-3).

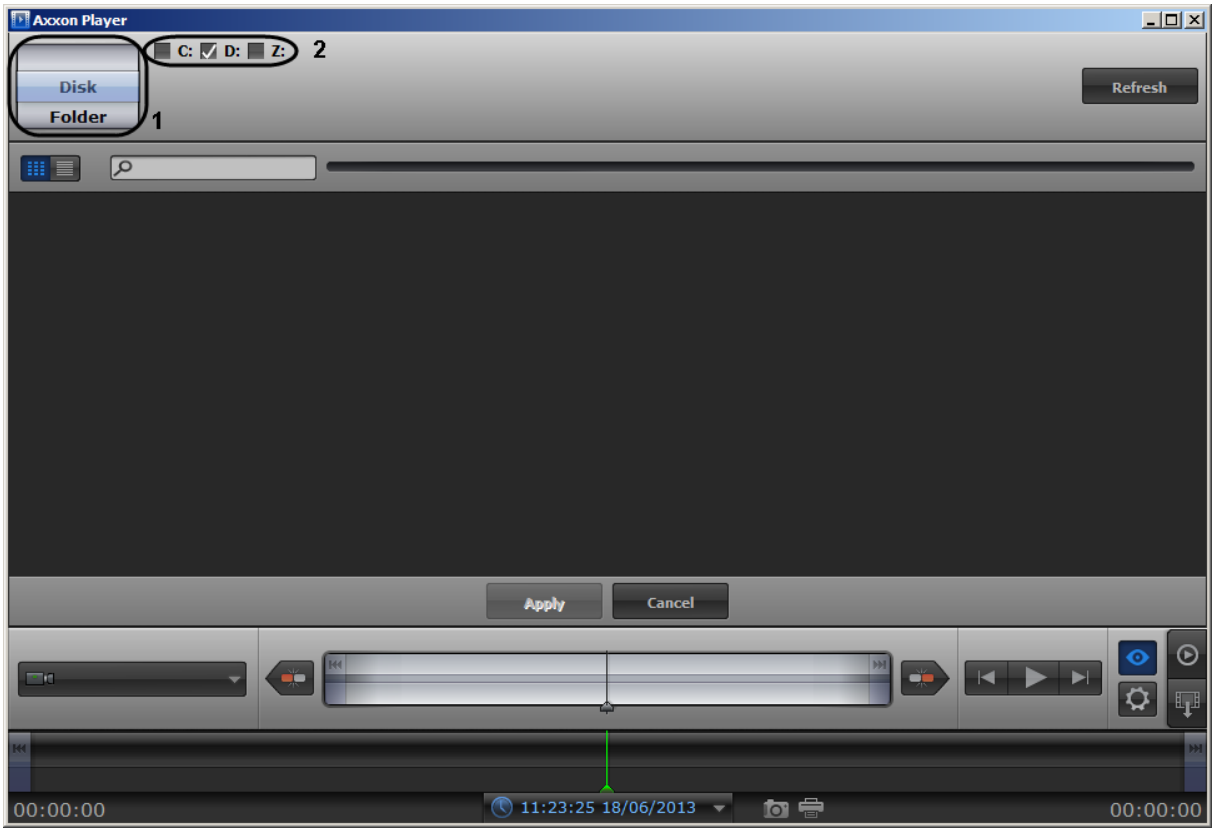


Figure 12.17-3 Select the way of opening the file

2. Select the way of opening the file: Disk, Folder or File (Figure 12.17-3, 1).

3. Specify the path to video files:

3.1. If the “Disk” way is selected then set checkboxes next to those disks on which the INTELLECT™ software archive is stored (Figure 12.17-3, 2).

3.2. If the “Folder” way is selected then click the button and specify the folder from which the archive is to be viewed using the standard Windows dialog (Figure 12.17-4).

Figure 12.17-4 Specifying the folder with the archive files

3.3 If the “File” way selected then click the button and specify the archive file using the standard dialog of file opening (Figure 12.17-5)

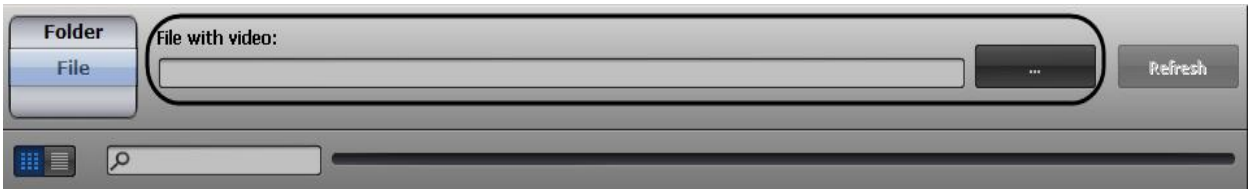


Figure 12.17-5 Selecting the archive file

4. Click the “Refresh” button. The of list video cameras on which the archive is available by specified path is displayed in the playback window (Figure 12.17-6, 1)

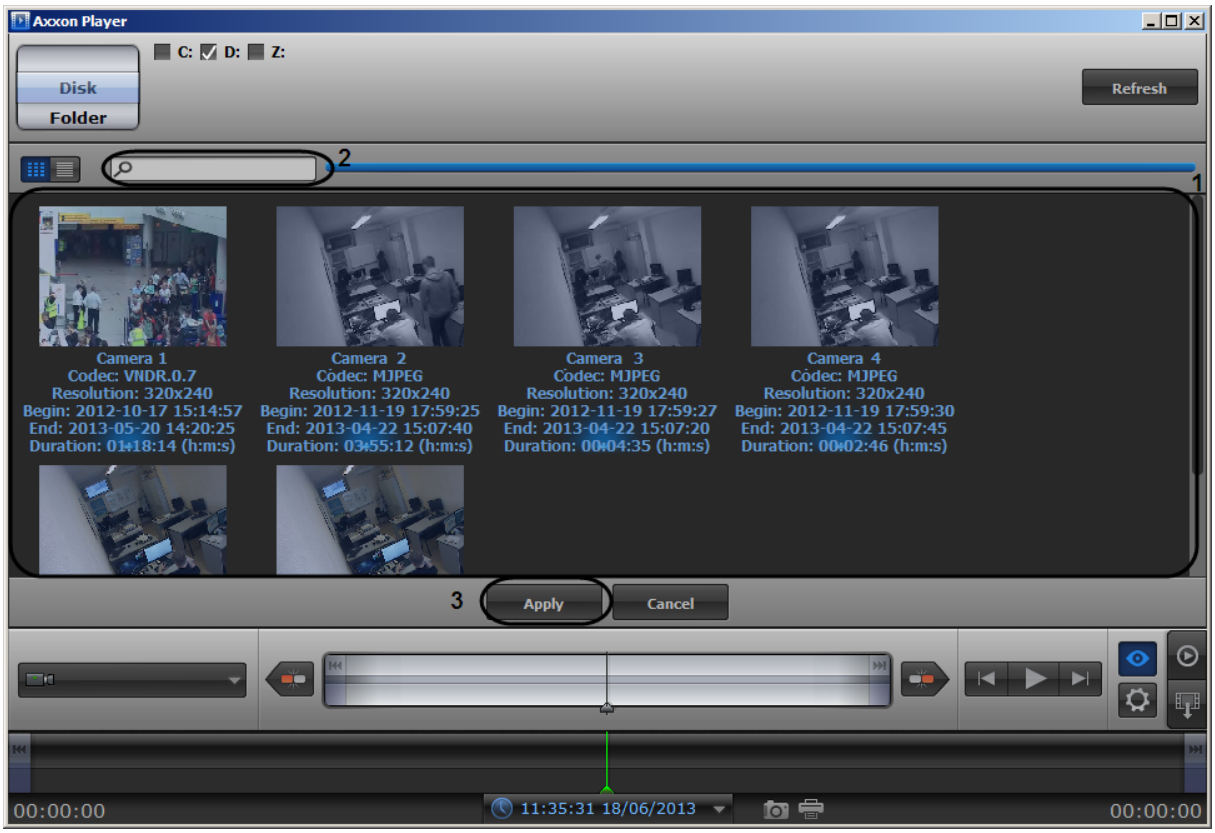


Figure 12.17-6 Selecting the video cameras

5. Select video cameras the archive from which is to be viewed (Figure 12.17-6, 1). To select more than one camera at a time left-click them holding the “Ctrl” button pressed.

   Note 1. Names of the selected video cameras are highlighted with blue. All found cameras are selected on default.

   Note 2. Click the *button to switch over the mode of list viewing by rows (one camera in a row).*

   Note 3. Enter the part of camera name in the Search field to search required camera (Figure 12.17-6, 2).

6. Click the “Apply” button (Figure 12.17-6, 3).

Playback setting panel is closed. Video images from selected cameras stored in the archive on specified path are displayed in the utility window (Figure 12.17-7).

Figure 12.17-7 Video images from cameras

If several cameras are selected for archive playback, it is possible to make the image from one camera fullsized in the utility window. Double click the video image to switch over the full-screen mode. Double click the video image again to return the mosaic mode.

Opening the archive files specifying the path is completed.

12.17.4.2 *Opening video files using the command prompt*

It is possible to open video files using the “AxxonPlayer.exe” utility from the command prompt.

To open video files input the following in the command prompt:

Axxon_player.exe --source "File/Folder path". For example, Axxon_player.exe --source "H:\VIDEO\05-05-12 18\15._01".

To select all available disks with the archive use the “all” value of the “source” parameter: Axxon_player.exe --source "all".

To display the window of the Axxon_Player.exe utility over other windows use the “topmost” parameter with “1” value when opening video files using the command prompt. For opening in a normal mode use “0” value of this parameter. For instance, the Axxon_player.exe --source "H:\VIDEO\05-05-12 18\15._01" --topmost "1" command starts the utility in the displaying over other windows mode. By default the “topmost” parameter has “0” value.

To start the Axxon_Player.exe utility in a single mode prohibiting simultaneous opening several windows of the utility, use the “single” parameter of the command prompt with “1” value. To start using several windows of the utility use **0** value of this parameter. For instance, using the

Axxon_player.exe --source "H:\VIDEO\05-05-12 18\15._01" --single "1" command the Axxon_Player.exe utility starts with prohibition of simultaneous opening of several utility windows. By default the “single” parameter has “1” value.

12.17.5 Configuring the interface of the Axxon_Player.exe utility

To configure the interface of the “Axxon_Player.exe” utility do the following:

1. Go to the setting panel of the Axxon_Player.exe utility. For this click the button (Figure 12.17-8, 1).

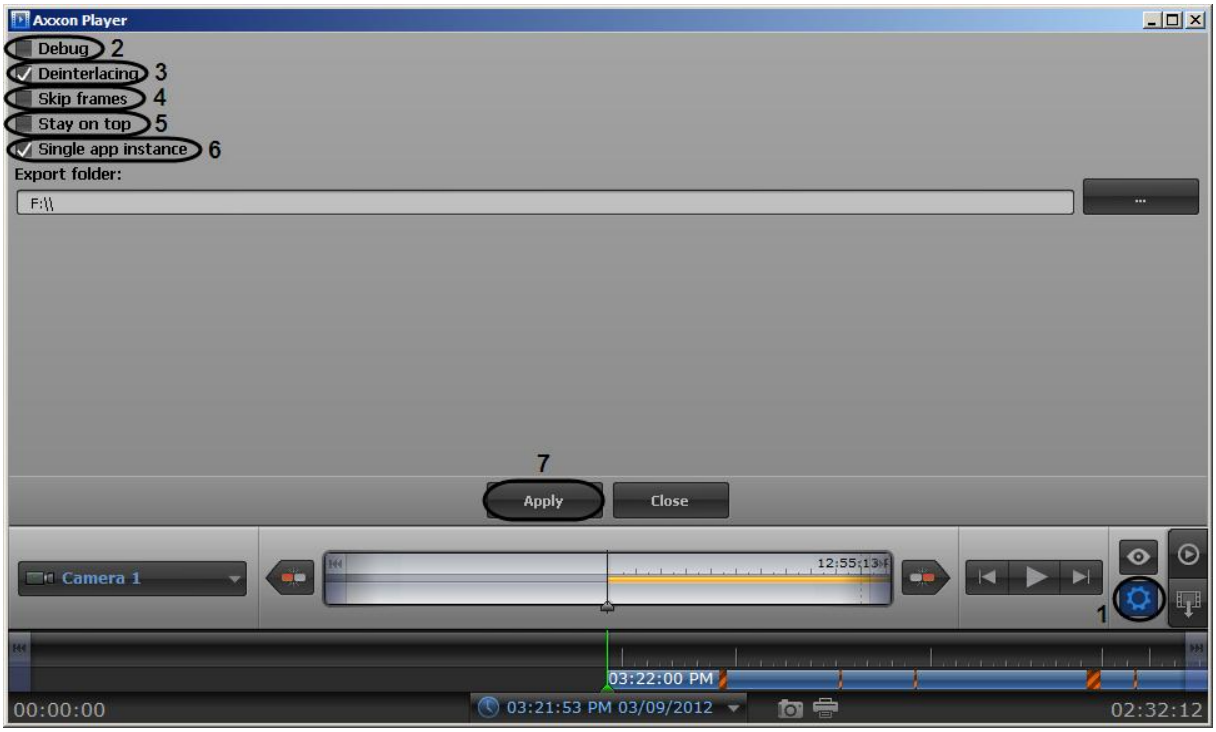


Figure 12.17-8 Enabling deinterlacing

2. To display a semi-transparent debug window over each image set the “Debug” checkbox (Figure 12.17-8, 2).
3. To enable deinterlacing set the “Deiterlacing” checkbox (Figure 12.17-8, 3). To disable deinterlacing remove this checkbox.
   Deinterlacing allows avoiding artifacts in the video image (Figure 12.17-9).

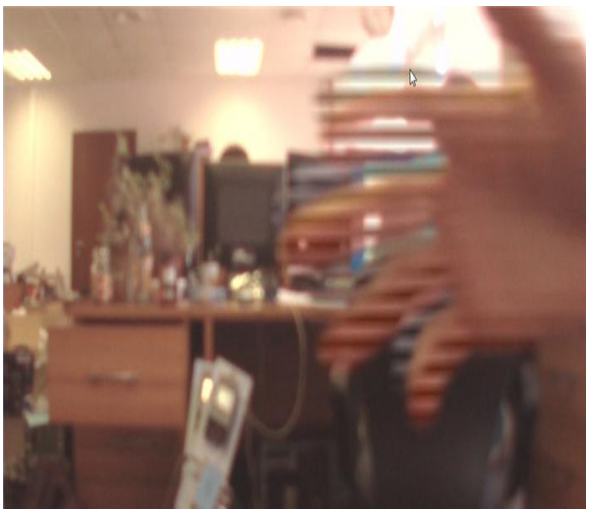


Image with artifacts

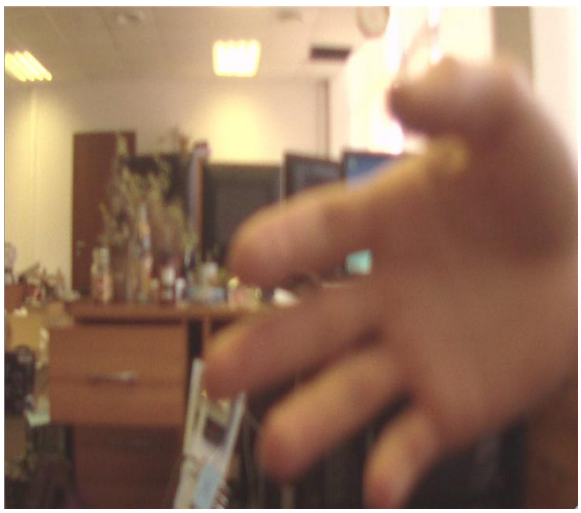


Image with no artifacts

Figure 12.17-9 Image with artefacts and without them

4. To enable the option of frames skipping when there is fast playback set the “Skip frames” checkbox (Figure 12.17-8, 4). This functionality is used to reduce the Server load.
5. To display the utility window over other windows set the “Stay on top” checkbox (Figure 12.17-8, 5).
6. To disable the simultaneous opening of several utility windows set the “Single app instance” checkbox (Figure 12.17-8, 6)
7. Click the “Apply” button (Figure 12.17-8, 7).

Deinterlacing configuration is now completed.

12.17.6 Viewing video using the AxxonPlayer.exe utility

12.17.6.1 *Playback control panel*

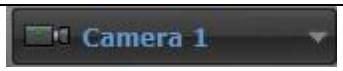
Archive playback control using the “AxxonPlayer.exe” utility is performed in the utility window on the playback control panel (Figure 12.17-10).

Figure 12.17-10 Playback control panel

Click the button to go to the playback control panel.

Elements description of the playback control panel is given in Table 12.17-1

Table 12.17-1 Elements of playback control panel

Control element	Performed function
	Start the archive playback on cameras on which there are records on specified date. Synchronic archive playback is available.
	Playback stop.
	Playback speed up in two times relatively the current speed if the playback launched (maximum ×16 speed up is available). Go to the next frame if the playback stopped.
	Playback speed down in two times relatively the current speed if the playback launched (maximum ×16 speed down is available). Go to the previous frame if the playback stopped.
	Go to the current record beginnig.
	Go to the current record ending.
	Go to the archive ending in the main time scale. Go to the archive ending of selected camera on additional time scale.
	Go to the archive beginning in the main time scale. Go to the archive beginning of selected camera on additional time scale.
	Select active camera for archive playback in full-screen mode if several cameras selected for archive playback.

	Saving the frame. Frame is saved in Tools\Screenshots folder of INTELLECT™ software installation directory.
	Printing the frame.
11:06:03 09/04/2012	Specifying time and date for archive record to be played.

Time and archive marks in the both scales are to be taken into consideration while controlling playback. Their description is given in Table 12.17-2.

Table 12.17-2 Time and archive marks on time scales

Mark	Description
	This mark means that there is no compressed archive. The more interval without archive, the thicker the mark is.
Time mark 1 (Figure 12.17-11, 1)	Time period from archive begin to the current moment.
Time mark 2 (Figure 12.17-11, 2)	Time period from the current period to archive ending.
Time mark 3 (Figure 12.17-11, 3)	Time of recording start.
Time mark 4 (Figure 12.17-11, 4)	Time of recording finish.

Figure 12.17-11 Time and alarm marks on time scales

12.17.6.2 *Archive navigation using the calendar*

Archive navigation can be performed using the “Calendar” tool (Figure 12.17-12). This tool is designed to specify the date the archive on which is to be played back.

Figure 12.17-12 The Calendar tool

To specify date of archive viewing do the following:

1. Click the or button to access the “Calendar” tool (Figure 12.17-13, 1).

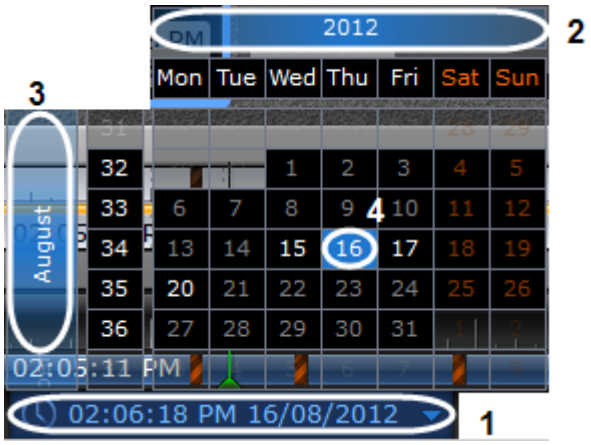


Figure 12.17-13 Specifyong the date for viewing the archive

2. Specify the year by dragging the calendar field left or right (Figure 12.17-13, 2).

1. Specify the month by dragging the calendar field up or down (Figure 12.17-13, 3).

2. Select the needed day by left-clicking the mouse (Figure 12.17-13, 4). Days for which records are stored in archive are highlighted with white.

Going to the first archive record at the specified date is performed when the required date is selected in the calendar.

Date specifying for archive viewing is completed.

12.17.6.3 *Archive navigation using the time scale*

Archive navigation can be performed using the time scales.

Time scales contain color indicators of records presence per period – tracks.

There are following time scale types in the “AxxonPlater.exe” utility:

1. Main time scale (Figure 12.17-14, 1). This scale displays tracks from all cameras selected to view.

2. Additional time scale (Figure 12.17-14, 2). This scale displays tracks from the active camera.

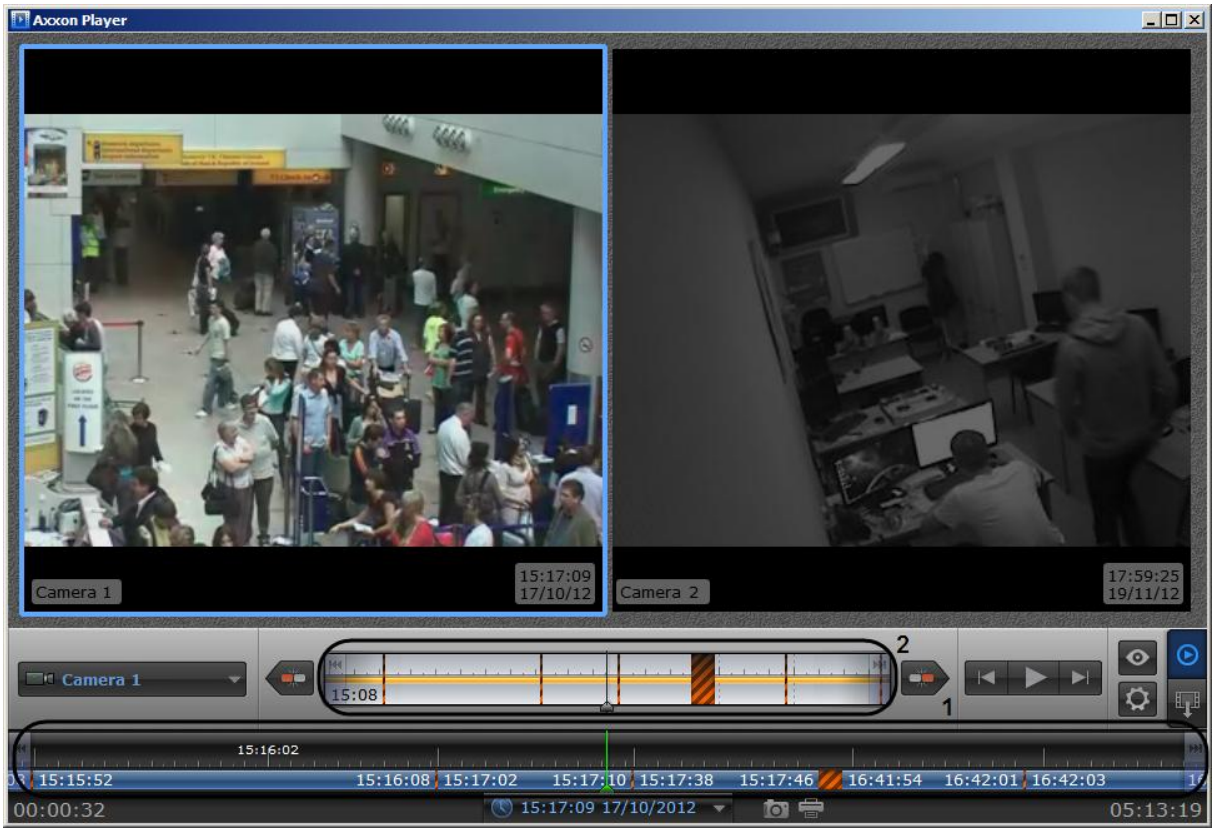


Figure 12.17-14 Main and additional time scales

Archive navigation is performed in two ways:

1. By dragging the scale relatively the indicator (Figure 12.17-15). When the indicator is matched to the point on the time scale then there is going to the moment on the record corresponding to this point.

2. By left-clicking the mouse on required period on the time scale.

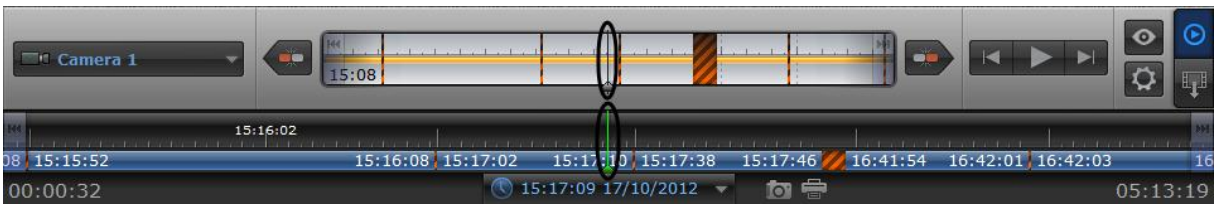


Figure 12.17-15 Time scale indicators

Going in the main and additional scale is sincronized.

It is possible to size time scales. Zoom in and zoom out of time scales are performed using the scroll wheel in required area of the time scale.

12.17.6.4 *Scaling the video image*

It is possible to scale viewing video images in the “AxxonPlayer.exe” utility.

Zoom in and zoom out of video image size are performed using the scroll wheel in the camera area (Figure 12.17-16).

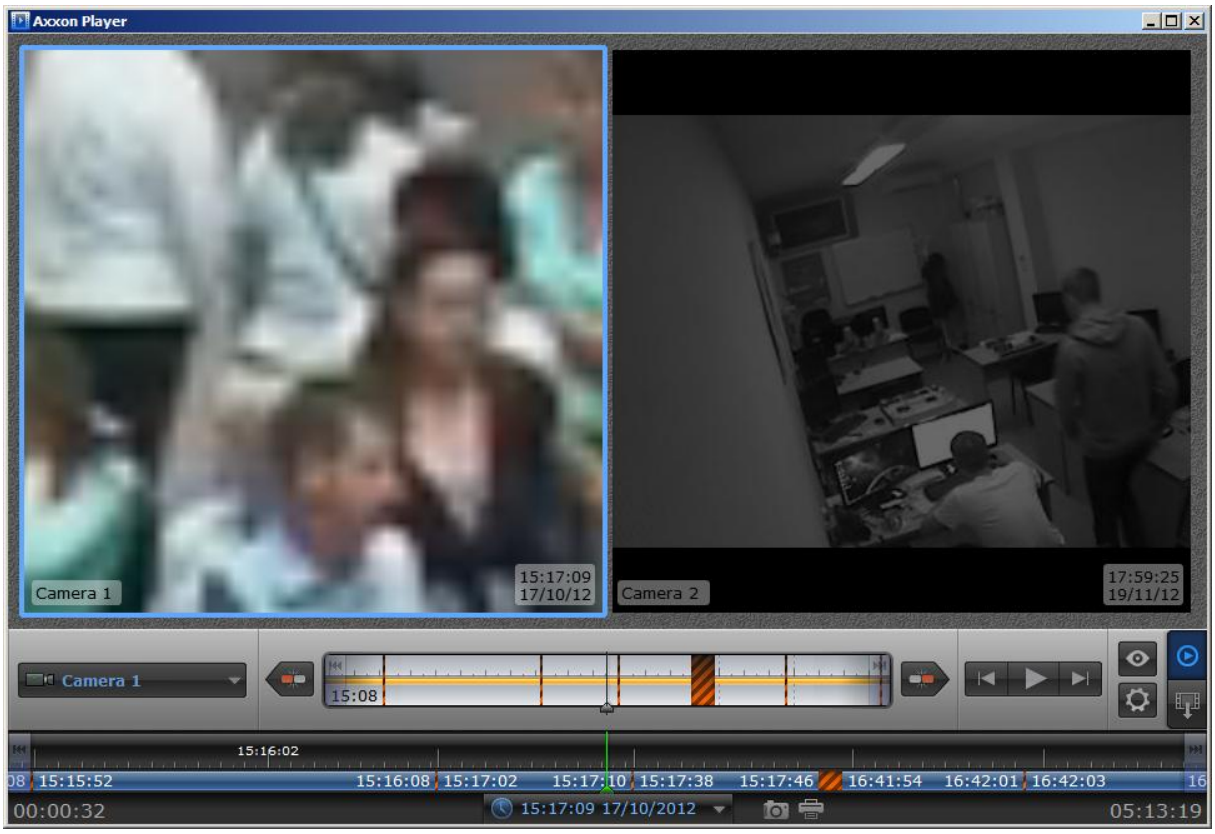


Figure 12.17-16 Scaling the video image on Camera 1

Navigation over the blowup video is performed using the mouse cursor moving with holding the middle mouse button (wheel) pressed.

12.17.6.5 *Saving the frame from the command prompt*

It is possible to export frame from archive using the command prompt. The following parameters of axon_player.exe executive file are used:

— help – reference on parameters of executive file;

— source arg – specifying the video file/catalogue;

— channels arg – specifying the video camera id for frame export;

— destination arg – specifying the catalogue for frame export;

— time – specifying the time of export frame in YYYY-MM-DD HH:MM:SS.ZZZ format.

Example.

« --source "D:\VIDEO" --destination "D:\CmdExportFolder" --channels "1 3 5" --time "2011-11-02 15:40:11.123"»

or

«--source "D:\VIDEO" --destination "D:\CmdExportFolder\UserFrame.jpg" --channels "1" --time "2011-11-02 15:40:11.123"»

File names like “dd-MM-yyyy hh-mm-ss-zzz channelID.jpg" are assigned automatically in the first case. In the second case file names are specified by the user and it is possible to save the frame in jpg, bmp or png formats.

If the **channels** parameter is not specified, then all existing channels are to be saved both for the video and images.

12.17.7 Exporting the Intellect video archive using the AxxoPlayer.exe utility

12.17.7.1 *Order of video archive export*

Exporting the INTELLECT™ software archive using the “AxxonPlayer.exe” is performed in the following order:

1. Specify the path to the folder to which archive files are to be exported.
2. Go to the export panel.
3. Create the export task.
4. Start the archive export.

12.17.7.2 *Specifying the export folder*

To specify the export folder do the following:

1. Click the button. The settings panel of the “AxxonPlayer.exe” utility is opened (Figure 12.17-17, 1).

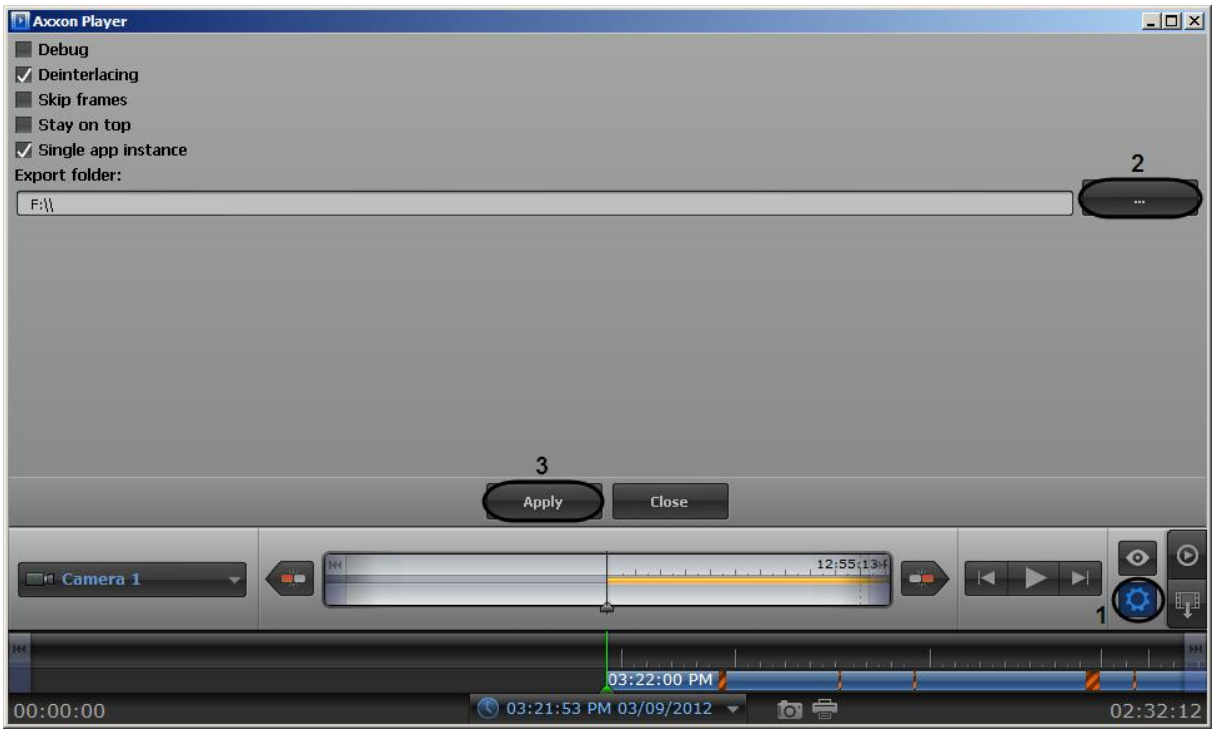


Figure 12.17-17 Export flder configuration

2. Click the button and select the export folder using the standard dialog of path selection to the Windows OS folder (Figure 12.17-17, 2).

1. Click the “Apply” button (Figure 12.17-17,3).

Specifying the export folder is completed.

12.17.7.3 *Going to the export panel*

To go to the export panel click the button (Figure 12.17-18).

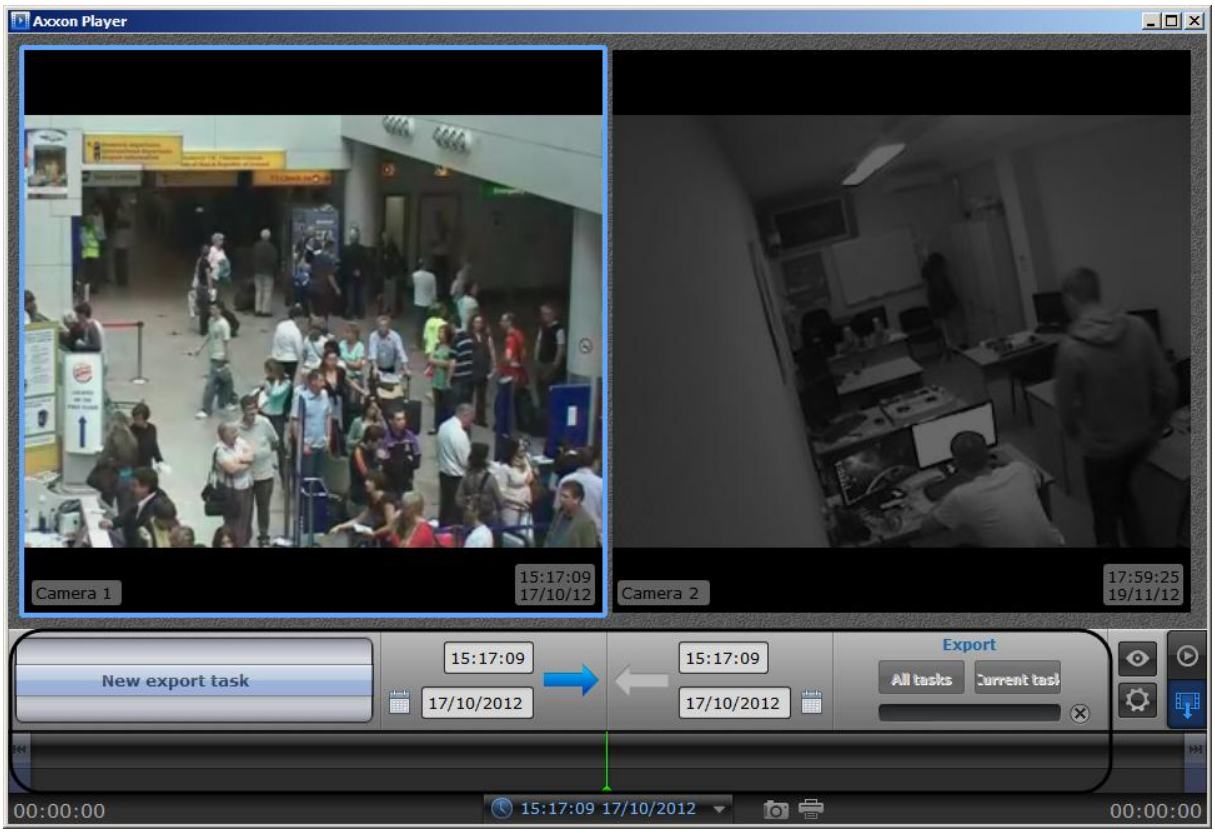


Figure 12.17-18 The export panel

12.17.7.4 *Creating the export task*

To create the export task do the following:

1. Select the “New export task” value in the list (Figure 12.17-19). The value selection is performed by dragging the list items up or down until the aligning with the list center.

Figure 12.17-19 First step in export task creation

2. Select the image from the required camera and drag it to the list using the left mouse button (Figure 12.17-20).

Figure 12.17-20 Dragging the image from the camera to the task list

Cameras are to be added to the export list (Figure 12.17-21, 1).

Note. To remove the cameras from the list click the button.

Figure 12.17-21 Specifying the export interval

1. Specify the start export date by one of the following ways:

   1.1 Enter the required value in the field manually (Figure 12.17-21, 2).

   1.2 Click the button and use the “Calendar” tool (Figure 12.17-21, 3). Calendar operation procedure is equal to the archive navigation procedure (see «Archive navigation using the calendar» chapter).

   1.3 Click the button (Figure 12.17-21, 4) and specify the start value of export by dragging the time scale relatively the indicator (Figure 12.17-21, 8).

2. Specify the end export date by one of the following ways:

   2.1 Enter the required value in the field manually (Figure 12.17-21, 5).

2.2 Click the button and use the “Calendar” tool (Figure 12.17-21, 6). Calendar operation procedure is equal to the archive navigation procedure (see «Archive navigation using the calendar » chapter).

2.3 Click the button (Figure 12.17-21, 7) and specify the end value of export by dragging the time scale relatively the indicator (Figure 12.17-21, 8).

Export task creation is completed.

12.17.7.5 *Run the archive export*

To run the export do the following:

Click the “All tasks” button for export of all created tasks (Figure 12.17-22, 1)

Figure 12.17-22 Run the archive export

1. Click the “Current” button to run the export of task selected in the task list (Figure 12.17-22, 2).

The export state is displayed by the indicator of process display (Figure 12.17-22, 3). Archive files will be copied to the export catalogue in the «drive_<Disk letter with the «Intellect» software archive>» after the export completion, e.g. «drive_D».

Note. Click the button to stop the export. None of files will be exported.

Export of video archive is completed.

12.17.7.6 *Set the export parameters from the command prompt*

It is possible to set the export parameters from the Windows command prompt. The following parameters of the axon_player.exe executive file are used:

— help – reference output by parameters of executive file;

— source arg – specify the video file/catalogue;

— channels arg – specify the video camera id for export through the space button ;

— destination arg – specify the export catalogue;

— from arg – specify the start export time in YYYY-MM-DD HH:MM:SS.ZZZ format;

— to arg – specify the end export time in YYYY-MM-DD HH:MM:SS.ZZZ format.

Example of line for export: «--source "D:\VIDEO" --channels "1 3 5" --destination "D:\CmdExportFolder" --from "2011-11-02 15:40:05.123" --to "2011-11-02 15:40:17.123"»

13 Appendix 3. Relevant information on using Windows operating system

13.1 Working with Windows OS registry

13.1.1 General information about Windows OS registry

Windows system registry is a database containing the settings of the operating system (hardware, software, users). When system parameters of the operating system are changed, the system registry is updated.

The registry can be edited by the regedit.exe program included in the standard set of service programs in Windows. The information is stored in two hidden files in a Windows folder: system.dat and user.dat . The registry is a hierarchical tree structure, the branches of which constitute the keys that contain values or subkeys. The registry has six main branches described in Table 13.1-1.

Table 13.1-1

Branch name	Description
HKEY_CLASSES_ROOT	Contains the information of software configuration, including the links from file extensions to programs, drag-and-drop parameters, printer settings and COM port settings.
HKEY_CURRENT_USER	Contains user settings of the system. This section is created and populated from the HKEY_USERS section upon user logon.
HKEY_LOCAL_MACHINE	Contains the parameters of the computer, its drivers and other hardware. The data in this section is shared by all users of the computer.
HKEY_USERS	Contains the information about all users registered on the computer. There are two types of parameters – shared by all users, and specific to each user.
HKEY_CURRENT_CONFIG	Contains the information about current hardware configuration.
HKEY_DYN_DATA	Points to a subsection in the HKEY_LOCAL_MACHINE section related to Plug and Play devices. This section changes upon adding or removing devices to or from the computer.

The branch structure is visually similar to the structure of the user folders, allowing nested branches. Figure 13.1-1 shows the main elements of the registry.

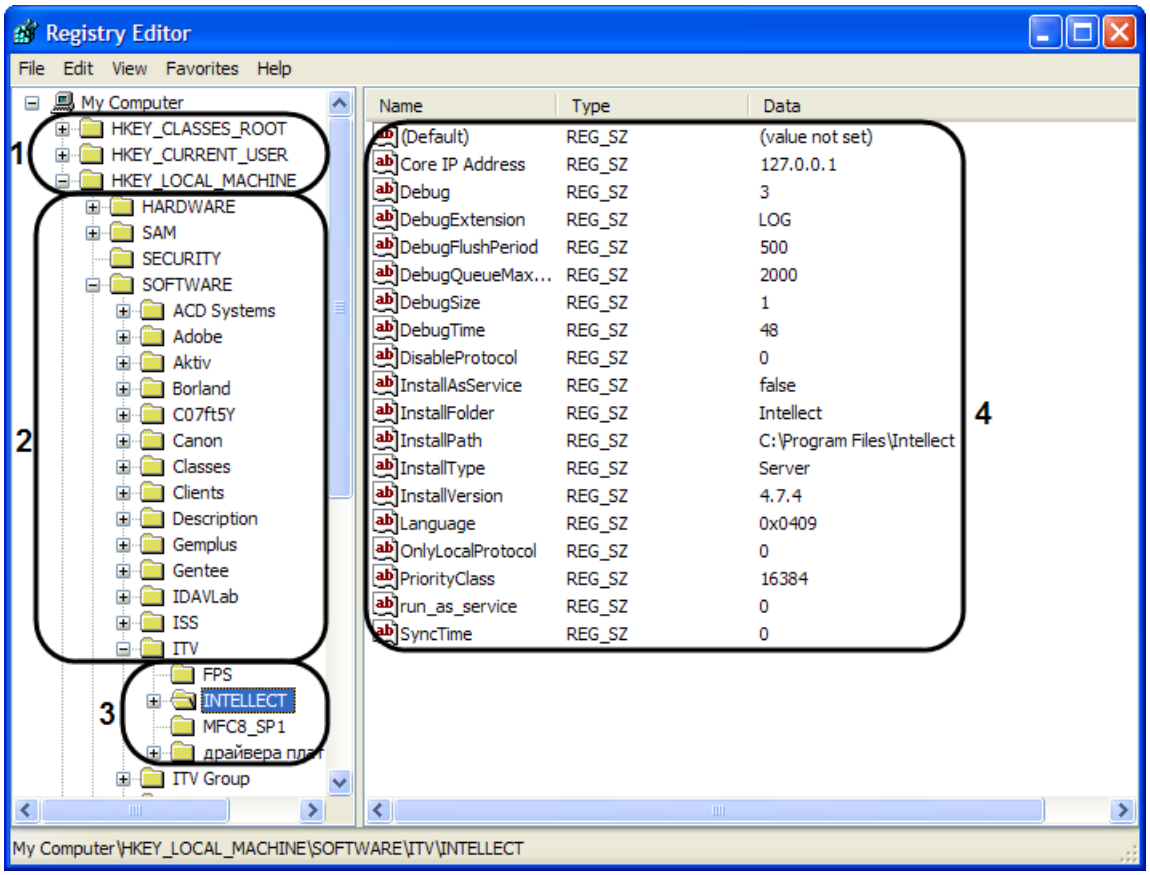


Figure 13.1-1. Main elements of the registry

1. Branches;
2. Keys;
3. Subkeys;
4. Parameters;

Each parameter has three components: name, type and value. A key can have only one parameter with no name, which serves as a default value of the key. It is recommended to assign meaningful names to parameters, indicating its purpose.

The values in the registry can be of particular types. The most commonly used types are described in Table 13.1-2.

Table 13.1-2

Data type	Description	Purpose
REG_DWORD	4 bytes in hexadecimal or decimal format.	Many service or driver parameters are of this type. Example: 0x00000240(576) — decimal value is given in parenthesis.
REG_BINARY	Binary data of an arbitrary form. Maximum length – 16 bytes.	Most data on hardware components is stored as binary. In the regedit.exe window it is displayed

Data type	Description	Purpose
		in hexadecimal format, for example 01 00 00 00.
REG_SZ	A string ending with a null symbol.	Example: C:\Windows
REG_MULTI_SZ	Multi-line text. An array of strings ending with a null each. An array itself ends with two nulls.	Lists and other records in readable format are of this type. The records are separated by commas and other symbols in the editor.
REG_EXPAND_SZ	Data string of variable length ending with a null.	Undisklosed links to environment variables are of this type.
REG_FULL_RESOURCE _DESCRIPTOR	A sequence of nested arrays.	This type is designed for storing the list of device resources and drivers.

13.1.2 Using the registry editor

13.1.2.1 *Starting and shutting-down the editor*

Several programs allow editing the system registry. The regedit.exe utility is included in the standard set of Windows service programs.

To start the editor, do the following:

a. Open the Run dialog box by clicking Start, then Run, or by pressing WIN+R keys on the keyboard (Figure 13.1-2).

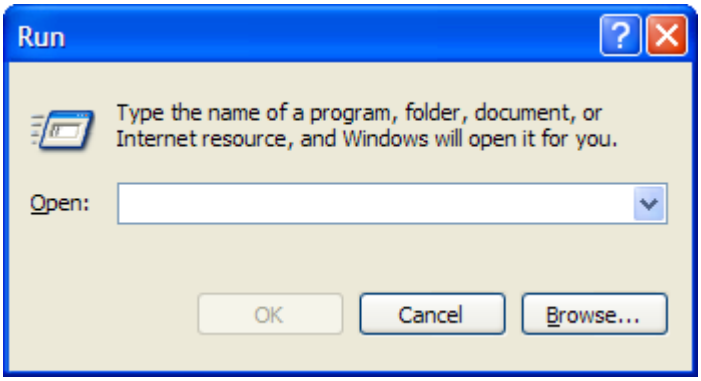


Figure 13.1-2. The Run dialog box

b. Enter “regedit” in the Open field of the dialog box.

c. Click OK.

The registry editor window will open (Figure 13.1-3).

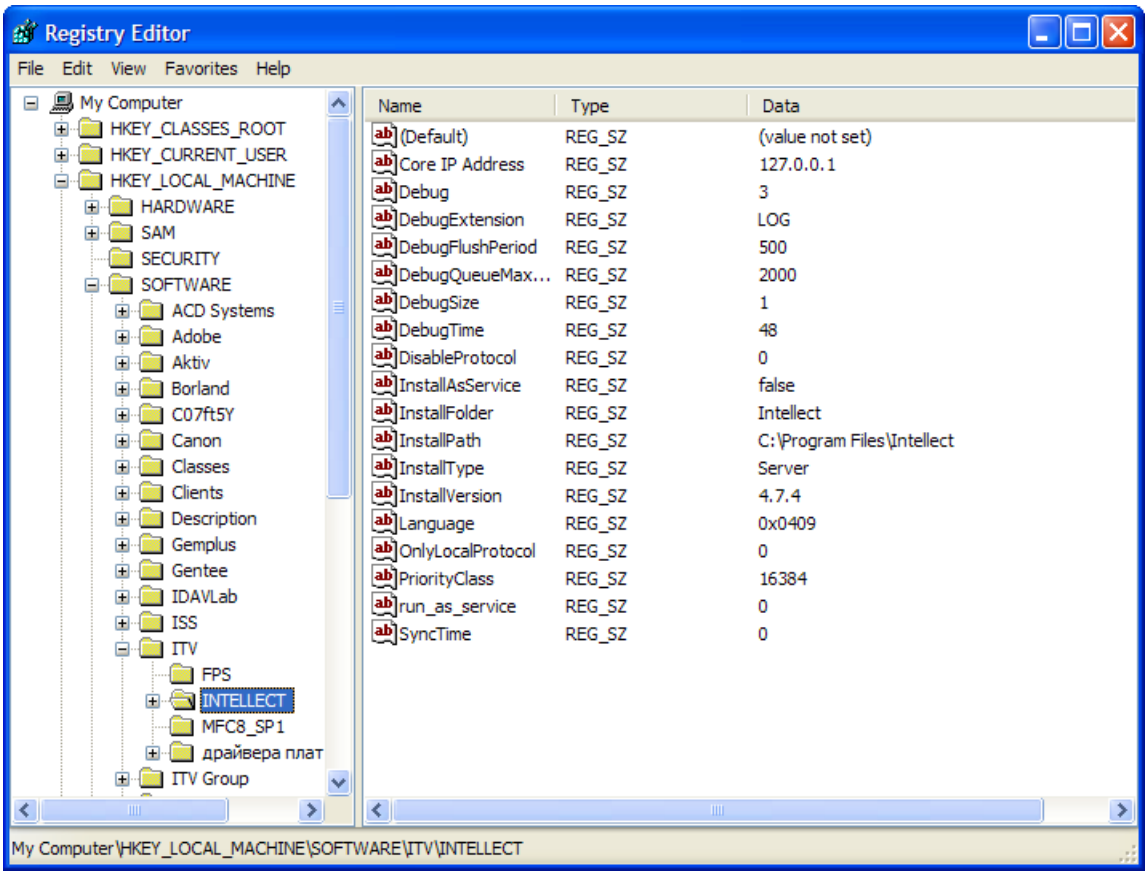


Figure 13.1-3 Registry editor window

To close the registry editor, click the button, or select Exit from File menu (Figure 13.1-4).

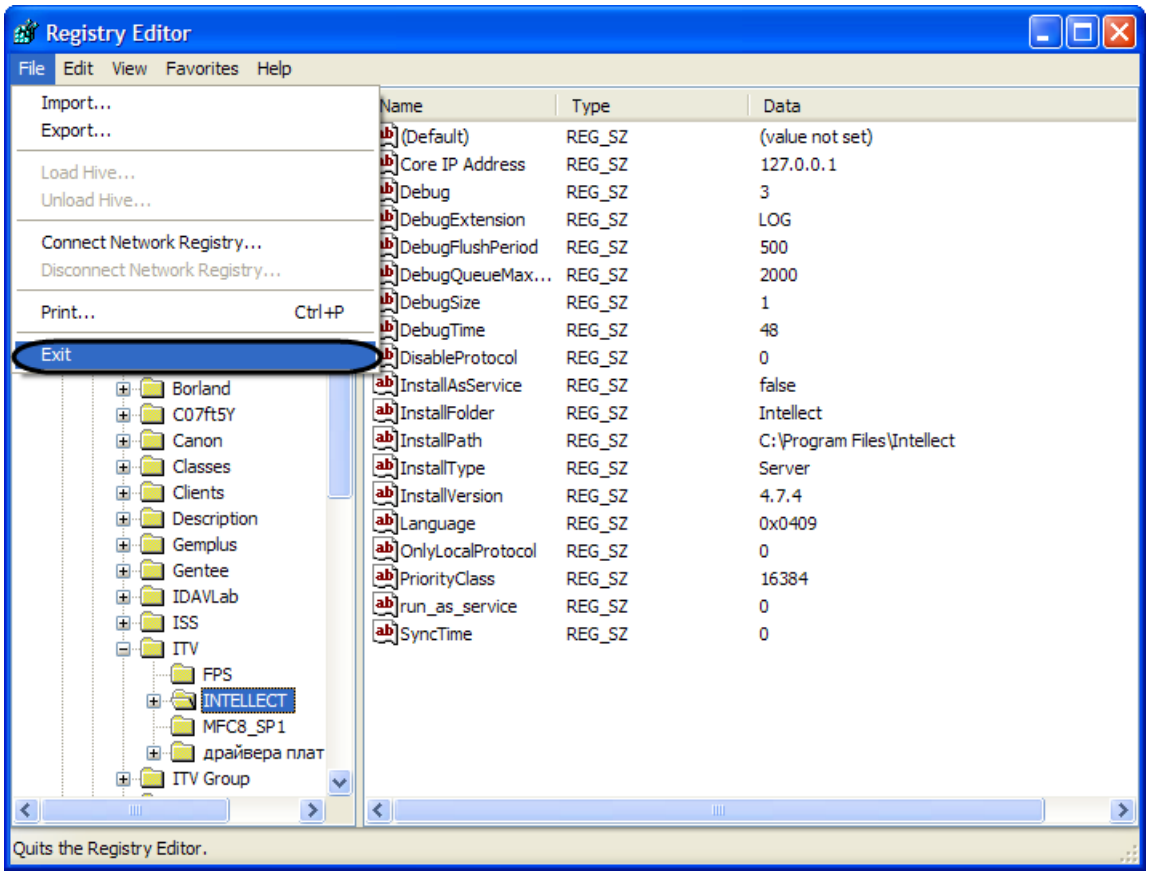


Figure 13.1-4. Shutting-down the registry editor

13.1.2.2 *Interface elements*

Figure 13.1-5 shows the elements of the registry editor window.

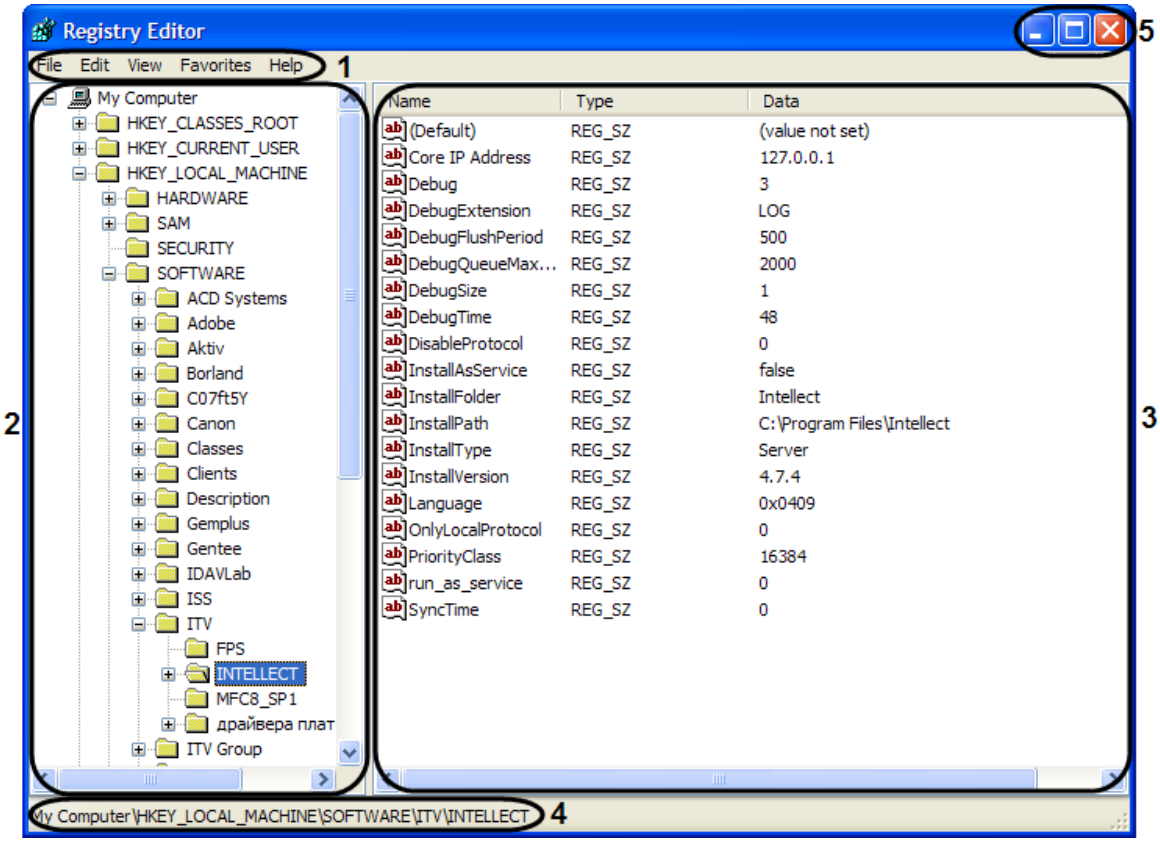


Figure 13.1-5. Interface elements of the registry editor window

1. Main menu. Contains the commands and settings.
2. Registry tree. Displays the structure of the registry.
3. Parameters table. Displays the parameters of the selected key.
4. Information line. Displays the pathname of the selected object.
5. Control buttons (left to right): Minimize, Restore, Close.

13.1.2.3 *Navigating the registry tree*

The registry structure is shown on the left of the window in a tree similar to the folders tree in Explorer. The tree contains six main branches, each of which contains keys, subkeys and parameters shown in the right panel of the window.

To enter a lower level folder (key), click the plus icon next to the parent folder (Figure 13.1-6).

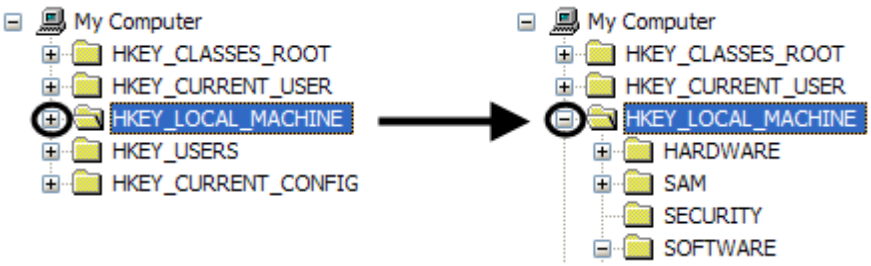


Figure 13.1-6. Expanding a branch in the registry tree

To contract the branch, click the minus icon next to it.

13.1.3 Adding string parameters to the registry

To add a string parameter to a key, do the following:

1. Select the required branch and click the plus icon (Figure 13.1-7). All folders (keys) inside this branch will be displayed.
2. Find a key to add a parameter to. The table on the right will display existing parameters of this key.

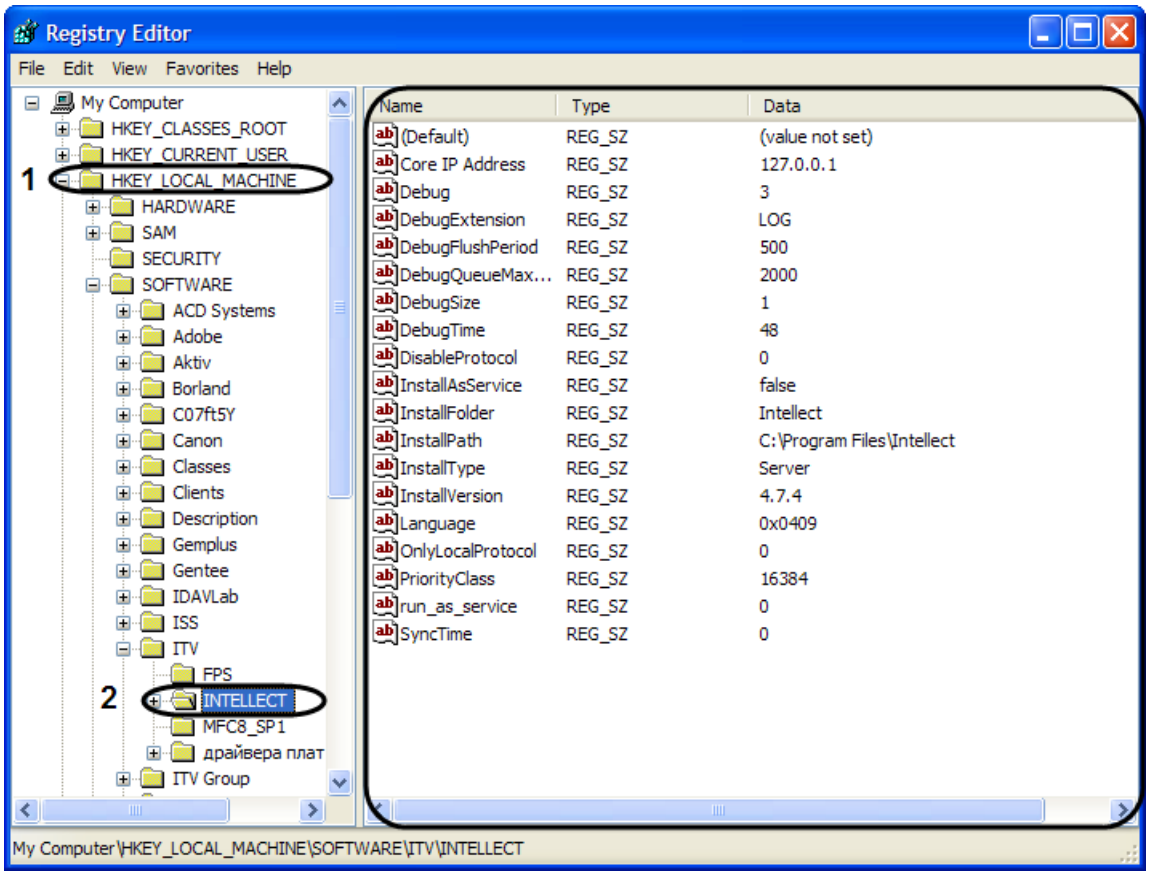


Figure 13.1-7. Selecting a folder in the tree

3. In the main menu, select Edit, then New, then String Value (Figure 13.1-8).

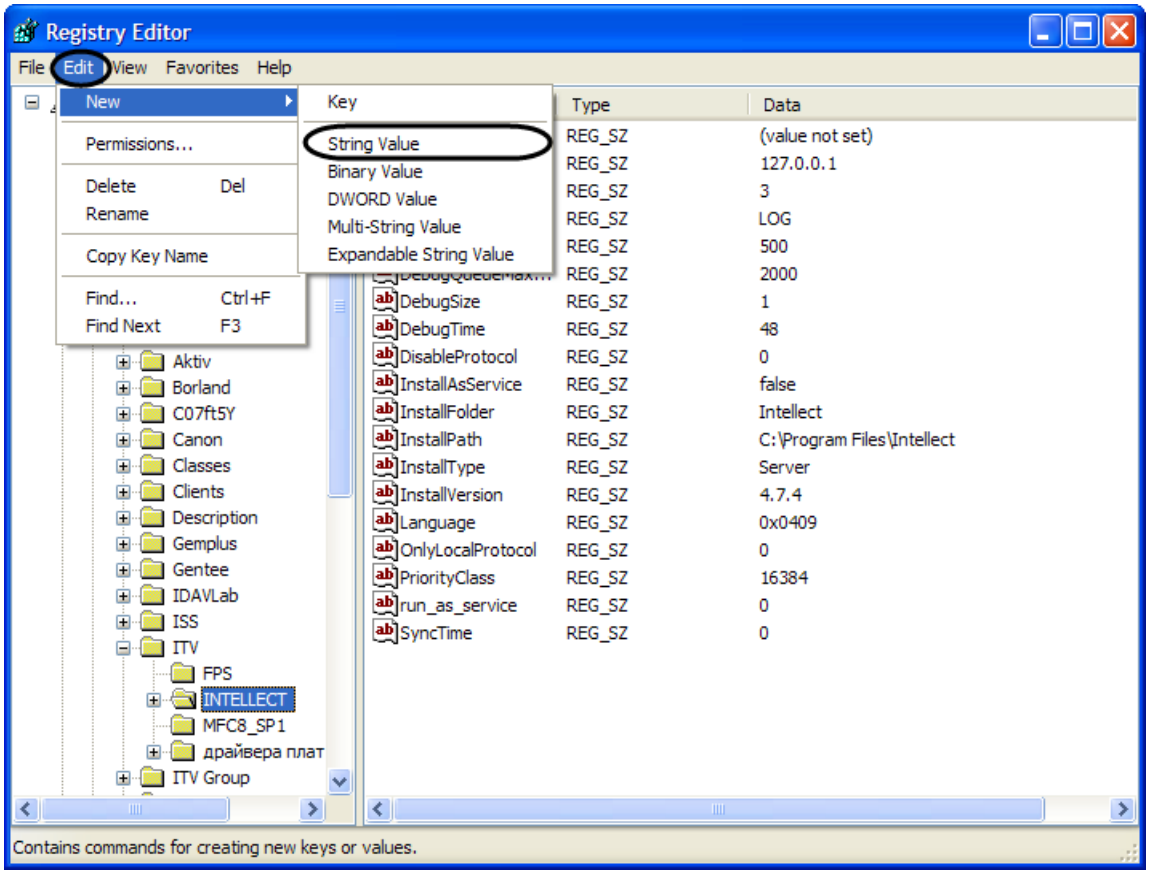


Figure 13.1-8. Creating a new string parameter

A new string parameter will be created (Figure 13.1-9).

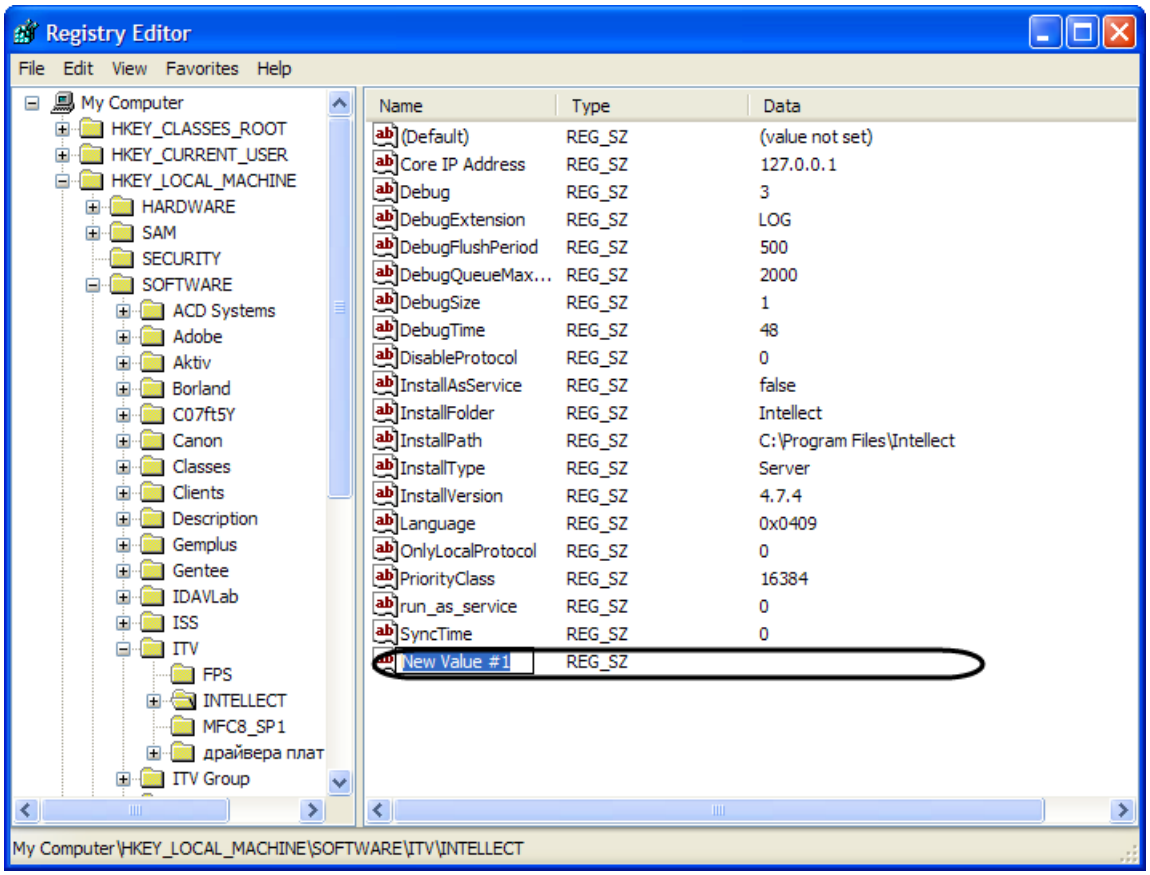


Figure 13.1-9. A new string parameter is created

4. Assign a name to the new parameter. Enter the name in the highlighted name field, which by default reads “New Value #1”, and click anywhere in the editor window. The entered name will be saved (Figure 13.1-10).

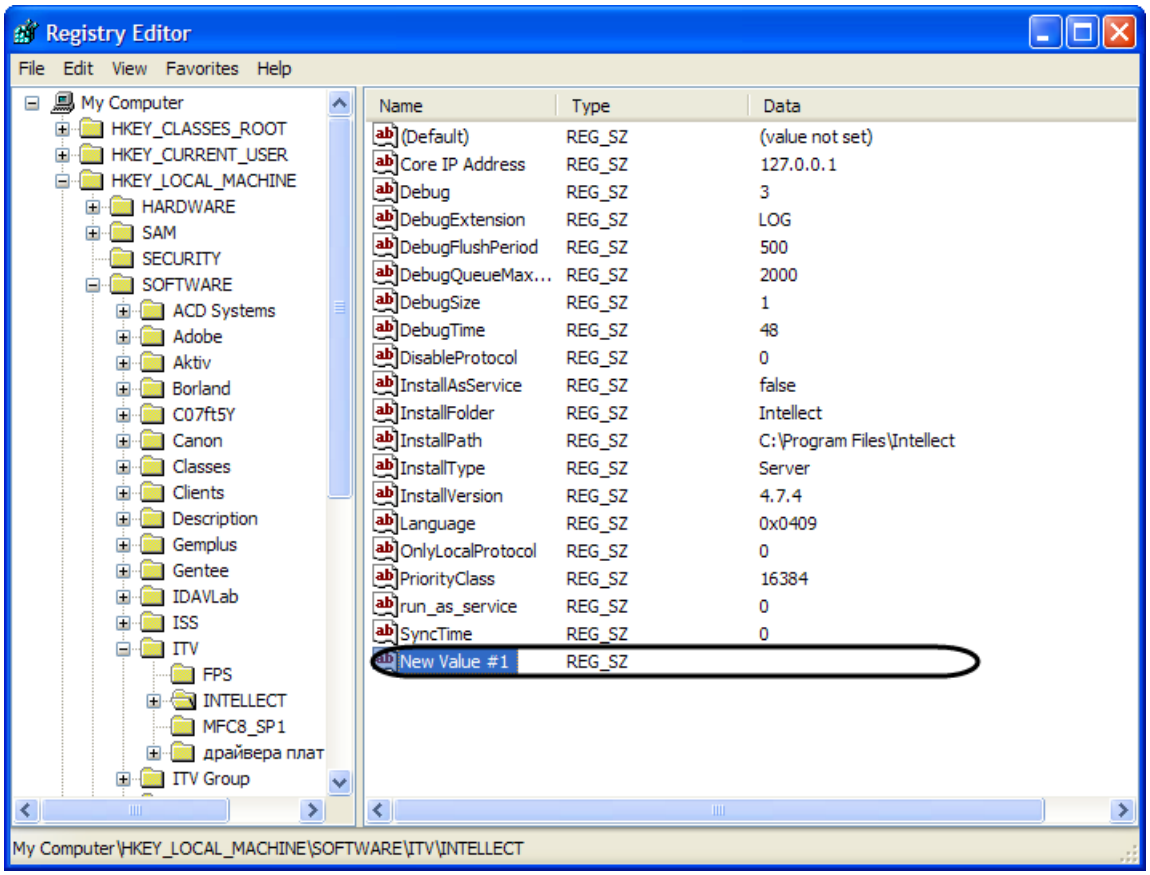


Figure 13.1-10. The new parameter is assigned a name

5. Specify the value of the new parameter. Double-click the parameter name. The Edit String dialog box will open (Figure 13.1-11).

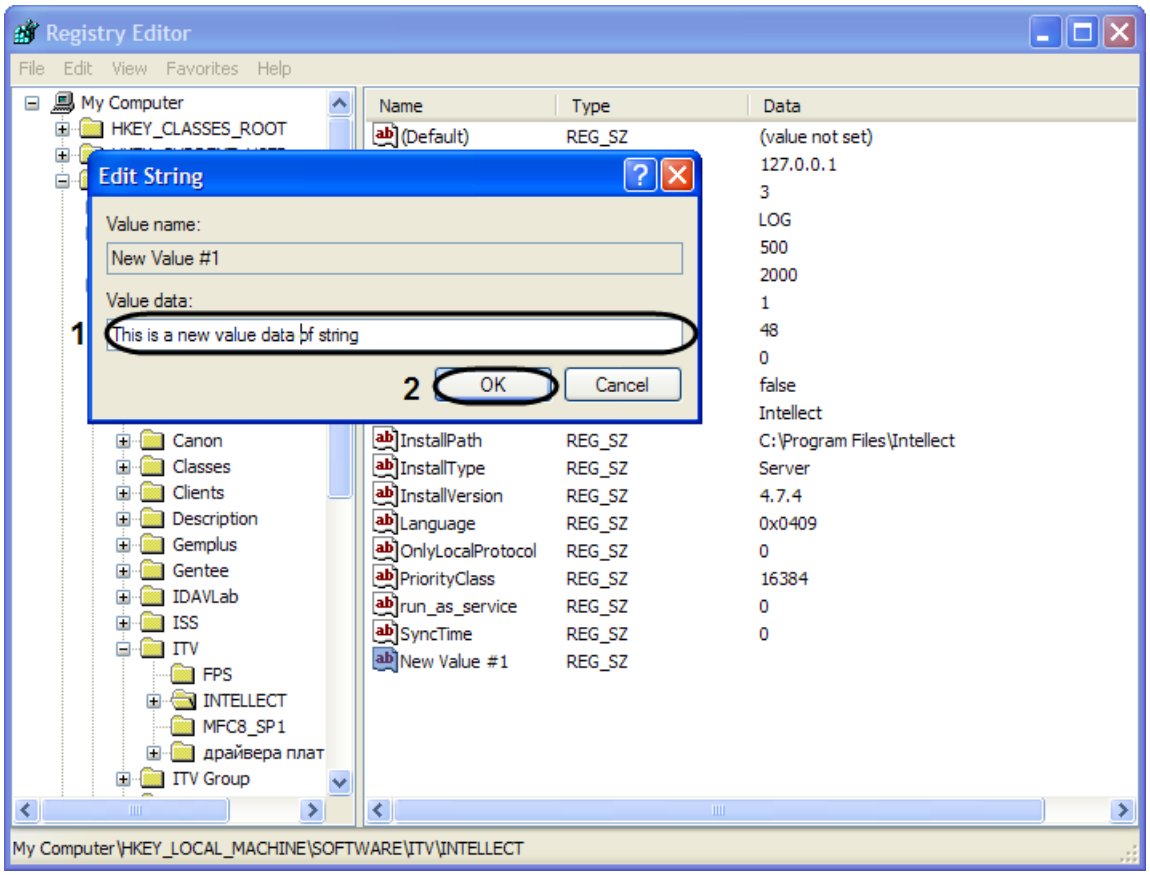


Figure 13.1-11. Edit String dialog box

Enter the value into the Value Data field (Figure 13.1-11, 1) and click OK (Figure 13.1-11, 2).

A string parameter with a specified value will be created (Figure 13.1-12). To edit the value, repeat step 5.

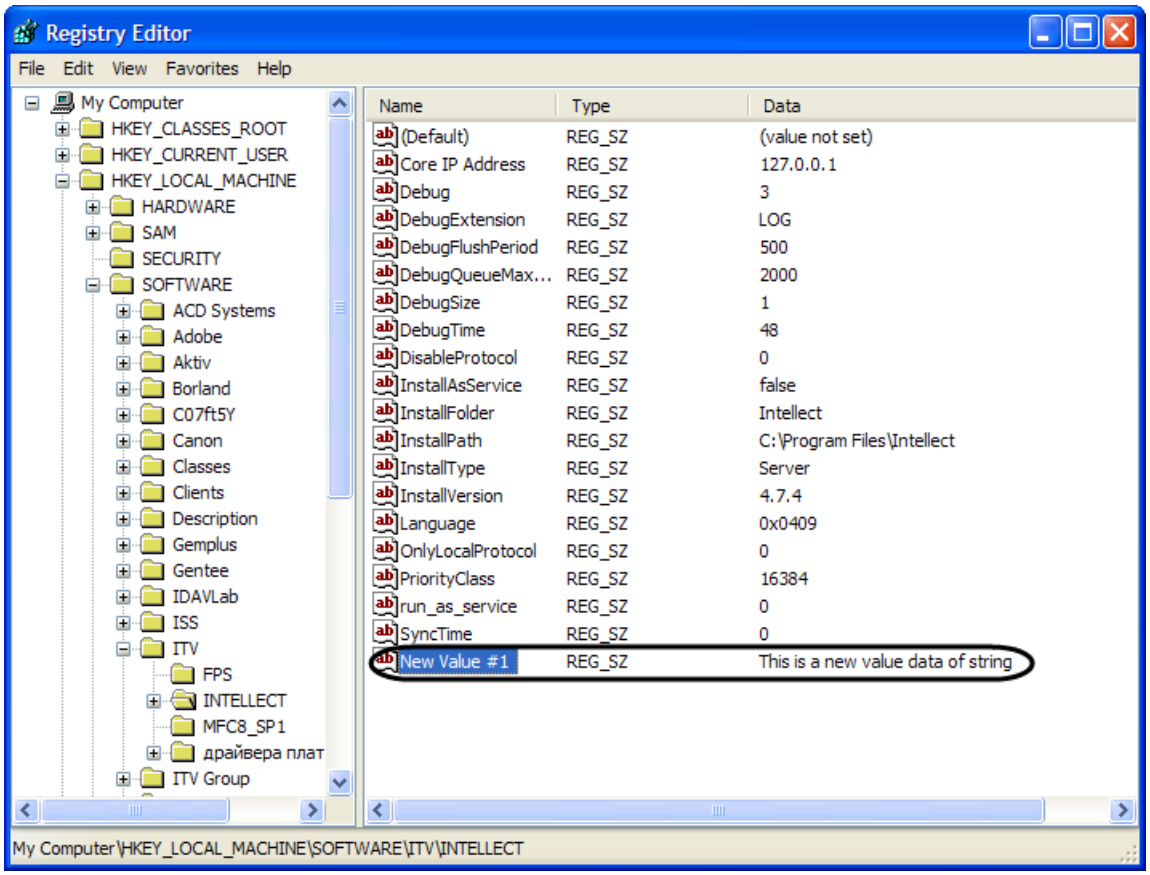


Figure 13.1-12. A string parameter is created

13.1.4 Modifying the value of string parameters in Windows OS registry

To modify the value of a string parameter, do the following:

1. Select the required branch and click the plus icon (Figure 13.1-13). All folders (keys) inside this branch will be displayed.

2. Find a key containing the parameter to be edited. The table on the right will display the existing parameters of this key.

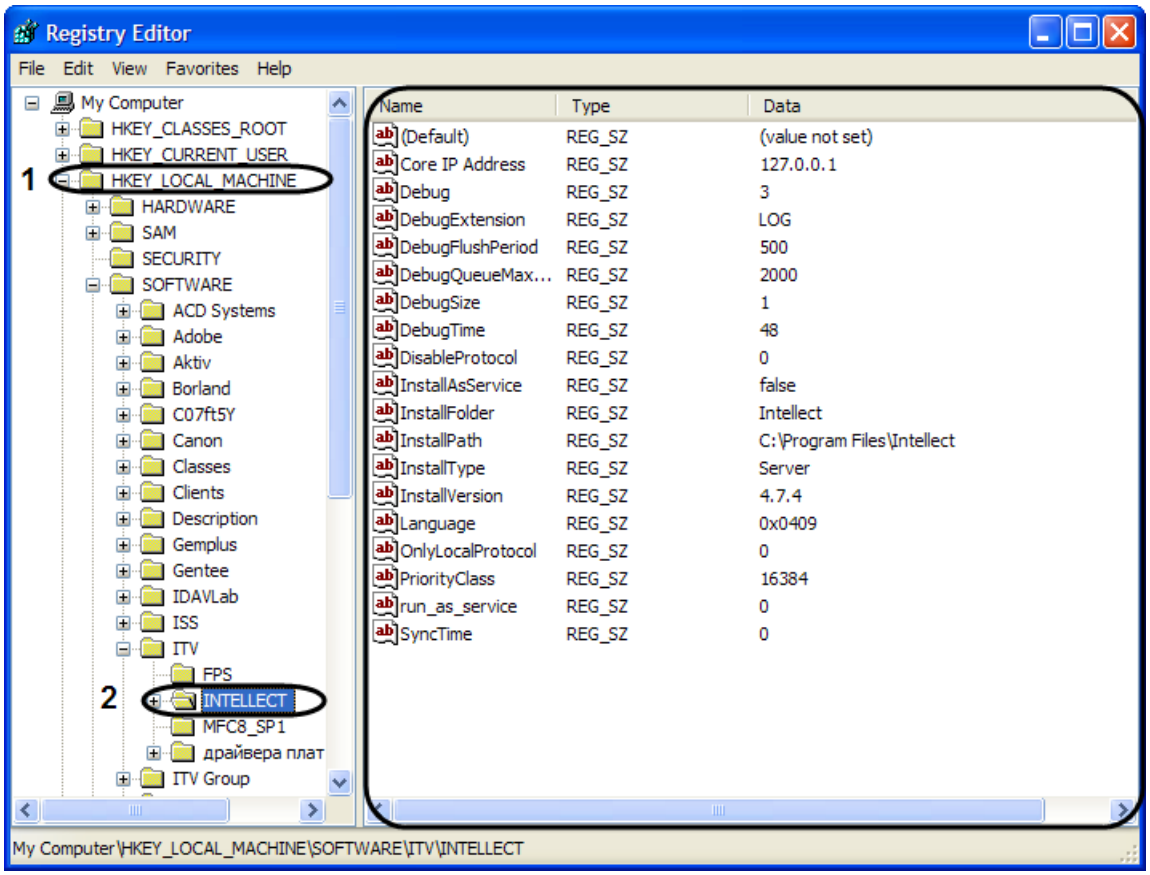


Figure 13.1-13. Selecting a folder in the tree

3. Select the parameter to be modified (Figure 13.1-14).

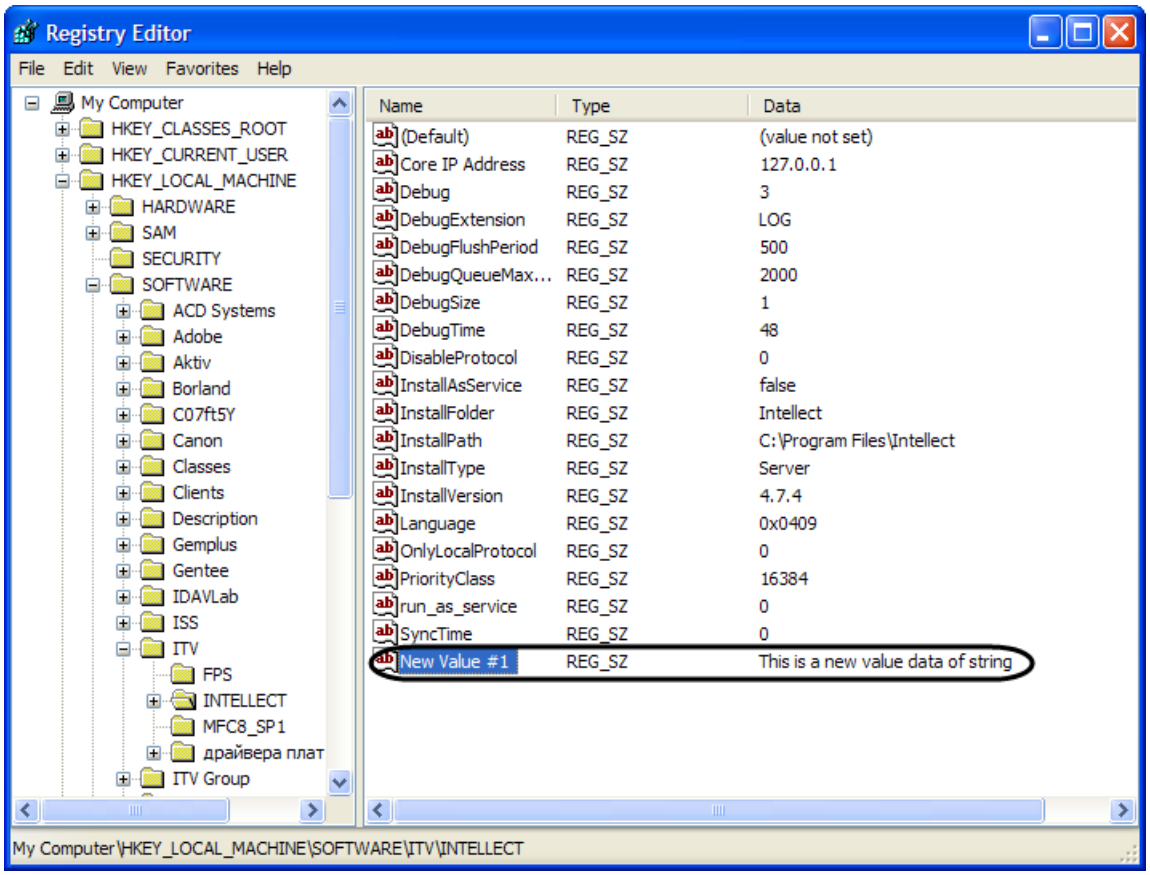


Figure 13.1-14. Selecting the parameter to be modified

4. In the menu, select Edit, then Modify (Figure 13.1-15).

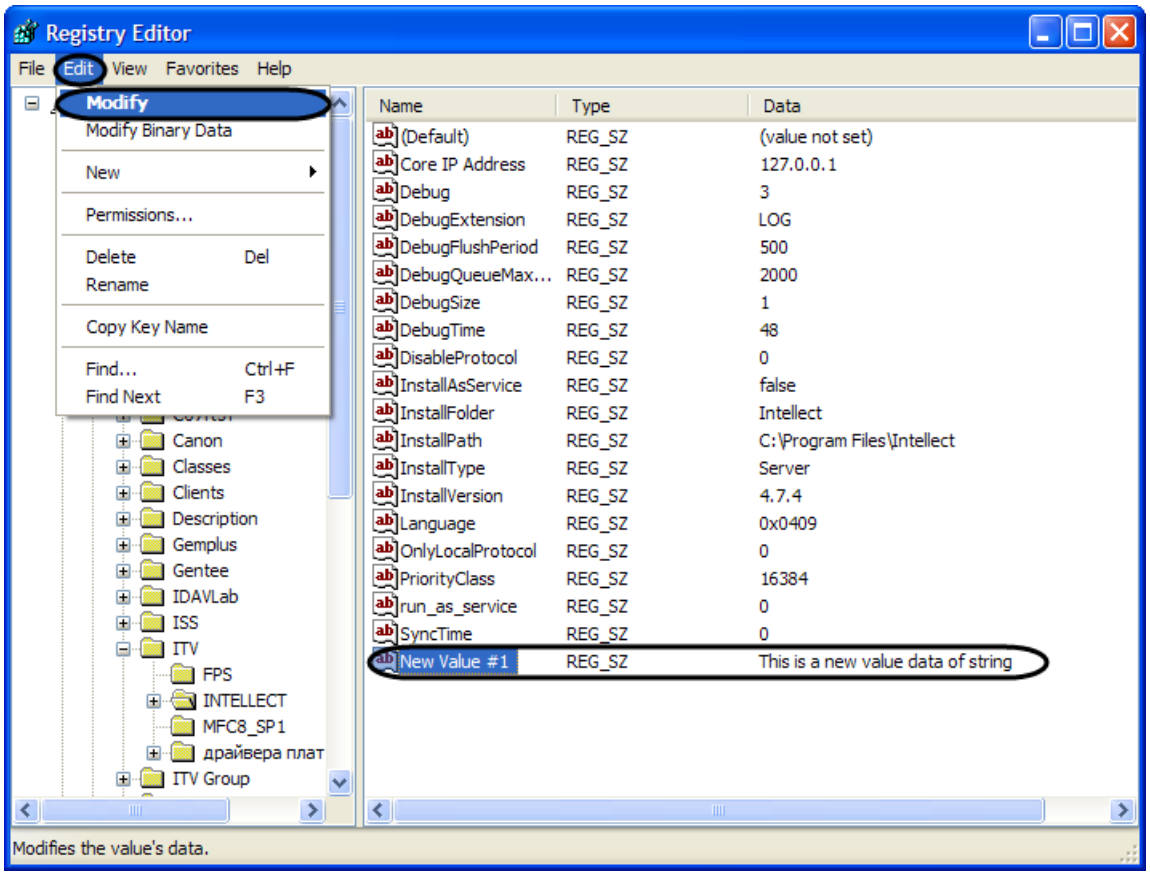


Figure 13.1-15. Selecting a menu command for modifying a parameter

The Edit String dialog box will open (Figure 13.1-16).

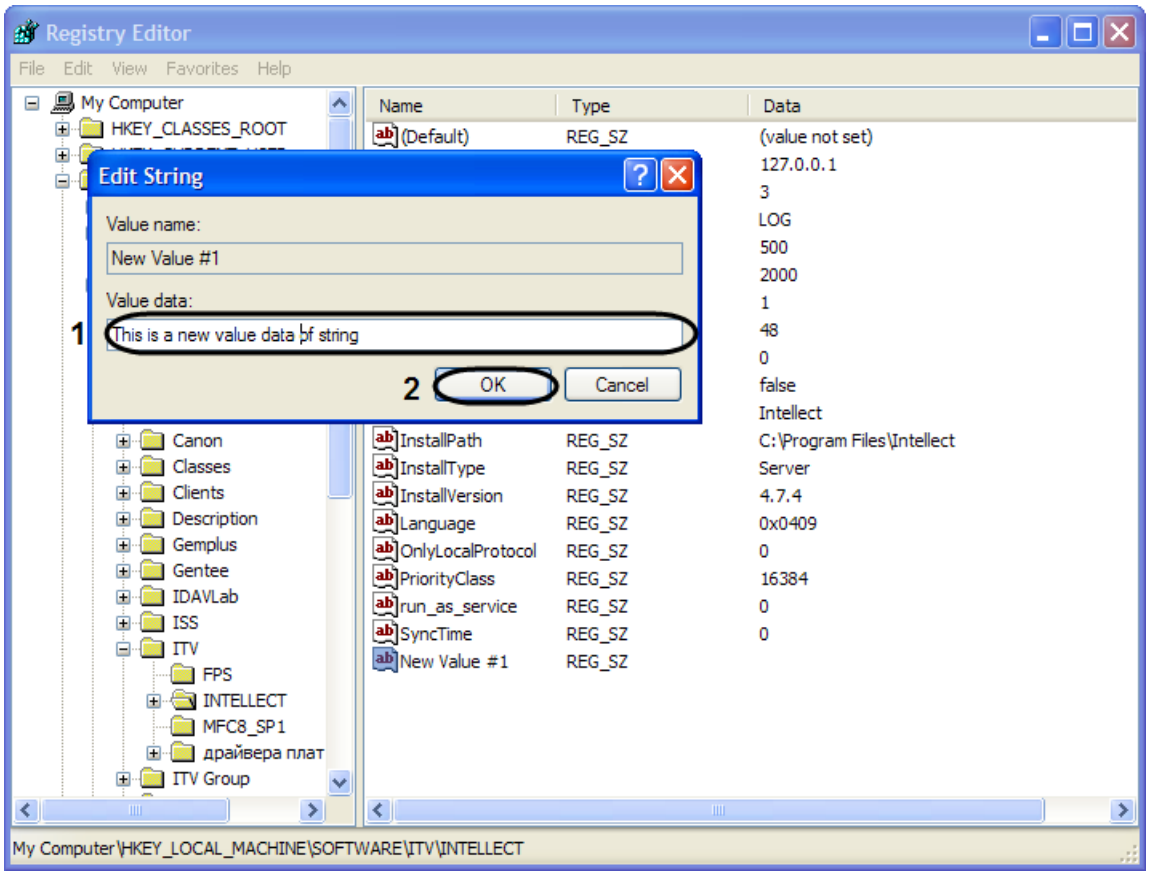


Figure 13.1-16. Edit String dialog box

5. Modify the value of the parameter. Delete the old value and enter a new one into the Value Data field (Figure 13.1-16, 1). Click OK (Figure 13.1-16, 2).

The value of the parameter will be changed (Figure 13.1-17).

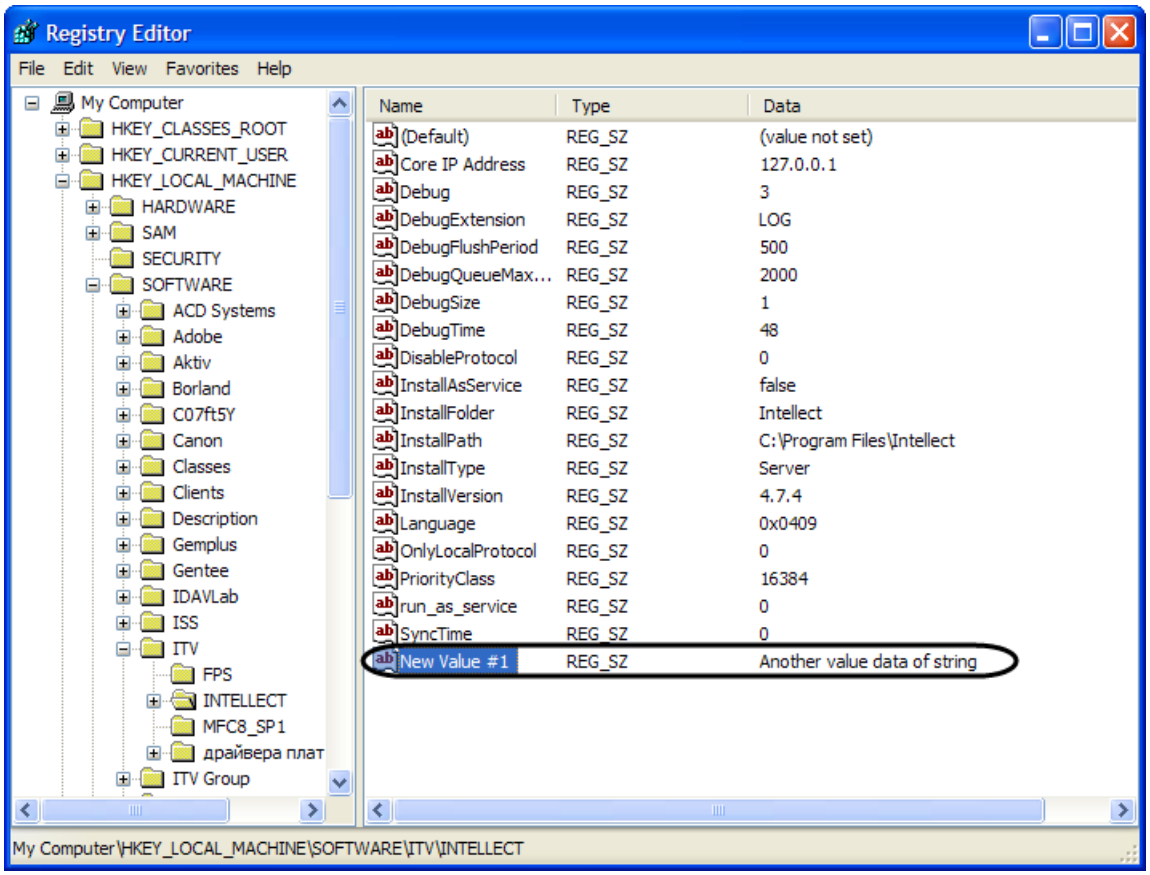


Figure 13.1-17. The parameter value is modified

13.1.5 Deleting parameters from the Windows OS registry

To delete a string parameter from the registry, do the following:

1. Select the required branch and click the plus icon (Figure 13.1-18). All folders (keys) inside this branch will be displayed.

2. Find a key containing the parameter to be deleted. The table on the right will display the existing parameters of this key.

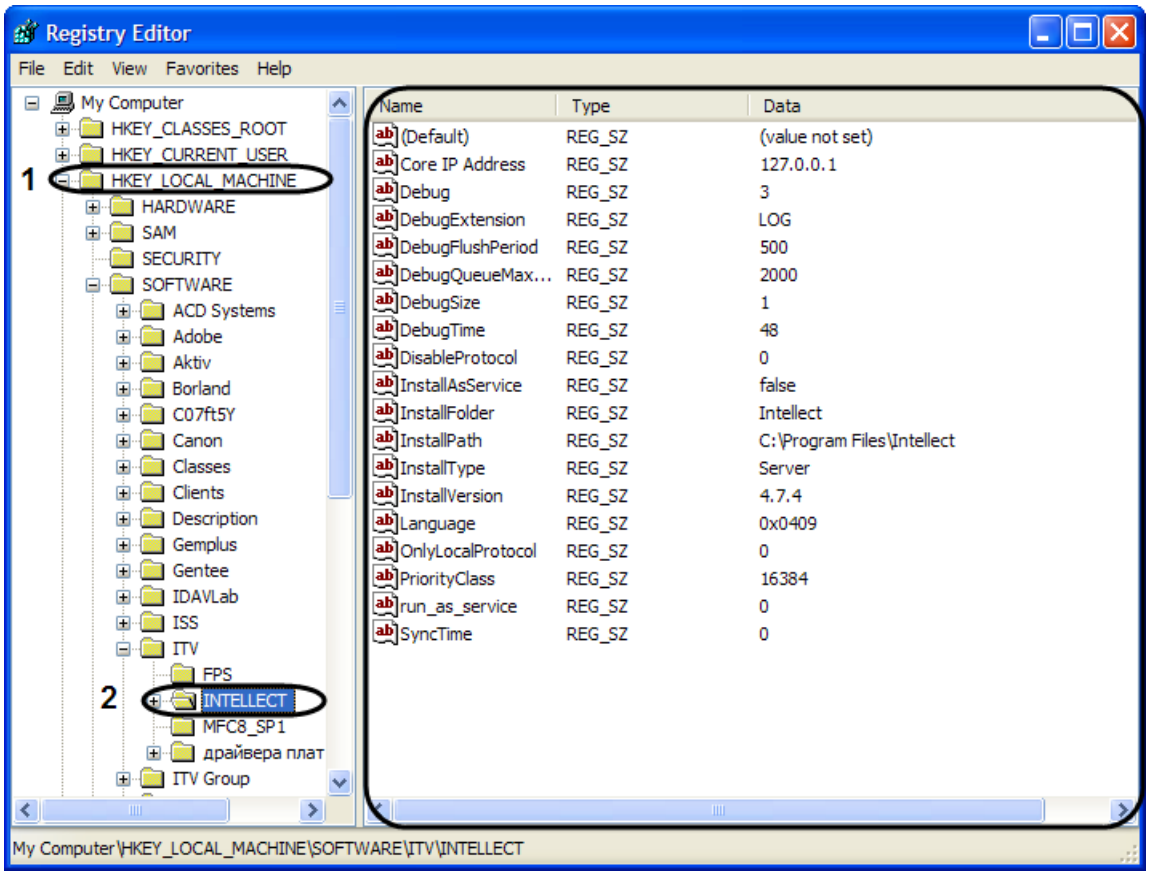


Figure 13.1-18. Selecting a folder in the tree

3. Select the parameter to be deleted (Figure 13.1-19).

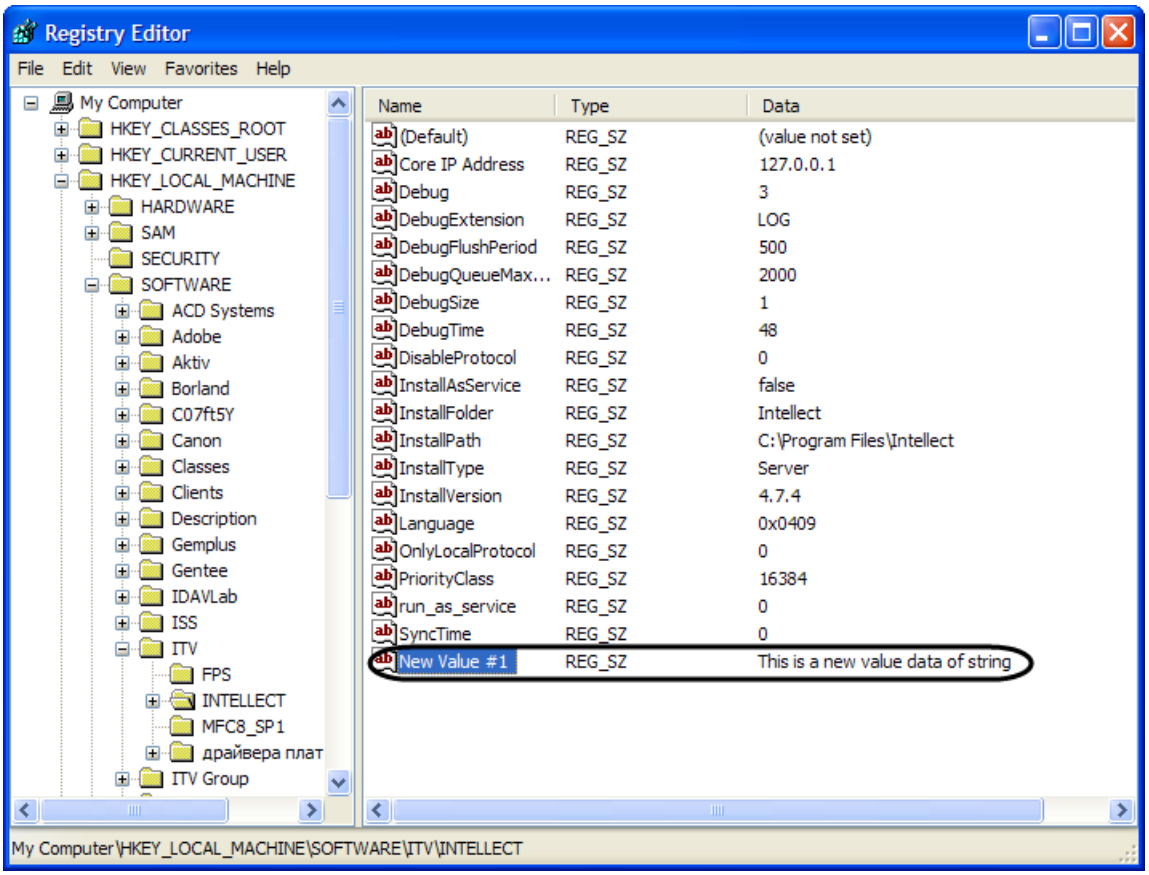


Figure 13.1-19. Selecting the parameter to be deleted

4. In the menu, select Edit, then Delete (Figure 13.1-20).

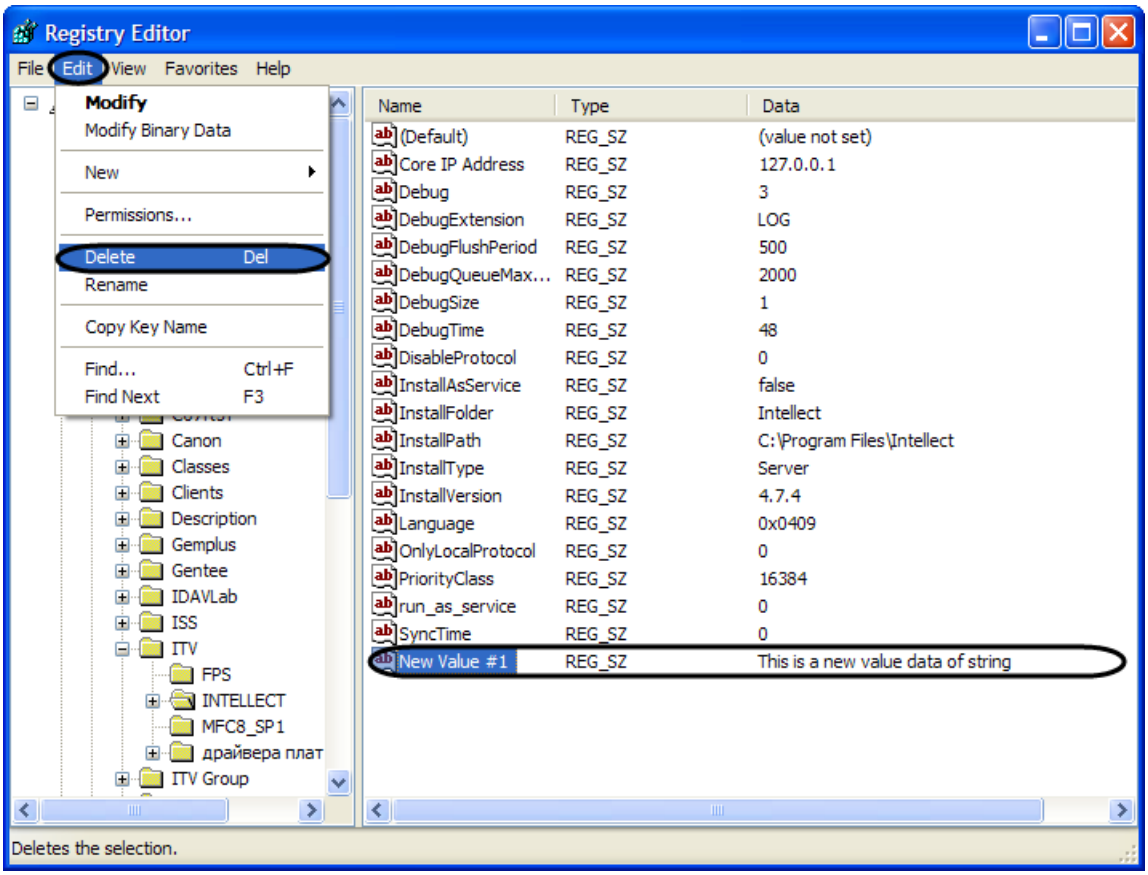


Figure 13.1-20. Deleting a string parameter

The string parameter will be deleted from the registry.

NOTE. The Edit menu can also be opened as a context menu by right-clicking the required parameter.

13.1.6 Setting up the User Account Control (UAC) in Windows OS for operating Intellect PC

If you don't want Windows OS to ask for confirmation of Intellect PC running processes when the User Account Control (UAC) is on and to suspend the system operation while waiting for the user answer, you should create EnableLinkedConnections key in the registry. To carry this out do the following:

1. Open subsection of HKEY_LOCAL_MACHINE \ SOFTWARE \Microsoft \Windows \CurrentVersion \Policies \System registry.
2. Create new DWORD value (Figure 13.1-21).

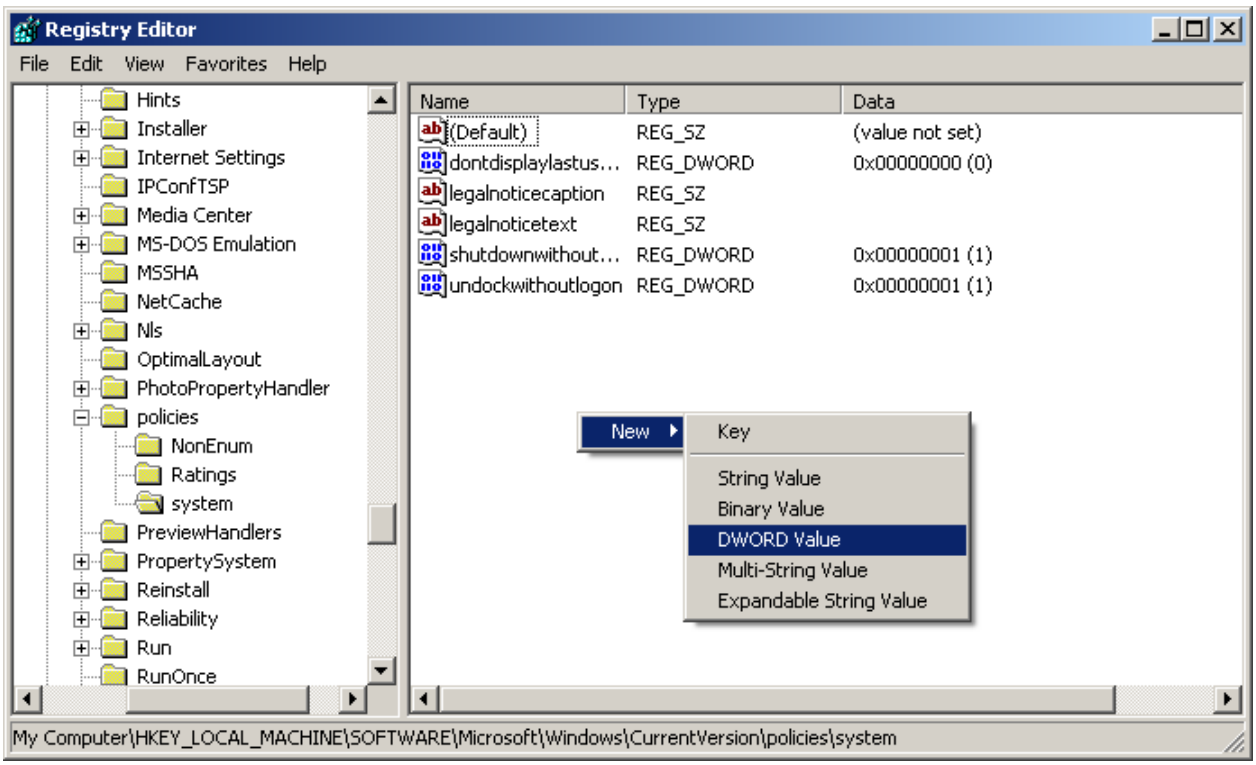


Figure 13.1-21 DWORD Value creation

3. Set EnableLinkedConnections name to the new value and click Enter (Figure 13.1-22).

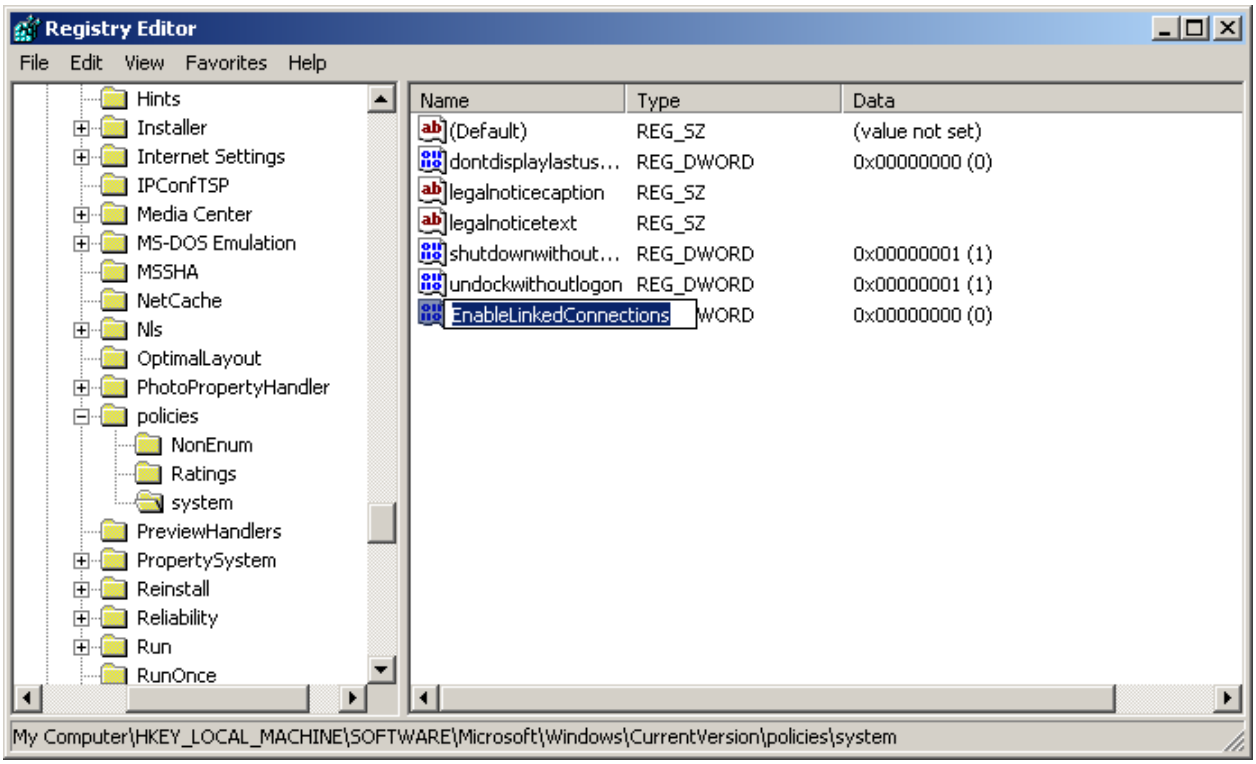


Figure 13.1-22 Appellation of a new name to the value

4. Set value=1 to EnableLinkedConnections. Click OK (Figure 13.1-23).

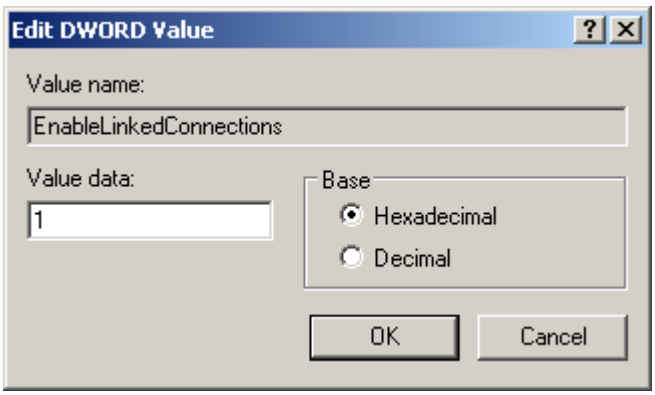


Figure 13.1-23 Value edition

5. Close registry editor and restart your computer.

EnableLinkedConnections registry key is created.

13.2 Connecting network disks in Windows Vista and Windows 7 OS

In some cases net disks are not displayed in Intellect PC settings in Windows Vista and Windows 7 OS when UAC is on. In order to net disks appear in Intellect PC settings, connect them in Windows OS under administrator, the following way:

1. Call a command prompt. Select **Run** in **Start** menu and enter «cmd» in entry field and click **OK**.
2. Enter «net use Z: \\Address\Folder» in command prompt; **Z** is letter of Roman alphabet that will represent net disk in the system, , **Address** is IP-address of net disk, **Folder** is a name of folder (Figure 13.2-1).

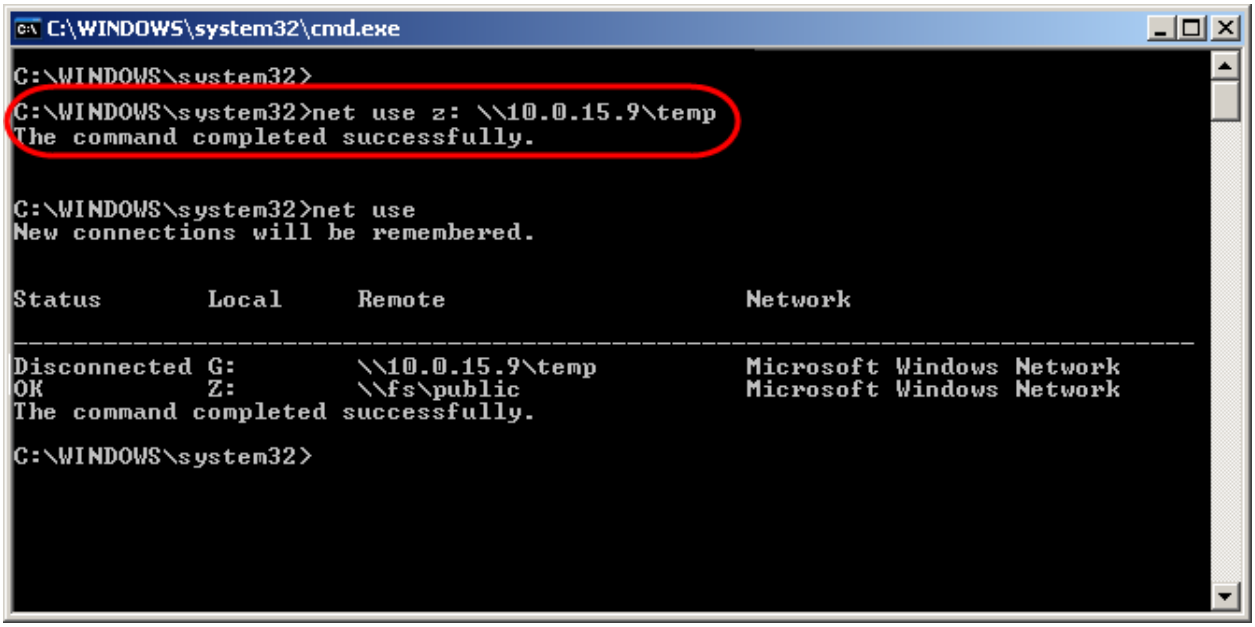


Figure 13.2-1 Windows command prompt box

After connection net disk appears in Intellect PC settings.

13.3 Setting up serial (COM) ports in Windows

To view and edit the settings of COM ports, start the Device Manager. Right-click the My Computer icon on the Desktop and select Properties in the drop-down menu. The System Properties window will open. Open the Hardware tab and click the Device Manager button (Figure 13.3-1).

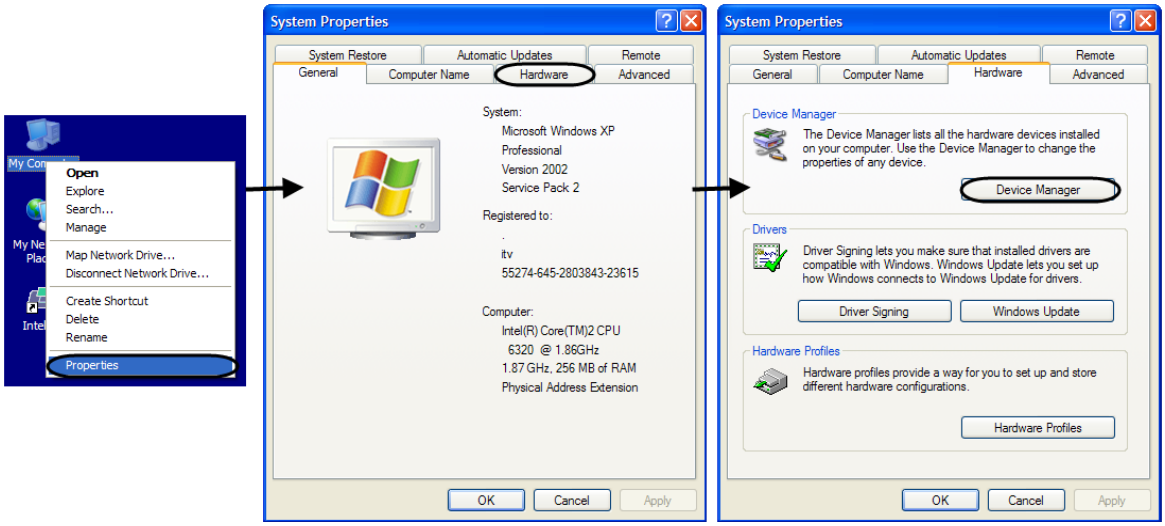


Figure 13.3-1. Starting the Device Manager

The Device Manager window will open. Expand the Ports (COM & LPT) branch and select the COM port to which the device to be set up is connected. Then, right-click the required COM port in the tree to open the drop-down menu and select Properties. The settings of the port will open in a dialog window. Go to the Port Settings tab to view and edit the Bits per Second and the Parity parameters (Figure 13.3-2).

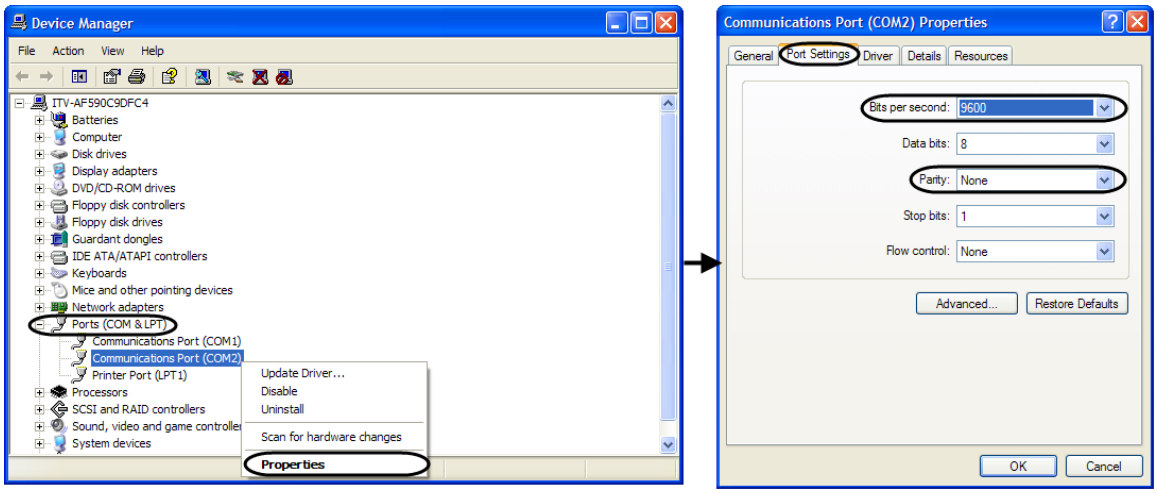


Figure 13.3-2. Opening the Port Properties window

13.4 Working with Windows OS services for operating Intellect™ installed as a Service

13.4.1 General information about Intellect™ operation as a Service

INTELLECT™ installed as a Service, is started before user authorization in Windows OS and before Windows applications are launched (including the Explorer application which is used for starting up such applications as Windows OS and various other applications installed on the Server).

Note. In INTELLECT™ installed as a Server user can log off INTELLECT™ and service remains started and INTELLECT™ restart is possible.

If INTELLECT™ is installed as a Service and it operates under account different from administrator, then the user interface is not displayed. To configure INTELLECT™, log in the system under administrator account – INTELLECT™ will restart under this administrator account and user interface is ready to be configured. If after this log off the administrator account and log in as a user, the interface is not displayed but settings are saved.

Note. When INTELLECT™ is started under some user (not under SYSTEM), then if user is changed and the first user has not logged off, INTELLECT™ will not restart – it will be started under the first user.

If INTELLECT™ is installed as a Service and database connection is performed via Windows account information, then for operation under the user different from the user who installed INTELLECT™ this user is to have SQL server permissions.

13.4.2 Configuring the restart of the "ITV Intellect Core Server" service

If the "ITV Intellect Core Server" service is to be restarted, do the following:

1. Go to the Windows Control Panel in the "Start" menu.
2. Select "Administrative Tools" -> "Services". The list of services registered in the system is displayed.
3. Select the "Properties" item in the context menu of the "Intellect Core Server" service.
   Note. The context menu is called with the right click on the name of the service.
4. Go to the "Recovery" tab in the displayed box (Figure 13.4-1, 1).

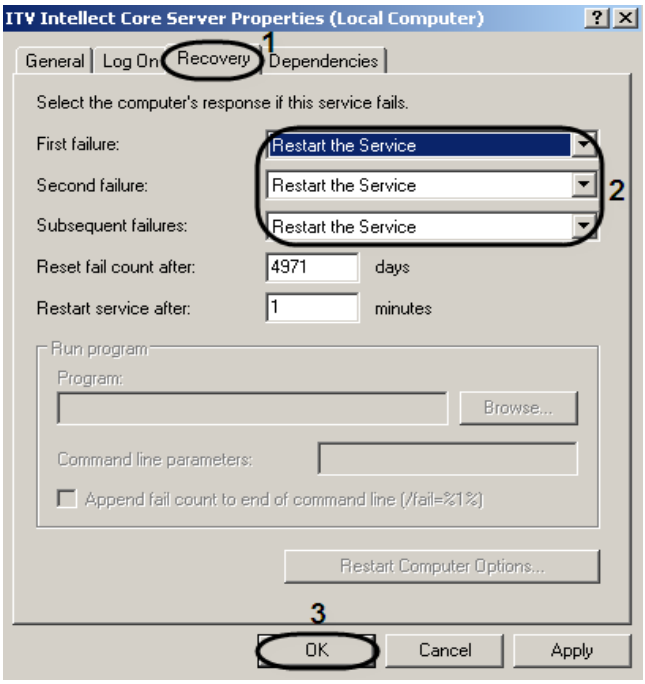


Figure 13.4-1 Configuring the restart of the "ITV Intellect Core Server" service

5. In the corresponding drop-down lists select the actions to be performed in case of the first, second and subsequent system failures (Figure 13.4-1, 2).
6. To save the changes, click the "OK" button (Figure 13.4-1, 3).

The restart of the "ITV Intellect Core Server" service is now configured.

13.4.3 Working with network disks of INTELLECT™ installed as a Service

If it is necessary to use network disks for working with archive in Intellect™ that is installed as a Service you should add them by setting UNC path, the following way:

1. Go to the last line in the list of disks and click the "↓" key (Figure 13.4-2).

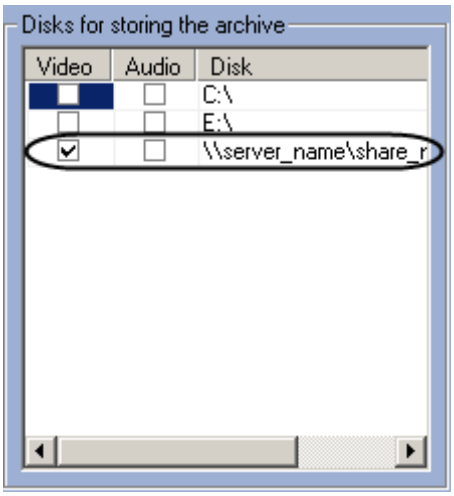


Figure 13.4-2 Setting UNC path to network disk

2. Set a path to the network disk in appeared line in the "Disk" column (Figure 13.4-2). UNC path is set in "\\server_name\share_name" format where the "server_name" is the name of file server and the "share_name" is the network name of public folder.

3. Set the check box for created disk in the “Video” column.

*Note. If network disk is added not by setting the UNC path, then recording on it is unavailable in **Intellect is installed as a Service** mode.*

Attention! If INTELLECT™ is installed as a Service on Windows XP OS, it is impossible to record on network disks.

Recording on network disks in INTELLECT™ installed as as a Service is performed only in case when INTELLECT™ is started under some user (not under SYSTEM) and the user is logged in the system. When the user who belongs to the IntellectUsers group logs in the system, INTELLECT™ is restarted automatically on behalf of this user. Both network disks and UNC path are available for recording. If the user logs off the system, INTELLECT™ will restart under system account and all network disks are unavailable.

13.4.4 Enabling INTELLECT™ as a Service startup

If INTELLECT™ was not installed as a Service and you want to make it such, do one of the following:

1. Reinstall INTELLECT™ and set the “Install Intellect as a service” checkbox (see “Installing and removing INTELLECT™ software” section).

2. Use the "IntellectRunService.exe -i" command in the Windows command prompt of the Intellect installation directory. As a result the “ITV Intellect Core Server” service is registered in the system.

13.4.5 Disabling INTELLECT™ as a Service startup

To disable the startup of INTELLECT™ as a Server, do the following:

1. Restart INTELLECT™. In this case do the following:
   1.1. Remove INTELLECT™ (see “Removing INTELLECT™ software” section).
   1.2. Install INTELLECT™ without setting the “Server” checkbox (see “Installing INTELLECT™ software” section).
2. Use the command prompt. In this case do the following:
   2.1. Run the Windows cmd.exe command prompt:
      2.1.1. Under the administartor account with disabled UAC.
      2.1.2. As administrator under the administartor account or user account with enabled UAC.
   2.2. Go to the INTELLECT™ installation directory (Figure 13.4-3).

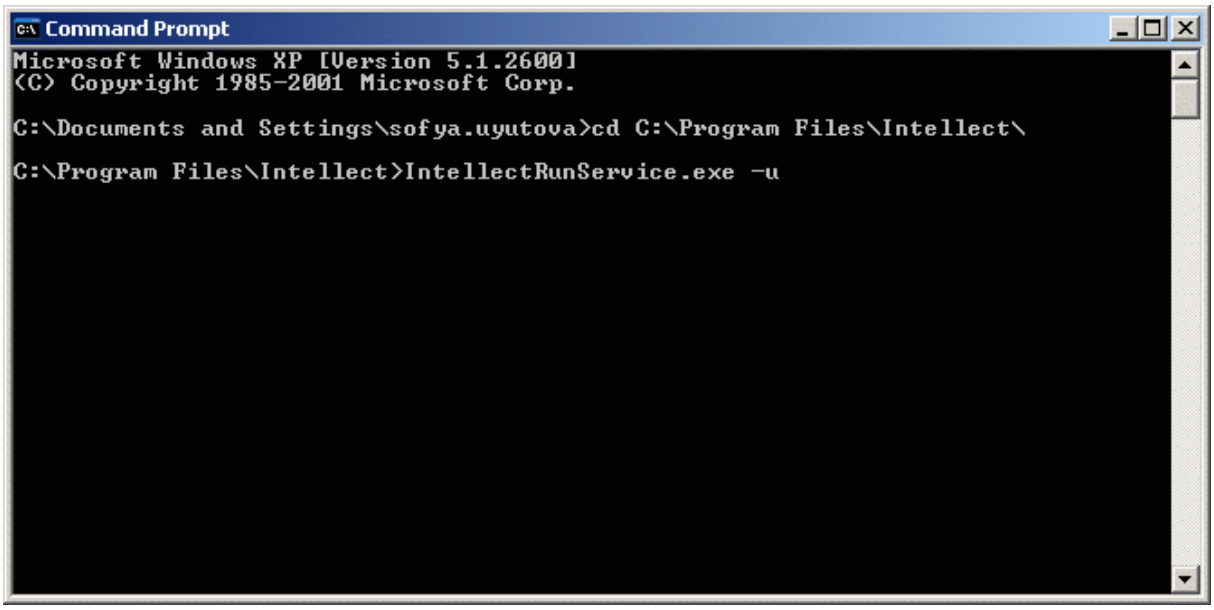


Figure 13.4-3 Disabling Intellect as a Service startup using the command prompt

2.3. Run “IntellectRunService.exe –u” command with the Windows command prompt (Figure 13.4-3).

INTELLECT™ as a Service startup is now disabled.

13.5 The list of TCP ports used in INTELLECT™

The list of TCP ports used in INTELLECT™ is given in Table 13.5-1. Port 1062 is used to connect intellect.exe kernel and captioner (CAM_TITLE.run module) to MS SQL Server. MS SQL Server also uses TCP port 1433 and UDP port 1434 (by default) for database synchronization.

Port 8082 is used to connect clients to Web Server 2.0 module.

Note.This data is necessary for setting security system and firewall on the Server. The “Client’s connection to the module” , “Client’s module name” parameters are set for client-server modules.

Table 13.5-1

№	Module name	Name of the corresponding object in INTELLECT™	Connection port to intellect.exe kernel	Name of client module	Client’s connection port to the module
1	ARCHPANEL.run	Panel of Active archiving	22118	-	-
2	audio.run	Microphone	21008	player.run	20910
3	CAM_TITLE.run	Captioner	21077	TITLEVIEWER.run	20978
4	dialog.run	Custom dialog box	21058	-	-
5	DRS.run	Data replication service	22175	-	-
6	EVENT_COUNTER.run	Event counter	22153	-	-
7	EVENT_VIEWER.run	Event viewer	21055	-	-
8	keyb.run	Keyboard	21005	-	-
9	MAP.run	Map	21051	-	-
10	MC_CLIENT.run	Monitoring client	22179	-	-
11	message.run	Alarm message window	21056	-	-
12	MMS.ru	Mail Message Service	21031	-	-
13	player.run	Audio player	21060	-	-
14	slave.exe	Computer	21111		

№	Module name	Name of the corresponding object in INTELLECT™	Connection port to intellect.exe kernel	Name of client module	Client's connection port to the module
15	SMS.run	Short Message Service	21035	-	-
16	telemetry.run	Telemetry card	21010	-	-
17	TELEMETRY_PANEL.run	Telemetry control panel	22101	-	-
18	TITLEVIEWER.run	Search by captions	22112	-	-
19	video.run	Video server Active archiving Videogate	21050	CAM_TITLE.run	20900
				audio.run	20903, 20904
20	VMS.run	Voice message service	21032	-	-
21	VNS.run	Voice notification service	21004	-	-
22	WEBSERVER.run	Web-server	21034	-	-
23	WINDOW.run	External window	21053	-	-
24	vmdadb.run	VMDA metadata storage	22219	-	-
25	operatorprotocol.run	Operator protocol	22215	-	-
26	Liveplayer.run	Live sound switch	22199	-	-
27	ldapimport.run	LDAP service	22252	-	-
28	confchekutil.run	Configuration check	22220	-	-
29	streamingserver.run	rtsp Server	2228	-	-

13.6 Configuring Windows Firewall

If the Intellect software works when the Windows firewall is enabled, then the firewall is to be configured in the following way:

1. Add all processes connected to the Intellect software working to the exceptions list (of allowed programs and components). At standard settings the firewall requires the permission to start the process at first attempt of the module launch.
   Attempt of the module launch is performed at creation the corresponding object in the hardware tree. It is needed to allow the access to the network when the request appears.

   If the access request is not displayed at the module launch attempt, add the needed processes to the allowed list manually.

2. While the Intellect software working in the distributed environment it is needed to add the SQLservr.exe and sqlbrowser.exe processes to the exceptions list (of allowed programs and components) on the Server with which the database synchronization is performed.

Note. Detailed information on Windows Firewall configuration is presented in the Microsoft web-site: http://windows.microsoft.com/

14 Appendix 4. Instaling the «Microsoft .NET Framework 3.5 SP1»

To install «Microsoft .NET Framework 3.5 SP1» manually do the following:

1. Install the Intellect PC as a server (see section «Intellect installation on servers »).

2. Run the «Microsoft .NET Framework 3.5 SP1» setup from the folder «redist» of the Intellect setup program directory.For example: «C:\Intellect\redist\DotNet3.5\dotnetfx35.exe».
3. Extracting files message will be displayed as a result (Figure 13.6-1).

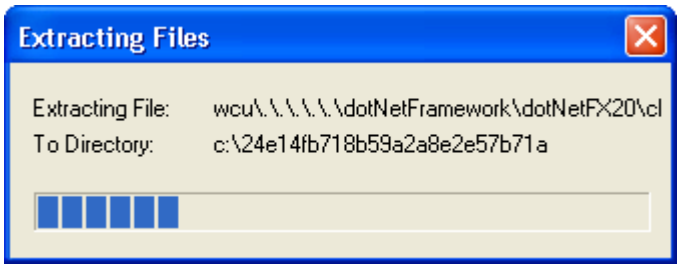


Figure 13.6-1 Extracting the files «Microsoft .NET Framework 3.5 SP1»

Then «Microsoft .NET Framework 3.5 SP1» setup window will be displayed (Figure 13.6-2).

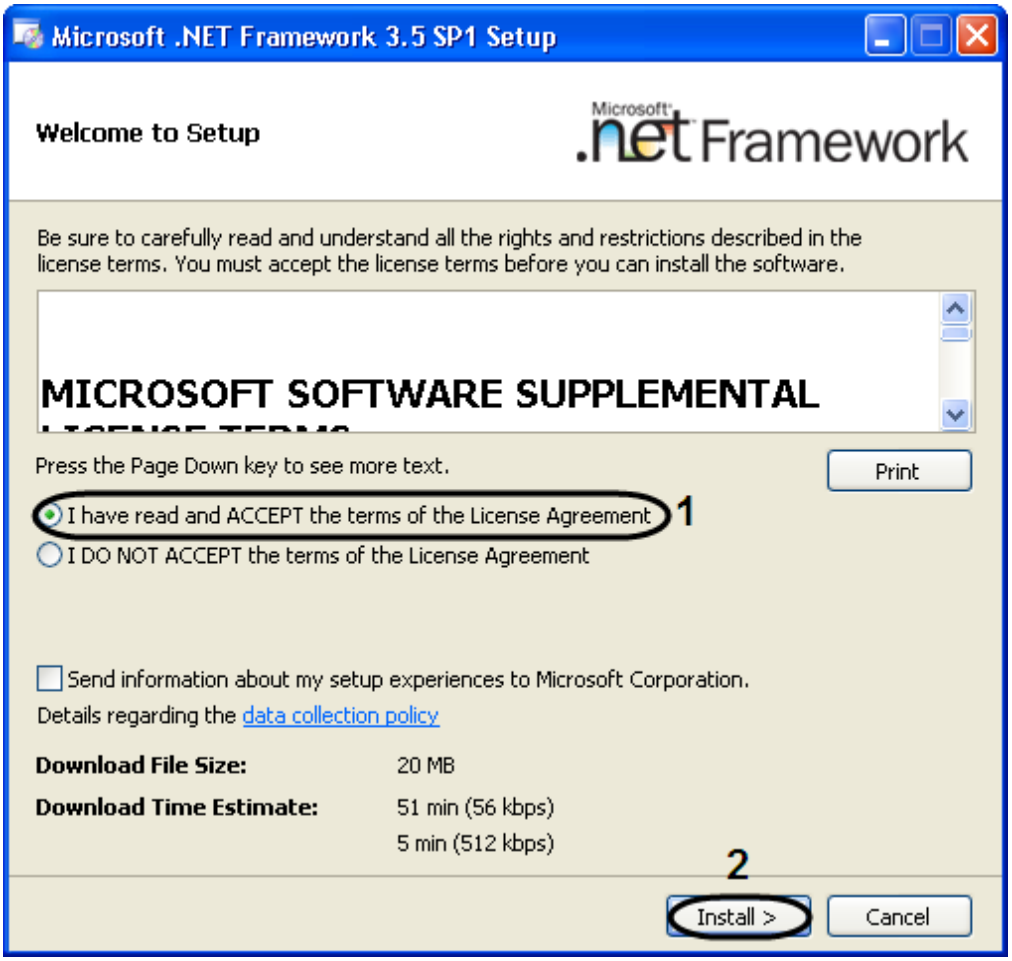


Figure 13.6-2 The "Microsoft .NET Framework 3.5 SP1" setup

4. Confirm the acceptance of License Agreement terms by setting the switcher to the position «I have read and ACCEPT the terms of the License Agreement » after investigating the License Agreement terms, otherwise the setup will be cancelled (Figure 13.6-2, 1).
5. Click«Install>» (Figure 13.6-2, 2).

Install process dialog window will be displayed as a result (Figure 13.6-3).

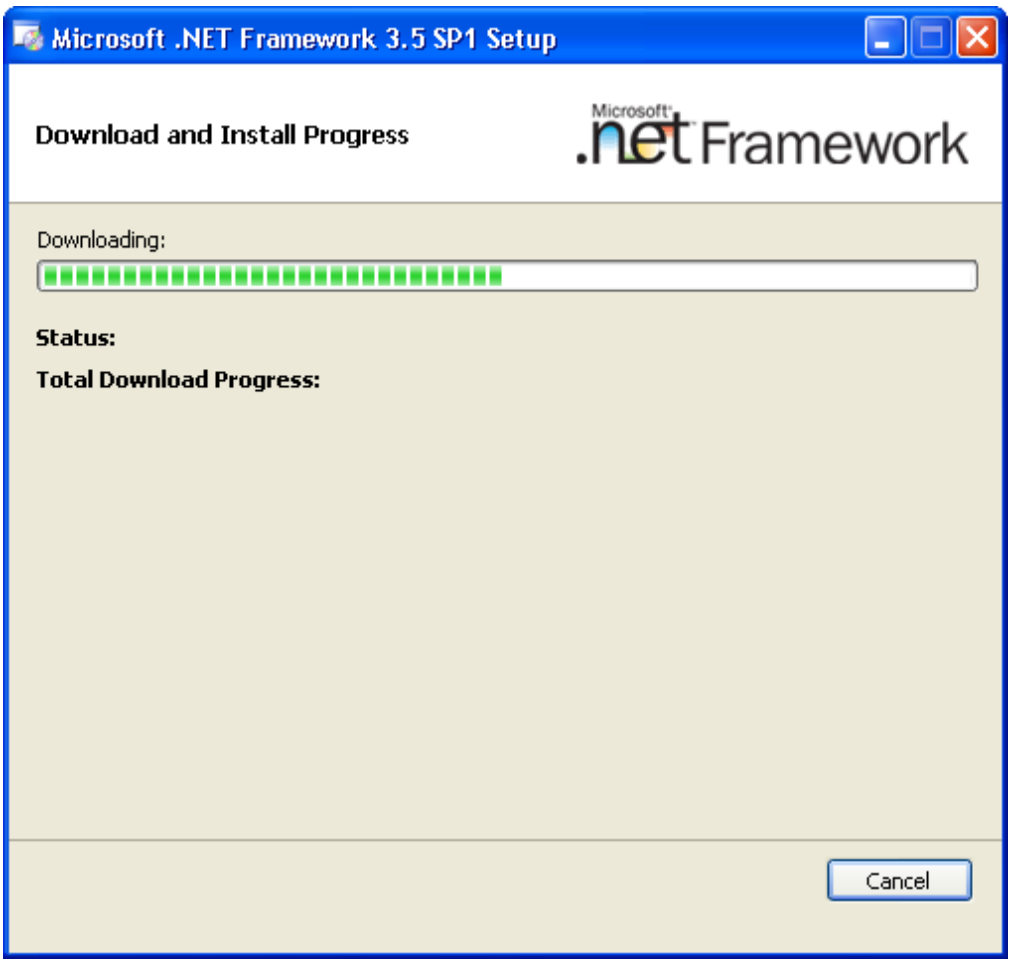


Figure 13.6-3 The "Download and Install Progress" box

6. «Download complete.You can now diskonnect from the internet» message will be displayed after finishing the download process (Figure 13.6-4).

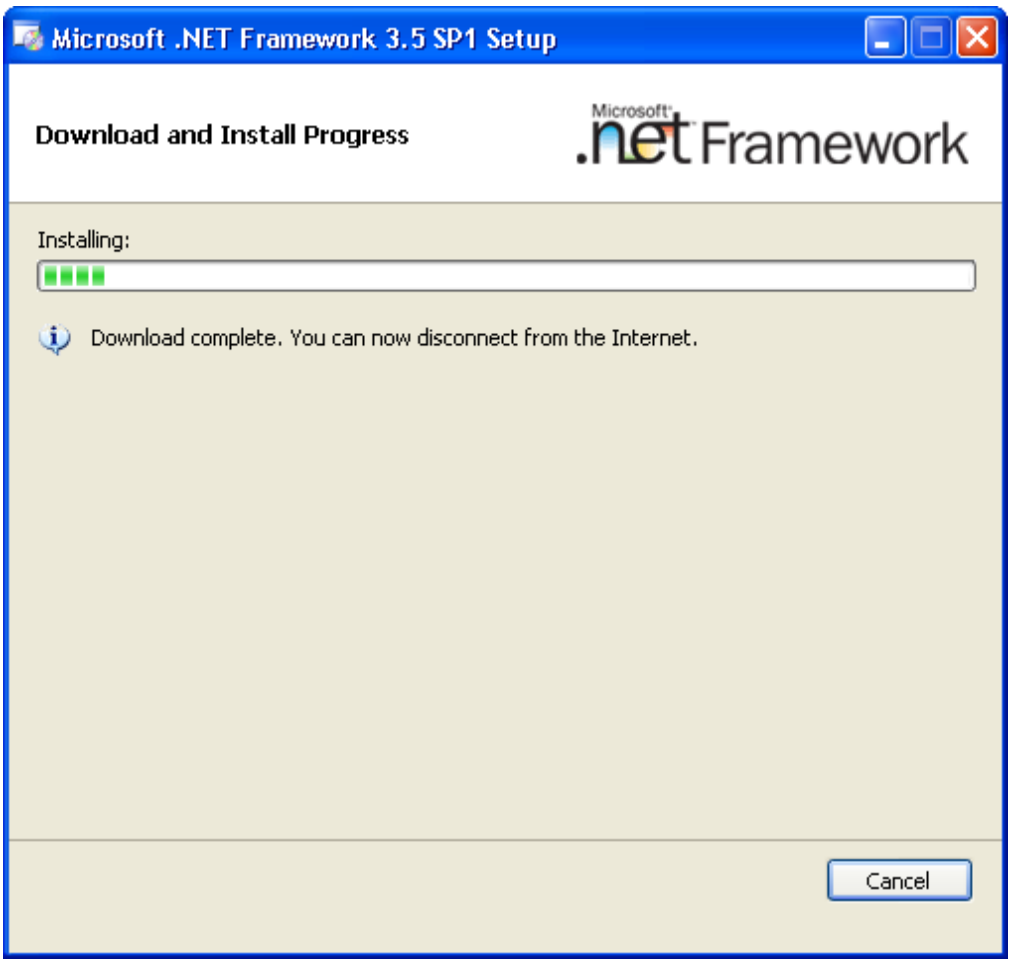


Figure 13.6-4 The "Download complete" message

Then «Microsoft .NET Framework 3.5 SP1» setup complete dialog window will be displayed (Figure 13.6-5).

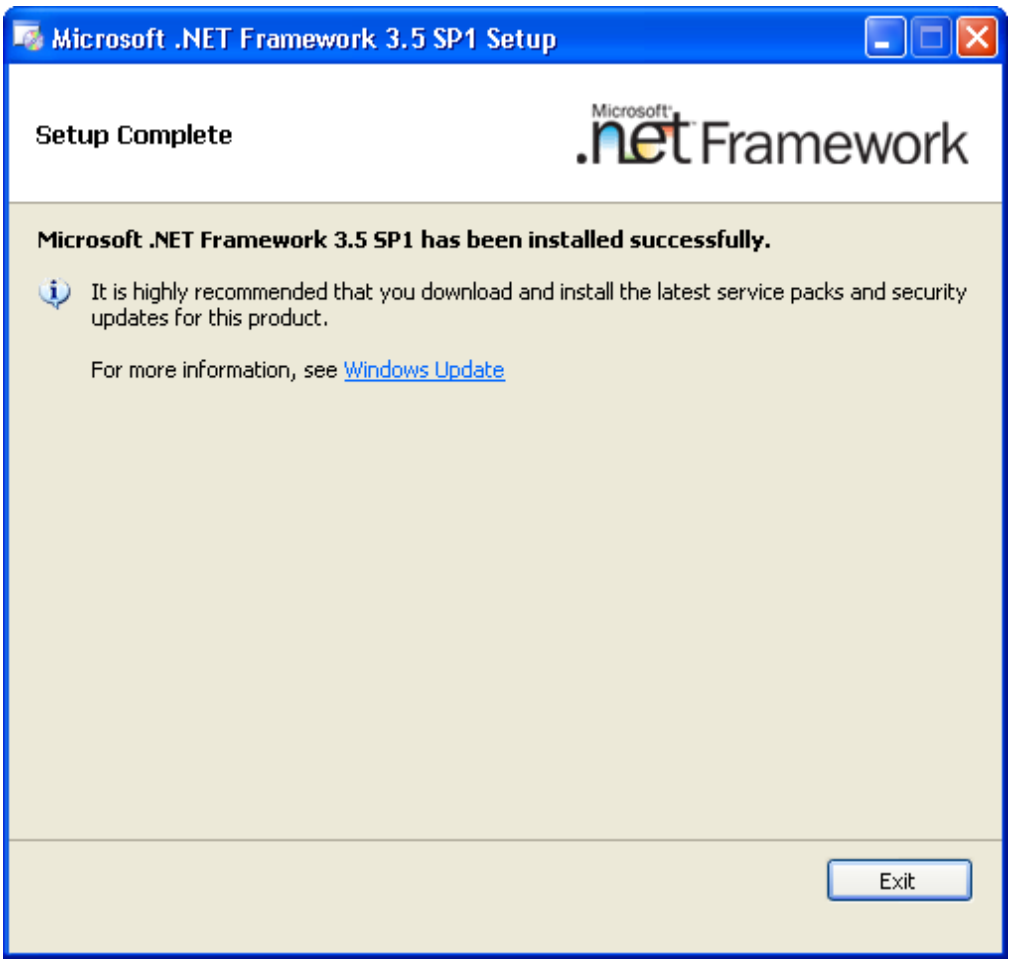


Figure 13.6-5 The "Microsoft .NET Framework 3.5 SP1" setup completion

7. Click Exit button to complete the setup process (Figure 13.6-5).

«Microsoft .NET Framework 3.5 SP1» setup is completed.

15 Appendix 5. «Microsoft SQL Server 2008 Express R2» installation

To install «Microsoft SQL Server 2008 Express R2» manually, do the following:

Note1. While installing the MS SQL Server 2008 Express R2 in auto mode it is recommended to leave the offered settings in «SQL Server 2008 R2 Setup» unchanged.

Note2.If there is «Microsoft SQL Server installation error» during SQL Server 2008 installation, check recommendations at website «http://connect.microsoft.com/SQLServer/feedback/details/440343/failure-to-install-sql-server-2008-service-pack-1-kb968369-error-code-84b30001». To solve this problem reboot your computer and restart «Microsoft SQL Server 2008 Express» installation.

1. Set the switch to the “Yes, I want to install Microsoft SQL Server 2008 Express R2” position (see “Installation of INTELLECT™ software as a ServerInstallation of INTELLECT™ software as a Server” section).
2. The “MS SQL Server 2008 Express R2 setup” box will be displayed (Figure 13.6-1).

Figure 13.6-1 The "MS SQL Server 2008 Express R2 setup" box

Note. There is warning about compatibility issues while installing Microsoft SQL Server 2008 R2 Express on OS Windows 8 and Windows Server 2012. To continue installation select the "Run the program without getting help" item (Figure 13.6-2).

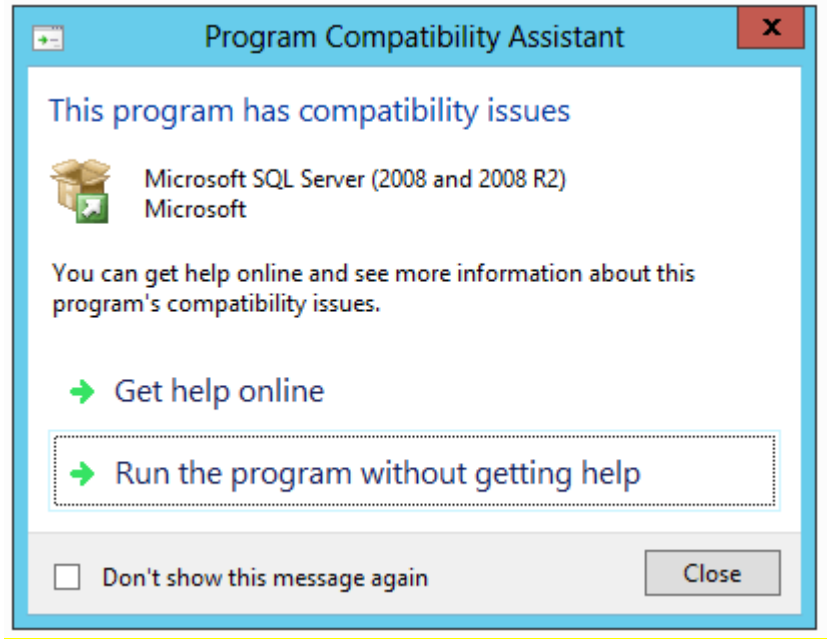


Figure 13.6-2 The message about compitability issues

3. The "Setup Support Rules" dialog box will be displayed for identification and deletion of possible problem while installing the MS SQL Server 2008 Express R2 (Figure 13.6-3).

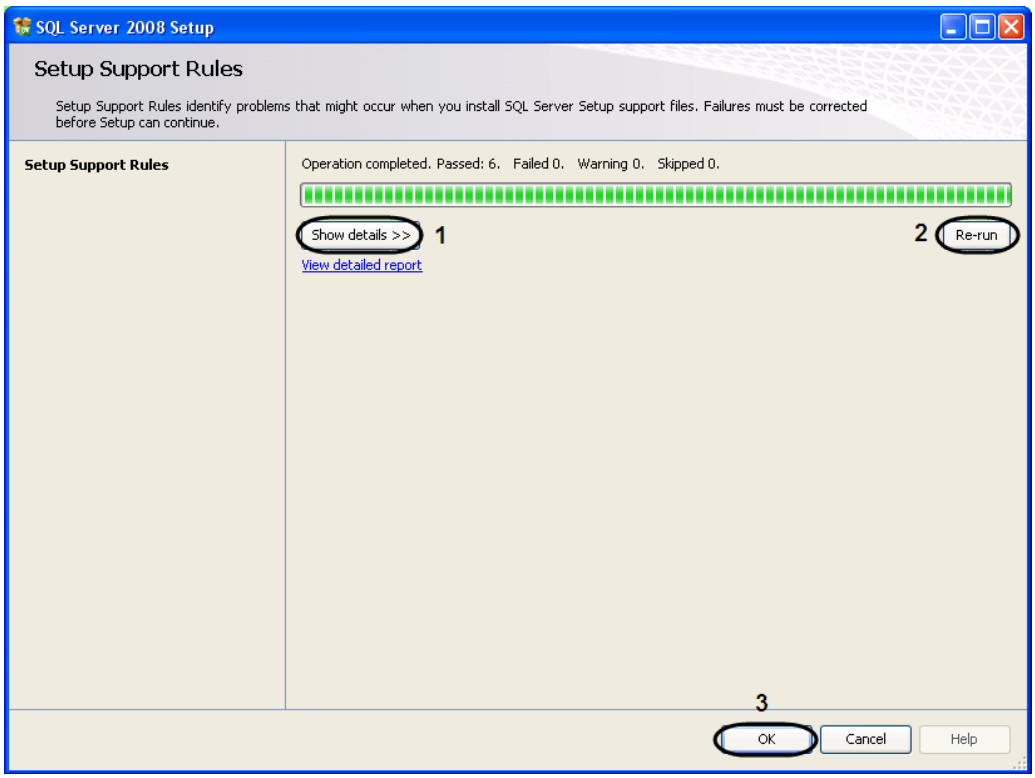


Figure 13.6-3 The "Setup Support Rules" box

3.1. To view the detailed report about installation, click the “Show details>>” button (Figure 13.6-3, 1).

3.2. To rerun the installation, click the “Re-run” button (Figure 13.6-3, 2).

3.3. To close the dialog box, click the “OK” button (Figure 13.6-3, 3).

4. The “Please wait while SQL Server 2008 R2 Setup processes the current operation” message will be displayed (Figure 13.6-4).

Figure 13.6-4 Processing the current operation box

5. Then the “Product Key” dialog box will be displayed for specifying the product key of MS SQL Server 2008 R2 (Figure 13.6-5).

Note. This version of MS SQL Server 2008 Express R2 is free of charge and does not require activation.

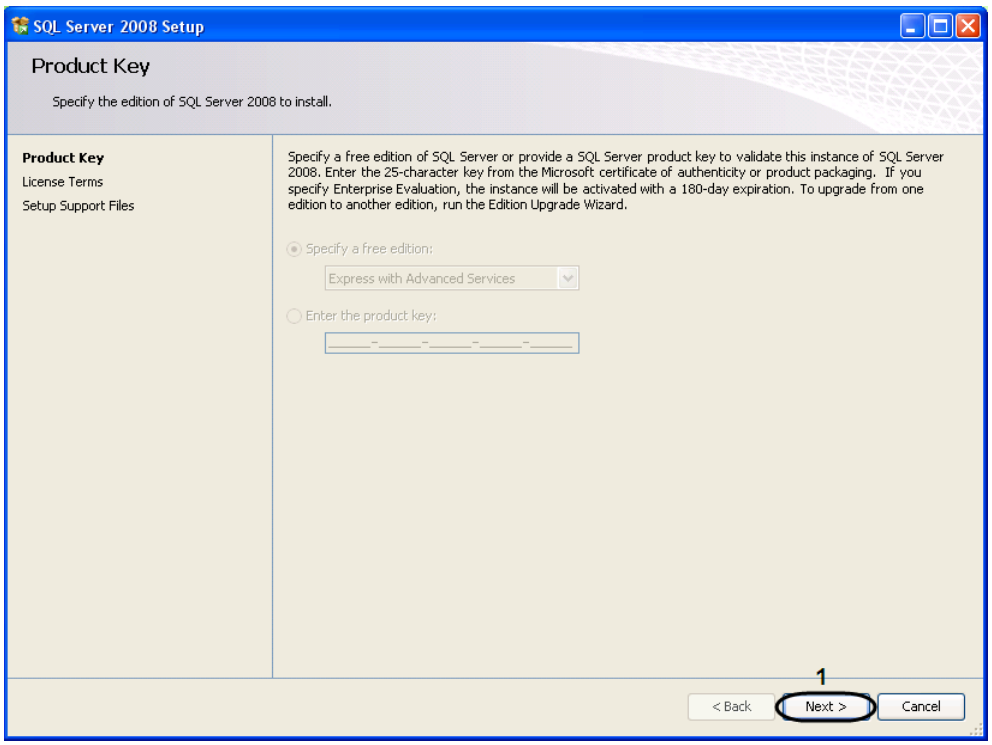


Figure 13.6-5 The "Product Key" box

6. To go to the next box, click the “Next>” button (Figure 13.6-5, 1).
7. The “License Terms” box with license terms will be displayed (Figure 13.6-6).

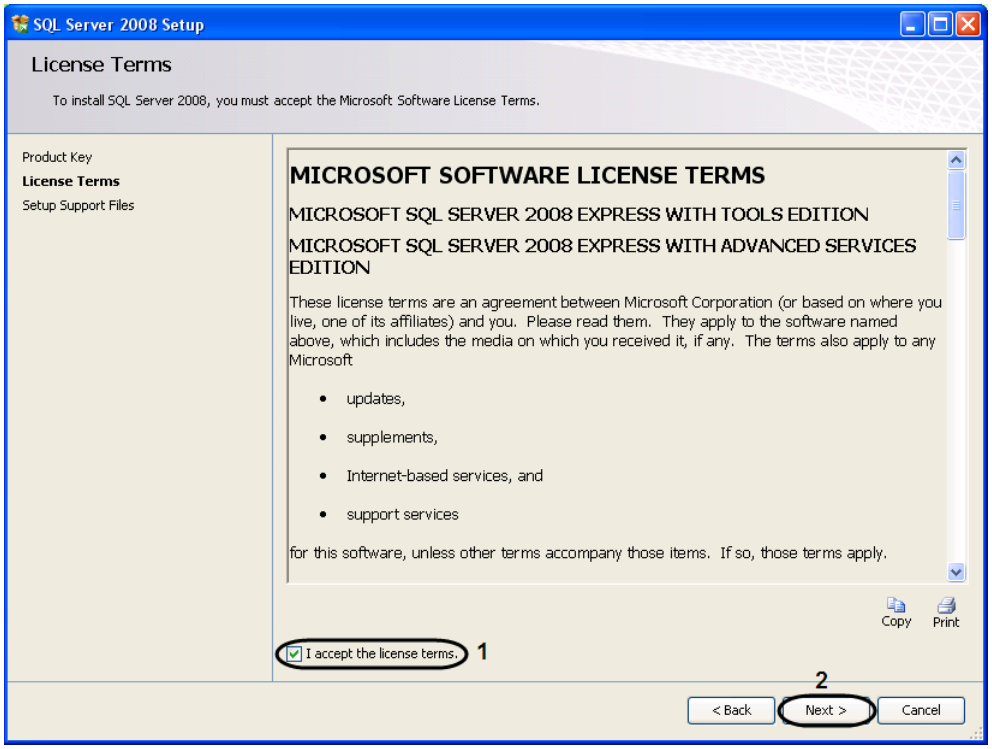


Figure 13.6-6 The "License Terms" box

7.1. Confirm that you accept the license terms by setting the “I accept the license terms” checkbox (Figure 13.6-6, 1).

7.2. To go to the next box, click the “Next>” button (Figure 13.6-6, 2).

8. Install the system components necessary for MS SQL Server 2008 R2» operation by clicking the “Install” button in the opened “Setup Support Files” box (Figure 13.6-7, 1).

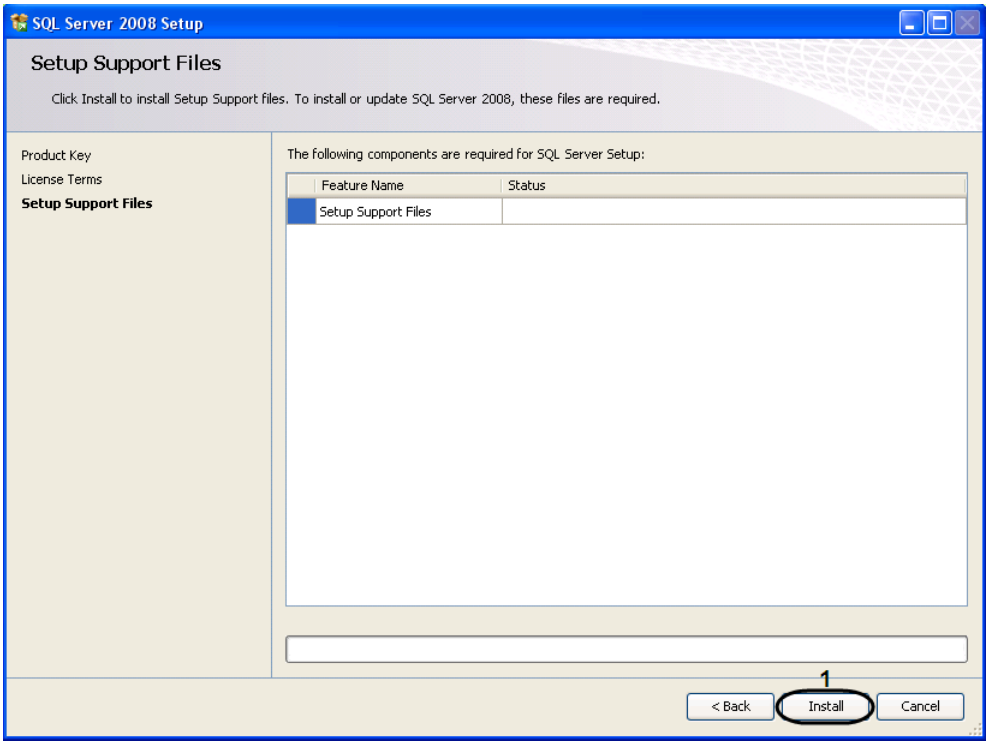


Figure 13.6-7 The "Setup Support Files" box

9. The “Please wait while SQL Server 2008 R2 Setup processes the current operation” message will be displayed (Figure 13.6-8).

Figure 13.6-8 Processing the current operation box

10. In the “Setup Support Rules” dialog box setup the support rules of MS SQL Server 2008 R2 (Figure 13.6-9)

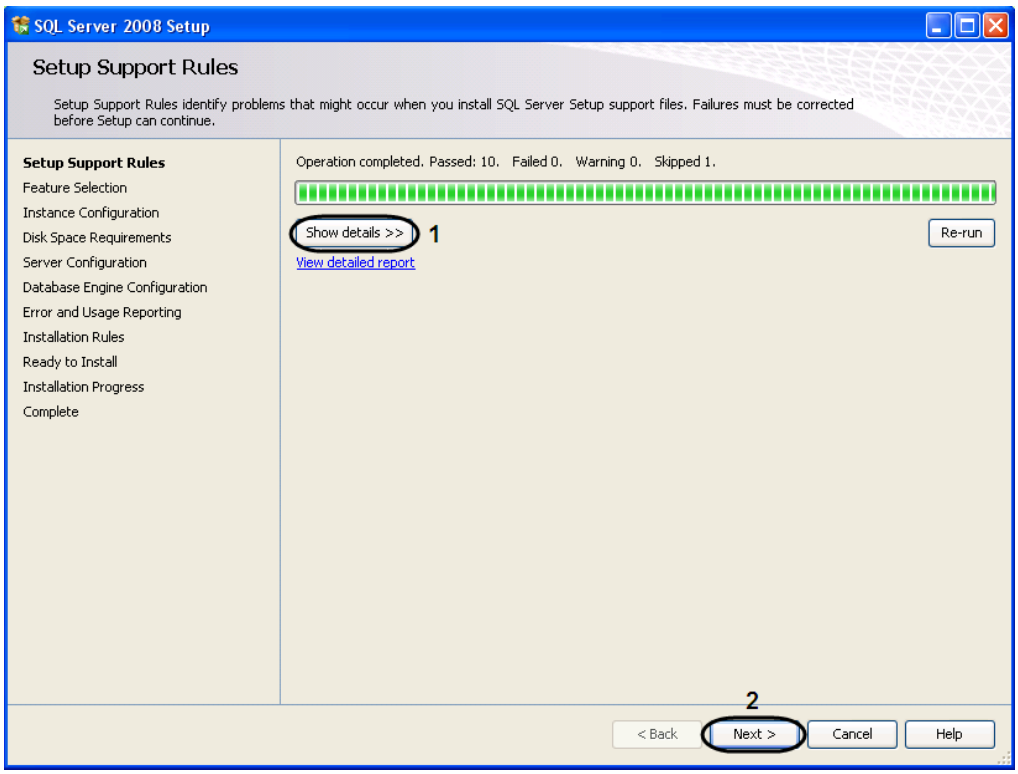


Figure 13.6-9 The "Setup Support Rules" box

10.1. To view the detailed report about installation, click the “Show details>>” button (Figure 13.6-9, 1).

10.2. To go to the next box, click the “Next>” button (Figure 13.6-9, 2).

11. Then MS SQL Server 2008 R2 “Feature Selection” setup dialog box will be displayed (Figure 13.6-10).

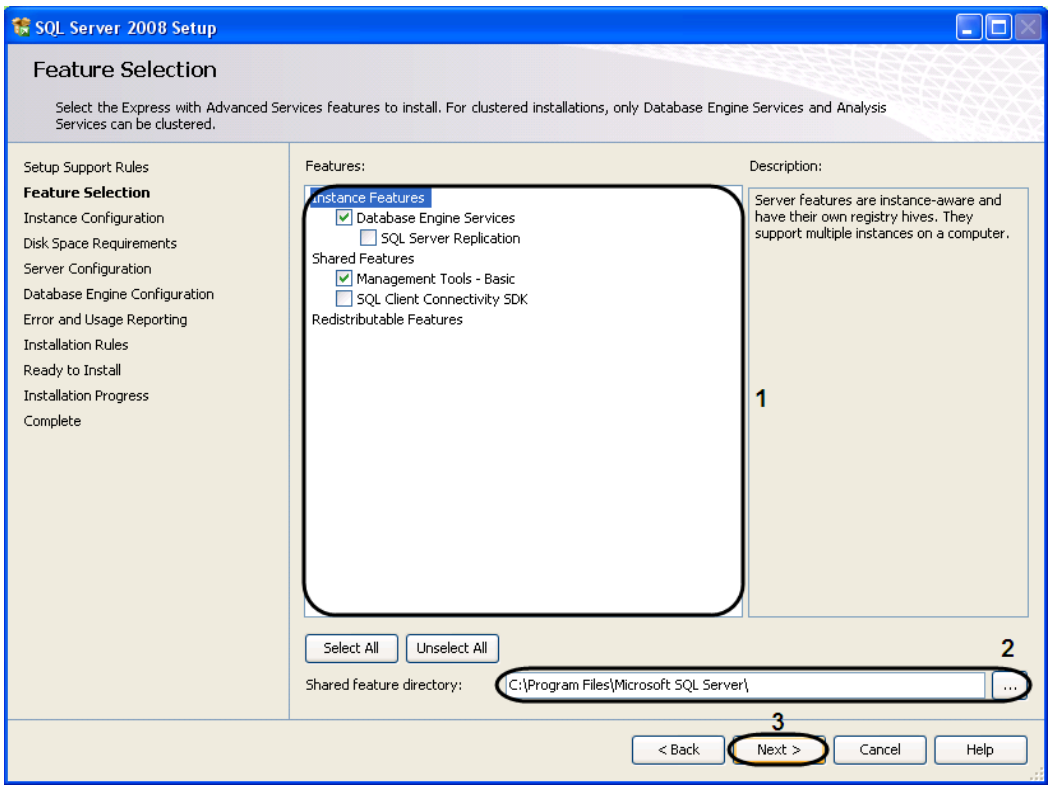


Figure 13.6-10 The "Feature Selection" box

11.1. Set the checkboxes in the field «Features: » next to the components that are to be installed (Figure 13.6-10, 1).

11.2. Specify the path to the installation directory in the “Shared feature directory:” field (Figure 13.6-10, 2).

11.3. To go to the next box, click the “Next>” button (Figure 13.6-10, 3).

12. The “Instance Configuration” dialog box will be displayed for setting the configuration of MS SQL Server 2008 R2 instatnce (Figure 13.6-11).

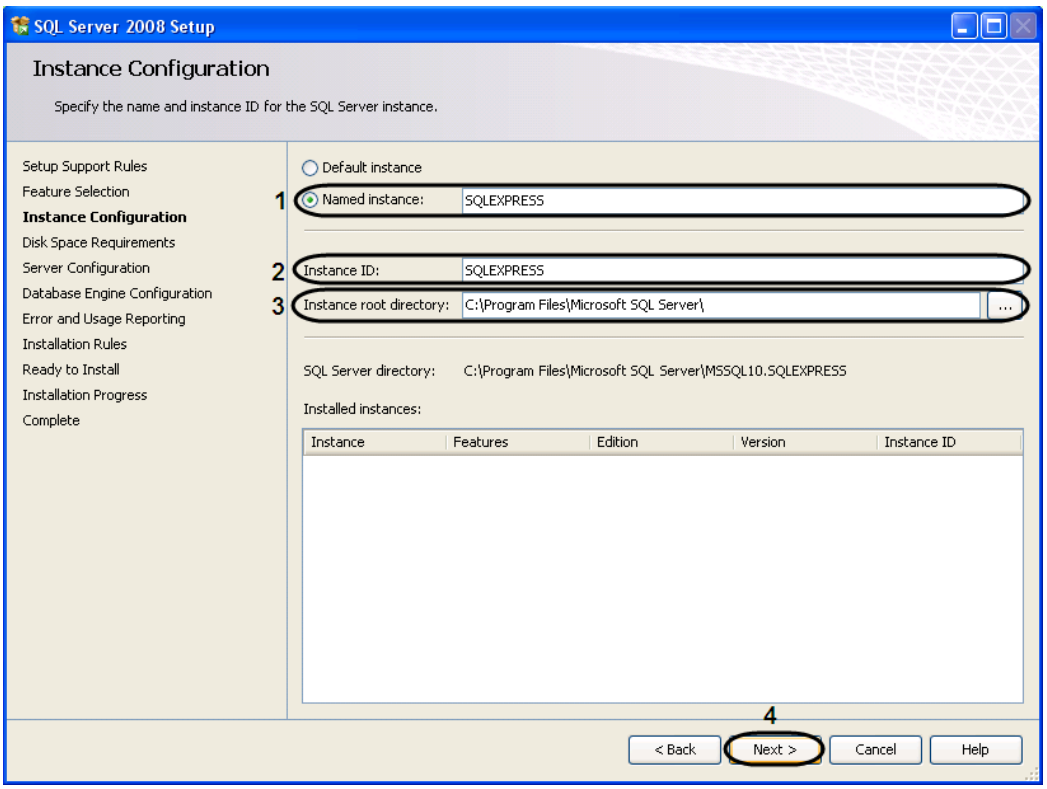


Figure 13.6-11 The "Instance Configuration" box

12.1. Set the switch to the “Named instance” position and specify the “SQLEXPRESS” name of in the field (Figure 13.6-11, 1).

12.2. Specify the “SQLEXPRESS” value for the instance identifier in the “Instance ID” field (Figure 13.6-11, 2).

12.3. Specify the path to the root directory for setting up the MS SQL Express in the “Instance root directory” field (Figure 13.6-11, 3).

12.4. To go to the next box, click the “Next>” button (Figure 13.6-11, 4).

13. The “Disk Space Requirements” box will be displayed (Figure 13.6-12).

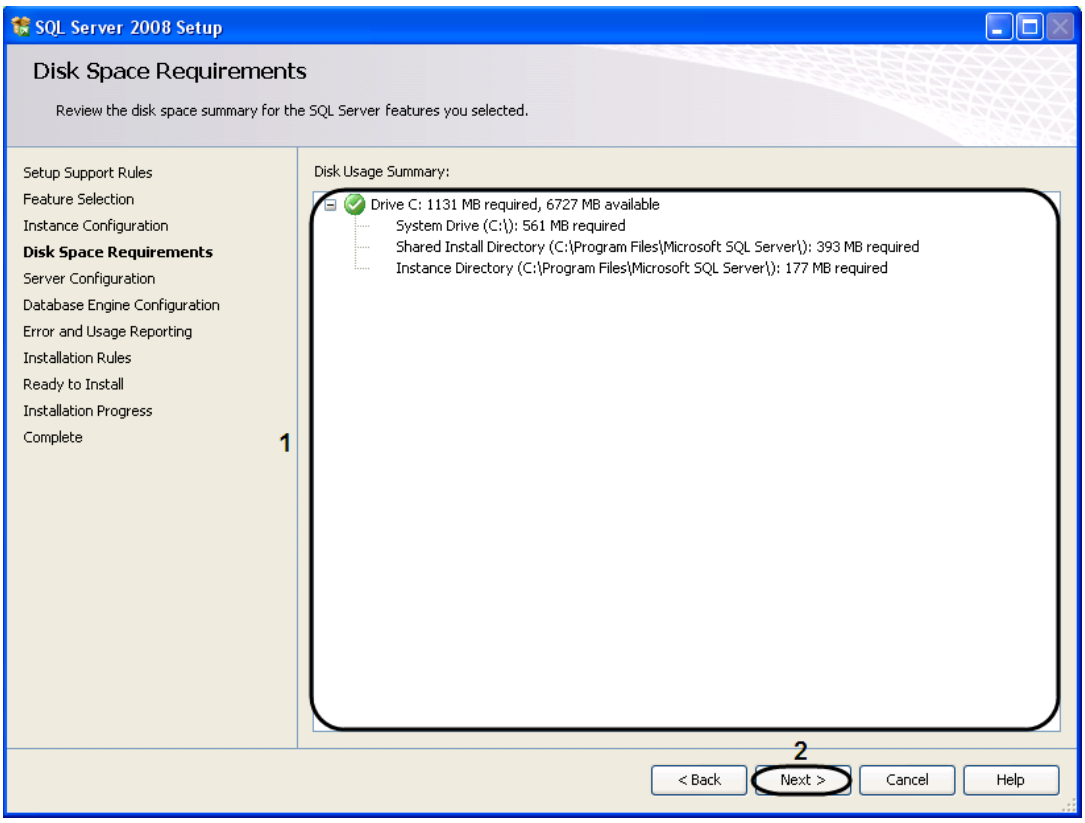


Figure 13.6-12 The "Disk Space Requirements" box

13.1. The requirements for disk space for setting up the selected functions of MS SQL Server 2008 R2 are specified in the “Disk Usage Summary” field (Figure 13.6-12, 1).

13.2. To go to the next box, click the “Next>” button (Figure 13.6-12, 2).

14. The “Server Configuration” box will be displayed, click the “Next >” button to continue (Figure 13.6-13, 1).

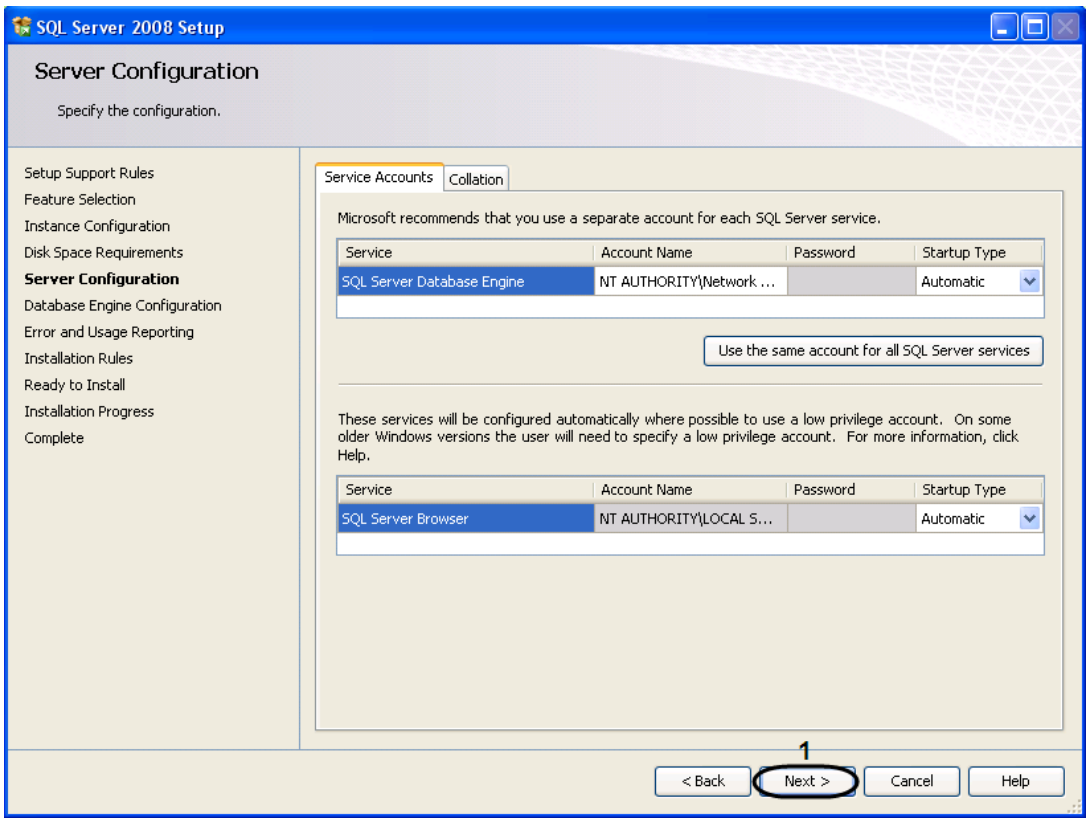


Figure 13.6-13 The "Server Configuration" box

15. The “Database Engine Configuration” box will be displayed, click the “Next >” button (Figure 13.6-14, 1).

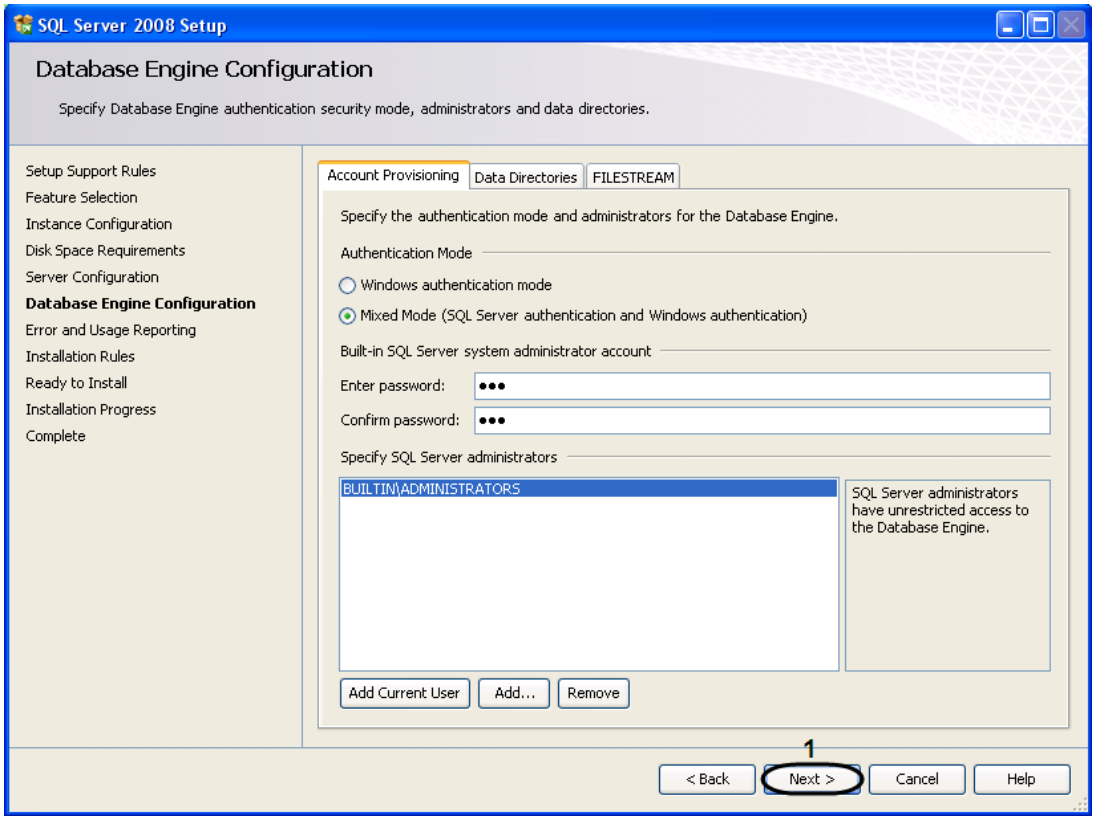


Figure 13.6-14 The "Database Engine Configuration" box

16. The “Error and Usage Reporting” box will be displayed, for resending the errors and reports of using the SQL Server to Microsoft (Figure 13.6-15).

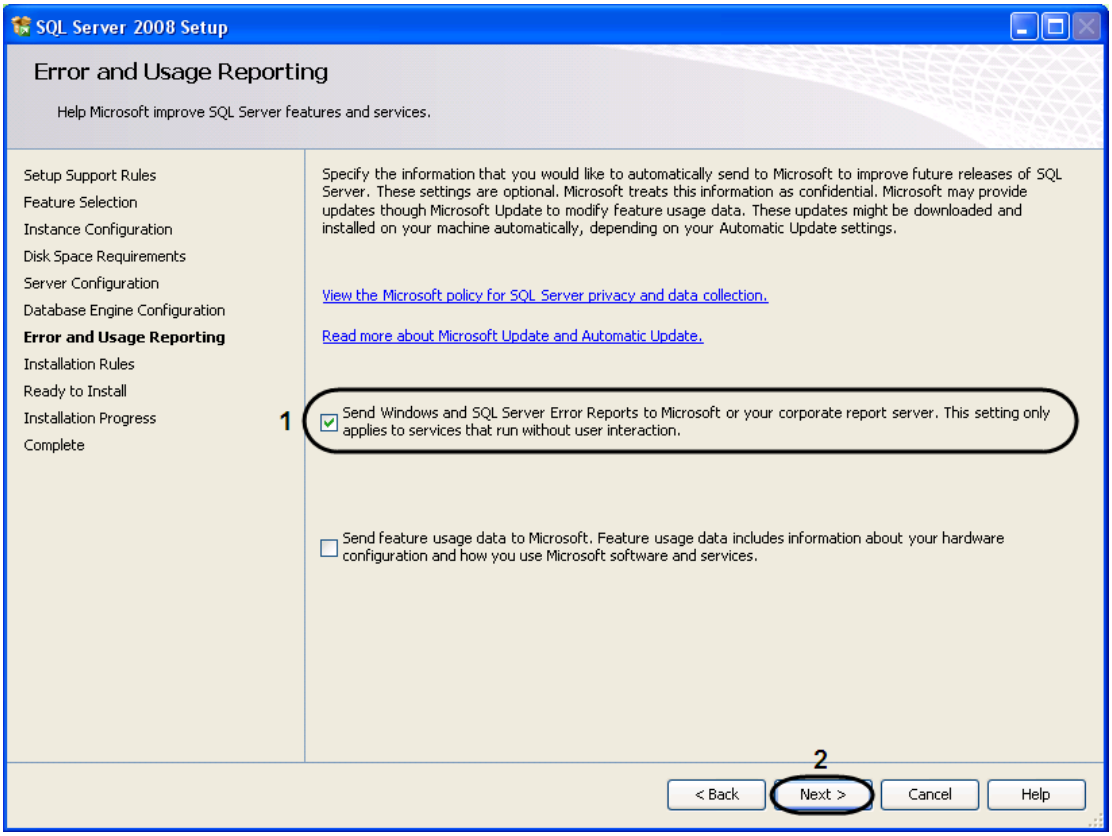


Figure 13.6-15 The "Error and Usage Reporting" box

16.1. Set the “Send Windows and SQL Server Error Reports to Microsoft or your corporate report server. This setting only applies to services that run without user interaction” checkbox (Figure 13.6-15, 1).

16.2. To go to the next box, click the “Next>” button (Figure 13.6-15, 2).

17. The “Installation Rules” box will be displayed (Figure 13.6-16).

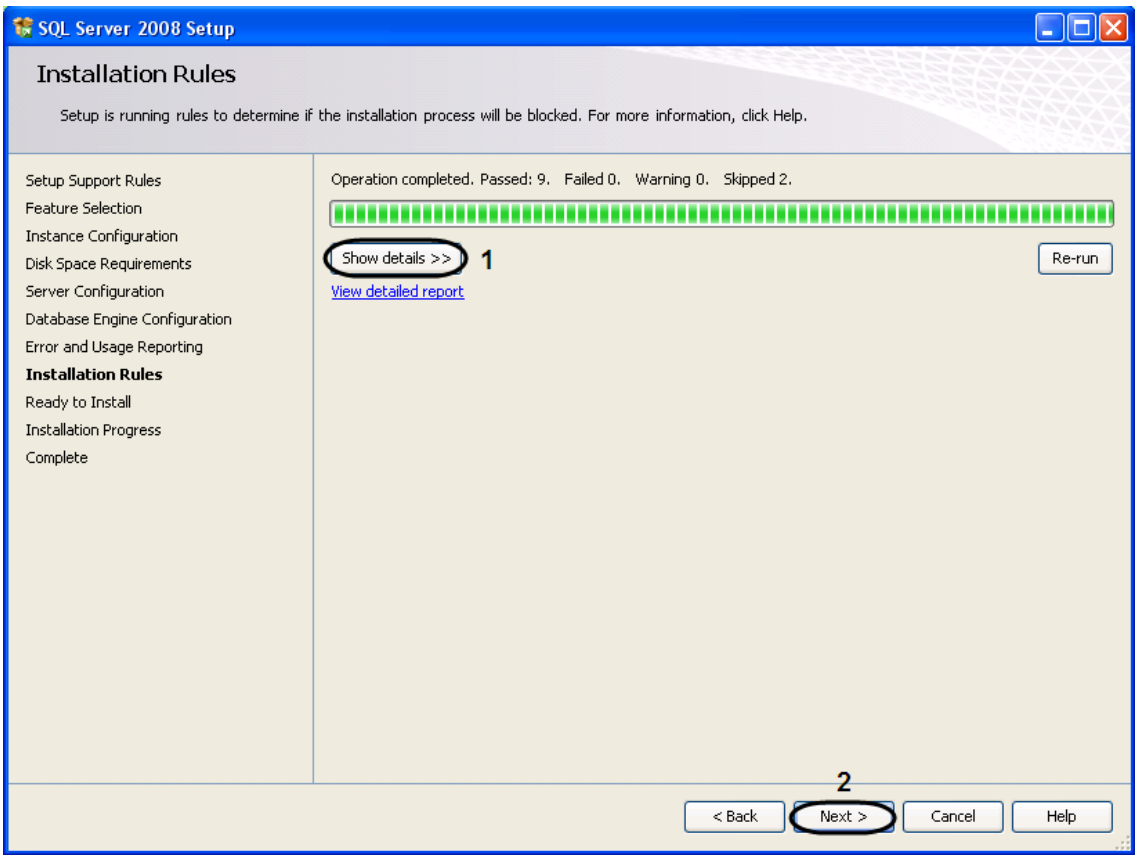


Figure 13.6-16 The "Installation Rules" box

17.1. To view the detailed report about installation, click the “Show details>>” button (Figure 13.6-16, 1).

17.2. To go to the next box, click the “Next>” button (Figure 13.6-16, 2).

18. The “Ready to Install” box will be displayed (Figure 13.6-17).

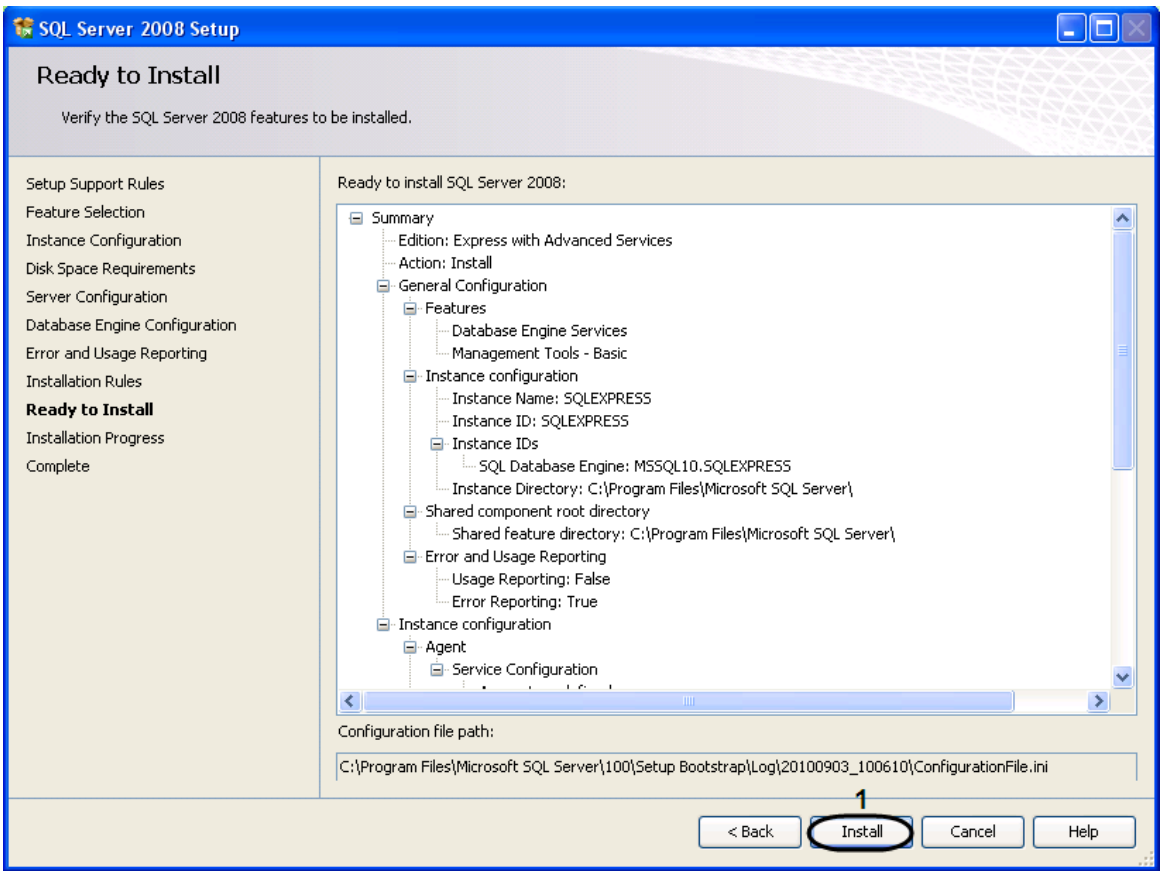


Figure 13.6-17 The "Ready to Install" box

19. To run the installation process, click the “Install” button (Figure 13.6-17, 1).
20. The “Please wait while SQL Server 2008 R2 Setup processes the current operation” message will be displayed (Figure 13.6-18).

Figure 13.6-18 Processing the current operation box

21. The information about the installation process is displayed in the opened “Installation Progress” dialog box. When the installation is completed, click the “Next >” button (Figure 13.6-19, 1).

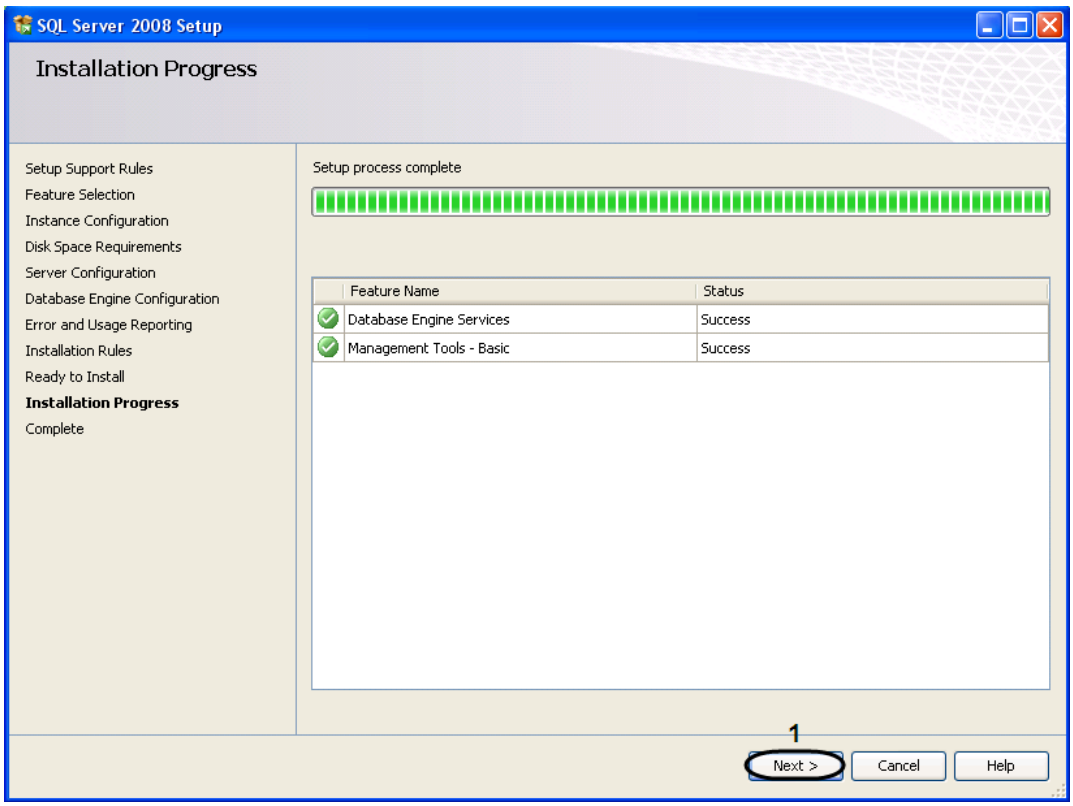


Figure 13.6-19 The "Installation Progress" box

22. The “Complete” box will be displayed to provide information about the MS SQL Server 2008 R2 installation completion (Figure 13.6-20, 1).

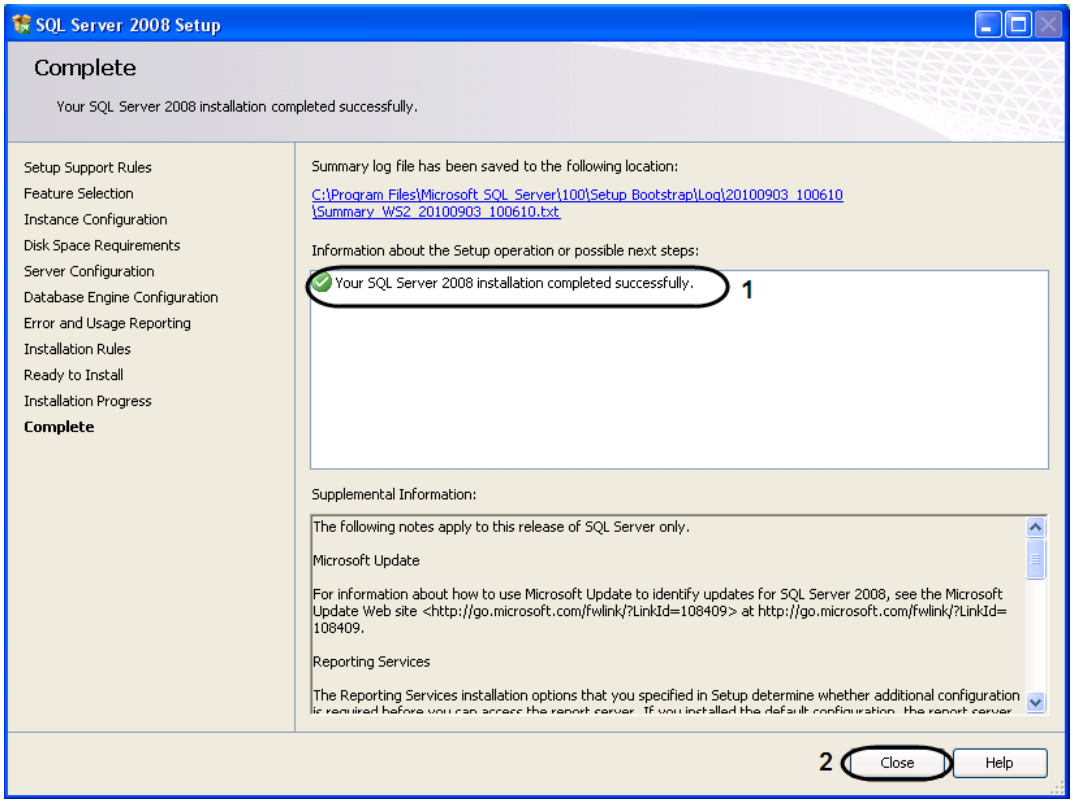


Figure 13.6-20 The "Complete" box

23. To quit the installation process, click the “Close” button (Figure 13.6-20, 2).

The “Microsoft SQL Server 2008 Express R2” installation is completed.