

Vibraimage network software

VibraNet

MANUAL

Version VibraNet

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CONTENT

1 Introduction	3
1.1 Basic applications	3
1.2 System requirements	3
1.3 Package contents.....	3
2 VibraNet software installation	4
2.1 Guardant dongles driver installation.....	4
2.2 VibraNet installation	4
3 VibraNet. User's manual	8
3.1 Main window	8
3.2 Menu position control	9
3.3 Main menu	10
3.2.1 Menu «File»	10
3.2.2 Menu «Help».....	10
3.4 Menu «Cfg».....	11
4 VibraNet. Work example.....	12
4.1. System structure example	12
4.2. The order of system starting.....	14
4.3. The order of power off	14
4.4. The system operating procedure	15
4.4.1 Windows of camera.....	16
4.4.2 The list of events and «captured» windows	16
6 Warranty.....	18
6.1 Disclaimer of Warranties	18
6.2 Limitation of Liability	19

1 Introduction

Welcome to the **VibraImage** World! Thank you for your purchase of **VibraNet** system. This Manual is written to help you enjoy **vibraimaging** and open new features in well-known objects!

VibraImage technology measures micromovement (micro motion, vibration) of person by standard digital, web or television cameras and image processing. Human head microvibration is linked with the vestibular-emotional reflex (VER) of a person and reflects emotion status and personality traits. Our system detects human emotions by the control of three dimensional (3D) head-neck movements and fluctuations, accumulated as frame difference in several video frames.

1.1 Basic applications

VibraNet software solves the following targets:

- monitoring vibraimage systems net;
- gather and process vibraimage information from network;
- control vibraimage suspect level in several workplaces;
- research and ranking of psychophysiological responses to presented stimuli;
- monitoring of suspect person physiological parameters;
- video surveillance in real time by vibraimage and suspicious person detection;
- psychological and psychophysiological testing in vibraimage net solutions.

1.2 System requirements

- | | |
|--------------------|---------------------------------|
| • Operation System | Windows 7/8/10 or later |
| • Processor | Intel I3 2400 MHz or later |
| • RAM | more than 100 Mb |
| • HDD | more than 100 Mb free space |
| • Network | LAN 100Mb/s or better |
| • USB port | 1 free USB port version USB 2.0 |

1.3 Package contents

- | | | |
|---|---|---|
| 1. VibraNet software and Guardant PRO dongle | - | 1 |
| 2. User's manual | - | 1 |
| 3. Personal computer (option) | - | 1 |

2 VibraNet software installation

2.1 Guardant dongles driver installation

Note, To install the driver in NT/2000/XP/W7/W8/W10 administrator rights are required!

1. Close all other applications to avoid file sharing errors;
2. Run INSTDRV.EXE application from «Guardant drivers» folder «\Soft\Guardant2eng\»;
3. When the utility is started, it will check the presence of Guardant driver in the system. If the driver is not found, only [Install driver] button will be available in the main window. To install or update Guardant driver click on «Install driver» or «Reinstall driver» button.
4. If the driver installation is successful, INSTDRV will display a corresponding message.
5. Click «OK» to continue.
6. Close INSTDRV application;
7. Restart the system.

Note

By default the system are installing the driver for 64-bit Windows 7. If necessary, you can manually install the required driver of folders «\Soft\32\» or «\Soft\64\».

2.2 VibraNet installation

It is necessary to execute the following actions for installation of VibraNet:

1. Check «System Requirements».
2. Go to Web page www.psymaker.com/support/downloads/
3. Load file VibraNet.exe www.psymaker.com/downloads/VibraNet.exe
4. Run file VibraNet.exe
5. Select language for installation procedure (fig. 2.1).

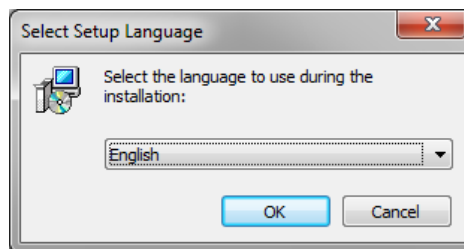


Fig. 2.1. Choice of installation language

6. Press button «OK» in the appeared window of the beginning installation.
7. Accept the license agreement and to press button «Next» in the appeared window.
8. Specify a way to a catalogue where files of the program will be written down In the appeared window, then to press button «Next».
9. Choose a data folder for program's shortcuts.

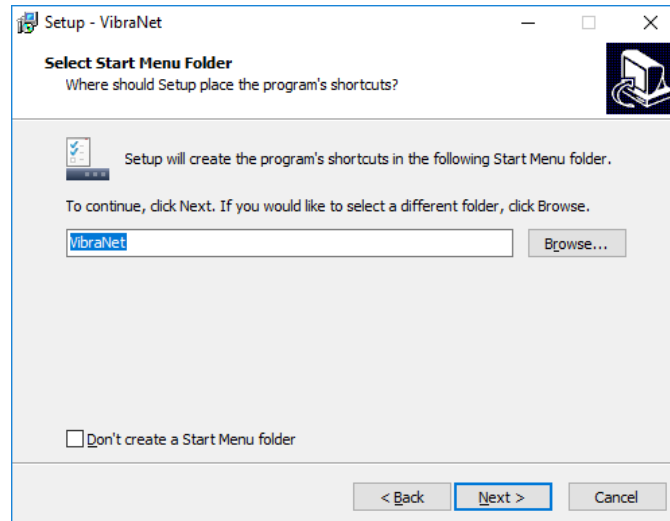


Fig. 2.2. Choice of a data folder for program's shortcuts

10. Press button «Next» in the appeared window, allows installation on your computer.
11. In the appeared window select version of the program and additional components which you want to install on your computer (Access Database Engine 2010) (fig. 2.3) and press «Next».

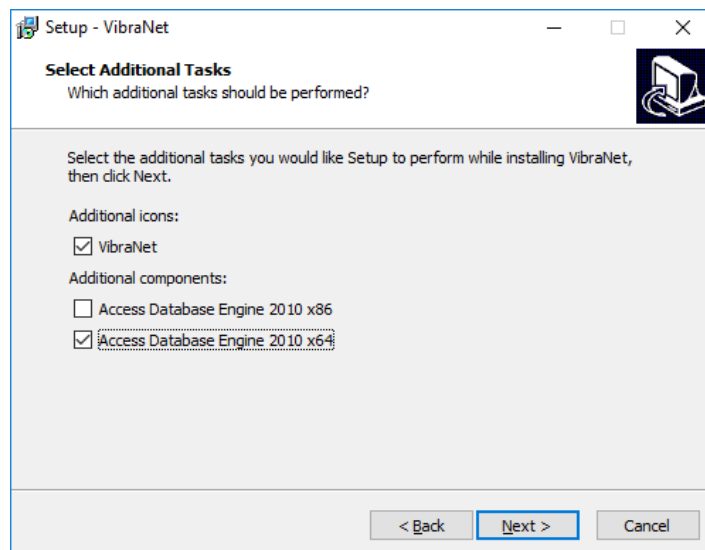


Fig. 2.3. Choice of a data folder for program's shortcuts

12. Press button «Install» for the start of installation and «Finish» at the end of installation.

13. VibraNet program pictogram appears after the end of installation in system menu and on desktop of your computer.
14. To reboot a computer.

2.3 First start of VibraNet

1. After the first start of software, you will see the program window shown in fig. 2.4.

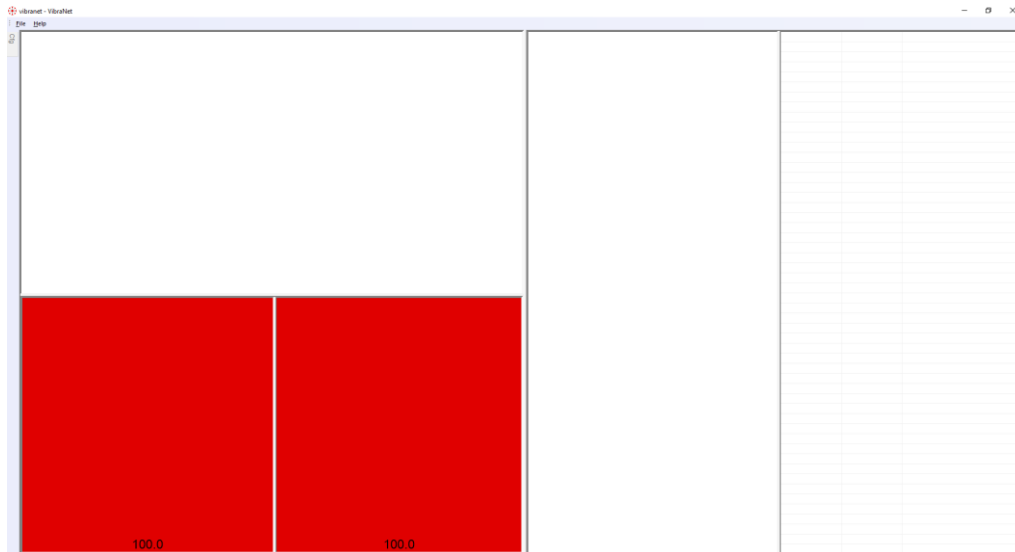


Fig. 2.4. First program start

2. Open menu «Cfg» on the window left side (fig. 2.5). The number of rows can vary depending on your previous settings.

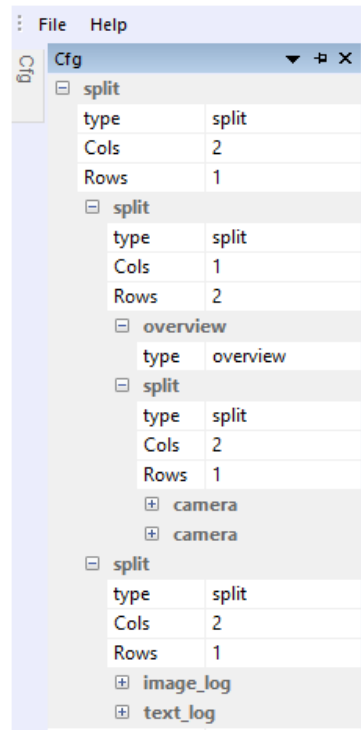


Fig. 2.5. Menu configuration «Cfg»

3. Delete unnecessary records (part of menu which item type).
4. Set necessary quantity of rows and cols. For example, if you need only 2 cells in one row you should set only 1 split with 2 cols and 1 row.
5. Set type of cell information by changing item type in submenu connected with cells parameters. More information about items see in ch. 3.4.
6. Save your settings in menu «**File**» => «**Save**»
7. Enjoy to work with our program.

3.2 Menu position control

The user can control the placement of additional windows or menu on the screen and the size using the controls elements on the left side of each window title. For each window it is available control menu (fig. 3.2). This menu also appears when you click the left mouse button in finding the mouse pointer in the desired window. In «Docking» mode, window position and size are fixed, and when opening/closing the window will open in a given position. The mode «Floating» window position and size can be changed by the user.

If the window is in a random location on the screen, then double-click the left mouse button on the window, the window will move on the screen in the «default» position.

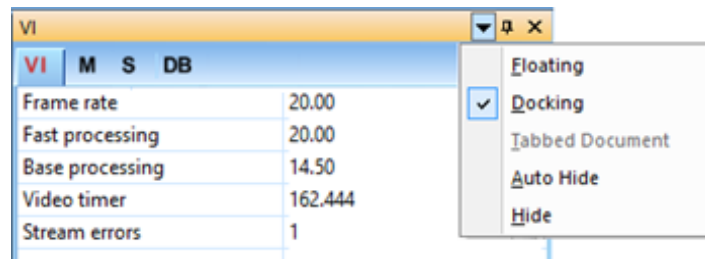


Fig. 3.2. Window control element

Each window can be closed, or by using the window menu or by using a separate control element (fig. 3.3).



Fig. 3.3. Control element «close window»

Each window can be temporarily minimized and moved to the border of the main program window (fig. 3.4).

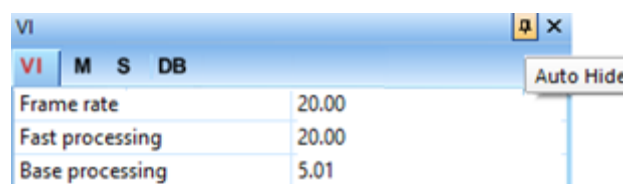


Fig. 3.4. Control element «hide window»

3.3 Main menu

The main menu contains the following items:

- «File»
- «Help»

3.2.1 Menu «File»

Menu «File» (fig. 3.5) contains following items:

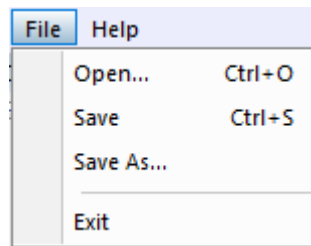


Fig. 3.5. Menu «File»

Item «Open...» – load settings;

Items «Save» and «Save As...» – save settings ;

Item «Exit» - exit from program.

3.2.2 Menu «Help»

Menu «View» (fig. 3.6) defines visible in the basic window information (fig. 3.7) and contains the following item:

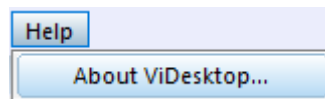


Fig. 3.6. Menu «Help»

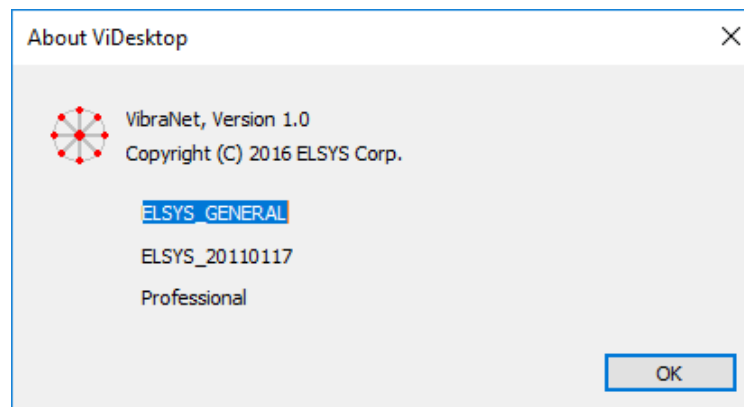


Fig. 3.6. Menu «Help»

3.4 Menu «Cfg»

Menu «Cfg» defines configuration of work window. You can choose some type for each cell. Possible choice (fig. 3.7):

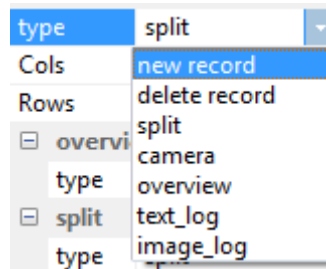


Fig. 3.7. Item «type»

1. **new record** – add new element for which you should choose type. Valid for “split” and “frame”;
2. **delete record** – delete element with its subgroup;
3. **split** – partition window to table (max 16x16 for one cell). After changing quantity of cells (cols and rows) you should use **new record** and **delete record**;
4. **overview** – cell from camera where critical level more than norm (fig. 3.1, 3) (most active camera) or frame from choosing event from “text_log”;
5. **camera** – connection to Vibraimage (fig. 3.1, 4, 3.8);

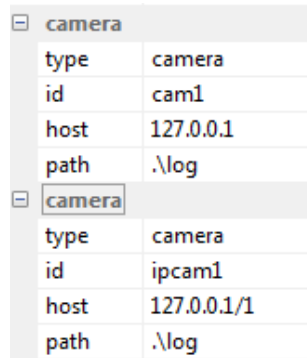


Fig. 3.8. Item «camera»

- id - the ID of the camera to display in the log
 - host - IP address to connect to Vibraimage. If after the address is / 1 or / 2 or / 3 ..., then the connection will be to the corresponding program
 - path - the path to the folder where the results will be stored
6. **image_log** – window for captured image (fig. 3.1, 5);
 - count – number of images in the list
 7. **text_log** – window for list of events (fig. 3.1, 6);
 8. **frame** – add window (only in next program version).

4 VibraNet. Work example

4.1. System structure example

The multichannel behavior detection system VibraImage (version Gallery) is constructed on the basis of 7 personal computers (PC1-PC7) and 12 television cameras (K1-K12). Computers configuration: processor Intel i7 e870, 2.93GHz, memory 4Gb RAM, 2 HDD disks on 500Gb, motherboard Asus P7P55LX, power source 500Wt with additional fan (fig.4.1).

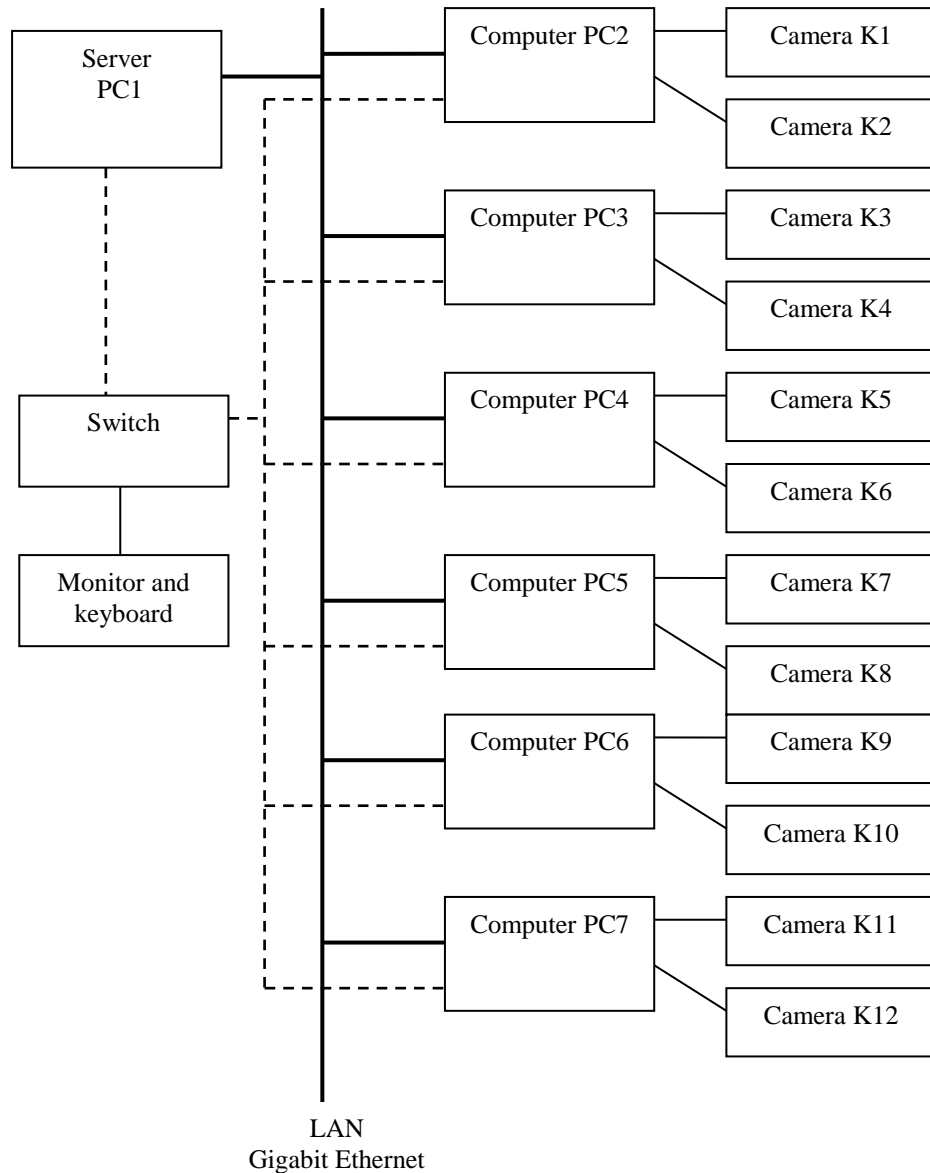


Fig.4.1. System structure example

Note

Based on VibraNet you can configure any system structure, for example, for 100 cameras, used the same principals described in this document.

All computers are connected to the local network Gigabit Ethernet, which constructed on basis of 8-port local network switch D-Link DGS-1008D. Each computer has own IP address. This IP address you should write to item camera in menu «Cfg».

For the general control from one single keyboard and for display the information to the single monitor, all computers PC1-PC7 are connected through 8-port switch D-Link DKVM-8E.

12 television cameras are connected to 6 personal computers (PC2-PC7), on 2 cameras to computer. On each of computers in an automatic mode it is started two programs VibraImagePro10 working in «Macro» mode which carry out the basic video data processing. Record of videofiles from each camera is carried out in an automatic mode. Folders with results of work are open for access from a desktop of a server computer PC1.



Fig.4.2. Shared network folder

Command line for start of the VibraNet.exe program on PC2-PC7:

«VibraNet.exe –copy XX –camera Y –format 352x288 –cstart 30 –noaudio»

Where XX - the name of a folder where the video archive from the selected camera is stored

Y - a serial number of the camera on this computer

–cstart 30 - to begin record of video through 30 seconds after loading system

Computer PC1 works as a server of system. On a server you should run VibraNet.

Note, the software for work with a database is not included into the basic VibraImage installation complete set and demands installation on a computer the additional software for persons identification.

The server receives from local computers and displays for operator the following information:

- The message on a danger threshold
- The frame with the image of the person, which danger level has exceeded the set limit.

At reception from a local computer the signal about suspected person detection, the server gives warning sound signal, will write corresponding record in the list of events and display the image of suspected person in a control window.

Viewing of pictures of all people «captured» by system during work can be executed in a folder «\Logs», or where you write in item Path.

Note, All «slipping mode» on computers must be switch off.

4.2. The order of system starting



At power on system it is required to execute the following order of actions:

1. Switch turn to power on
2. By turns to power on computers PC2-PC7
3. Power on the monitor
4. After 30 seconds to power on server computer PC1
5. To see on the monitor screen occurrence the images from television cameras K1-K12.

4.3. The order of power off

System power off is done consistently for each of computers. On the screen of the monitor it is possible to display the information from each of 7 personal computers. For switching between computers on a circle from PC1 to PC7 or on the inversion from PC7 to PC1 it is necessary to press quickly consistently the following buttons of the keyboard: [Scroll Lock] + [Scroll Lock] + [→ or ←]

For system power off it is required to execute the following order of actions:

1. Being switched between computers to display the monitor the information from one of 6 computers PC2-PC7.
2. On each computer 2 VibraImage.exe programs are started. In each of programs, it is necessary to stop record of videofiles. For this purpose, it is necessary to press the button  of the vibraimage toolbar. At end of record and closing of a videofile the button will change color .
3. Then it is necessary to close each of two programs VibraImage.exe.
4. Then to make program power off of a computer.
5. Items 1-4 repeat for each of 6 computers PC2-PC7
6. Switched to computer PC1. If PC2-PC7 have been switched off, in windows of VINetServer program there are no images from cameras.
7. Close the VINetServer.exe program
8. Then to make program power off a computer PC1.
9. Switch off the monitor
10. Switch off the switch of computers management.

Note, the fast power off mode of computers PC1-PC7 is possible. Computers power off is made by unitary pressing of button «Power» on the obverse panel of computers system blocks.

4.4. The system operating procedure

The basic working program is the NetServer.exe (Fig. 4.3). On the screen of the monitor the following information is displayed:

- From each of 12 television camera displayed video and the current «danger» level
- A window of the control
- The list of events
- Photos last 4 found out people, which danger level was exceeded with the set limit.

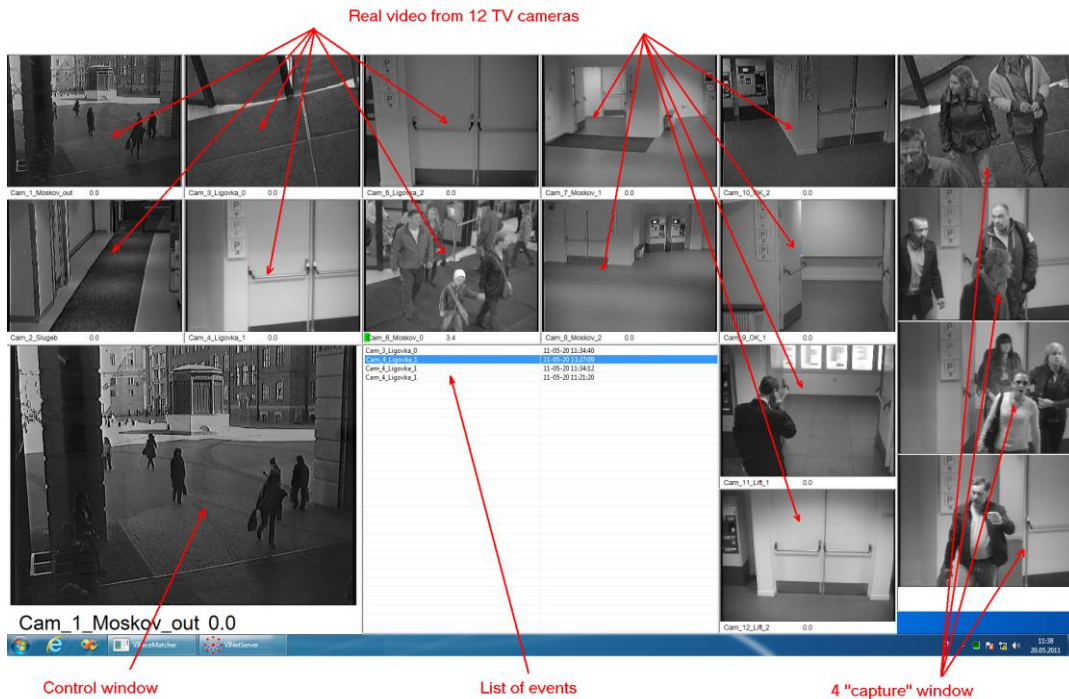


Fig.4.3. Example of VibraNet main window

In the **Control** cell in a mode “overview” the following information can be displayed:

- The video data from one of the 12 cameras. For this purpose it is necessary to bring the mouse pointer to a window of the chosen camera and to click the left mouse button.
- Detection of suspected person in a control window the picture of last «captured» person is automatically displayed.
- For monitoring procedure the operator can choose record of one of the registered events in «list of events» (cell “text_log”), to click above it the left mouse button and in «control window» the photo of the person which danger level has exceeded a limit will be displayed.

4.4.1 Windows of camera

From each of 12 television cameras in a separate window the video information, the camera name (installation position) and the current value of a suspected level (Fig. 4.4). Depends on suspected level value the color scale can have the different color. If the suspected level has exceeded the set limit color of a scale will be red, and the image from the camera will be captured in one of «capture» windows (fig. 4.5), and in the list of events corresponding record will be made.



Fig.4.4. Window of camera (single)



Fig.4.5. Capturing suspected person

4.4.2 The list of events and «captured» windows

If the person's suspected level, fixed by one of camera, exceeds the set limit then the following actions are automatically done:

1. The photo of the person is fixed in «image_log» window. The suspected person is allocated with a red rectangular.
2. The photo of the person is added in top of list « image_log »
3. In «List of events » record which contains the information is added: date and time, camera name and suspect level.



Fig. 4.6. The object is detected

6 Warranty

Maintenance service and service regulations of **VibraNet** system is carried out according to this Manual and instructions of used hardware maintenance (a computer, the camera, etc.).

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