



Neuro-Linguistic Profiling System

Software

MANUAL

Version: **VibraNLP_10 (10.2.1.214)**

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Saint Petersburg

2020

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1 Introduction

Welcome to the **VibraImage** World! Thank you for your purchase of **VibraNLP** system. This Manual is written to help you enjoy **vibraimaging** and open new features in your predisposition to various factors!

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

The determination of the pair profile of multiple intelligences (MI) is carried out at the stage of preliminary testing and significant stimuli are presented to the test factor at the stage of basic testing. Pre- and basic tests are carried out sequentially without interruption and are assembled into a single adaptive psychophysiological testing. Pre-testing and basic testing are carried out sequentially without interruption and are put together into a single psychophysiological testing. Relevance of stimuli presented in the basic testing is proportional to the priority of MI pairs identified in pre-testing, and the order of stimuli presentation for different types of MI is identical in the first and second parts of psychophysiological testing. Stimuli presented at the stage of basic testing have a multifactorial linguistic structure with reference to the type of MI and testing subject.

The **VibraNLP** program is similar to the **VibraNLP** in principles of finding the MI profile, which is determined twice during the test. The first determination of the MI profile occurs during pre-testing with neutral stimuli presentation. The second definition of the MI profile occurs upon presentation of neutral stimuli related to multiple intelligences and significant stimuli related to the studied factor. Current **VibraNLP** includes LO questionnaire with detection of predisposition to a terrorist activity. Users have the opportunity to create their questionnaires using this technique and determine the subject's predisposition to other factors, for example, a predisposition to alcoholism, loyalty to certain principles, family loyalty, etc.

The method of adaptive psychophysiological testing is based on the propositions that the structure of consciousness is directly related to the method of determining the psychological, behavioral and psychophysiological characteristics of a person, and that for correct measurement it is necessary to have a maximum of information about the measured value. Person perceives completely different stimuli that have one or more meanings in their content. Jung wrote in 1921 that an introvert and an extravert have different perceptions of the same object. This principle was transferred to the methodology of stimulus formation during psychological testing. **VibraNLP**. The transition from a single (single stimulus was intended to determine the test subject's response to one position) presentation of the stimuli to a multifactorial one significantly changes many aspects of psychological and psychophysiological testing. Multifactorial textual stimuli are more complicated in linguistic development, since several semantic loads must be introduced into one question. However, the psychophysiological response of a testee to multifactorial stimuli allows to obtain much more information when processing the results of psychological and psychophysiological tests. A direct corollary of MI theory is as follows. If a person has a priority (predominant or significant) development of a certain type of MI, then the stimuli presented to significant types of MI are correspondingly more significant for this person than the stimuli presented to undeveloped types of MI. From the point of view of conducting psychological surveys, this suggests the possibility of a significant reduction in the number of stimuli presented to a person while increasing the accuracy of

the results obtained because becomes possible to pre-establish the multiple intelligences profile of a subject that was implemented in the **VibraNLP**.

The developed adaptive method of psychological and/or psychophysiological testing allows one to achieve higher accuracy in comparison with the known methods of presenting general stimuli without taking into account the significance of the psychological characteristics of personality, one of which is MI profile of a testee. The proposed method can be used to conduct mass testing of people for being disposed to various factors, for example, alcoholism, terrorism, drugs, bribes, loyalty, etc. The proposed variant of psychological testing is compact and takes the minimum time for testing, despite the fact that the general questionnaire is more than 100 questions, each of testee answers only 1/6 of the total number of questions, in the given example it is 24 questions. Moreover, testing accuracy only increases, since each testee is presented by questions and stimuli that are significant for him personally.

The proposed adaptive method of psychological testing combines the advantages of classical psychological testing, which includes many questions related to various fields of knowledge and suitable for testing random samples. At the same time, the developed adaptive testing method combines the advantages of individual psychophysiological pre-test conversations, but does not require additional individual adjustment to a testee.

A functional diagram of adaptive psychophysiological testing by the **VibraNLP** program is shown in Figure 1.0

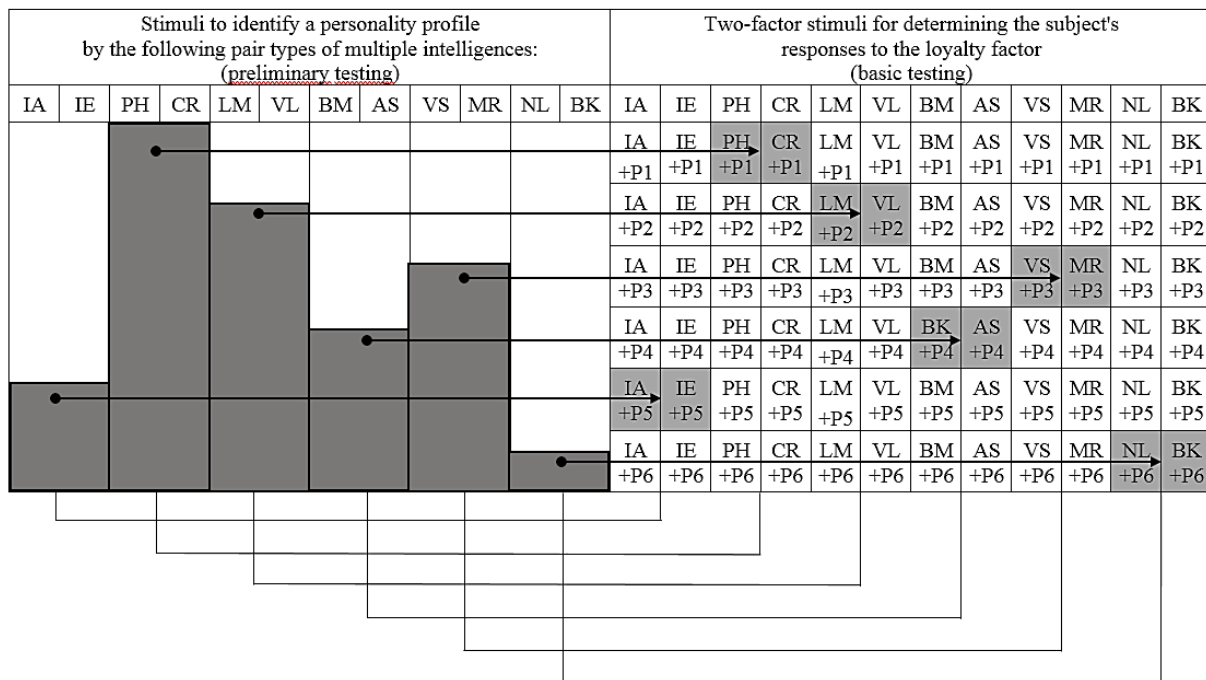


Fig. 1.0 A functional diagram of adaptive psychophysiological testing by **VibraNLP**

1.1 Basic applications

VibraNLP program is designed for adaptive psychophysiological testing based on a preliminary determination of the profile (Pre-testing).

VibraNLP software can be used to conduct mass testing of people for being disposed to various factors, for example, alcoholism, terrorism, drugs, bribes, loyalty, etc.:

The software together with the hardware form the system **VibraNLP**.

1.2 Specifications

User must have the hardware with the following parameters:

1.2.1 Basic parameters

- | | |
|---|-----|
| • Resolution, TVL, more than | 400 |
| • Noise level of vibraimage, bit, less than | 0,1 |
| • Frame speed, FPS, not less than | 25 |

1.2.2 Digital (web) camera requirements

- | | |
|--------------------------------------|-------------------------|
| • Digital camera supplied on request | |
| • Resolution, pixel, more than | 640 x 480 |
| • USB compatible | USB 2.0, USB 3.0 |
| • Frame speed, FPS, more than | 25 |
| • Exposition control | automatic and manual |
| • Color mode | color and B/W |
| • Flicker mode | Flicker 50 Hz and 60 Hz |

1.2.3 System requirements for computer

- | | |
|-----------------------------------|--|
| • Operation System | Windows 7/8/10 or later 64-bit only |
| • Processor | Intel I5 or higher |
| • RAM more than 4 Gb | |
| • HDD more than 100 Mb free space | |
| • USB port | 1 free USB ports version USB 2.0, 3.0 |
| • Installed software | Microsoft Office Excel 2010 (64-bit only) and higher |
| • Video capture | WDM-compatible video device |

1.3 Requirements for a relative position of a person and a camera

The basis of the **VibraNLP** program is vibraimage technology which can provide a high-quality result only by analyzing high-quality video. To do this, you must fulfill all requirements of paragraph 1.2.2, 1.2.3. As well as to meet the requirements of paragraph 1.2.1 it is necessary:

- 1 the tested person to sit in front of a camera and without leaning on the elbows, neck, back and head
- 2 fix the camera (on the monitor, on the tripod, etc.) in front of the tested person
- 3 face lighting should be uniform
- 4 the camera should be focused on the person's face

Fig. 1.1 shows the ideal position of a person in front of the camera, and fig. 1.2 – the ideal image of the person in the frame.

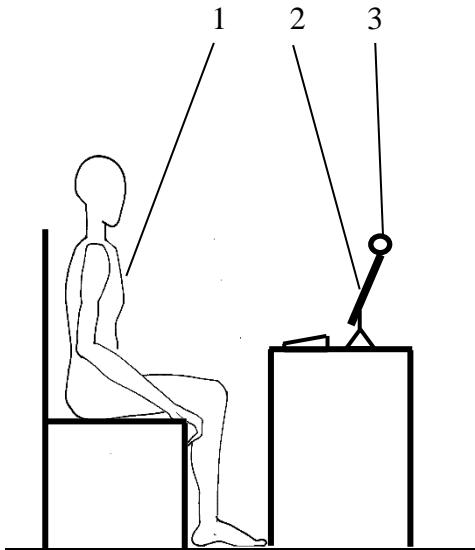


Fig. 1.1 Ideal test conditions

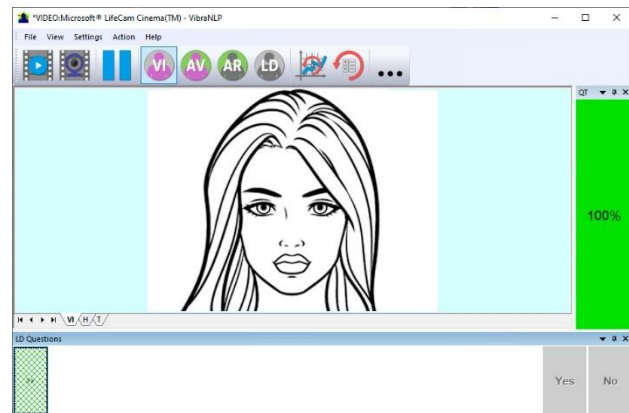


Fig. 1.2 Ideal image of the person in the frame

For convenience, you can enable the Automatic video quality test in the settings section (see section 4.4), then an assessment as a percentage of video quality will appear on the left side of the program.

1.4 Package contents

1	VibraNLP software	-	1
2	Activation code	-	1
3	User's manual	-	1
4	Digital USB camera (hardware)	-	1 (option)
5	Microphone (hardware)	-	1 (option)
6	Personal computer (hardware)	-	1 (option)

Attention!

Hardware with the specified parameters isn't included in the delivery. User gets the hardware for the **VibraNLP** system themselves.

It is recommended to use Microsoft LifeCam Studio webcam or similar with parameters not worse than this webcam.

2 VibraNLP software installation

It is necessary to execute the following actions for installation of VibraNLP program on your computer:

1. Go to Web page <http://www.psymaker.com/ru/support/downloads/>
2. Download file www.psymaker.com/downloads/setupVibraNLP10.exe
3. Run file VibraimageMI10.exe from archive file.
4. Select language for installation procedure.
5. Press button «Next» in the appeared window of the beginning installation.
6. Accept the license agreement and to press button «Next» in the appeared window.
7. In the appeared window, specify a way to the catalogue where files of the program will be written down, then to press button «Next».
8. Press button «Next» in the appeared window, allows installation of software files on your computer.
9. Press button «Install» at the start of installation.
10. Press button «Finish» at the end of installation.
11. VibraNLP program icon appears after the end of installation in system menu on desktop of your computer.
12. To reboot a computer.
13. Verify that the camera is connected to the computer and run the program.

2.1 VibraNLP software activation

- 1 Procedure of activation is done once at the first start of the program.
- 2 Before the program activation it is need to buy this version of the program in the online store Psymaker
<http://www.psymaker.com/store/>
- 3 Activation procedure requests access to the Internet for receiving answer code from server.
- 4 Activation code has the structure VI10_XXXXXXX_NLP.

2.1.1 Standard activation

1. Run VibraNLP program to begin an activation.
2. At the first start of the program the activation window will be displayed (Fig. 2.1).

VI Key

Request

Code: AA11-3469-CC65-CB93-1A26-F79C-26CE-14E7-931B-C680

Answer

Get Answer code using HTTP

OK Cancel

Fig. 2.1. Activation window.

3. In the field «Request» it is necessary to enter the activation code received by e-mail or specified by the seller (Fig.2.2)

VI Key

Request: PSYMAKERCOM_2DBEA9B86436C93357B34FE753AED760_LD

Code: AA11-3469-CC65-CB93-1A26-F79C-26CE-14E7-931B-C680

Answer

Get Answer code using HTTP

OK Cancel

Fig. 2.2. Input activation code.

Attention!

Please, be careful and paste code without additional gaps!

4. After input of activation code to press the button «Get Answer code using HTTP».

5. The activation code will be checked up through the Internet and, in case of successful end of activation procedure, the answer code will be sent (Fig. 2.3).

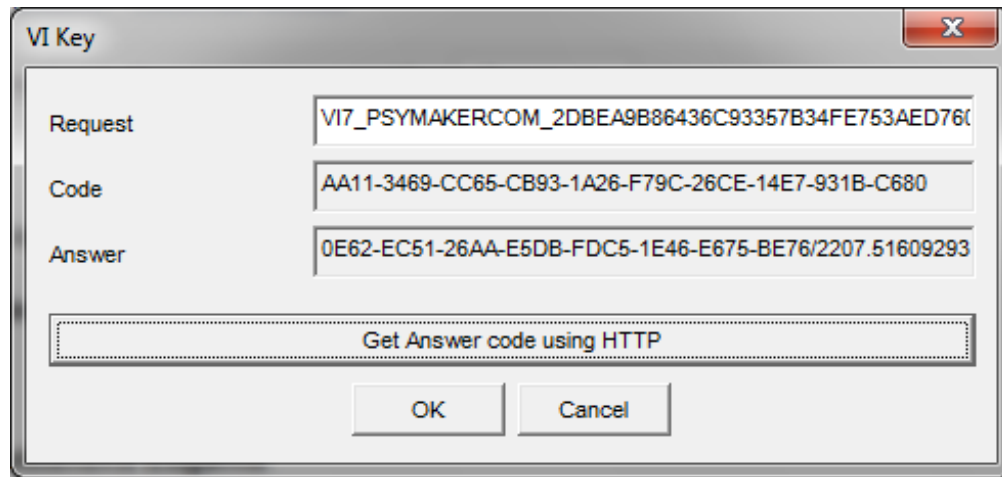


Fig. 2.3. Successful activation.

6. Press button «**OK**». **VibraNLP** will start automatically.
7. Start to work with the system in accordance with this manual.

2.1.2 DEMO activation

1. Run **VibraNLP** program to begin an activation.
2. At the first start of the program the activation window will be displayed (Fig. 2.1).
3. In the field «Request» it is necessary to enter «DEMO_MI» (Fig.2.4). After input of activation code to press the button «Get Answer code using HTTP».

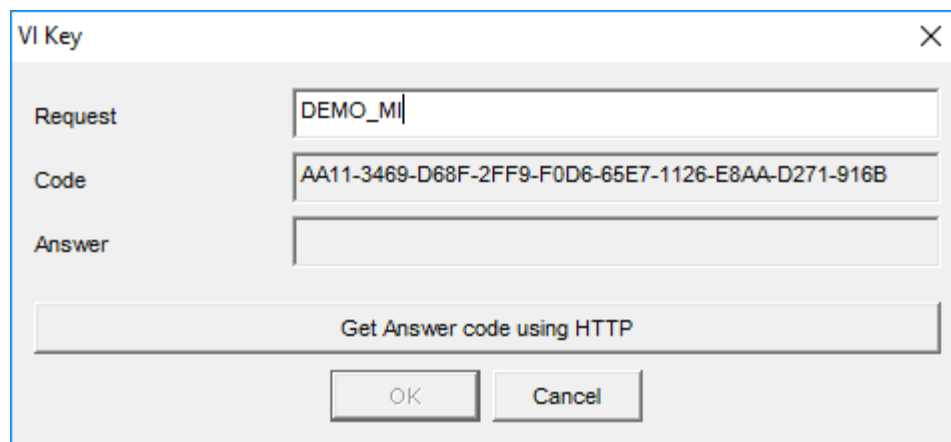


Fig. 2.4. Demo activation code input.

Attention!

Please, be careful and paste code without additional gaps!

4. The activation code will be checked up through the Internet and, in case of successful end of activation procedure, the answer code will be sent (Fig. 2.5).

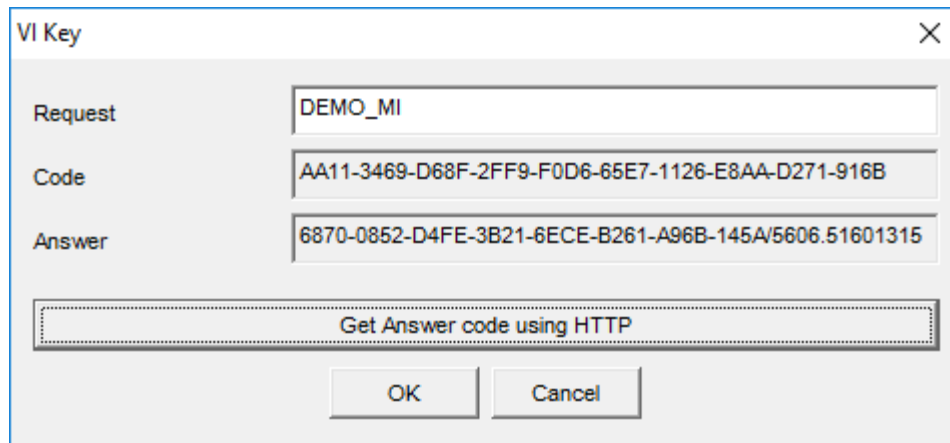


Fig. 2.5. Successful DEMO activation..

5. Press button «OK». **VibraNLP** will start automatically.
6. Start to work with the system in accordance with this manual.

2.3 First start

1. After successful activation of the program at the first start, if you are not connected to a camera, you will see the program window shown on Fig. 2.6.

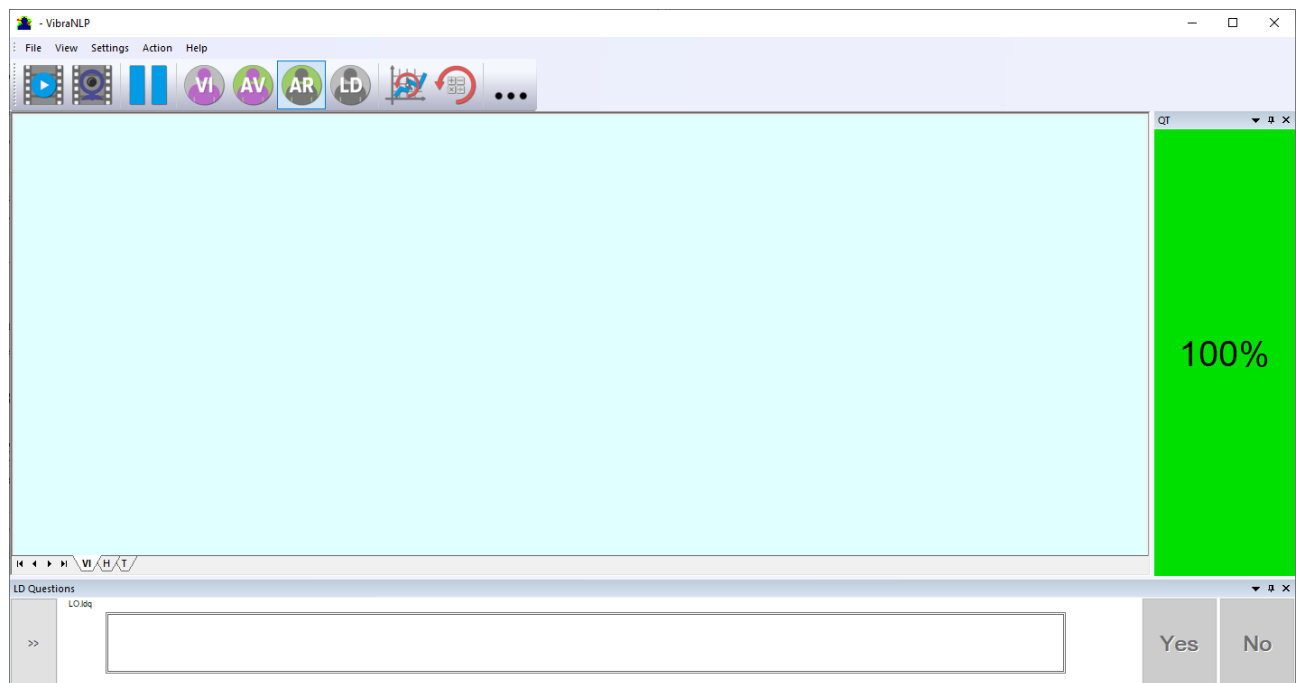


Fig. 2.6. First start.

2. Move the cursor to the upper left corner of the program and in the pop-up menu "Settings" => "Language" select the desired program language (Fig. 2.7). By default it is English.

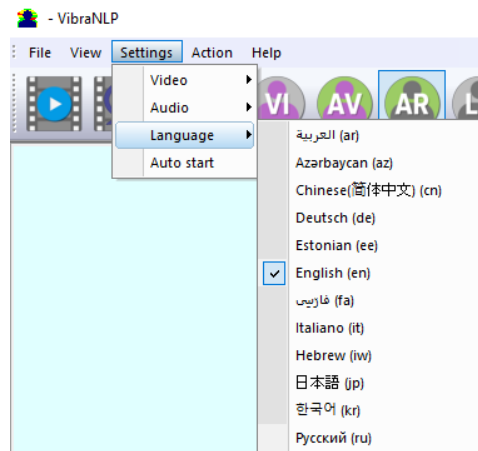


Fig. 2.7 Selecting a language

3. Select a camera in the menu “Settings” => “Video” (on a Fig. 2.8 – Microsoft Lifecam Cinema).

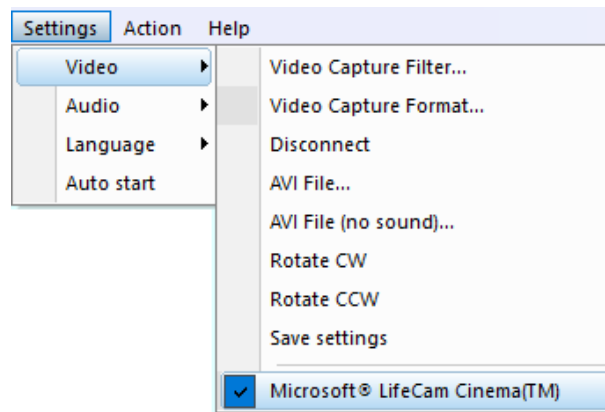


Fig. 2.8. Selecting a camera

If the program does not see your camera, check the connection of the camera to the computer. After selecting a camera, an image will appear on the screen.

4. Set the camera parameters (see section 2.5)
5. Check video quality (see section 2.5.5). It should be more than 80%, that is, the column on the left side of the program should be green and, if necessary, eliminate the causes of low-quality video (1-5 errors).
6. Select a questionnaire “LOen” as shown in fig. 2.9. The questionnaire by default is “LO”.

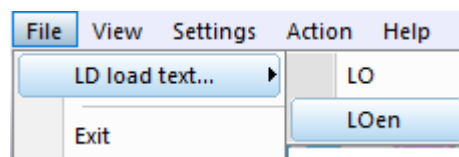




Fig. 2.9. Selecting a questionnaire

7. Place the test person in front of the camera as recommended here (see section 1.3)

8. Press the button  in the low left part of the screen. Questions and stimuli will appear on the screen.

9. Open the folder with the results of the program by clicking  in the toolbar.

10. Open the corresponding Excel file with the test results.

11. Analyze the results (see section 5).

2.4 VibraNLP reinstallation

Note, it is recommended to uninstall the VibraNLP program before any upgrade software or hardware on PC and to reinstall after this upgrade.

For this purpose, it is necessary to execute the following actions:

1. Connect to the Internet a computer on which one of VibraNLP has been installed.
2. Start VibraNLP program for reinstallation on a new computer.
3. In the menu «Help» (Fig. 2.8) choose item «About VibraNLP...» (Fig. 2.8).

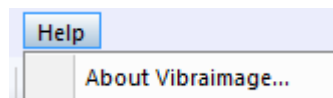


Fig. 2.10. Menu «Help»

4. In the opened window press the button «Unregister key» (Fig. 2.9).

5. Close the program.

6. Connect a new computer to Internet.

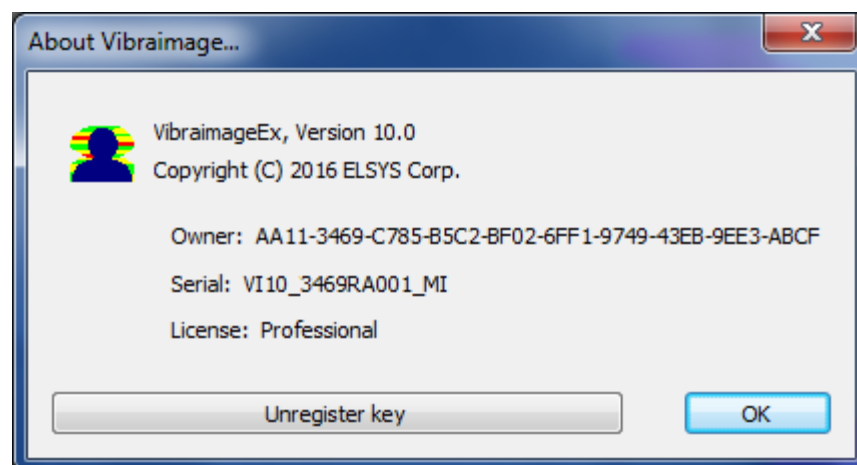


Fig. 2.11. Information about the program.

7. On the new computer install the program and make registration of an «old» modification activation code through the Internet, according to recommendations of section 2.1.

8. After successful program registration the given activation code will be fixed to the given computer.

2.5 Camera's setting

Correct camera settings is very important operation for the next vibraimage processing, because mistakes in image quality have great influence to the vibraimage processing results.

2.5.1 Video camera choice

It is necessary to select in the main menu «**Settings**» => «**Video**» => «**.../name used camera/...**». In figure 2.8 the process of selecting camera «Microsoft LifeCam Cinema» is shown. If the camera is connected, selected and works, then on the left of the name there will be an icon «✓» (Fig. 2.12), and the menu will be extended with the «**Video capture filter...**» and «**Video capture format...**».

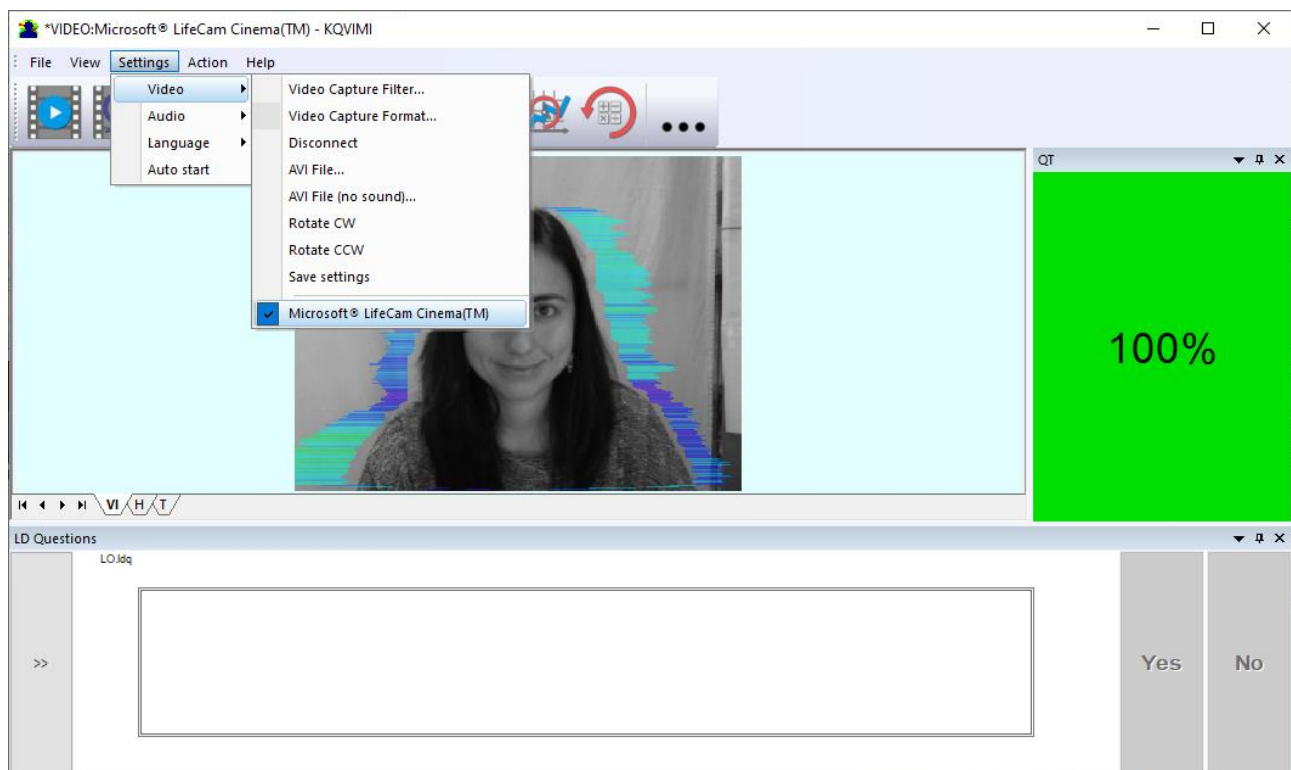


Fig. 2.12. Example of camera choice.

VibraNLP system allows to processing as the «alive» video signal acting from a video camera, and the video data, before written down and saved as an AVI-file. On default the system works with a signal from a video camera. Subitems «**AVI File ... F3**» and «**AVI File (no sound)... Ctrl+F3** » are intended for a choice for the analysis of an external videofile.

2.5.2 Video capture filter

Select «**Video capture filter.....**» in the submenu «**Video**» (Fig. 2.13) for open menu of the camera settings. Item «**Video capture filter....**» appears in the menu only in case of the correct installation of camera drivers and correct choice of operating camera.

After a choice of the «**Video capture filter...**» the window «**Settings**» will open. Settings window differs depends on camera type. The first tab of this window is usually devoted to the image setup (Brightness, Contrast, etc.). In a figure 2.14 the window «**Settings**» for the camera «**Microsoft LifeCam Cinema**» is shown. Camera Microsoft LifeCam Cinema has low noise level and is preferable for vibraimage applications among webcams., even better to use «**Microsoft LifeCam Studio**».

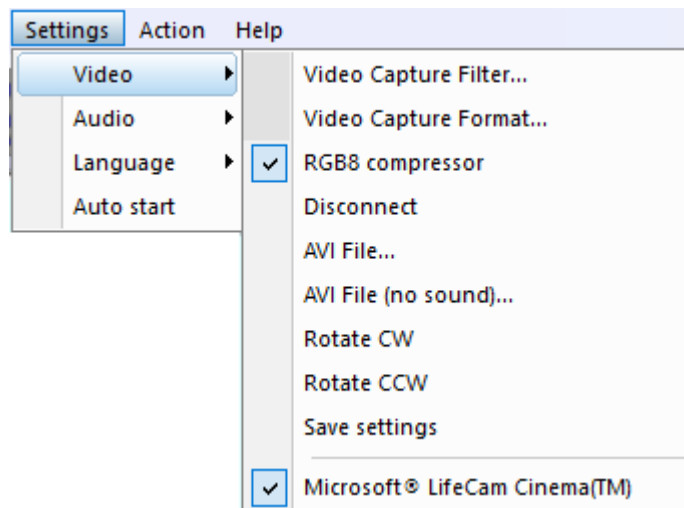


Fig. 2.13. Opening of the camera's settings menu («Video capture filter...»).

After a choice of the “**Video capture filter...**” the window “**Settings**” will open. Settings window differs depends on camera type. Figure 2.14 shows the “**Properties**” window for the Microsoft LifeCam Cinema.

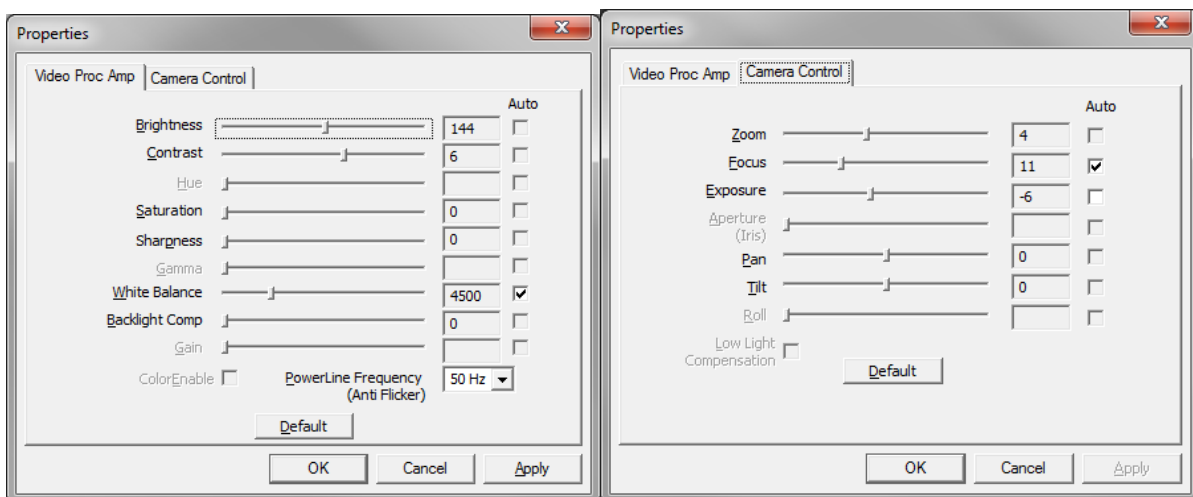


Fig. 2.14. Windows with settings for «Microsoft LifeCam Cinema»

- When adjusting the camera settings, you must fulfill the following general requirements:
- The «**Brightness**», «**Contrast**» and others parameters should be configured so that the image of the object was the maximum contrast.
- Switch on «**Flicker**» mode for setting lighting power line frequency (repayment flicker), in most countries it is 50 Hz.
- If your camera supports, then switch on the black-and-white image «**B/W mode**». If the camera works only in color mode, it is recommended to set «**Saturation**» parameter to minimum value.
- Depending on the experimental conditions and light to use automatic or manual setting «**Exposure**» parameter. If constant lighting, it is recommended to use the manual adjustment. If changes (for example, an object depends on the lighting street lighting), it is better to use the automatic adjustment mode setting.

Parameters «**Zoom**» and «**Focus**» is recommended to use in the manual mode and change their values not due to electronic image processing, but by approaching/removing the camera from the object.

Note, program settings are set by default at each new turn on the camera. If the video conditions don't change it is recommended to save your settings using item «Save Settings» from the submenu «Video» (Fig. 2.13).

2.5.3 Video capture format

Select «**Video capture filter...**» in the submenu «**Video**» (Fig. 2.13) for open menu of the camera settings. Item «**Video capture format...**» appears in the menu only in case of the correct installation of drivers of the camera and a choice of the working camera. Frame rate is necessary to set 30 and the frame size to set («Output Size») not less than 640 x 480 px (Fig. 2.15).

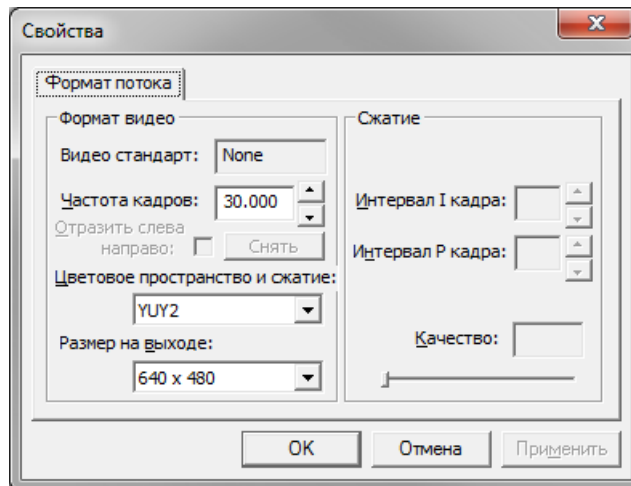


Fig. 2.16. Window «Video capture format».

Note, after changing camera settings in the program **VibraNLP** frame rate «In» must be in the range of 25 – 30 FPS.

2.5.4 Checking the settings on the test table

During the first start of Vibraimage system and periodically it is recommended to test image quality by the test table. It is required to place a test pattern opposite to the camera so that the image of the table occupies the entire space of the frame. To achieve the optimal contrast range of object is need to stand in camera settings auto regulation of illumination in case of unstable illumination (Fig. 2.16) and manual regulation of illumination in case of a constant illumination (Fig. 2.17). The inscription «Warning! Low quality (1)» in the upper left corner of the image is normal, because there is no person's face on the video.

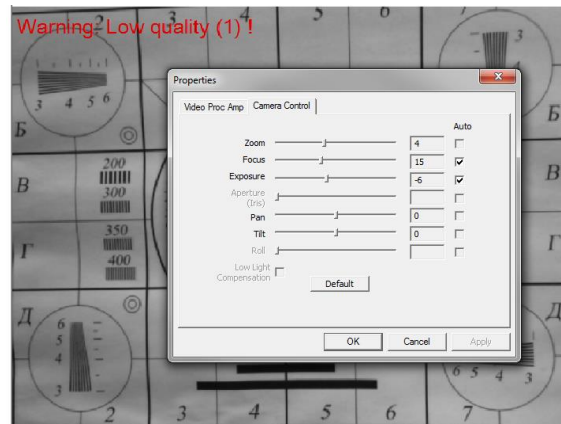


Fig. 2.16. Checking the camera settings on the test table, automatic regulation of the exposure (mode is recommended for unstable object illumination).

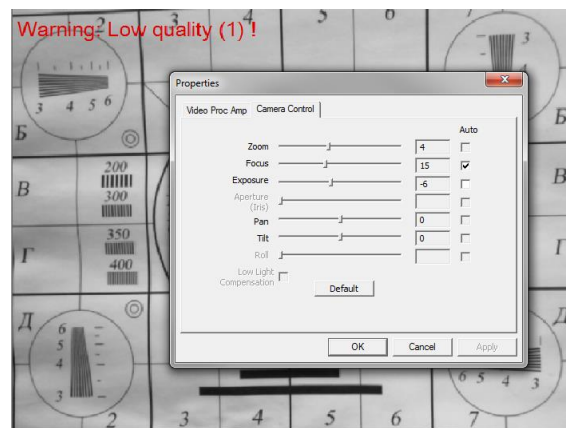


Fig. 2.17. Checking the camera settings on the test table, manual regulation of the exposure (mode is recommended for stable object illumination).

2.5.5 Video quality auto checking function

The **VibraNLP** program has built-in automatic quality control function image quality control during the test. Since the calculation of human reaction using the video image, the quality control for the processed video is necessary to obtain a correct test result. Error message and the low quality of video will appear on top of the **QT** column on the left side of the program (Fig. 2.18), but only if the **"Quality test"** mode in pop-up menu "Settings" is switch on.

If the quality test is enabled, the final result will appear only if there is no video error message for more than 80% of the measurement time.

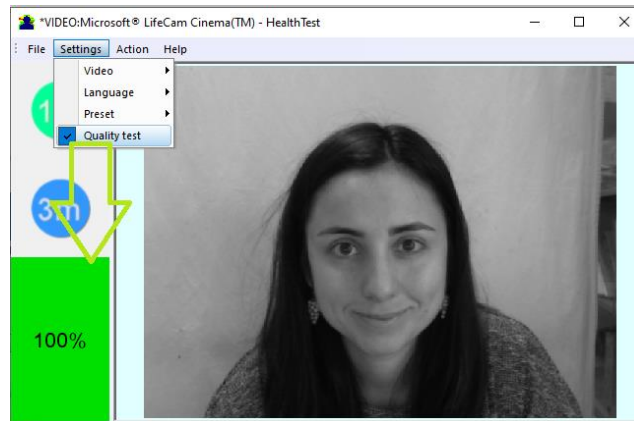


Fig. 2.18. Switch on “Quality test”

Program gives error indication if the image quality is lower than standard vibraimage requests:

- **Error 1** – indicates when facial image is lower than necessary. For cancel this error is need to move checked person closer to camera or start zoom function on camera. (Fig. 2.19).

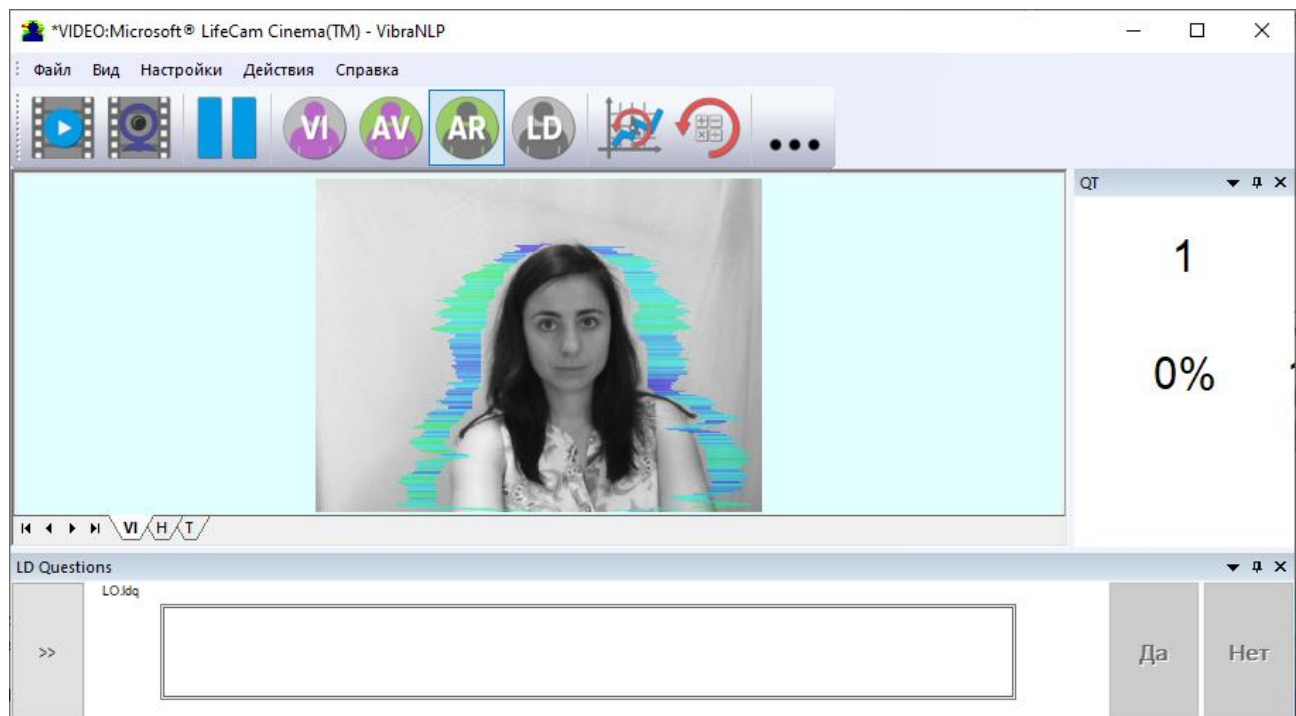


Fig. 2.19. Error 1 at the low video quality. Checking the cause is convenient in AR mode.

- **Error 2** – indicates when camera noise level is higher than necessary. The reason of this error could be low illumination, incorrect camera settings or camera vibration. (Fig. 2.20).

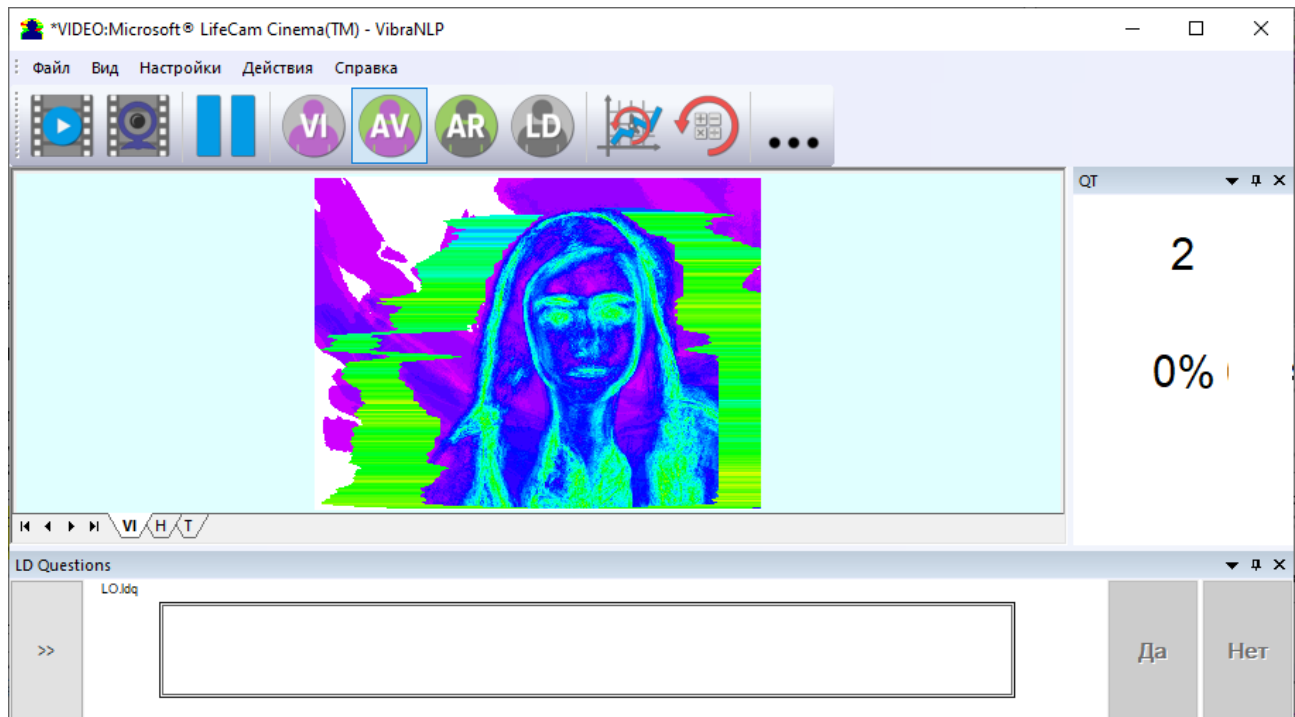


Fig. 2.20. Error 2 at the low video quality. Checking the cause is convenient in AV mode.

- **Error 3** – indicates when computer input frame rate is lower than necessary. Requested norm for processed frame rate is more than 25 f/s. This errors indication was done for deleting unqualified staff influence during results control. If the actual input speed is less than 25, then the program will show error 3 (Fig. 2.21).

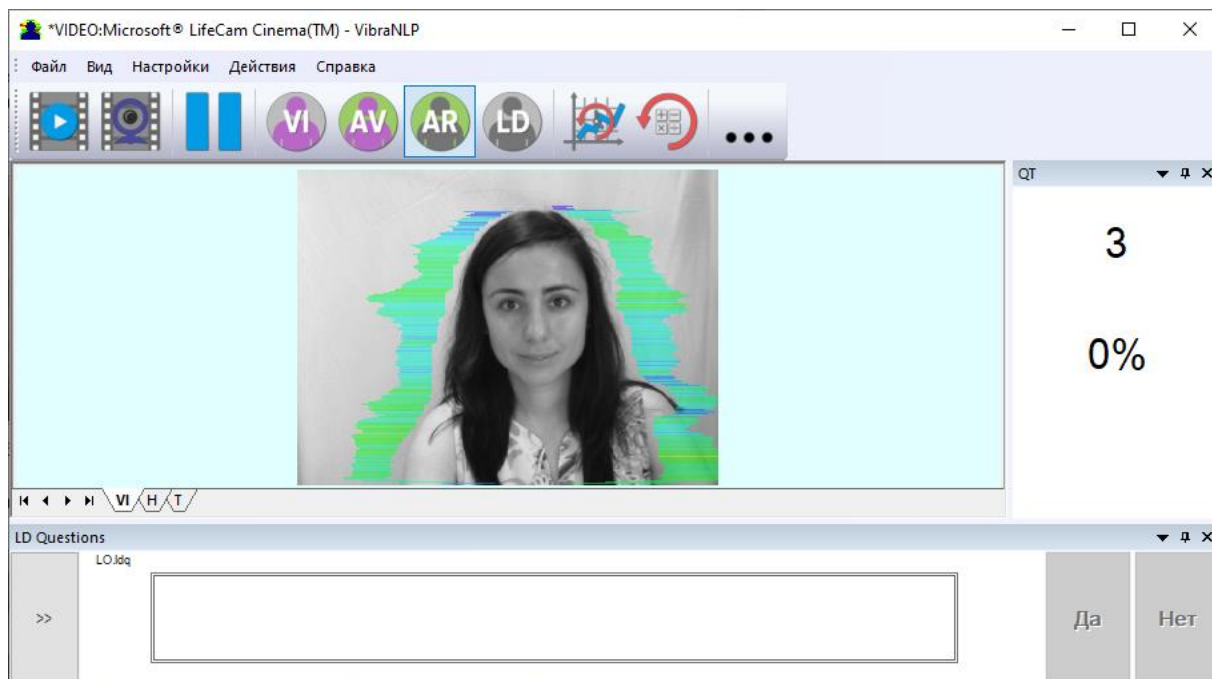


Fig. 2.21. Error 3 at the low video quality. Checking the cause is convenient in AR mode.

- **Error 4** – error-contrast image (Fig. 2.22).

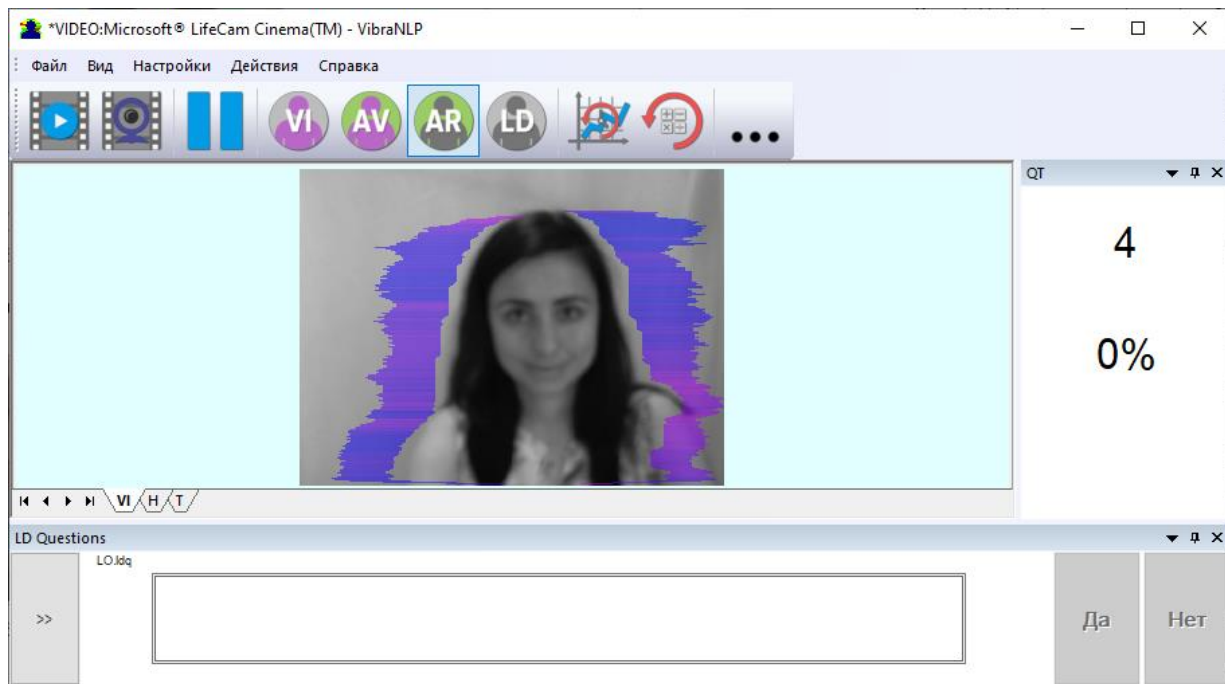


Fig. 2.22. Error 4 at the low video quality. Checking the cause is convenient in AR mode.

- **Error 5** – due to nonuniformity lighting of the face (Fig. 2.23)

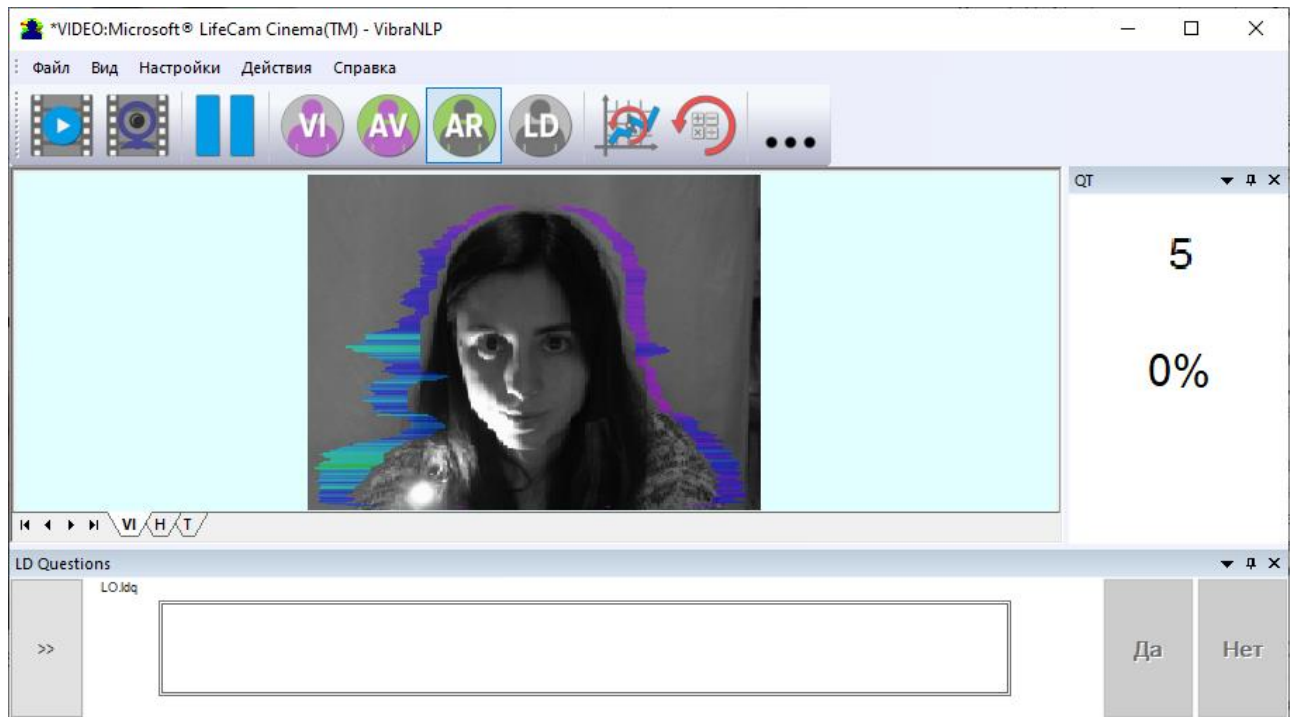


Fig. 2.23. Error 5 at the low video quality. Checking the cause is convenient in AR mode.

Error 1

The size of the person's head image in the picture elements (pixels), which determines the accuracy of recorded vibrations, requires constant monitoring during testing. When tested with a video image analysis there are no severe restrictions on the movement of the test person, as required by the contact method. This person feels natural, which increases the accuracy of test results.

However, the natural behavior can lead to the fact that during the test response deviates from the camera and the size of the human head image becomes less than required. To resolve this issue vibraimage system constantly monitors a person's head size of the image and displays an error message (1) in the window "QT" in the case of reducing the size below the limit. In addition, vibraimage program includes a permanent face detection algorithm, which ensures elimination of errors from a lack of a real image of the person in the frame during testing.

Error 2

Temporary noise signal from the video camera includes a video camera noise and illumination instability and can significantly affect the test results. In this case, at the slightest noise level exceeds the specified threshold, the system automatically displays an error message (2) in "QT" column.

Error 3

Despite the fact that the television camera may transmit to 30 frame/sec with the set resolution, it does not guarantee that the computer receives and processes the incoming video data in real time. And any deviation from the information processing in real time resulting in a loss of information and hence reduce the reliability of the test. By reducing the actual input frames frequencies and processing frequencies below the set limit, the system automatically displays a warning error (3). To fix the error, reduce the Zoom of the camera, if you used it to increase the size of the face. Check the processor load of your computer, close the resource-intensive programs.

Error 4

It occurs with uneven illumination of a person's face. For example, light falls on the side. Try turning the test person to the light or changing the angle of incidence of the light from the lamp. Also occurs if the test person is at an angle to the camera.

Error 5

It occurs if the image is not contrasty, for example, when the camera is not properly focused. To fix the cause of the error manually or automatically adjust the focus of the camera.

Note, before the start of the test should ensure that the program processed the image of a human WITHOUT ERRORS or disable the quality test.

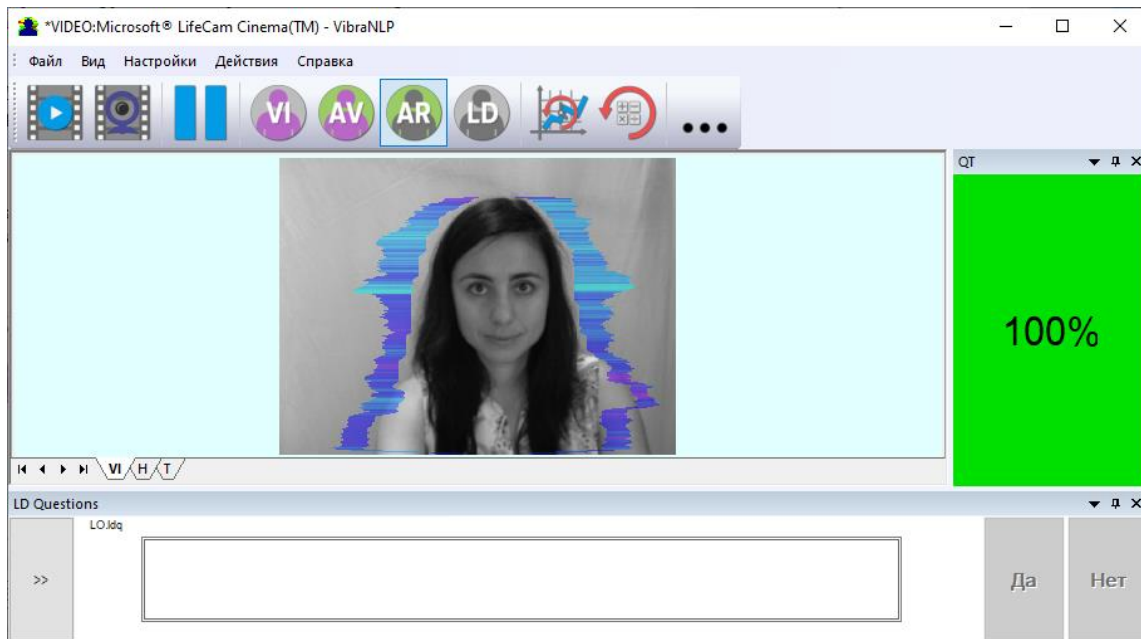


Fig. 2.24. An example of a quality column operation. Head image size and other parameters are correct.

Quality column shows time % during the testing when image quality is equal 100 %. When we have quality indication 81 % (fig 2.24), that means 81 % of testing time image quality hasn't errors and 19 % of testing time image quality includes errors with the number 1 - 5.

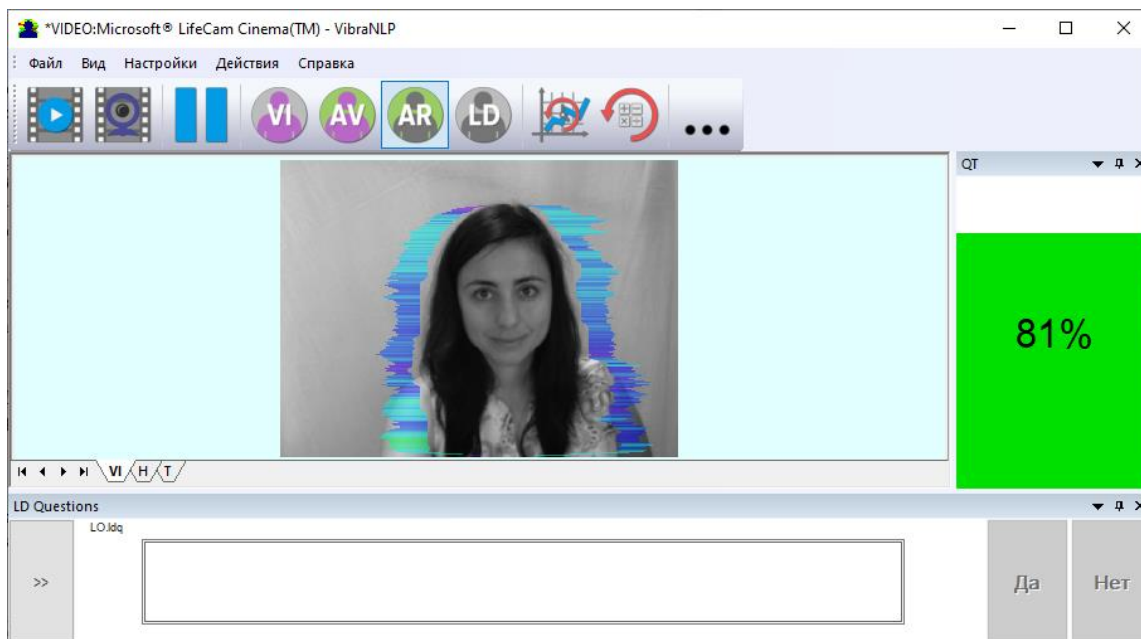


Fig. 2.25. Quality test shows 81 %

Pressing button R reset image quality to the beginning 100 %. In lie detection mode and M mode image quality is very important and testing with image quality lower 80 % could not be acceptable for processing.

3 VibraNLP. User's manual

VibraNLP software is designed to conduct mass testing of people for their disposition to various factors, for example, alcoholism, terrorism, drugs, bribes, loyalty, etc.

After start of **VibraNLP** and connection of the video device (Fig. 3.1) in the main window there is an image from connected video device.

3.1 Main window

Main window (Fig. 3.1) consists of the following parts:

1. main menu;
2. image area;
3. questionnaire panel;
4. tools panel;
5. name of running VibraImage module, model of video source (Video camera model or AVI file name) & type of video source (Video camera or AVI file);
6. quality test column;
7. image menu

Note, double click by the left button of a mouse in the image field of makes **RESET** of all saved up information and statistics about frames and start new cycle collection of information.



Fig. 3.1. Main window *VibraNLP*.

The user can add or remove the window on the screen using the submenu «**View**» - «**Toolbar**».

The user also can control the placement of additional windows on the screen and the size using the controls elements on the left side of each window title.

Each window can be temporarily minimized and moved to the border of the main program window (Fig. 3.2). Figure 3.3 shows additional windows hidden and moved to the border of the main window and they icons are highlighted in orange color.

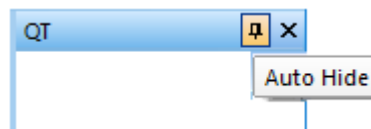


Fig. 3.2. Control element «hide window»

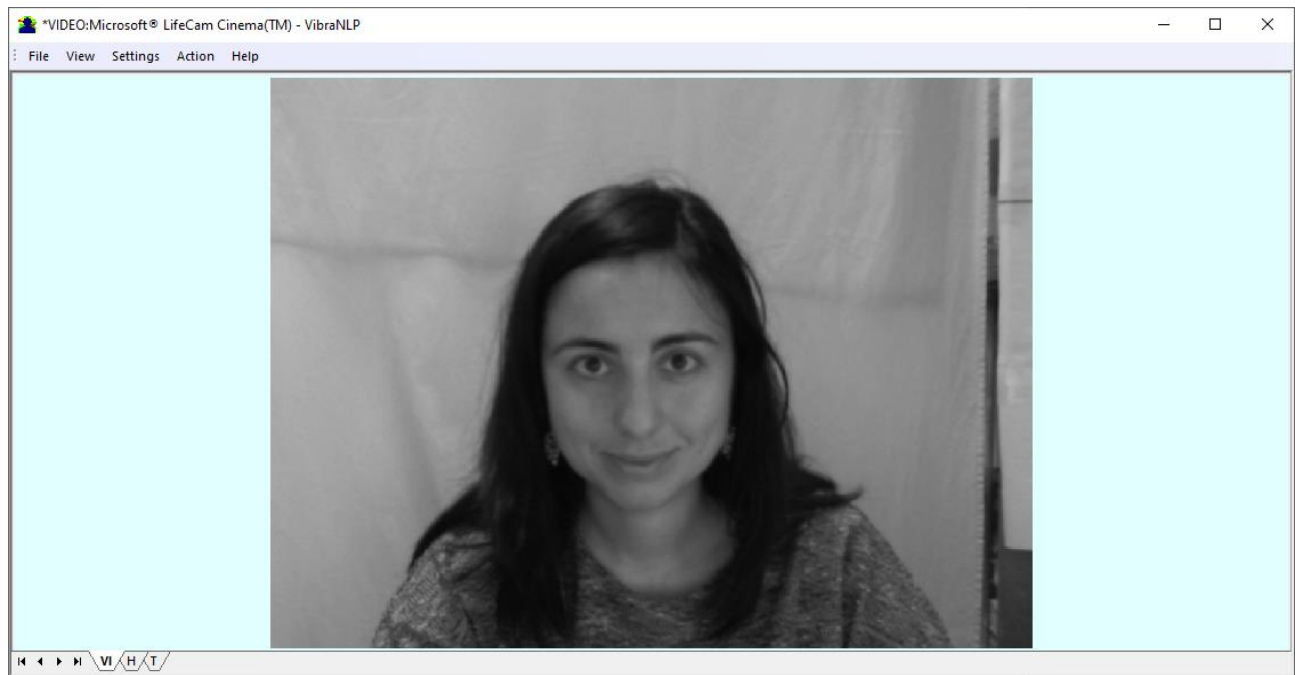


Fig. 3.3. All additional windows are hide

3.2 Main menu

The main menu contains the following items:

- «**File**»
- «**View**»
- «**Settings**»
- «**Action**»
- «**Help**»

3.2.1 Menu File

Menu «File» (Fig. 2.9) contains following items:

- Item «**LD load text...**» – load questionnaire file.
- Item «**Exit**» – allows quitting the program.

3.2.2 Menu View

The “View” menu (Fig. 3.4) determines what information will be displayed on the program main window.

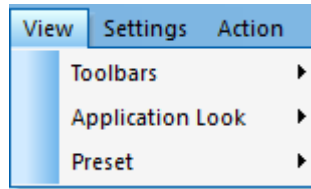


Fig. 3.4. Menu «View»

Submenu «**Toolbars**» (Fig. 3.5) - switch on/off the toolbars and additional functional windows.

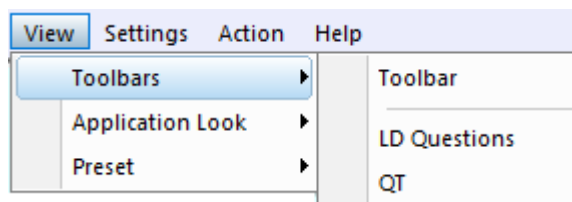


Fig. 3.5. Submenu «Toolbars»

Submenu «**Application Look**» changes the style of the main elements of the working window (Fig. 3.7) and contains following items (Fig. 3.6):

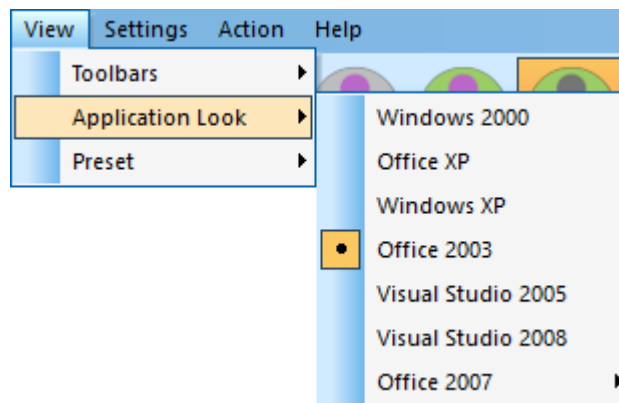
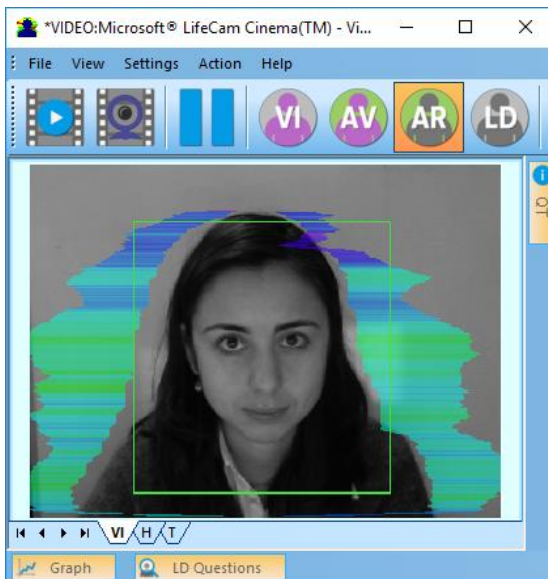
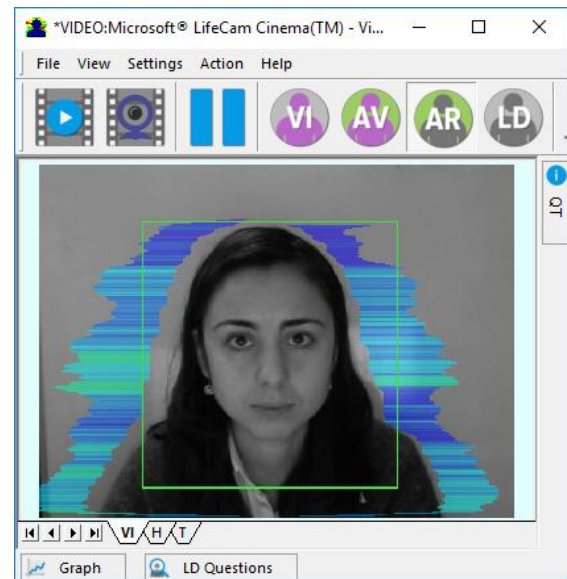


Fig. 3.6. Submenu «Application Look»



a) Style "Office 2003"



b) Style "Windows 2000"

3.7 Main window with different styles.

Submenu «**Preset**» – choice of visualization mode:

LD - real video image,

AR - external vibraimage (vibra-aura) around real video image,

AV - vibra-aura around internal vibraimage,

VI - internal vibraimage.

3.2.3 Menu Settings

Menu «**Settings**» (Fig. 3.8) contains following items:

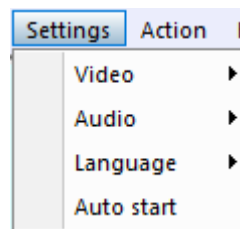


Fig. 3.8. Menu «Settings»

Submenu «**Video**» – video settings:

Submenu «**Video**» contains settings of video modes (see fig. 2.13). It can differ depending on connected devices. You can choose video source one from many installing in PC video-devices or load external video file.

Subitem «**Video Capture Filter...**», «**Video Capture Format...**», «**Save settings**» - (see section 2.5)

Subitem «**RGB8 compressor**» is intended for management of a video file record format. If this item is chosen, that, for economy of a space on a hard disk, the video file saved in a black-and-white format.

Note, for connection to system of network IP cameras and adjustments of their parameters the additional software CamIP.exe http://www.psychmaker.com/downloads/CamIP_installer.msi is used.

Subitem «**Disconnect**» allows disconnecting all video camera or video file.

Subitems «**AVI File...**» and «**AVI File (no sound)...**» are intended for selecting for the analysis of an external video file. The file can be loaded with a sound and without sound.

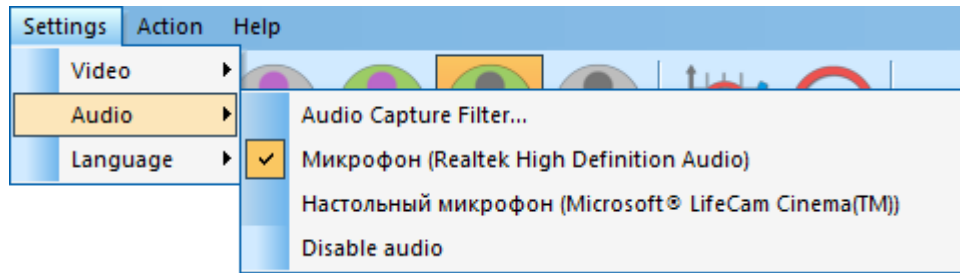


Fig. 3.9. Submenu «Audio»

Submenu «**Audio**» (Fig. 3.9) contains settings of audio modes. It is can differ depending on connected devices.

Item «**Audio Capture Filter...**» allows adjusting the microphone selected for operation (see items below).

Subitem «**Audio Capture Filter...**»

Item «**Disable audio**» cancel audio analysis.

Submenu «**Language**» allows to choose a language.

3.2.4 Menu Action

Menu «**Action**» (Fig. 3.10) contains following items:

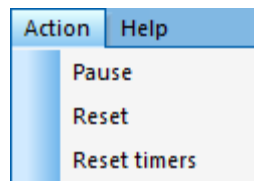


Fig. 3.10. Menu «Action»

Item «**Reset**» – reset all saved up information and statistics about frames and start new cycle collection of information.

Item «**Pause**» – stop last accepted frame of data in image area of windows.

Item «**Reset timers**» – reset to «0» all timers: video file timer, graph timer. The conclusion video and construction of graph begins all over again.

3.3 Tools and LD panels

VibraNLP toolbar (Fig. 3.11) contains following buttons:



Fig. 3.11. *VibraNLP* toolbar

All toolbar buttons (Fig. 3.11) duplicated the corresponding items in the menu system. When the tool tip determines the assignment of toolbar buttons. Note, the selected toolbar button is highlighted in color or volume, depending on the main window style.



– AVI files download for PDD analysis;



– live video camera connection;



– pause on image and program operations;



– choice of internal vibraimage mode (VI);



– choice of external vibraimage (vibra-aura) around internal video image mode (AV);



– choice of external vibraimage (vibra-aura) around real video image mode (AR);



– choice real video image mode (LD);



– reset timers and restart of testing;



– reset of all saved up information and statistics about frames and start new cycle collection of information;



– open the folder where you saved the images and measurement's data.

LD panel of VibraNLP program shown on fig. 3.12.

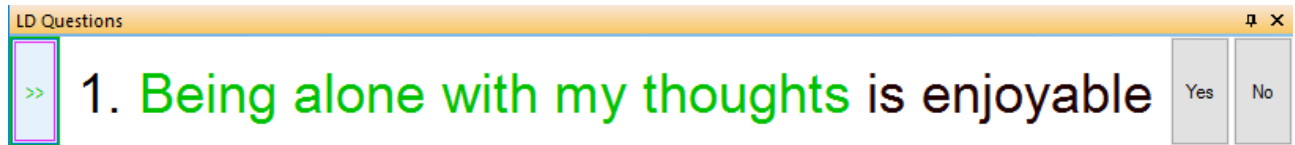



Fig. 3.12. LD bar. Starting of a questionnaire.

One-clicking on the button  on the LD bar let start a questionnaire at that moment. Double-clicking returns to the beginning of the questionnaire and the video file. The questionnaire can be selected by putting on the item “**LD load text...**” in the menu «**File**».

After the choice of the file, for example, “LOen” (Fig. 3.13), the program passes into the mode of reading and visualization of a questionnaire. The person conducting survey reads the questions which are displayed in the karaoke mode.

The user may develop owns questionnaires on topics of interest to him and put them in the installation directory \VibraNLP\ in the same file format **ld_XXXXXX.ldq**.

4 Saving and analyzing results

Test results can be viewed using standard Windows functions, such as pressing the PrintScreen and download images from the screen to any standard program such as Paint to view graphics.

After completing of the questionnaire program **VibraNLP** automatically creates files with the test results in the directory «C:\Users\user\Documents\MI Result».

The result of testing recorded in the form of files of the following types:

YYY-MM-DD hh_mm_ss_MI.xlsm	main results of intelligence profile, aptitude and skills abilities. Excel format
YYY-MM-DD hh_mm_ss_M.xlsx	testing result for Mental-Functional state. Excel format
YYY-MM-DD hh_mm_ss_e.txt	text file with a list of questions with the ranking of reaction to them, calculated by different algorithms (A, M, I, S, S1, At, It, IE);
YYY-MM-DD hh_mm_ss_histH.png	graphic file with the histogram of frequency distribution
YYY-MM-DD hh_mm_ss_histH.xml	data file with the histogram of frequency distribution. XML format
YYY-MM-DD hh_mm_ss_histT.png	graphic file with graphs of I-E state of a person changes over the period
YYY-MM-DD hh_mm_ss_LD.txt	measurement results based on LD calculations. Text format
YYY-MM-DD hh_mm_ss_M.xml	Testing result for Mental-Functional state. XML format
YYY-MM-DD hh_mm_ss_MI.xml	main results of PPS changes during the PFT is presented synchronously with graphical and text information. XML format
YYY-MM-DD hh_mm_ss_MI2.xml	alternative results of PPS changes during the PFT is presented synchronously with graphical and text information. XML format
YYY-MM-DD hh_mm_ss_row.txt	text file with the results of the measurement parameters on questions for statistical processing

In all files in names **YYYY-MM-DD** and **HH_MM_SS** date and time of measurement.

4.1 Final test results

The results of intelligence profile, aptitude and skills abilities during the PPT are shown in graphical and table information indicated in xlsm file (Fig. 4.1-4.13) in list Final and in text files.

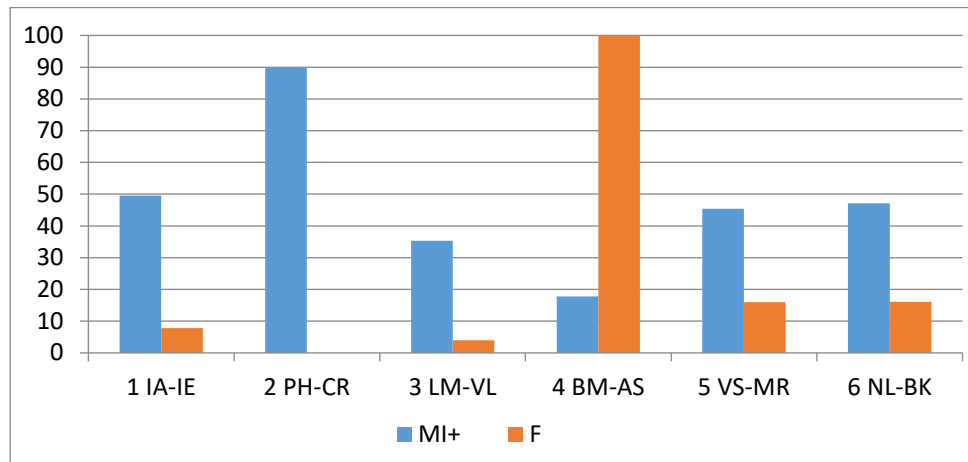


Fig. 4.1 MI profile taking into account the conscious response of the test person

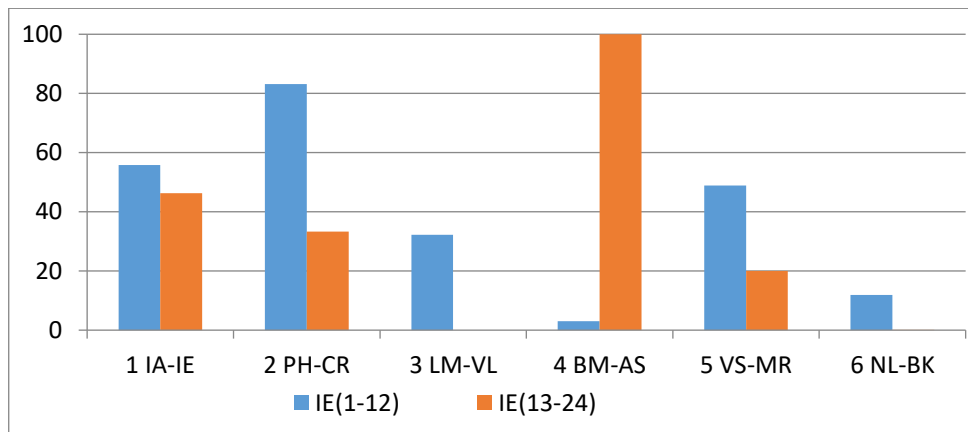


Fig. 4.2 MI profile taking into account the unconscious response of the testee for preliminary testing of IE (1-12) and for the second part with the presentation of significant IE stimuli (13-24)

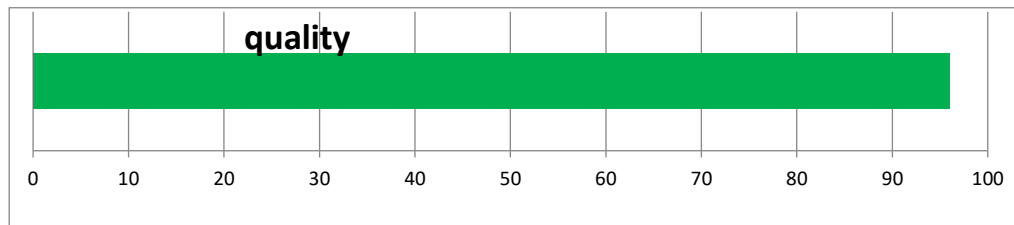


Fig. 4.3 Psychophysiological test quality (must be more than 80 %)

Processing the obtained results allows one to compare the total significance (the sum of the profiles) of the total MI profile for the first 3 significant types of MI (Mi (3)) obtained during preliminary testing with the general significance (F) of the MI profile upon presentation of significant stimuli in the second part of testing. Exceeding the overall significance of the MI profile for the first 3 significant types of MI in preliminary testing over the overall significance of the MI profile for the first 3 significant types of MI when presenting significant stimuli in the second part of the test indicates a lack of predisposition to a significant factor.

A table with the main result is obtained by mathematical processing of the tables IE Rating, IE Result and Final Result, shown in fig. 4.4-4.6:

Final result							
N		MI	F	Δ	$\Delta\%$	q(MI)	q(F)
1	PH-CR	90	0	90	100,00%	4;3	15.1;15.1
2	IA-IE	49	8	42	84,28%	2;3	13.2;14.2
3	NL-BK	47	16	31	65,88%	4;6	23.4;24.4
4	VS-MR	45	16	29	64,68%	4;5	21.3;22.3
5	LM-VL	35	4	31	88,70%	4;4	17.5;18.5
6	BM-AS	18	100	-82	-82,21%	2;6	19.6;20.6
	F+,Mi+	66	34	33	32,91%		
	Mi(3),F(3)	89	11	77	77,32%		
	Mi(IE),F(IE)	54	46	8	8,10%		
	F(U),F(S)	83	17	67	66,84%		

Fig. 4.4 Table Final result.

IE Result							
N		MI(IE)	F(IE)	Δ	$\Delta\%$	q(MI)	q(F)
1	PH-CR	83	33	50	59,91%	4;3	15.1;15.1
2	IA-IE	56	46	10	17,04%	2;3	13.2;14.2
3	VS-MR	49	20	29	59,05%	4;5	21.3;22.3
4	LM-VL	32	0	32	100,00%	4;4	17.5;18.5
5	NL-BK	12	0	12	98,94%	4;6	23.4;24.4
6	BM-AS	3	100	-97	-97,01%	2;6	19.6;20.6
	F+,Mi+	54	46	8	8,10%		
	Mi(3),F(3)	65	35	31	30,68%		
	Mi(IE),F(IE)	54	46	8	8,10%		
	F(U),F(S)	50	50	0	0,22%		

Fig. 4.5 Table IE result.

IE rating							
N		IE1	IE2	Δ	R	q(MI)	q(F)
1	IA-IE	-0,27	0,23	0,50	2	2;3	13.2;14.2
2	PH-CR	0,39	-0,31	0,70	1	4;3	15.1;15.1
3	LM-VL	0,22	-0,10	0,32	5	4;4	17.5;18.5
4	BM-AS	-0,17	-0,06	0,11	6	2;6	19.6;20.6
5	VS-MR	-0,22	0,22	0,44	3	4;5	21.3;22.3
6	NL-BK	-0,03	0,39	0,42	4	4;6	23.4;24.4

Fig. 4.6 Table IE rating.

NDI		
F+,Mi+	66	34
Mi(3),F(3)	89	11
Mi(IE),F(IE)	54	46

Fig. 4.7 Table Final result.

N	%	Intelligence profile	
1	90	PH	Philosophical (PH)
2	72	CR	Creative (CR)
3	49	IA	Intrapersonal (IA)
4	47	BK	Bodily-kinesthetic (BK)
5	45	MR	Musical-rhythmic (MR)
6	45	VS	Visual-spatial (VS)
7	42	IE	Interpersonal (IE)
8	35	LM	Logical-mathematical (LM)
9	18	BM	Business-Mercenary (BM)
10	16	VL	Verbal-linguistic (VL)
11	8	NL	Naturalistic (NL)
12	6	AS	Ascetic-Sacrificial(AS)

Fig. 4.8. Intelligence profile table based on MI rating

	%	No	Broad field
1	63	06	Information and Communication Technologies (ICTs)
2	58	01	Education
3	55	05	Natural sciences, mathematics and statistics
4	47	07	Engineering, manufacturing and construction
5	42	03	Social sciences, journalism and information
6	38	10	Services
7	37	09	Health and welfare
8	35	02	Arts and humanities
9	35	04	Business, administration and law
10	34	08	Agriculture, forestry, fisheries and veterinary

Fig. 4.9 Broad field of recommended personality specialization

	%	No	Narrow field
1	63	061	Information and Communication Technologies (ICTs)
2	62	051	Biological and related sciences
3	62	053	Physical sciences
4	58	011	Education
5	58	023	Languages
6	55	032	Journalism and information
7	54	071	Engineering and engineering trades
8	52	092	Welfare
9	49	103	Security services
10	48	081	Agriculture

Fig. 4.10 Narrow field of recommended personality specialization

	%	No	Skills
1	75	0322	Library, information and archival studies
2	68	0711	Chemical engineering and processes
3	68	0712	Environmental protection technology
4	68	0716	Motor vehicles, ships and aircraft
5	63	0611	Computer use
6	63	0612	Database and network design and administration
7	63	0613	Software and applications development and analysis
8	63	0713	Electricity and energy
9	63	0714	Electronics and automation
10	63	0715	Mechanics and metal trades

Fig. 4.11. Recommended personality specialization

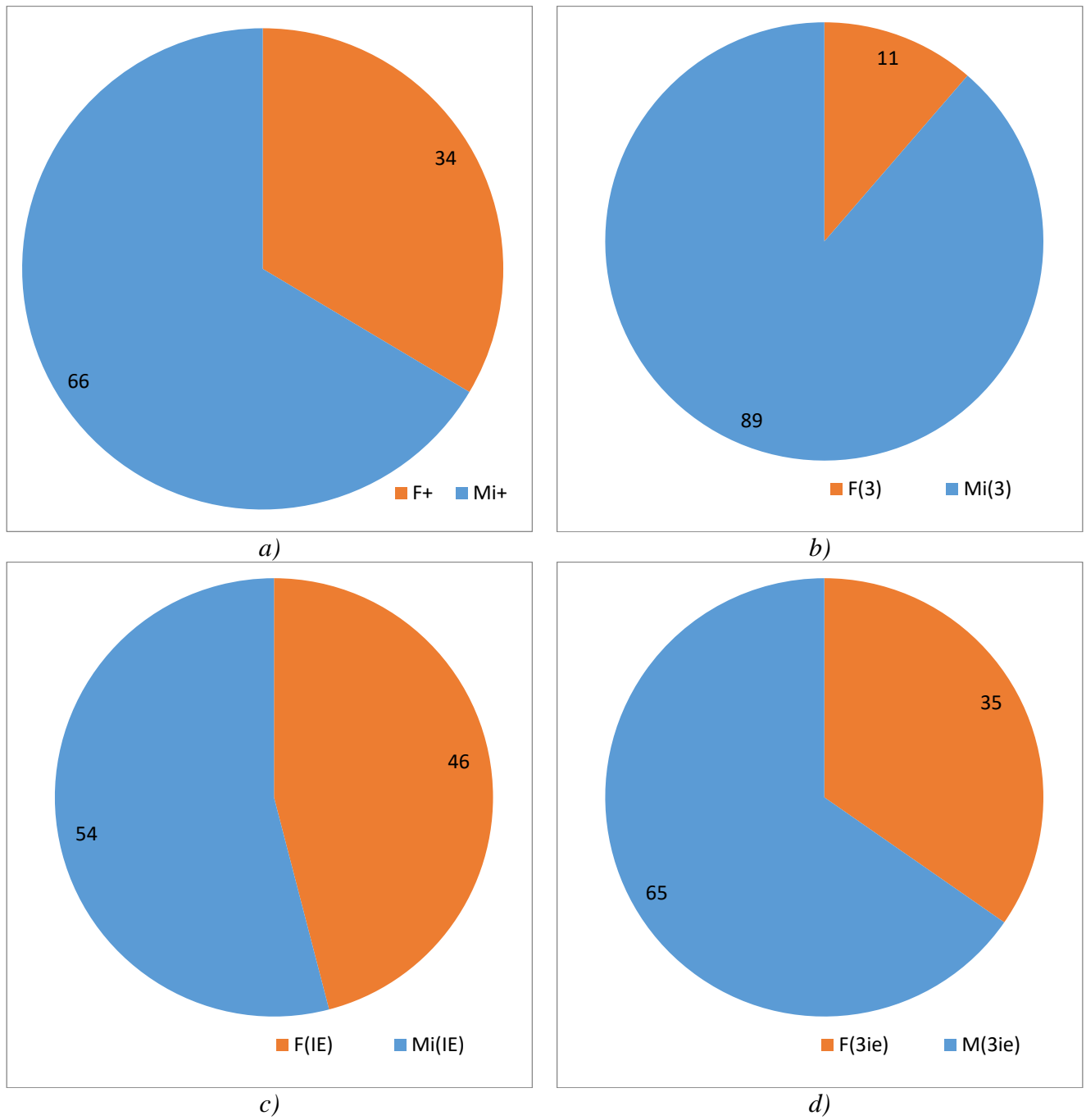


Fig. 4.12.

In the fig. 4.14 there is ratio between conscious and conscious response during current PPT. In the left bottom part of the chart there is graph of sum Pearson's correlation coefficient. It's counted on graphs I(t) and E(t) from the file **YYY-MM-DD hh_mm_ss_M.xlsx**.

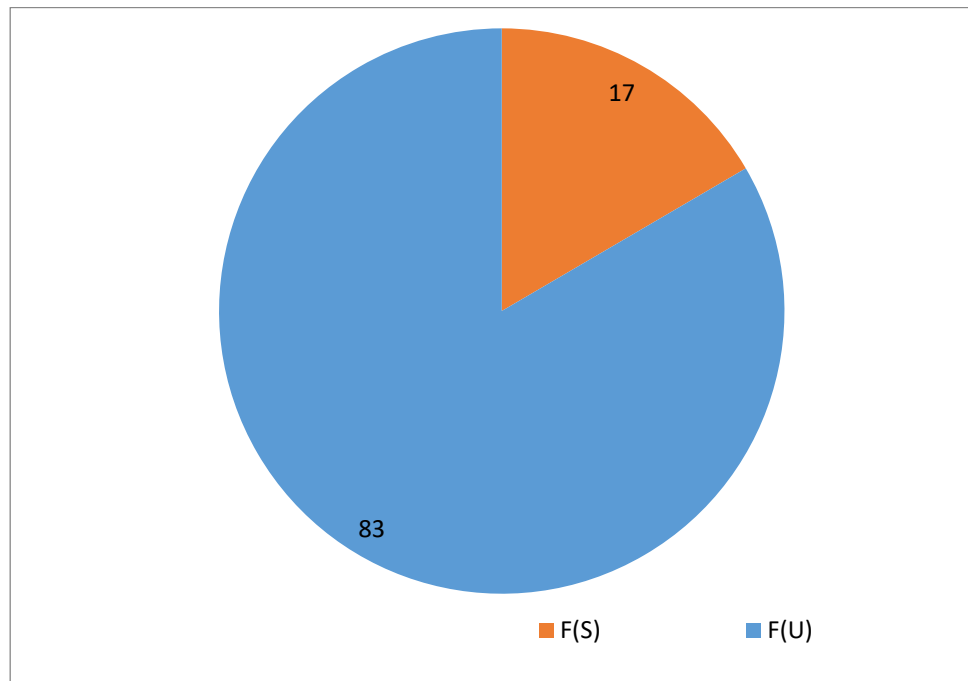


Fig. 4.13. .

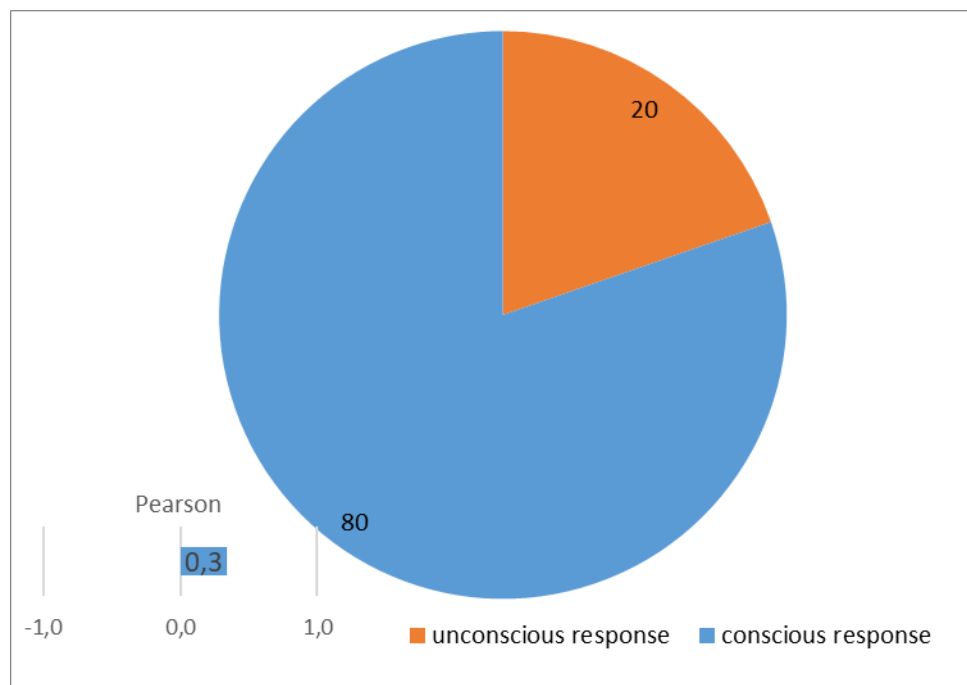


Fig. 4.14. Ratio between conscious and conscious response during current PPT.

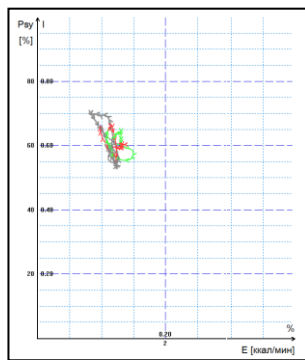
Given MI profile data are the testing VibraNLP results of Viktor Minkin, the author and inventor of this method and VibraNLP program.

4.2 Graphs of PPT changes

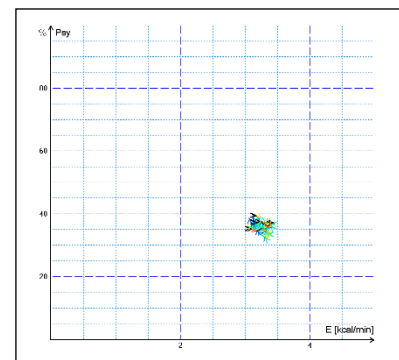
Changing of I-E state of a person to a controlled period of time clearly displayed on the graph (see fig. 4.15). Only a person who is in a relaxed or in a state of high concentration (see fig. 4.15b) may be in a fixed I-E state during such insignificant time as 1 minute. Most of the people make a noticeable fluctuations of I-E state, even for short periods of time, depending on their thoughts (see fig. 4.15a) and under the influence of the environment (see fig. 4.15c).

Color line of I-E state changes corresponds to the «color» of the test question:

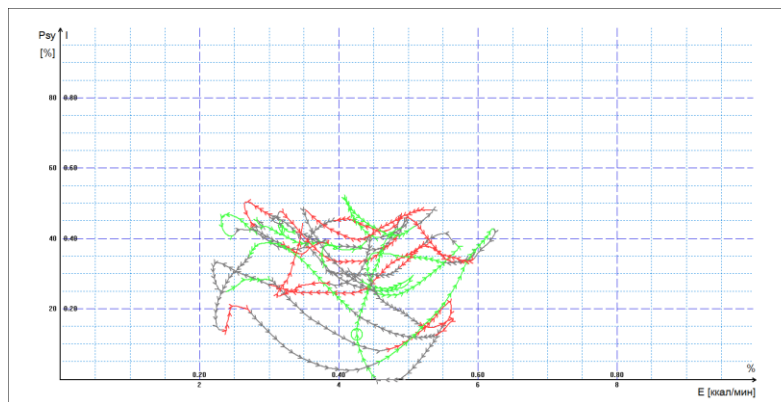
- time between questions – grey;
- control questions – green;
- relevant questions – red.



a) Changing around the average value



b) Stable condition, indicating a high degree of self-control person..




c) Periodic change I-E state along a certain trajectory, usually characteristic for an interview, type a question-answer

Fig. 4.15 (a, b, c). Change person psycho-energy conditions for the chosen period.

User can see I-E state graph on tabs  on the main window.

4.3 Frequency histogram of PPT

The frequency histogram (Fig. 4.16) of PPT shows the total distribution of the tested person vibrations for all the test time. The similarity of the received histogram to the normal law of distribution means a normal state of the tested person during the test. Asymmetry or multimodality of the received histogram argue of certain deviations from the norm during the test.

User can see histograms on tab  on the main window. Each histogram is characterized by the following parameters:

- M – the center of weights of frequency distribution (average value of microvibrations frequency);
- S – root-mean-square deviation of frequency distribution;
- D – a dispersion of frequency distribution.

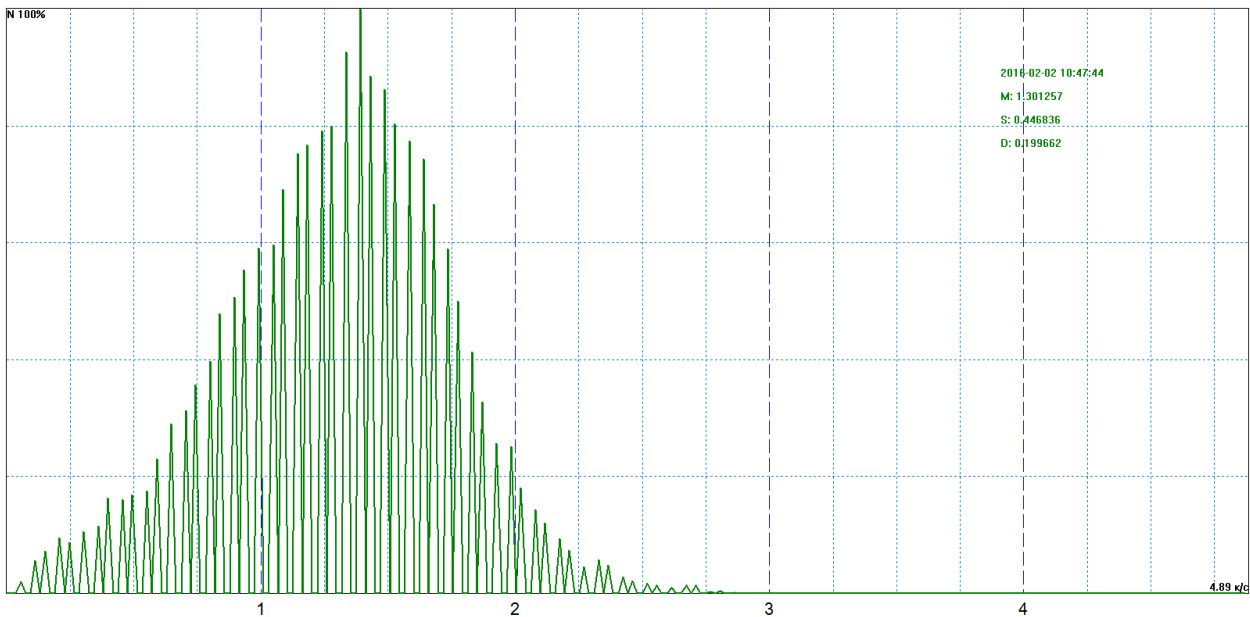


Fig. 4.16 Example of frequency distribution histograms.

5.4 Psychophysiological status of the person

1. Every from T1-T10 psychophysiological parameters measured by vibraimage system are specified to range 0 - 1 (0 - 100) % using fixed coefficients experimentally selected.

2. Mathematical formula by which measured psychophysiological parameter is determined is primary, and a code name (for example, Aggression) is secondary. Psychophysiological meaning of each parameter T1-T10 may be varied depending on the experimental conditions.

3. The set of measured parameters T1-T10 determines the total psychophysiological (psychosomatic, functional) status of a person based on the integral coefficient K.

Statistical processing of parameters measured in a mode «**M**» is carried out by the program Vibrastat.

On Psy variability-Mental basal metabolism diagram (see more information in ch. 4.3) changing of person's state is highlighted with different colors. For example, last question link with red color.

For more information about this file (Fig. 4.17) refer to «Behavior Detection System. VibraImage 10 PRO. Manual», http://www.psymaker.com/downloads/VI10_ManualEng.pdf in the section «M Mode».

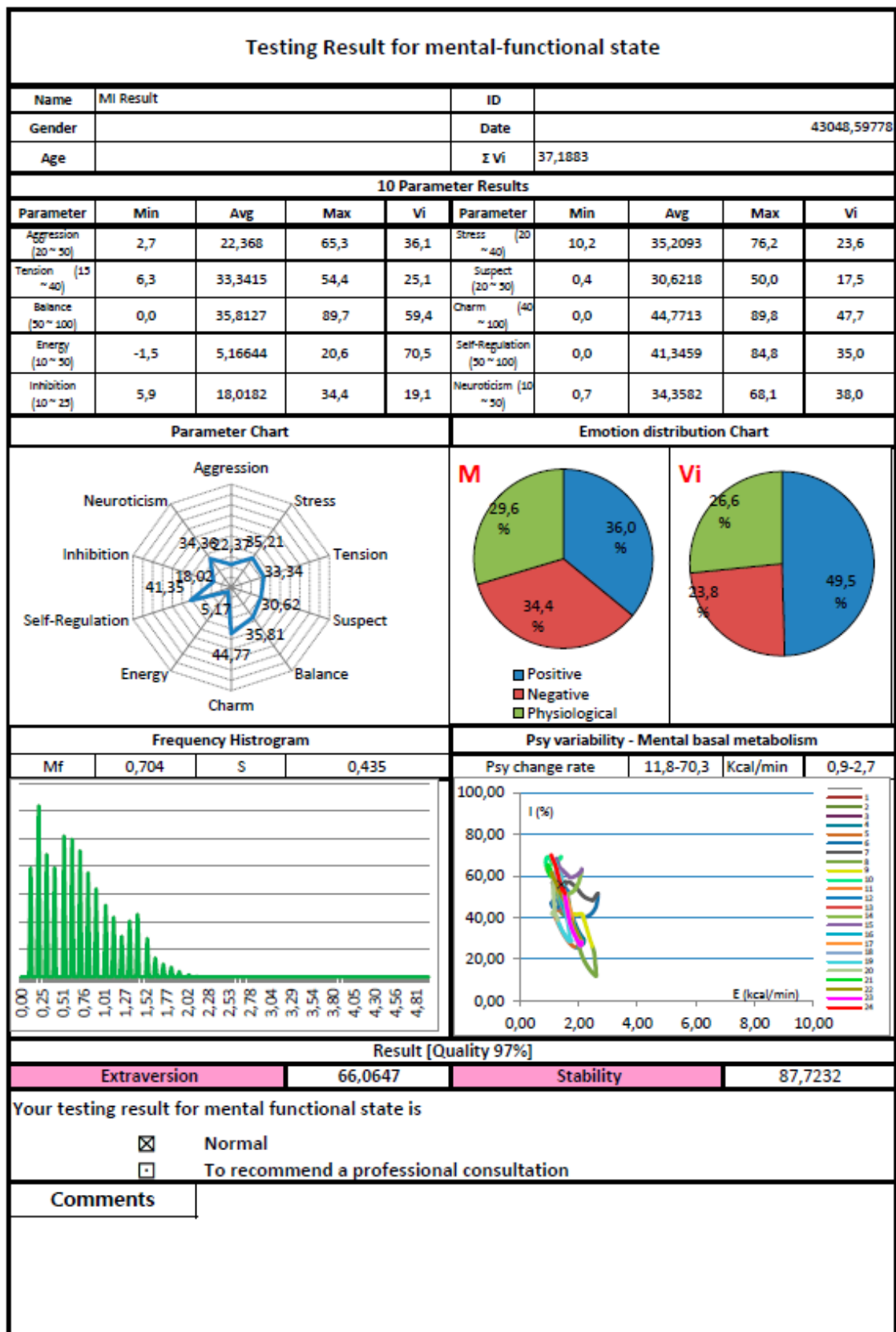


Fig. 4.17 Psycho-emotional status of the person

5.5 Recording of technical test results. Excel file start

Full record of values parameters registered by vibraimage system is recorded to a text file with the ending row. This file can be used for statistical research and testing of algorithms for determining PPS and PFT.

This file can be copied and transferred to Excel for self-treatment.

Note, if Macros have been disabled in current Excel program you need to start Macros in manual mode. In this case after test finishing you will see empty table as it is shown on fig. 4.18.

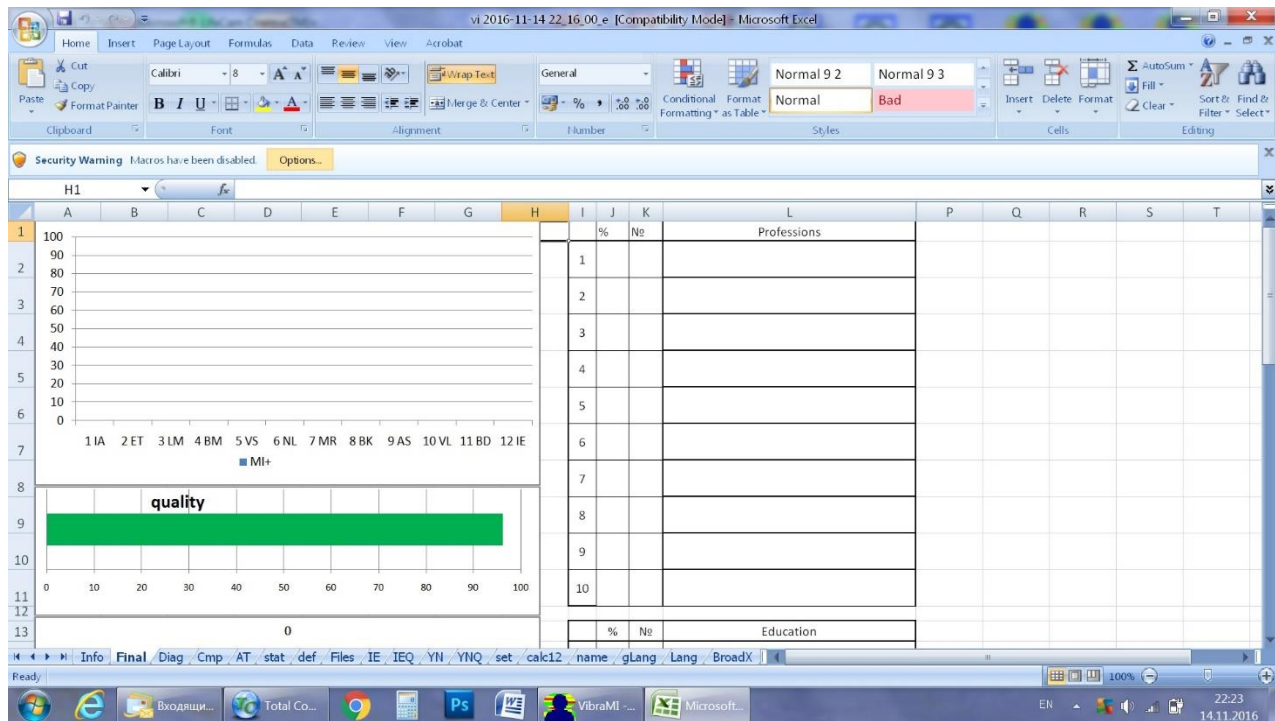


Fig. 4.18 Empty table of excel file with disabled macros

In this case you need to enable Macros function in the manual mode as it is shown on the fig. 4.19.

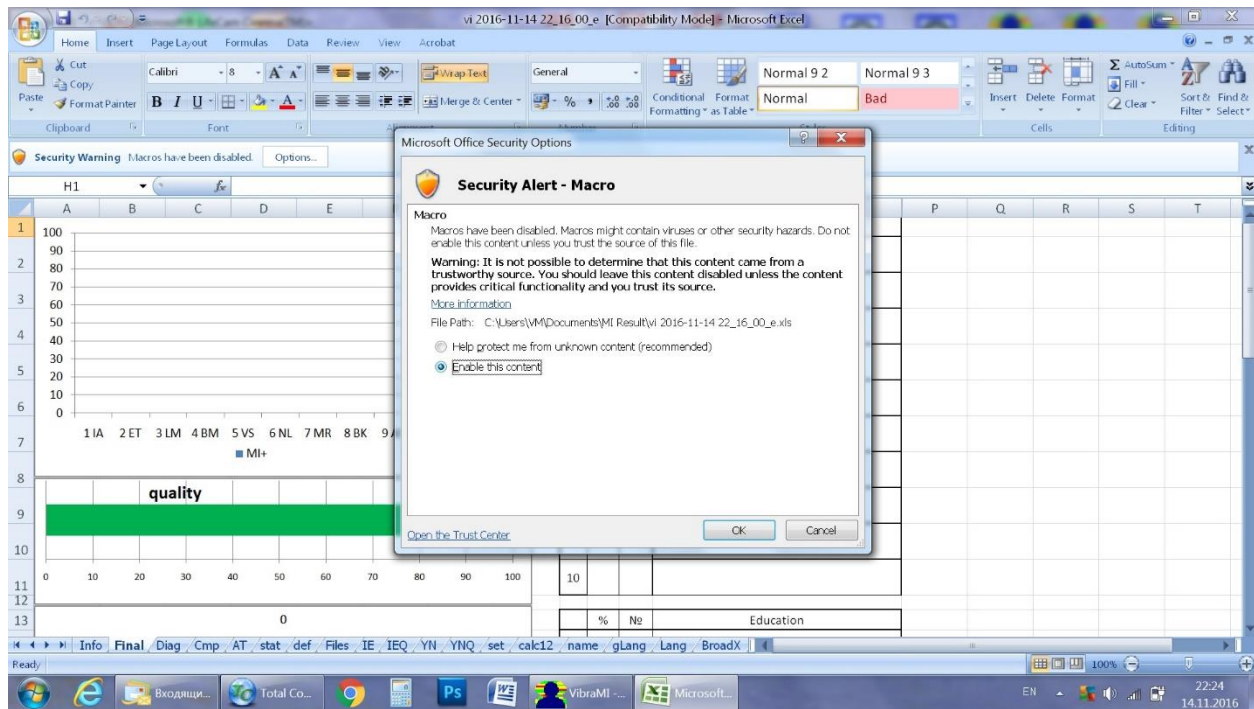


Fig. 4.19 Macros enable function start

Concrete interface of Macros function enabled depends on the version of stand Excel program and can differs from fig. 4.18 and 4.19. So you need to use Excel help for starting Macros function in the opened file for calculation of MI parameters.

6 Warranty

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

ATTENTION!

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July 2020

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