

Blitz Judgment. Profiling System

MI-Sins

Version 10.2.3.167

MANUAL

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Saint Petersburg

2022

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1 Introduction

Welcome to the **VibraImage** World! Thank you for using **MI-Sins Blitz Judgment Profiling System**. This Manual is written to support detail profiling including detection of positive and negative personality characteristics.

VibraImage technology measures micromovement (micro motion, vibration) of a 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. MI-Sins system detects human emotions by the control of three-dimensional (3D) head-neck movements and fluctuations, accumulated as frame difference in several video frames.

Blitz Judgment Profiling (MI-Sins) is the method of adaptive psychophysiological testing with the use of neurolinguistic profiling with the presentation of multifactorial stimuli, individually calculated at pretesting stage. Linear structure of negative personality characteristics and addictions (vices, sins) is uniquely tied to the of multiple intelligences by extraversion level increases. The method of positive and negative personality traits testing, using vibraimage technology and presentation of text and visual 48 stimuli with the 5 seconds presentation period (blitz) gives high accuracy profiling result in 250 second testing. The calculation of a person's vices (sins) profile and personality righteousness (virtue/sins ratio) is based on the unconscious and conscious responses to the presented stimuli. Blitz Judgment Profiling System increase the accuracy of personality profiling by replacing psychophysiological prediction to the study on a psychophysiological simulator, in which real personality characteristics are measured.

1.1 Basic applications

MI-Sins is psychometric program of adaptive psychophysiological testing with the use of neurolinguistic profiling with the presentation of visual and text multifactorial stimuli.

Blitz Judgment Profiling System MI-Sins targets the following:

- detection of MI profile during pretesting;
- selection of two leading MI types;
- presentation of multifactorial stimuli tied with two leading MI types and 12 sins (vices);
- detection of Sins (Vices) personal profile;
- detection of main personal sins (vices);
- calculation of personality righteousness (virtue/sins ratio).

More details about methods described in publications:

DOI: 10.25696/ELSYS.VC5.EN.03

DOI: 10.25696/ELSYS.VC5.EN.05

1.2 Computer and Camera Requirements

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 30

1.2.2 Digital (web) camera requirements

- Resolution, pixel, not less 640 x 480
- USB compatible USB 2.0, USB 3.0
- Frame speed, FPS, higher 30
- Exposition control main and auto
- Color mode (b/w preferable in settings) b/w
- Flicker mode Flicker 50 Hz and 60 Hz

1.2.3 System requirements for computer

- Operation System Windows 10 or later 64-bit only
- MS Office 2015 or later
- Processor Intel I5 or higher
- RAM more than 8 Gb
- HDD more than 100 Mb free space
- USB port 1 free USB ports version USB 2.0 or higher
- Video capture WDM-compatible video device

1.3 Package contents

- | | | | |
|----|-------------------------------|---|------------|
| 1. | MI-Sins software | - | 1 |
| 2. | Activation code or dongle | - | 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 MI-Sins system themselves.

Recommended to use Microsoft LifeCam Studio webcam or similar with parameters not worse than this webcam.

1.4 Requirements for Blitz Judgment

The basis of the MI-Sins program is vibraimage technology giving high-quality profiling result only by analyzing high-quality video. Users must fulfill all requirements of points 1.2.1, 1.2.2, 1.2.3. as:

- investigated person stand or sit in front of a camera and not leaning his head to any object;
- fix a camera (on the wall, on the tripod, etc.) in front of the tested person;
- face lighting should be uniform;
- camera should be focused on the person's face
- facial image on a monitor must be contrast to background

Fig. 1.1 shows standard position of sitting subject in front of the camera, and fig. 1.2 – the standard image of the subject in the frame.

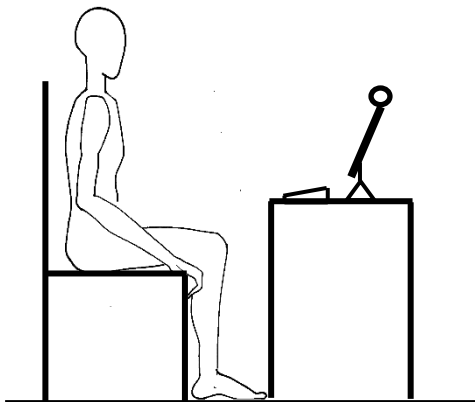


Fig. 1.1 Test conditions

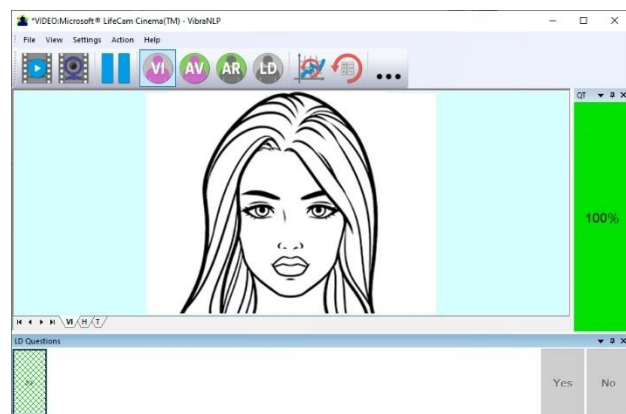


Fig. 1.2 Image of a subject in the frame

For convenience by default, the automatic video Quality Test is enabled (see section 2.4.5), then an assessment as a percentage of video quality will appear on the right side of the program.

2 MI-Sins software installation

It is necessary to execute the following actions for MI-Sins program installation on your computer:

1. Go to Web page <http://www.psymaker.com/support/downloads/>
2. Download file setupMI_Sins.exe by link http://www.psymaker.com/downloads/setupMI_Sins.exe
3. Run file setupMI_Sins.exe
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. Selecting an additional icon allows to display the icon on the computer desktop.
10. Press button «Install» at the start of installation.
11. Press button «Finish» at the end of installation.
12. MI-Sins program icon appears after the end of installation in system menu on desktop of your computer.
13. To reboot a computer.
14. Verify that the camera is connected to the computer and run the program.

2.1 MI-Sins software activation

Note: MI-Sins has 5 free starts without activation procedure however with requirement an access to the Internet.

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_MIS
5. MI-Sins supports dongle of Vibraimage PRO and MiSins dongle.

2.1.1 Standard activation

1. Run MI-Sins program to begin an activation.
2. At the first start of the program, the activation window could be displayed (Fig. 2.1).

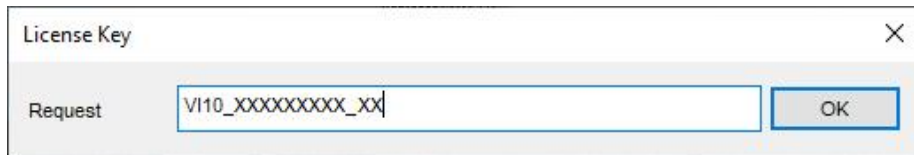


Fig. 2.1. Activation window.

3. In the field «Request» it is necessary to enter the activation code received by e-mail or specified by the seller (Fig.2.1)

Attention!

Please, be careful and paste code without additional gaps!

4. After input of activation code to press the button «OK».

5. The activation code will be checked up through the Internet and, MI-Sins will start automatically in case of successful end of activation procedure.

6. Start to work with the system in accordance with this manual.

2.2 MI-Sins reinstallation

Note, it is recommended to uninstall the MI-Sins 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 MI-Sins has been installed.
2. Start program to reinstall on a new computer.
3. In the menu «Help» (Fig. 2.2) choose the item «About MI-Sins...» (Fig. 2.2).

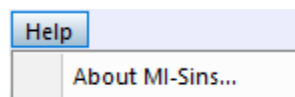


Fig. 2.2. Menu «Help»

4. In the opened window press the button «Unregister key» (Fig. 2.3).
5. Close the program.
6. Connect a new computer to Internet.
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.

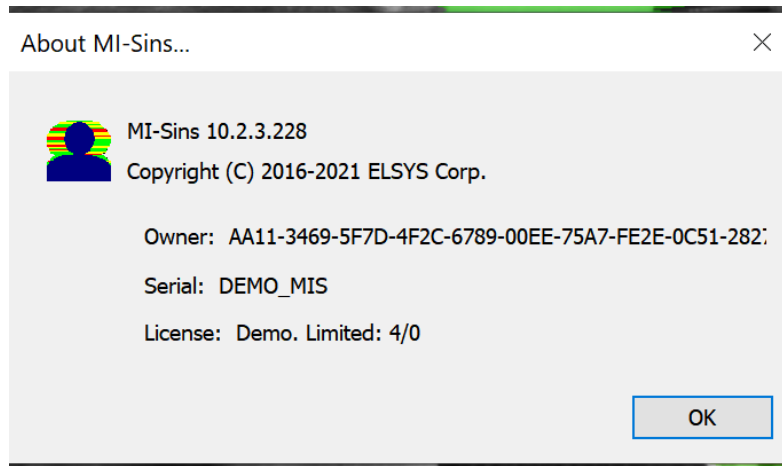


Fig. 2.3. Information about MI-Sins program by DEMO start

2.3 First start

1. After successful activation of the program at the first start, if camera was not connected to PC, you will see the program window shown on Fig. 2.4.

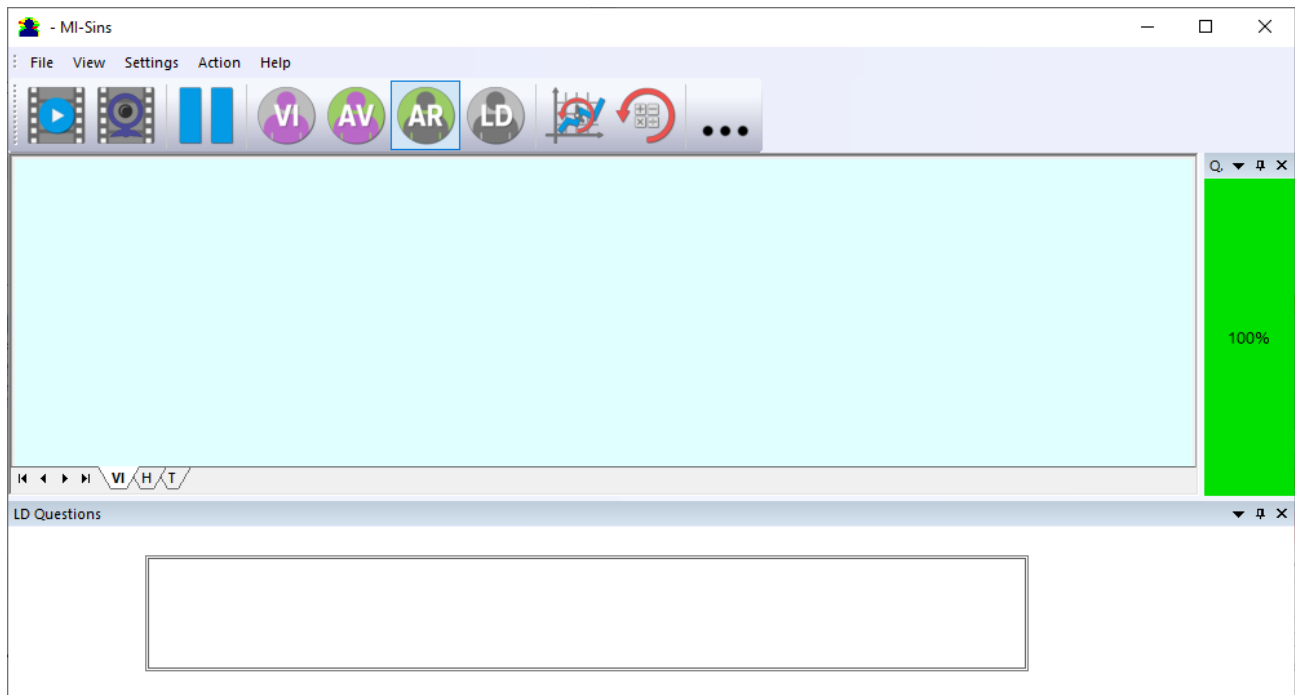


Fig. 2.4. First start

2. Select program language (Fig. 2.5) in the menu "**Settings**" => "**Language**". Default language is English.

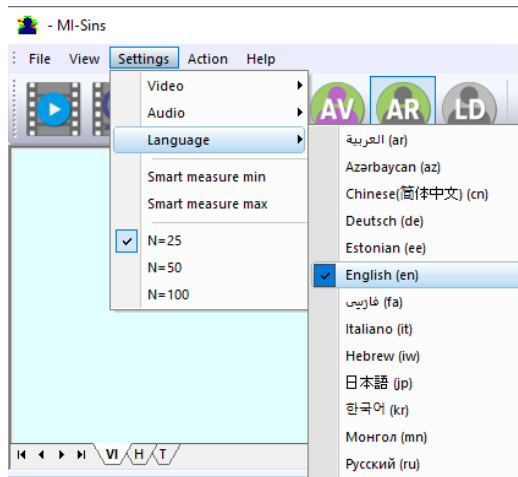


Fig. 2.5. Selecting a language

3. Select a camera in the menu “Settings” => “Video” (on a Fig. 2.6 – Microsoft Lifecam Cinema).

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.

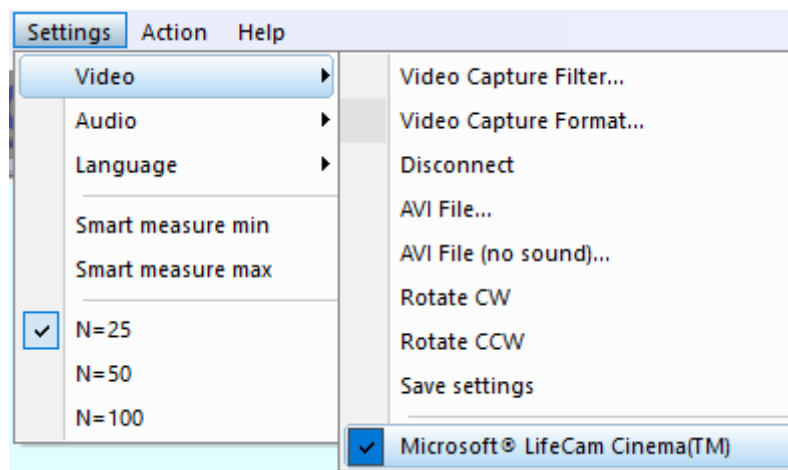


Fig. 2.6. Selecting a camera

4. Set the camera parameters (see section 2.4).
5. Check video quality (see section 2.4.5). 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 12_VICE_EN as shown in fig. 2.7. Or select questionnaire from your language. Current MI-Sins program includes questionnaires on Chinese, English and Russian languages.

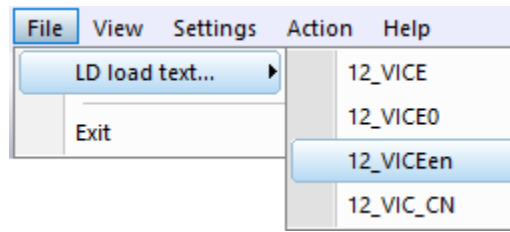


Fig. 2.7. Selecting a questionnaire

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 paragraph 4).

After end of the test program MI-Sins automatically creates result file **YYY-MM-DD hh_mm_ss_M.xml** in the directory «C:\Users\user\Documents\MI-Sins». In all files in names **YYYY-MM-DD** and **hh_mm_ss** date and time of measurement.

2.4 Camera's setting

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

2.4.1 Video camera choice

It is necessary to select in the main menu «**Settings**» => «**Video**» => «**.../name used camera/...**». In figure 2.6 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. 2.6), and the menu will be extended with the «**Video capture filter...**» and «**Video capture format...**».

MI-Sins 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.

2.4.2 Video capture filter

Select «**Video capture filter.....**» in the submenu «**Video**» (Fig. 2.6) 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 2.8 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**».

After a choice of the “**Video capture filter...**” the window “**Settings**” will open. Settings window differs depends on camera type. Figure 2.8 shows the “**Properties**” window for the Microsoft LifeCam Cinema.

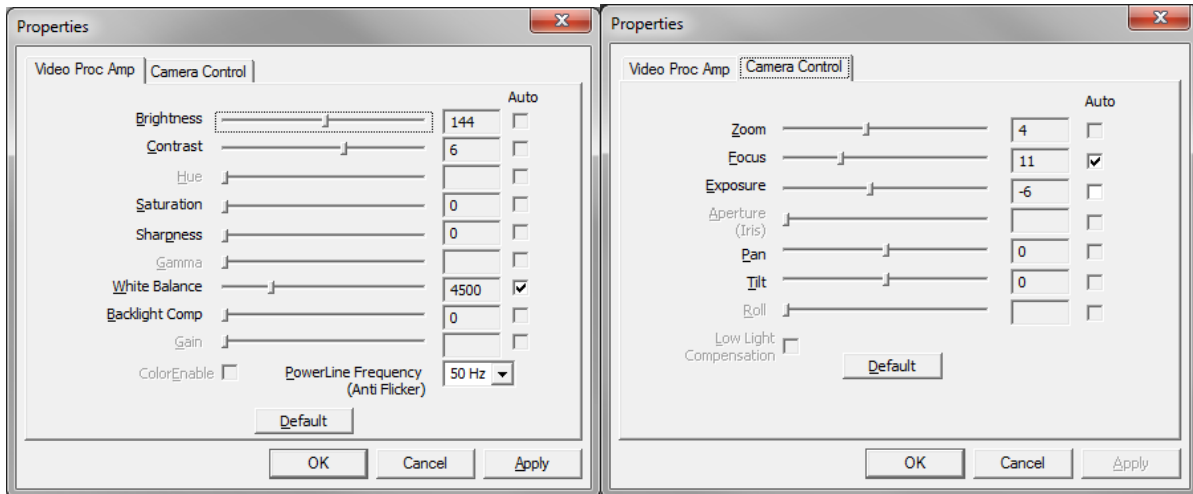


Fig. 2.8. Windows with settings for «Microsoft LifeCam Cinema»

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. 2.6).

2.4.3 Video capture format

Select «**Video capture filter...**» in the submenu «**Video**» (Fig. 2.6) 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. 2.9).

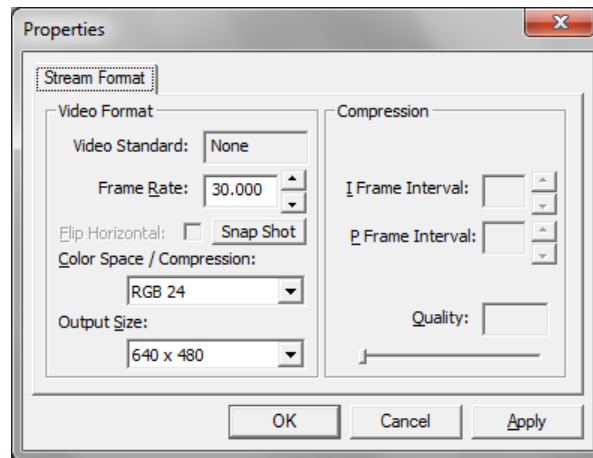


Fig. 2.9. Window «Video capture format».

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

2.4.4 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. 2.10) and manual regulation of illumination in case of a constant illumination (Fig. 2.11). The inscription «Warning! Low quality (1)» in the upper left corner of the image is normal, because there is no a person's face on the video.

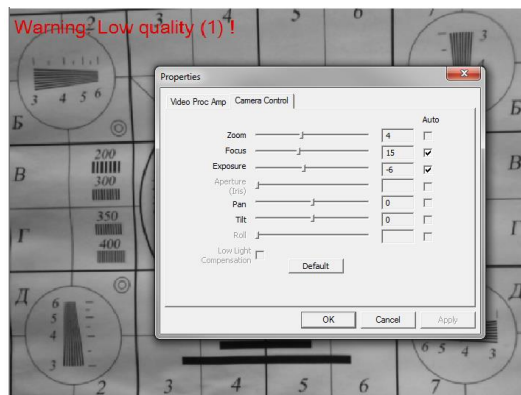


Fig. 2.10. Checking the camera settings on the test table, automatic regulation of the exposure (mode is recommended for unstable object illumination).

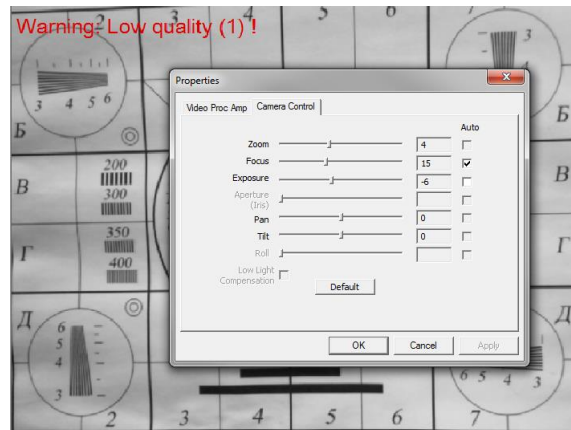


Fig. 2.11. Checking the camera settings on the test table, manual regulation of the exposure (mode is recommended for stable object illumination).

2.4.5 Video quality auto checking function

The MI-Sins 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 right side of the program (Fig. 2.12).

The final result will be correct only if there is no video error message for more than 80 % of the measurement time.

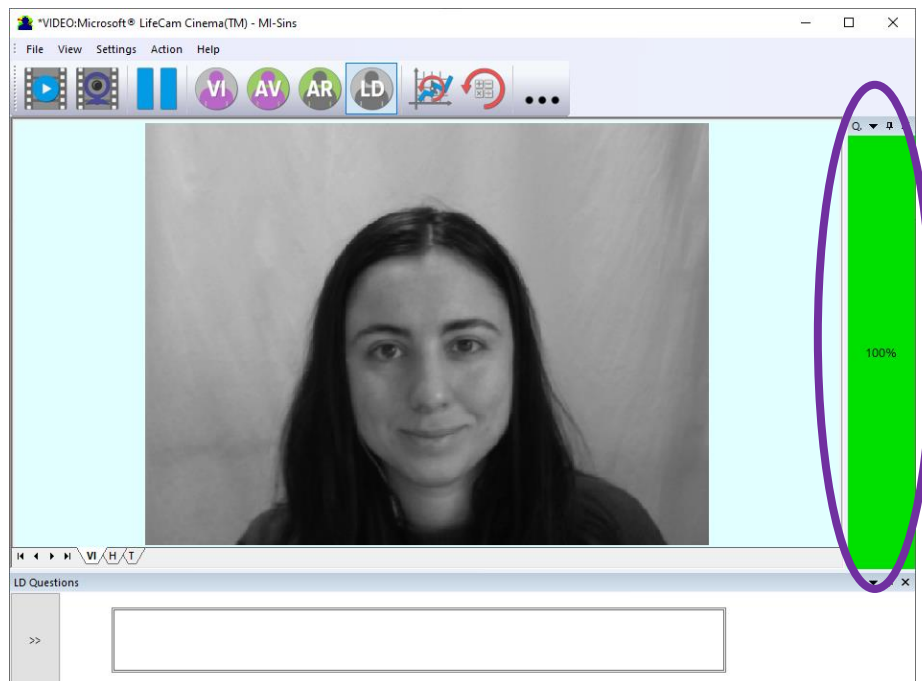


Fig. 2.12. “Quality test”

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 (it is recommended) or start zoom function on camera. (Fig. 2.13).

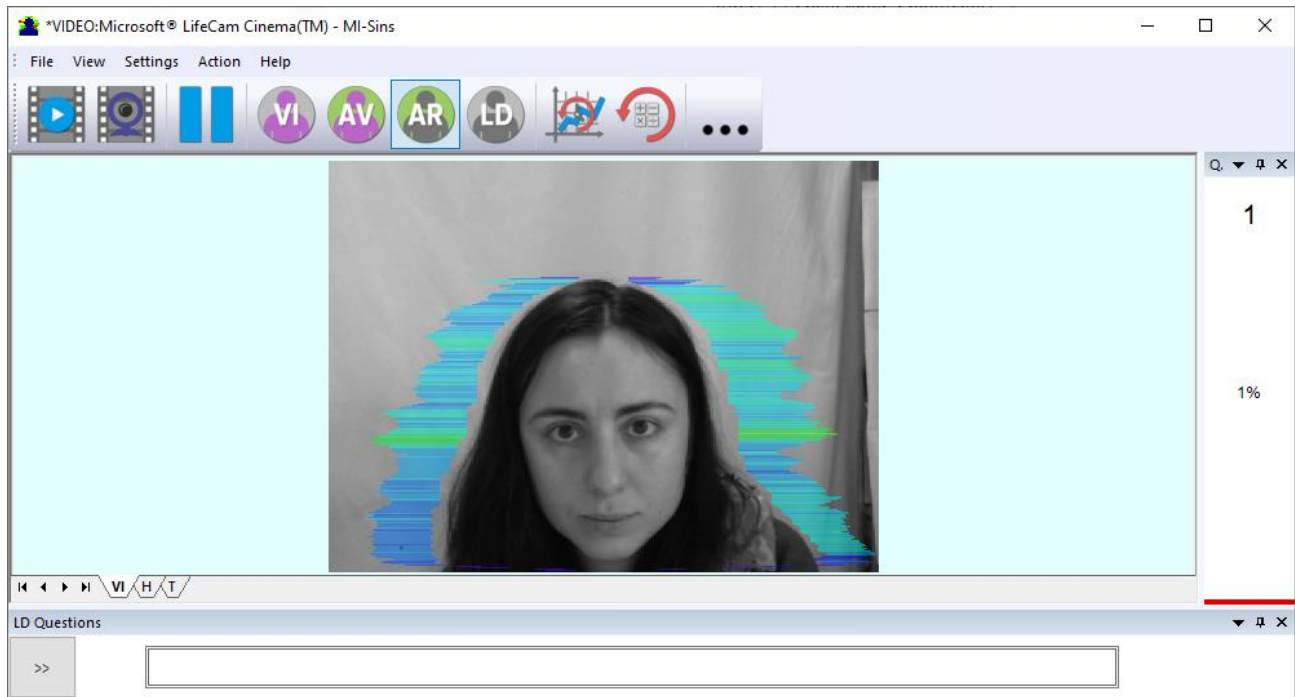


Fig. 2.13. Error 1 at the low video quality. Checking the cause is convenient in AR mode.

- **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. 2.14).

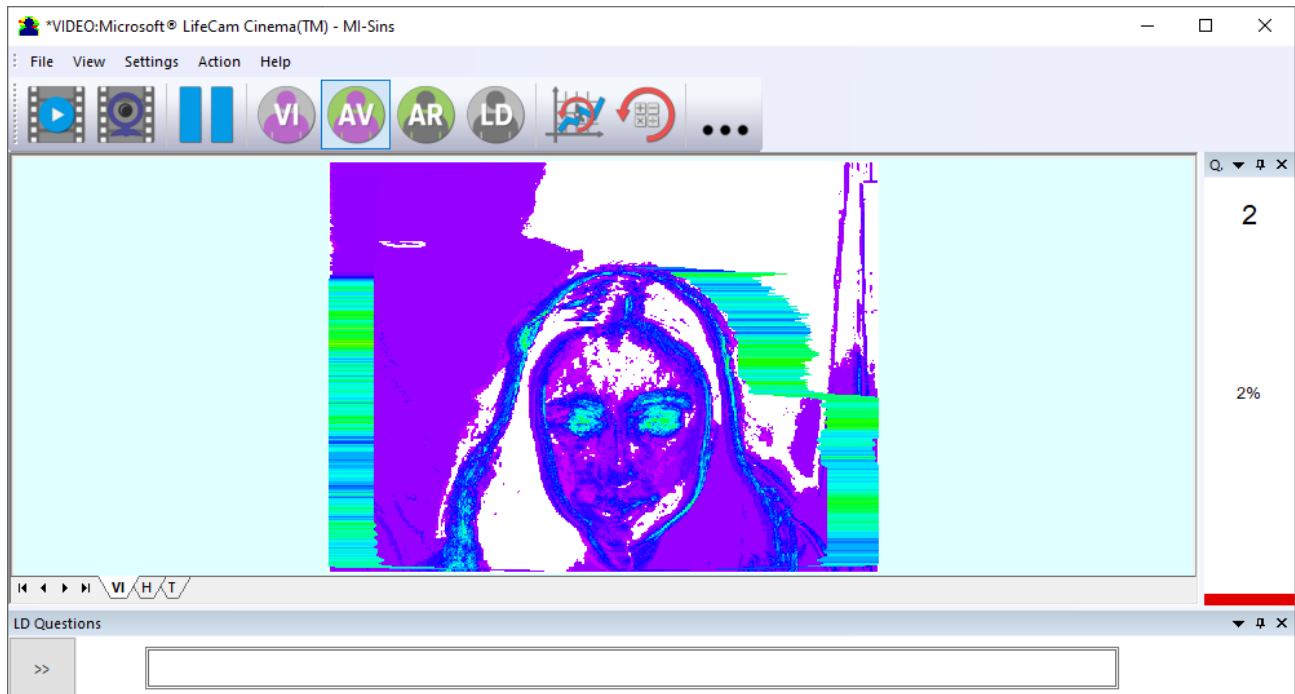


Fig. 2.14. Error 2 at the low video quality. Checking the cause is convenient in AV mode.

- **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. 2.15).

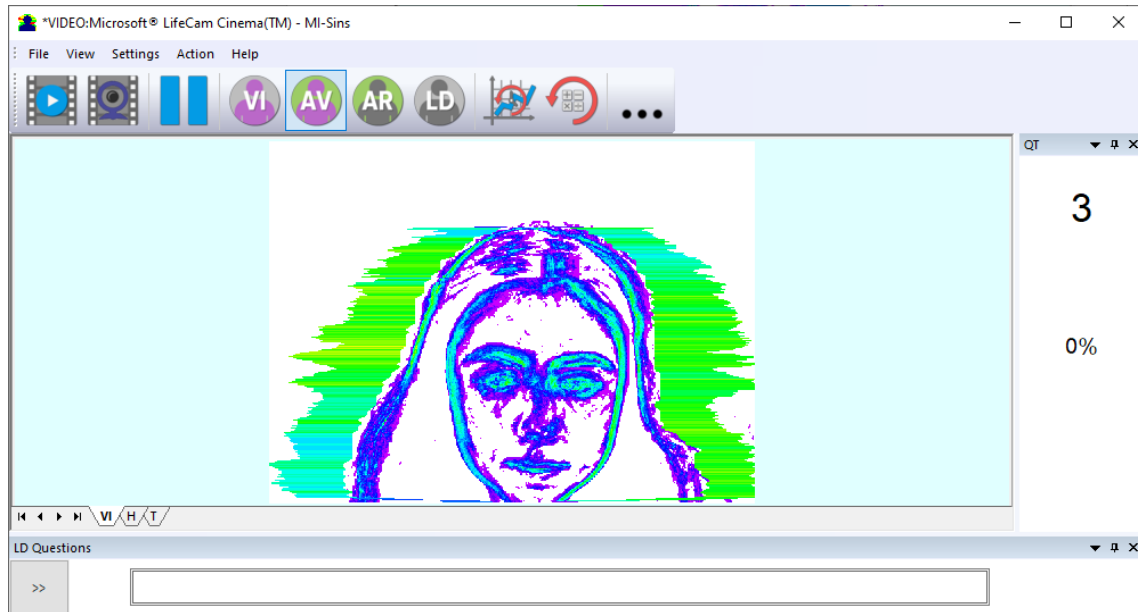


Fig. 2.15. Error 3 at the low video quality. Checking the cause is convenient in AR mode.

- **Error 4** – error-contrast image (Fig. 2.16).

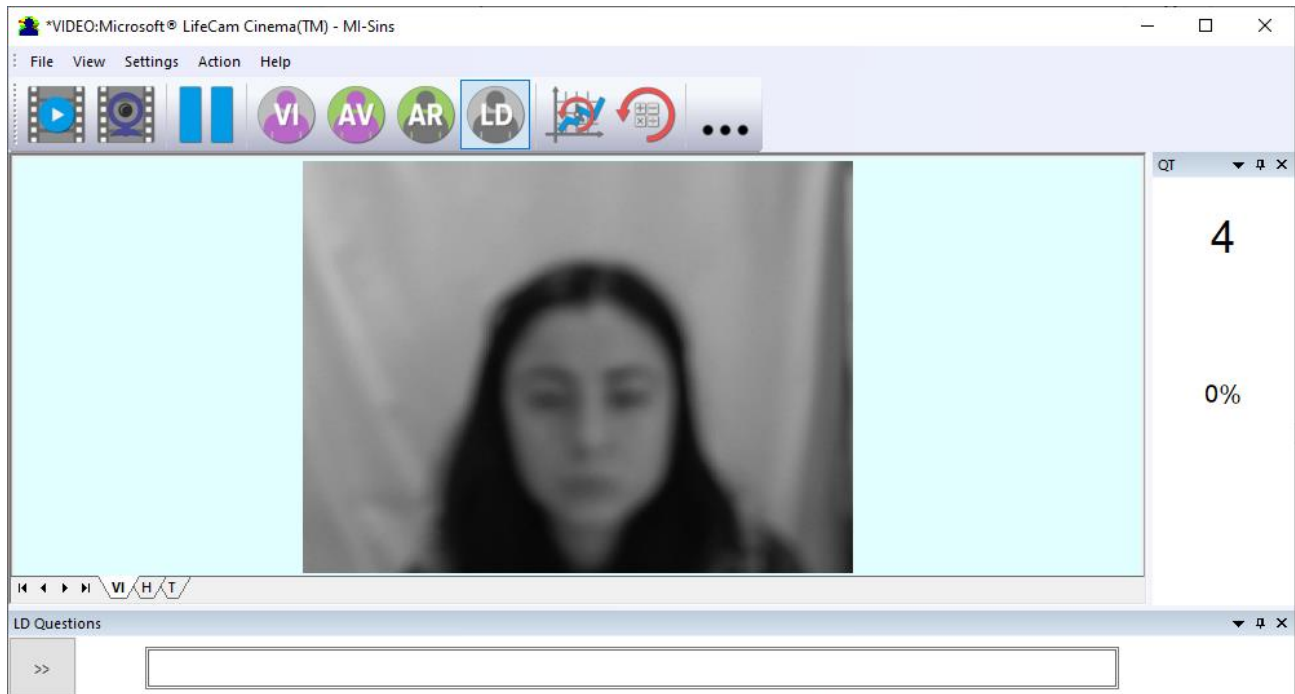


Fig. 2.16. Error 4 at the low video quality. Checking the cause is convenient in AR mode.

- **Error 5** – due to nonuniformity lighting of the face (Fig. 2.17)

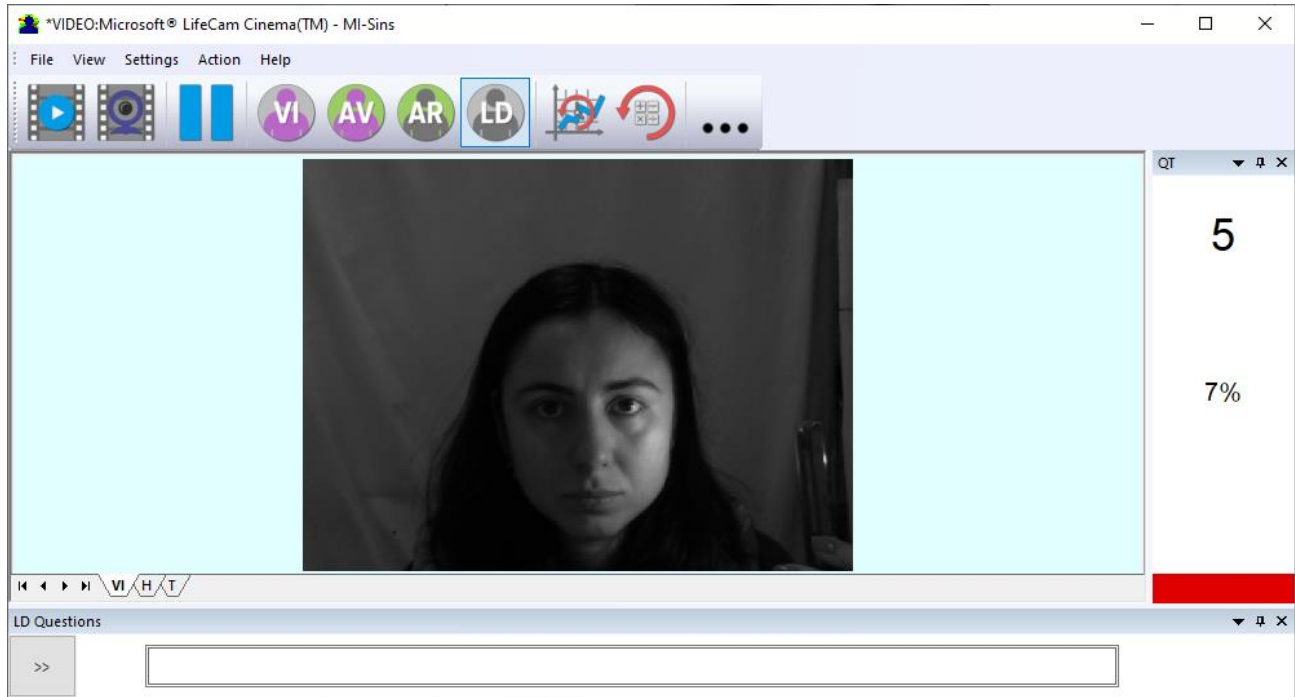


Fig. 2.17. Error 5 at the low video quality. Checking the cause is convenient in LD mode.

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 contrast, 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.

3 MI-Sins. Users manual

Video from camera or video file are displayed in basic window after starting the MI-Sins.

3.1 Basic window

In heading of the basic window the following information is indicated (Fig. 3.1):

- type of video source: Video camera or AVI file;
- model of video source: Video camera model or AVI file name;
- name of the program.

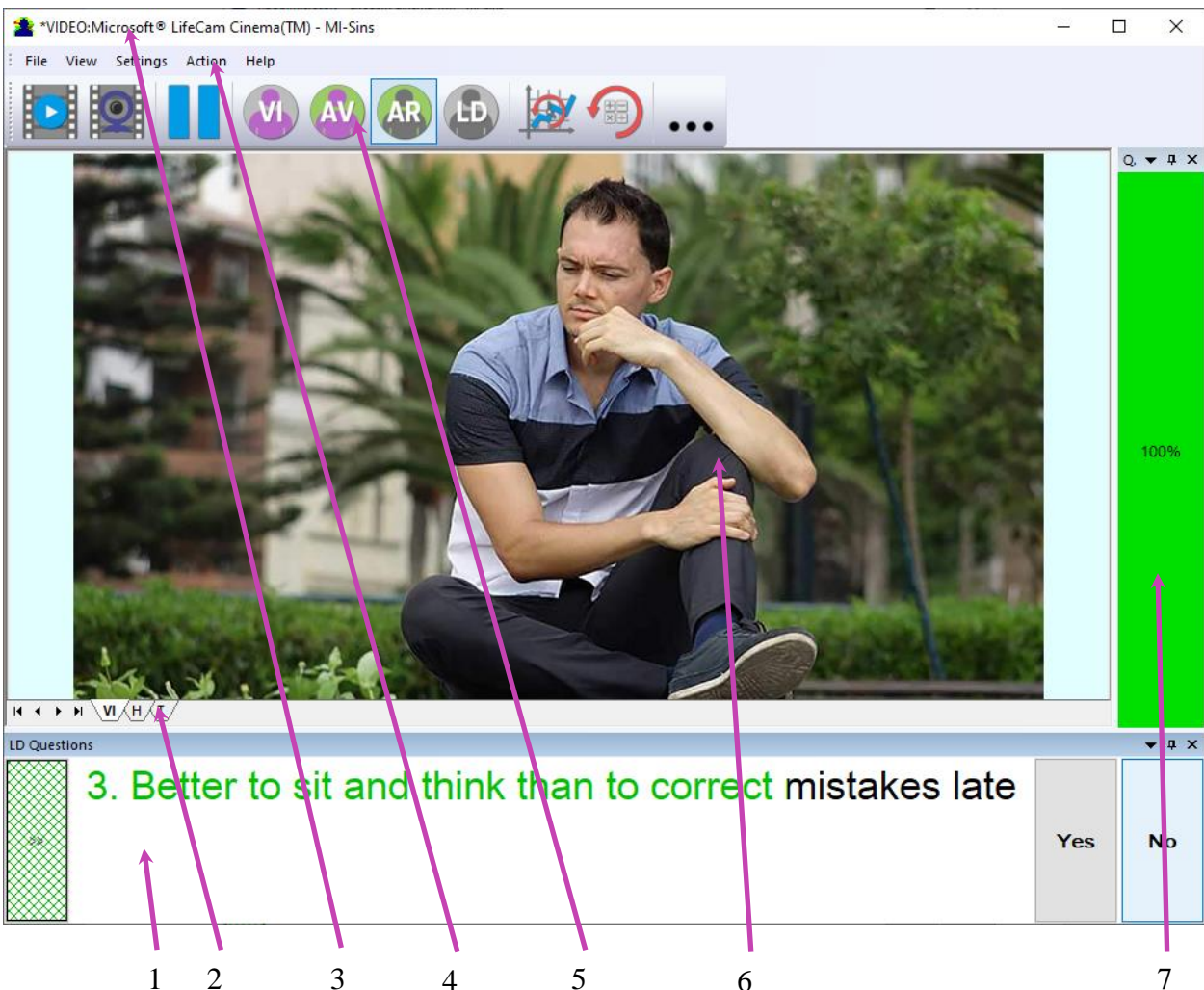


Fig. 3.1. Basic window MI-Sins

Note, double-clicking with the left mouse button in the image area **resets** all accumulated information about the inter-frame difference and starts a new cycle of data accumulation.

3.1.1 Basic window design

In total in the main window of the program in addition to the video area, you can see an additional 8 windows that display information about the parameters of mental and emotional state of a person, and program settings (on Figure 3.1 the windows labeled corresponding numbers):

1. Questionnaire panel
2. Tabs for choosing type of image
3. Name and type of a videosource
4. File, View, Settings, Action, Help – main menu.
5. Main toolbar.
6. Heading of the basic window
7. QT – image quality window

3.1.2 Windows position control

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.

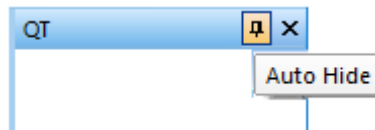


Fig. 3.2. Control element «hide window»

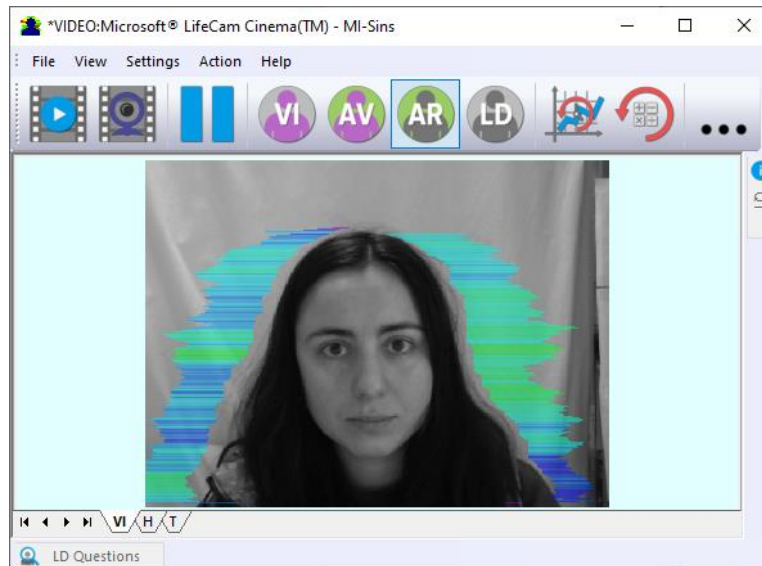


Fig. 3.3. All additional windows are hidden.

3.2 Main menu

The main menu contains the following items:

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

3.2.1 Menu «File»

Menu «File» (fig. 3.4) contains following items:

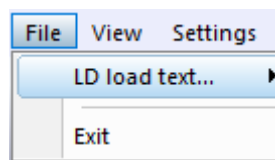


Fig. 3.4. Menu «File»

Item «LD load text...» – load questionnaire file.

Item «Exit» – allows quitting the program.

3.2.2 Menu View

Menu «**View**» (Fig. 3.5) contains following items:

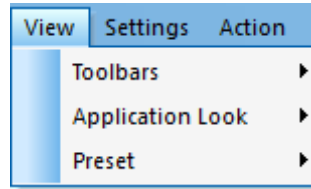


Fig. 3.5. Menu «View»

Submenu «**Toolbars**» (Fig. 3.6) - switch on/off the toolbars and additional functional windows.

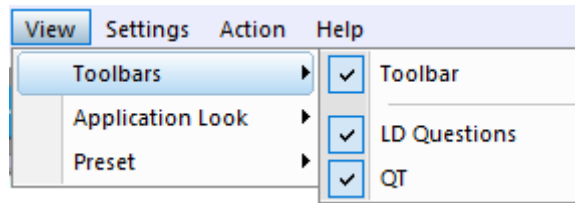


Fig. 3.6. Submenu «Toolbars»

Submenu «**Application Look**» (Fig. 3.7) contains following items:

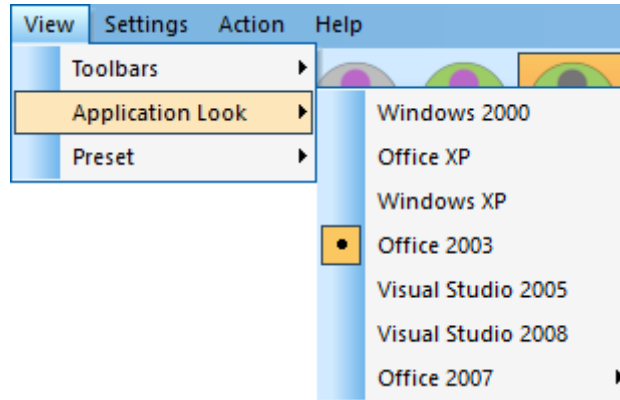
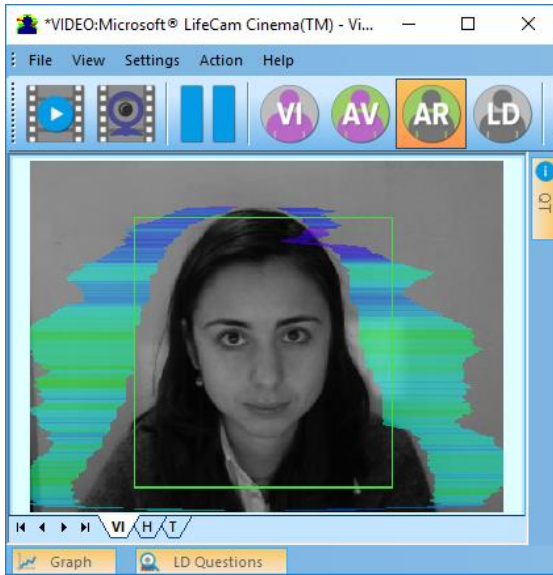
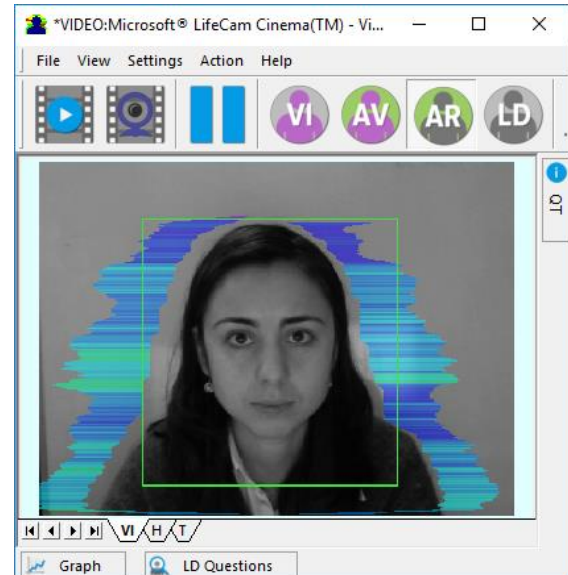


Fig. 3.7. Submenu «Application Look»

The program for the user's convenience have the ability to change the style of the main elements of the working window (Fig. 3.8). To change the style, use the submenu «**View**» - «**Application Look**» (Fig. 3.6).



a) Style "Office 2003"



b) Style "Windows 2000"

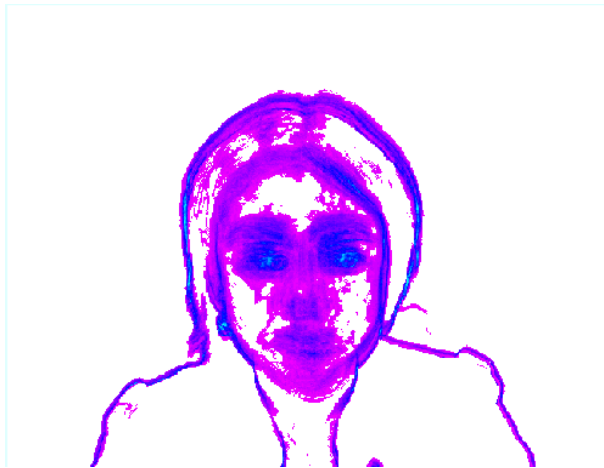
3.8 Main window with different styles.

3.2.2.1 Submenu «Preset»

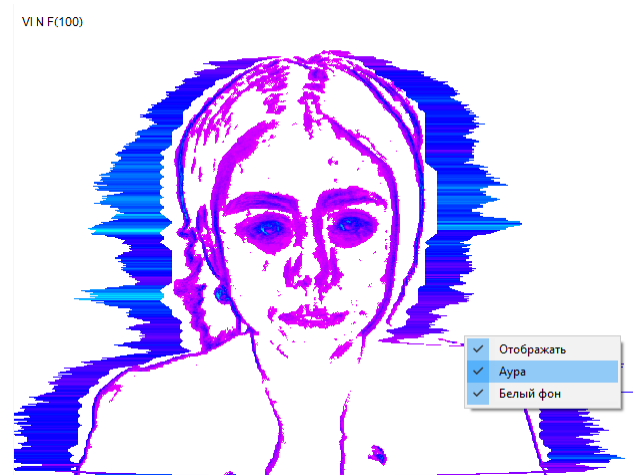
Submenu «**Preset**» defines the type of the display image:

Item «**Preset**» (Fig. 3.9) intended to choice one basic mode in image area.

- In «**VI**» mode [«VibraImage mode»] displays vibraimage of person. Color for every image pixel depends on its amplitude or frequency of vibrations (fig. 3.9a).
- In «**AV**» mode [«Aura - Vibraimage mode»] the contour of the object allocated around the vibraimage. Vibra-aura line size depends on medium line vibration amplitude. Vibra-aura line color depends on maximum line vibration frequency inside vibraimage contour (fig. 3.9b).
- In «**AR**» mode [«Aura on the Real image»] the vibra-aura of the person is shown around his real image (fig. 3.9c).
- In «**LD**» mode [«Lie Detector mode»] image area shows real object image (fig. 3.9d).



3.9a Mode VI



3.9b Mode AV



3.9c Mode AR



3.9d Mode LD

3.9 Image area in different modes

3.2.3 Menu Settings

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

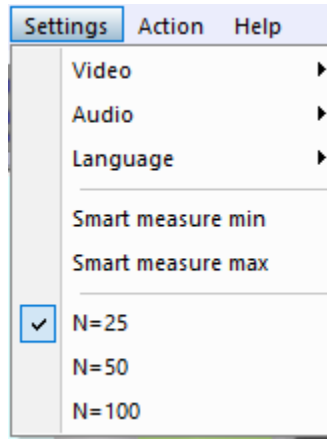


Fig. 3.10. Menu «Settings»

Submenu «**Video**» contains settings of video modes (see fig. 2.11). It can differ depending on connected devices. For example, this menu contains the following items (Fig. 3.5). You can choose as 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 2.4)

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 (for example, in figure 3.5 CamIP RTSP Example) and adjustments of their parameters the additional software CamIP.exe http://www.psymaker.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.

Submenu «**Audio**» (Fig. 3.11) contains settings of audio modes. It is can differ depending on connected devices.

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

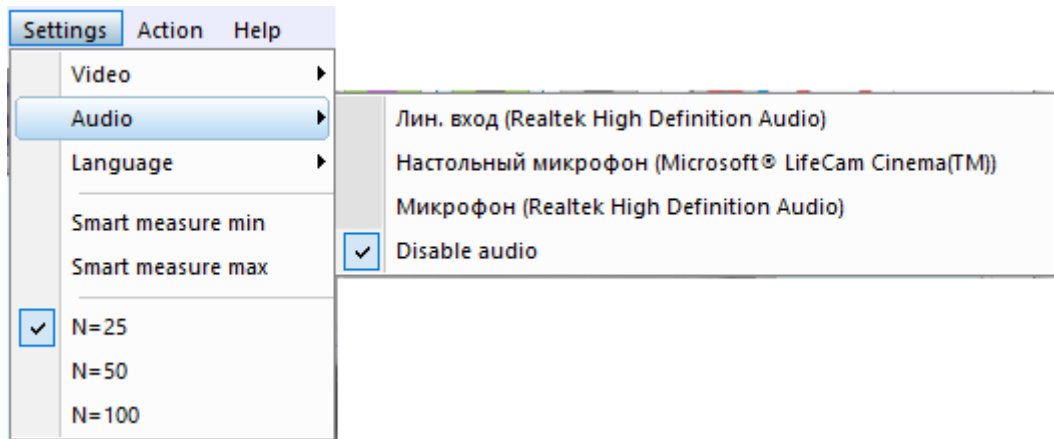


Fig. 3.11. Submenu «Audio»

Submenu « **Language** » allows to choose a language (Fig. 2.5).

«**Smart measure min**» and «**Smart measure max**» – start from minimum or maximum point of psychophysiological state. For details look <https://doi.org/10.25696/ELSYS.VC4.EN.04>

«**N**» – number of accumulated frames (25- default).

3.2.4 Menu Action

Menu «**Action**» (Fig. 3.12) contains following items:

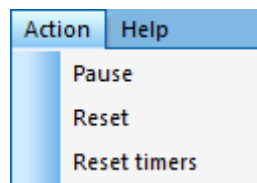


Fig. 3.12. Menu «Action»

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 panel of MI-Sins program

MI-Sins toolbar (Fig. 3.13) contains following buttons:



Fig. 3.13. MI-Sins 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 MI-Sins program shown on fig. 3.12.

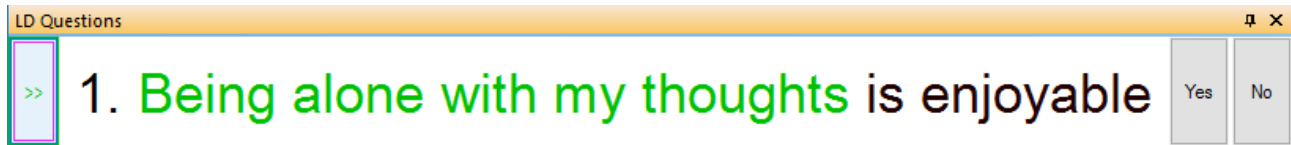


Fig. 3.12. LD bar. Starting of a questionnaire.

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, VICE12_En (Fig. 2.7), 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 \MI_Sins\ in the same file format **ld_XXXXXX.ldq**.

4 About Blitz Judgment method

4.1 Base of Blitz Judgment method

Scientists prefer to study separately the positive properties and talents of a person (Gardner, 1983; 2009; 2021), separately - negative ones (Leonhard, 1976, Zondi, 1998; Drayton, 2009; Brud, Cieciuch, 2020) and separately-neutral characteristics. personality (Eysenck, 1981). The development of vibraimage technology (Minkin, Shtam, 2000; Minkin, 2007; Minkin, Nikolaenko, 2008) as a tool for studying the personality profile in this regard did not differ from traditional scientific approaches to analyzing the psychophysiological state through reflex micromovements (Darwin, 1872; Mira-y-Lopez, 1957; Bernstein, 1967; Lorenz, 1963). We also initially created different questionnaires to identify talents and profiles of multiple intelligences (Minkin & Nikolaenko, 2017), neutral behavioral characteristics (Minkin, 2020a) and negative personality characteristics (Nikolaenko, 2020). However, the development of the adaptive testing and neurolinguistic profiling principles (Minkin & Nikolaenko, 2020) has noticeably changed our understanding of a person as a physical object in which everything is interconnected and intertwined, including positive and negative properties. Let's take a look at the basic principles of adaptive testing step by step, which allowed us to swing at comprehensive personality profiling in a short testing time of 250 seconds with blitz 5-second testing for one stimulus.

The first principle of psychophysiological testing was the joint processing of the subject's conscious and unconscious responses, measured on the relative scale (Minkin, Nikolaenko, 2017).

The next principle of psychophysiological testing was linear oppositional testing with the sequential formation of oppositional stimuli formed for the growth of extraverted personality traits (Minkin, Myasnikova, 2018). Synchronization of brain activity rhythm under the periodic presentation of fixed sequence of external stimuli became the next step in understanding psychophysiological responses (Minkin, Blank, 2019), since it was found that chronobiological processes are interconnected with the order and period of presentation of stimuli (Halberg, 1987; Blank, Blank, 2010). Determination of correlations between the main psychophysiological and behavioral parameters became the next stage in the study of psychophysiological responses (Minkin, 2020a). The development of the neurolinguistic adaptive testing method with the initial stage of the personality type measurement and the presentation of significant stimuli during one test made it possible to make the questionnaires really personal with a decrease in the number of presented stimuli during one test (Minkin, Nikolaenko, 2020). The transition to the blitz period of stimulus presentation (5 seconds) made it possible not only to increase the number of presented stimuli in a short testing time (no more than 10 minutes), but also to increase the accuracy of revealing hidden information (Minkin, 2021; Minkin, Blank, 2021).

Without these consistently taken steps in understanding the psychophysiological response to stimuli, it was impossible to correctly structure the positive and negative personality traits in a short 250-second test with the presentation of 48 individual stimuli that differ depending on the personality type of the subject. The structure of multiple intelligences (MI) with an increase in extraversion, and the structure of negative personality traits (next we will use the term “sins profile” instead of the terms profile of negative personality traits or vices, as it is shorter and has ancient history). Near the same was identified by head movements before (Behnke et al., 2021). However, increasing stimuli extraversion in our method gives compatibility between the first positive and second negative parts of testing, each includes the same number of stimuli – 24 and combine physiology and processing.

The order of stimuli presentation in the first part of the questionnaire for determining the leading types of MI and the second part of the questionnaire for identifying sins profile (SP) shown Table 1.

Table 4.1

The structure of stimulus presentation in the first part of the questionnaire for determining the leading types of MI and the second part of the questionnaire for identifying SP

No	Abbr	12_MI	12_Sins	Abbr
1	IA	Intrapersonal	Suicide	SU
2	PH	Philosophical	Sloth	SL
3	LM	Logical-mathematical	Cyber addiction	CA
4	BM	Business-Mercenary	Greed	GD
5	VS	Visual-spatial	Alcoholism, Drug Addiction	AD
6	NL	Naturalistic	Gluttony	GL
7	BK	Bodily-kinesthetic	Anorexia	AN
8	MR	Musical-rhythmic	Pride, Vanity	PV
9	AS	Ascetic-Sacrificial	Bribe, Theft	BT
10	VL	Verbal-linguistic	Envy	EN
11	CR	Creative	Lust	LT
12	IE	Interpersonal	Wrath	WR

In our opinion, linking the sequence of sinful stimuli presentation to the types of MI that are essentially close to them makes it possible to compare positive and negative personality traits most clearly. Our approaches to these MI types have been described in previous publications (Minkin, Nikolaenko, 2017; 2020). Therefore, now we provide explanations only for the terms of the 12_Sins column of Table 1, on the basis of which the stimuli of the MI-Sins program were developed, revealing the indicated SP.

4.2 Sins explanations

Suicide is a set of thoughts, ideas, experiences of a suicidal orientation with a readiness to implement them. Suicide is understood as a deliberate desire to deprive oneself of life due to objective or subjective reasons.

Sloth (Laziness) – the inability or unwillingness to be active in any business; deliberate inaction in a situation of favorable activity; weakness. Sloth, as one of the types of procrastination, social and personal passivity of a person. One of the 7 Deadly Sins (Kleinberg, 2010).

Cyber addiction is a form of psychological dependence (addictive behavior), which manifests itself in an obsessive fascination with various information resources and technical means. Cyber addiction includes internet-addicted behavior, gambling addiction (computer games, online games, games on a smartphone, tablet, i.e. using gadgets); manifests itself in the devaluation of non-play vital interests and desocialization of the individual.

Greed is a conscious hypertrophied striving (can reach the level of overvalued ideas) to multiply material and non-material values. Greed as a category of value orientations or character trait; manifests itself in the devaluation of other vital interests, can lead to desocialization of the individual. One of the 7 Deadly Sins (Kleinberg, 2010).

Alcoholism and drug addiction. Alcoholism – from the psychological dependence of alcohol consumption to the clinical dependence of alcohol. Alcohol dependence includes withdrawal symptoms or a tendency to develop it in various forms of psychological dependence (relieving physical or mental stress through the use of ethanol). Drug addiction is characterized by a pathological craving for the use of drugs that can cause an altered state of consciousness (withdrawal from reality). Drug addiction is accompanied by symptoms of mental and physical dependence, accompanied by signs of personality desocialization.

Gluttony – an addiction to tasty and abundant food; addiction to overeating; excess and greed in the use of food. Gluttony can be viewed as psychogenic overeating – an eating disorder in the form of a reaction to distress or in the structure of bulimic syndrome. One of the 7 Deadly Sins (Kleinberg, 2010).

Anorexia is a set of distorted ideas about the “harm” of food intake. Anorexia is an eating disorder expressed in a conscious, persistent desire to lose weight, fear of obesity and signs of personality desocialization, an overvalued desire for a healthy lifestyle.

Pride, vanity – false exaltation, narcissism. Pride and vanity are manifested in heightened arrogance, self-deception, in severe cases – megalomania, narcissism, selfishness, “double morality”. One of the 7 Deadly Sins (Kleinberg, 2010).

Theft-Bribery is a type of delinquent behavior that manifests itself in a conscious desire to appropriate someone else's property. A bribe as a form of theft: money or other valuables illegally given to an official in exchange for performing any actions in the office in the interests of the giving person.

Envy is an affective state, a personality trait, a form of psychological dependence, manifested in an obsessive comparison of one's own achievements with the achievements of other people. A distinctive feature of envy (as opposed to rivalry, etc.) is a persistent negative emotional background, hostility towards other persons (owners of the desired goods). One of the 7 Deadly Sins (Kleinberg, 2010).

Lust is a pronounced sexual desire, voluptuousness, over-attraction to the sexual sphere (sex, erotica). This concept has a broad interpretation, it can be understood as an overvalued idea (obsession) with the sexual sphere in the structure of personality deformation (deviant behavior) or as a clinical symptom – increased sexual desire (hypersexuality). One of the 7 Deadly Sins (Kleinberg, 2010).

Anger (Rage) is a difficultly controlled affective reaction, expressed in dissatisfaction with any phenomenon, followed by the desire to eliminate the object of dissatisfaction in any way; anger can be part of the structure of aggressive, deviant, delinquent behavior, etc. One of the 7 deadly sins (Kleinberg, 2010). After completing of the questionnaire program MI_Sins automatically creates files with the test results in

5 MI-Sins results

After completing of the questionnaire program MI_Sins automatically creates files with the test results in the directory «C:\Users\user\Documents\MI_S 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 personal 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 sheet 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 changing 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 psychophysiological state (PPS) changes during the testing is presented synchronously with graphical and text information. XML format
YYY-MM-DD hh_mm_ss_MI2.xml	alternative results of PPS changes during testing 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.

5.1 ACC – main results

In the file **YYY-MM-DD hh_mm_ss_MI.xlsm** there is sheet ACC with main profiling results for person. On figs. 5.1-5.4 MI – Multiple Intelligence, S – Sins, IE – unconscious response, YN – conscious response, IE+YN – integral psychophysiological response.

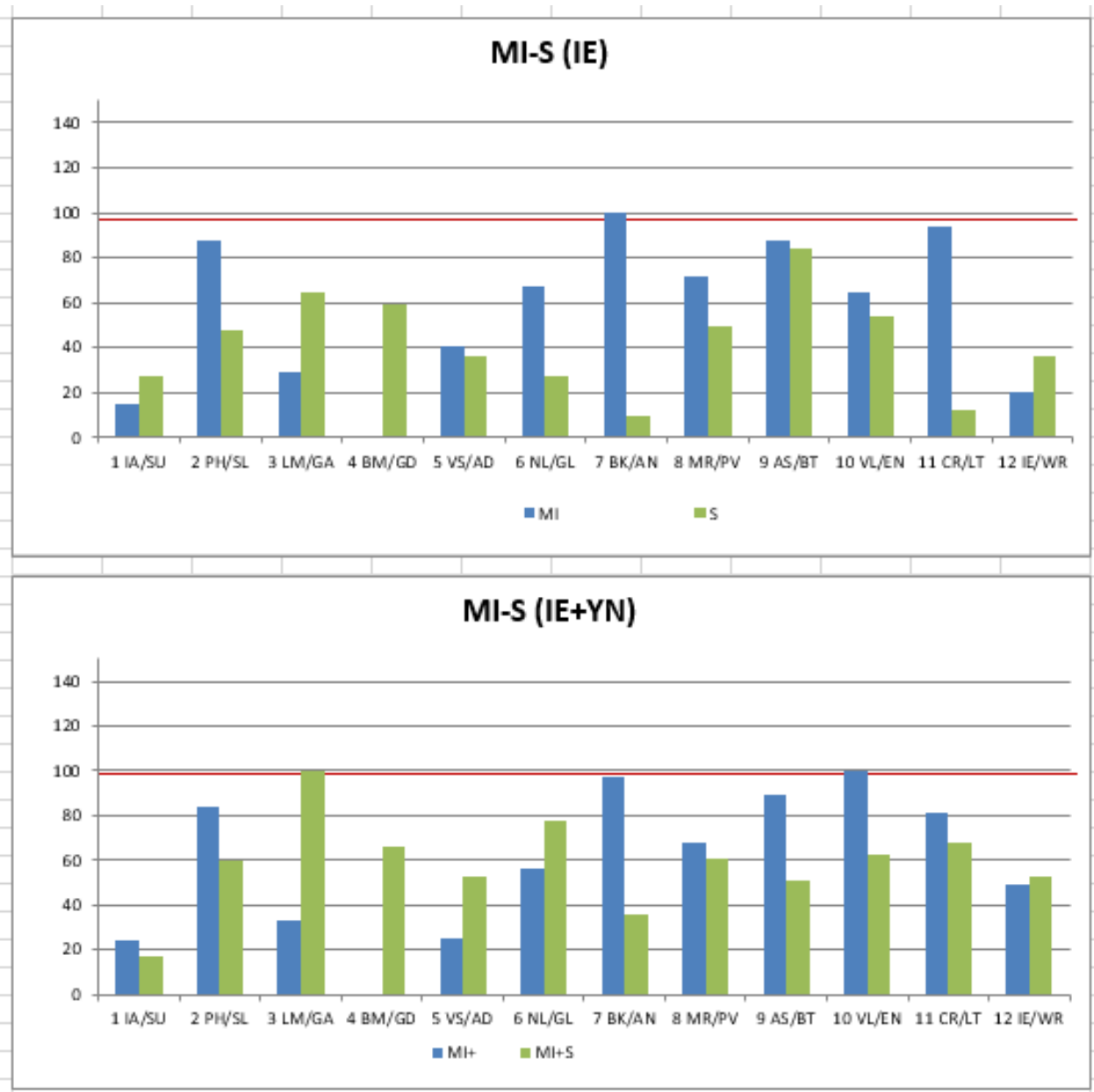


Fig. 5.1 Profile of MI-Sins on unconscious (IE) and integral (IE + YN) psychophysiological responses to 48 stimulus questions.

	MI(IE)			Sins(IE)		
1	100.0	BK	Bodily-kinesthetic (BK)	84.2	BT	bribe, theft
2	93.7	CR	Creative (CR)	64.2	GA	cyber addiction
3	87.7	PH	Philosophical (PH)	58.9	GD	greed
4	87.5	AS	Ascetic-Sacrificial(AS)	53.5	EN	envy
5	71.2	MR	Musical-rhythmic (MR)	49.6	PV	pride, vanity
6	67.2	NL	Naturalistic (NL)	47.9	SL	sloth
7	64.7	VL	Verbal-linguistic (VL)	36.6	AD	alcoholism, drug addiction
8	40.9	VS	Visual-spatial (VS)	36.5	WR	wrath
9	28.9	LM	Logical-mathematical (LM)	27.7	SU	suicide
10	20.2	IE	Interpersonal (IE)	27.6	GL	gluttony
11	15.0	IA	Intrapersonal (IA)	12.4	LT	lust
12	0.0	BM	Business-Mercenary (BM)	9.4	AN	anorexia

Fig. 5.2 Table of MI-Sins profiles (unconscious response), ranged in decreasing order of significance (from top to bottom)

	MI(IE+YN)			Sins(IE+YN)		
1	100.0	VL	Verbal-linguistic (VL)	99.7	GA	cyber addiction
2	97.1	BK	Bodily-kinesthetic (BK)	77.5	GL	gluttony
3	89.5	AS	Ascetic-Sacrificial(AS)	68.2	LT	lust
4	83.6	PH	Philosophical (PH)	66.1	GD	greed
5	81.2	CR	Creative (CR)	62.8	EN	envy
6	67.5	MR	Musical-rhythmic (MR)	60.4	PV	pride, vanity
7	56.0	NL	Naturalistic (NL)	59.4	SL	sloth
8	48.7	IE	Interpersonal (IE)	52.5	AD	alcoholism, drug addiction
9	32.7	LM	Logical-mathematical (LM)	52.5	WR	wrath
10	24.8	VS	Visual-spatial (VS)	51.1	BT	bribe, theft
11	24.3	IA	Intrapersonal (IA)	36.0	AN	anorexia
12	0.0	BM	Business-Mercenary (BM)	16.8	SU	suicide

Fig. 5.3 Table of MI-Sins profiles (integral response), arranged in decreasing order of significance (from top to bottom)

In the given example the subject's level of Sin in terms of the integral reaction exceeds the average level of the leading types of MI, therefore, Cyber addiction is the most relevant SP for the given testing results of the subject in terms of integral psychophysiological responses. Note that in table on fig 5.5 Cyber addiction is also the most significant Sin for the unconscious responses of the subject, and the conscious reaction confirms the result of the unconscious and transfers the level of this Sin close to the maximum response to the leading MI stimulus, that is, increases the level of this Sin close to 100% (maximum MI type).

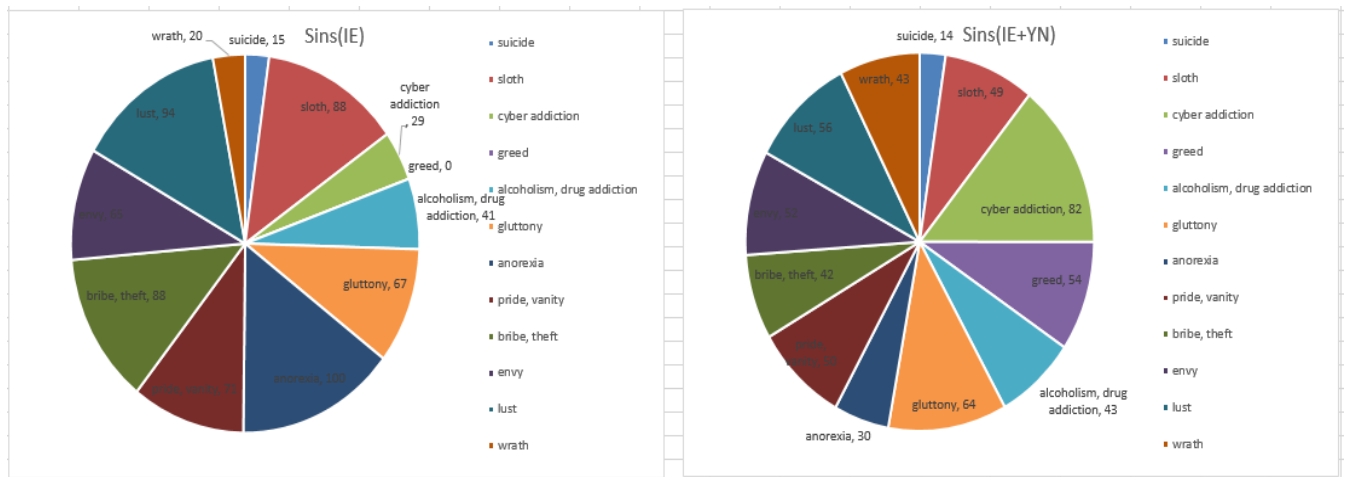


Fig. 5.4 SP pie charts of unconscious (IE) and integral (IE+YN) psychophysiological response to 24 stimuli questions.

5.2 Final test results VSR (virtue/sin ratio)

The total result of personal profiling show VSR (virtue/sin ratio)

VSR (virtue/sins ratio)
79%

Fig. 5.8 Final test results VSR (virtue/sins ratio)

Person with 100% righteousness has VSR=100%, persons having some sins (vices) higher than virtue level have VSR level lower than 100%.

More details are in publications:

DOI: 10.25696/ELSYS.VC5.EN.03

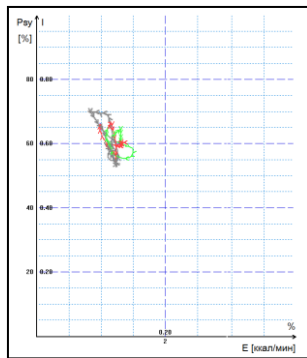
DOI: 10.25696/ELSYS.VC5.EN.05

5.3 Graphs of PPS changes from M files

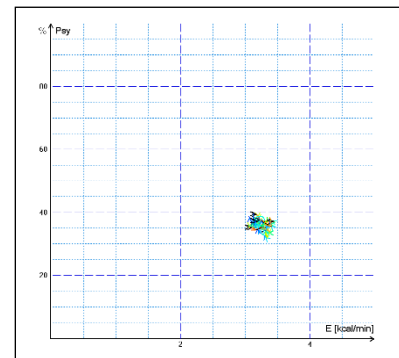
Changing of I-E state of a person to a controlled period of time clearly displayed on the graph (see fig. 5.9). Only a person who is in a relaxed or in a state of high concentration (see fig. 5.9b) may be in a fixed I-E state during such insignificant time as 1 minute. Most of the people make a noticeable fluctuations of I-E state, even for short periods of time, depending on their thoughts (see fig. 5.9a) and under the influence of the environment (see fig. 5.9c).

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

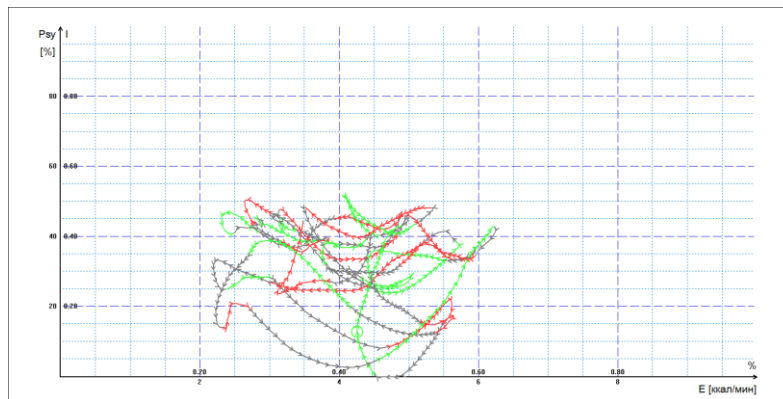
- time between questions – grey;
- control questions – green;
- relevant questions – red.



a) Changing around the average value



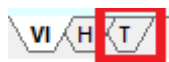
b) Stable condition, indicating a high degree of self-control person..



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

Fig. 5.9 (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.

5.4 Frequency histogram of PPS from M files

The frequency histogram (Fig. 5.10) of PPS 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.

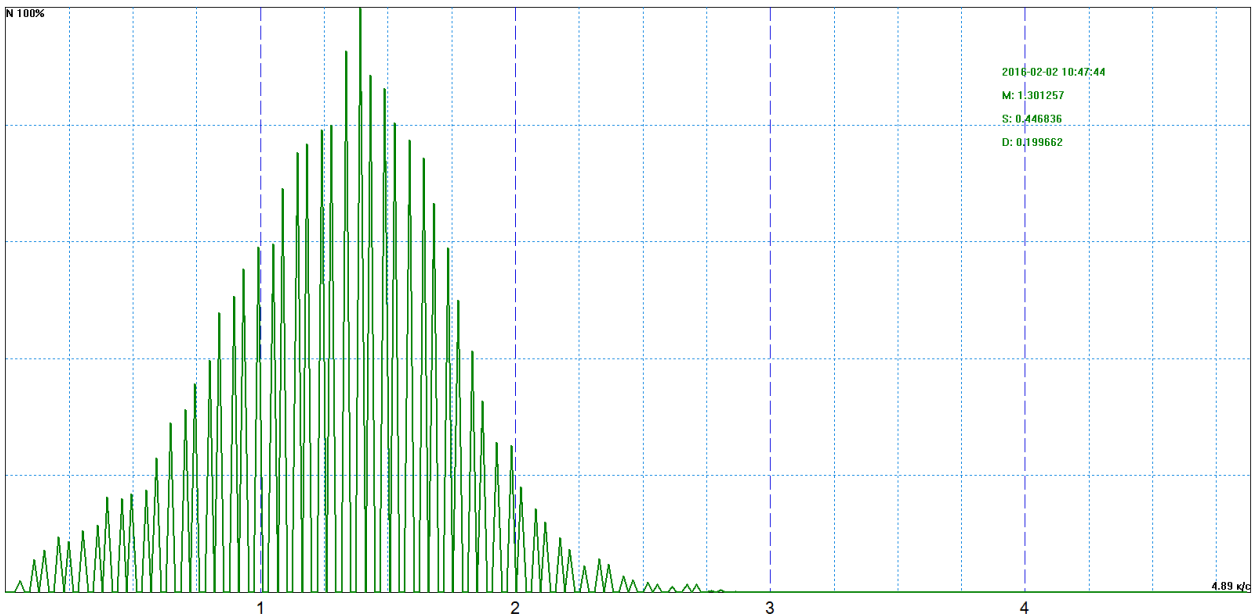


Fig. 5.10 Example of frequency distribution histograms.

5.5 Psychophysiological status of the person from M files

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, Agression) 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 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. 5.11) refer to «Behavior Detection System. VibraImage 10 PRO. Manual», http://www.psymaker.com/downloads/VI10_ManualEng.pdf in the section «M Mode».

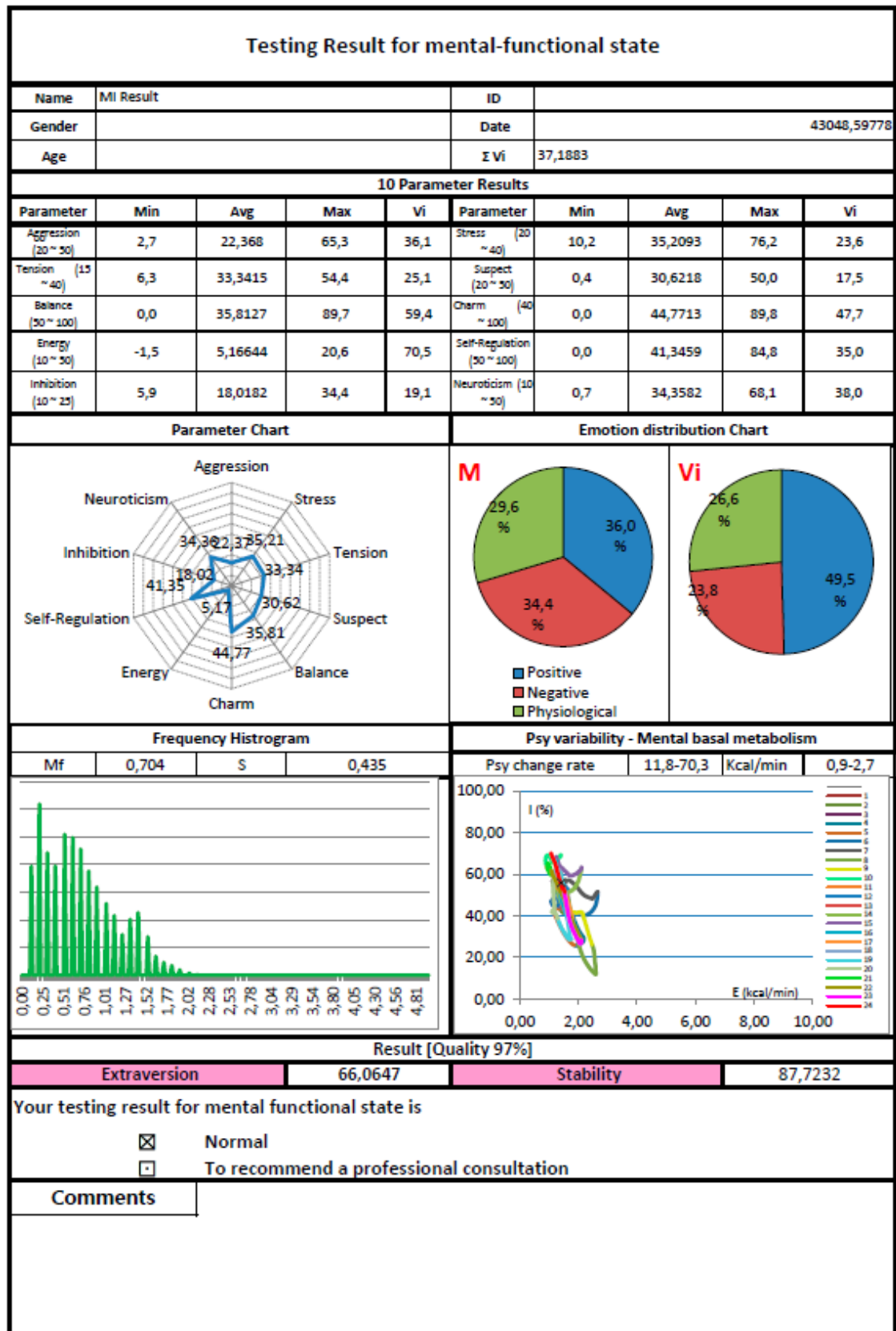


Fig. 5.11 Psycho-emotional status of the person

5.6 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 changes.

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. 5.12.

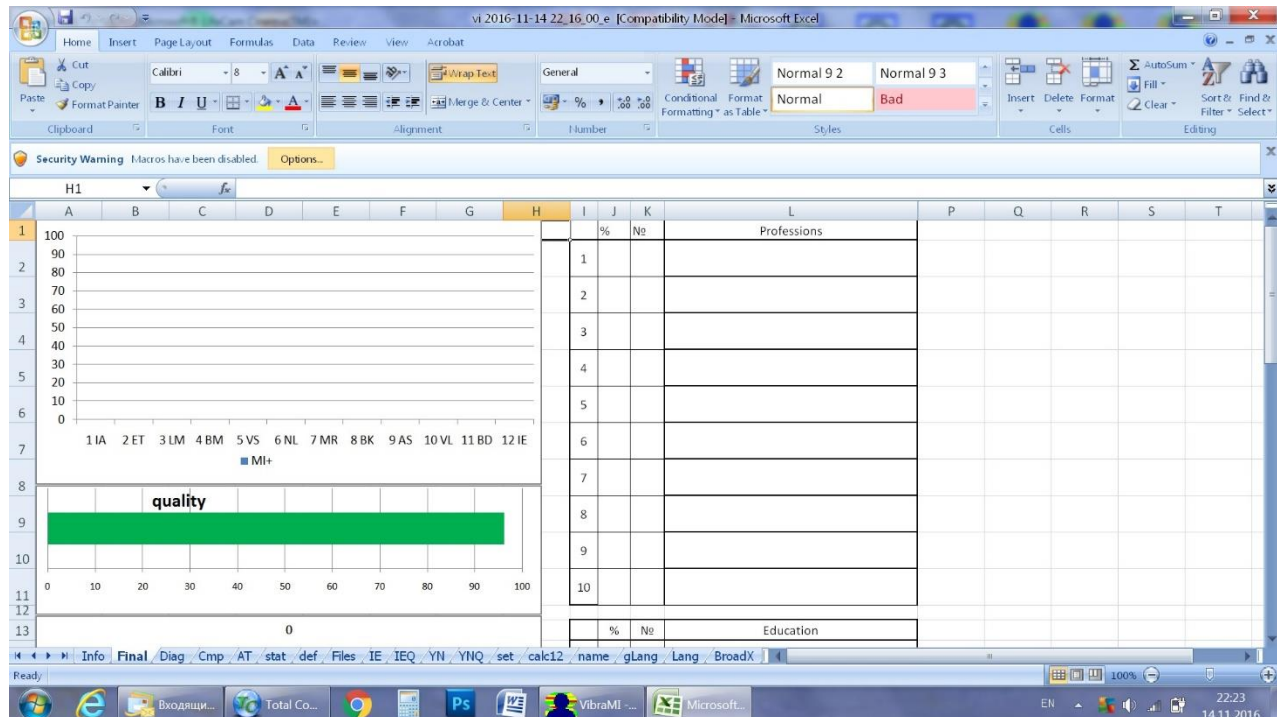


Fig. 5.12 Empty table of excel file with disabled macros

In this case you need to enable Macros function in the manual mode as it is shown on the fig. 5.13.

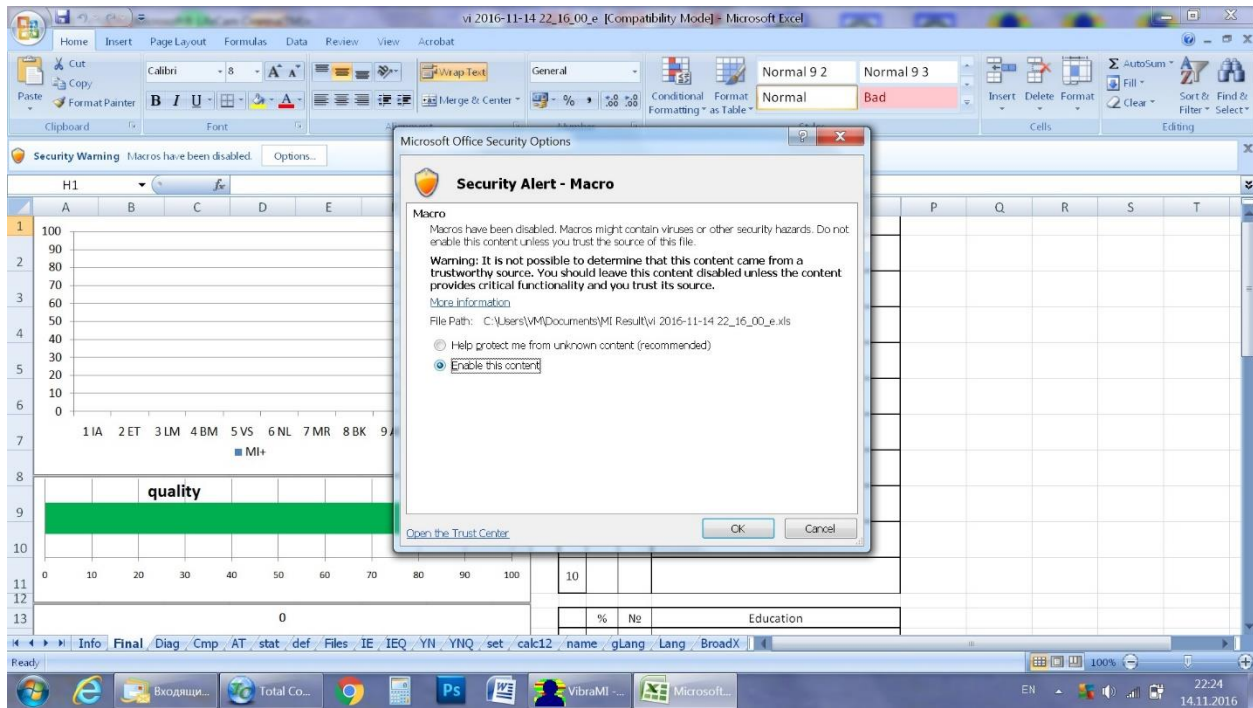


Fig. 5.13 Macros enable function start

Concrete interface of Macros function enabled depends on the version of stand Excel program and can differs from fig. 5.12 and 5.13. So you need to use Excel help for starting Macros function in the opened file for calculation of MI parameters.

Main profiling information about testing person placed on ACC page of MI file includes:

1. MI-Sins personality profile (IE)
2. MI-Sins personality profile (IE+YN)
3. MI-Sins personality tables
4. Personality VCR (virtue/sins ratio) or righteousness level.

The current program was designed for the profiling of adults and can be used as a way to obtain objective information about VCR of the subjects, for example, before obtaining a gun license, driver's license, parole, police, firefighting or holding certain government positions including politics. System can be used for preshift and periodical profiling of people.

Advanced users can provide questionnaire adaptation and using it for different applications after training and Certification by Elsys Corp.

6 Warranty

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

ATTENTION!

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Version MI-Sins 10.2.3.167

2022

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