Operator's Guide

Face PSIM 2.0 (english)

Last update 09/17/2025

Table of Contents

1 Terms and definitions

1. The Guide – this document, titled *Face PSIM Software Package. Operator's Guide*.
2. The Software – *Face PSIM* software package.
3. DB – face database used for face recognition, also referred to as the Face Recognition Database.

2 Introduction

On this page:

2.1 The purpose and structure of the Guide

This Guide is an informational reference designed for users of the *Face PSIM* software package with Operator access rights.

The Guide contains the following material:

1. General description of the *Face PSIM* software package.
2. *Face PSIM* software operation.
3. Description of the *Face PSIM* user interface.

2.2 Purpose of Face PSIM software

Face PSIM software is designed for automated identification of people by comparing a captured face in a surveillance video frame with reference images for which a Face Recognition Database contains information. *Face PSIM* software provides the following functional capabilities:

1. Recognizes human faces in a video frame.
2. Registers facial biometric parameters.
3. Compares a captured face displayed in a video frame with reference images stored within the <*Face PSIM* installation directory\Bmp\person> folder based on biometric parameters.
4. Maintains a database of recognized faces.
5. Creates a photo- and video archive.
6. Searches for faces in the database using a photo.

2.3 Recommendations for using the Face PSIM software package

Face PSIM software is installed as an extension to the *Axxon PSIM* software package.
The following is recommended for correct application of *Face PSIM* software:

1. Carefully follow the instructions.
2. Use the Software only for its intended purpose.
3. Do not use third party software on computers installed with *Face PSIM* unless the software is a component of the *Face PSIM* software package.

3 General description of Face PSIM

On this page:

3.1 Structure of Face PSIM

Face PSIM includes the base version of *Axxon PSIM* and additional software modules that directly perform face recognition functions.

Face PSIM includes the following software modules:

1. **Face Detection** system object.
2. **Face Recognition Server** system object.
3. **Face recognition and search** interface object.

3.2 Face Detection software module functionality

The *Face Detection* software module is designed to perform the following functions:

1. Face detection in the video frame.
2. Sending the captured face image to the face recognition server.

3.3 Face recognition server module functionality

The *Face recognition server* software module is designed to perform the following functions:

1. Record a frame displaying a captured face.
2. Register biometric parameters of a captured face.
3. Recognize captured faces.
4. Maintain a reference face database used for face recognition.
5. Search for recognized faces in the database.

6. Provide analytical data (including special reportsreports generation in the *WEB Report System PSIM*).
7. Count the number of passes.

3.4 Face recognition and search program module functionality

The *Face recognition and search* module is designed to perform the following functions::

1. Face search by image captured from video camera.
2. Face search by image loaded from a file.
3. Monitoring of captured faces in real-time mode.
4. Exporting the search results to the report file in PDF format.
5. Working with reference face databases.
6. Counting the number of passes.
7. Facial characteristics recognition with the appropriate license for the *VA* recognition module.

4 Face PSIM software operation

4.1 Launch and shutdown of the Software

Before starting work with the Software, it is recommended to check the operability of all system components: connections, video cameras, etc.

The Software can be launched in the following two ways:

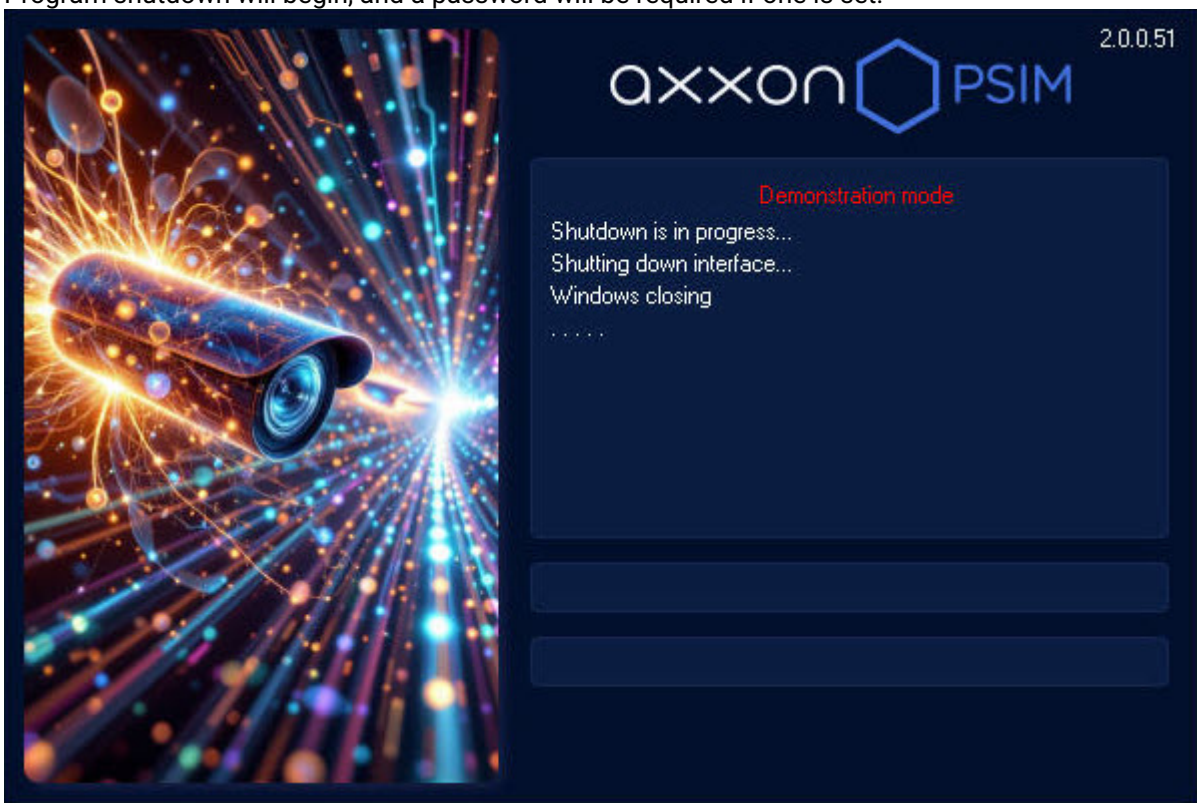
1. Automatically. The software starts automatically after the operating system loads.
2. Manually. To start the Software manually, in the **Start** menu, select **Programs**, then **Axxon PSIM**, then **Client Workstation**, or use the corresponding shortcut on the **Desktop**.

Software startup may be password protected. In this case, enter your password to start the Software.

To shut down the Software, perform the following steps:

1. Point the mouse cursor to the upper right corner of the screen. The program's main control panel will then appear.
2. Click the  icon on the program's control panel.
3. Select **Log off** in the menu that opens.

Program shutdown will begin, and a password will be required if one is set.



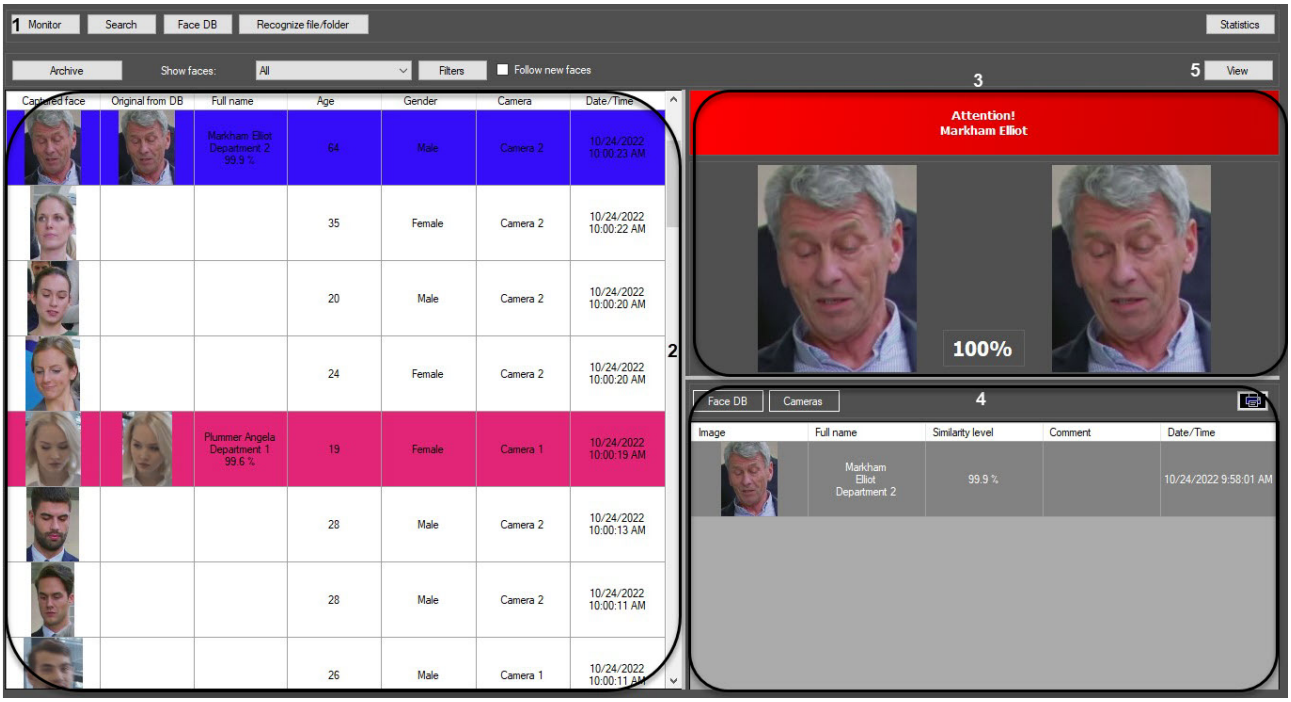
Note

The Software can be configured to forbid shutdown. In that case, the **Log off** option will not be displayed in the menu.

4.2 Working with the Face recognition and search interface object

4.2.1 Monitoring of captured and recognized faces

To go to the monitoring mode of captured and recognized faces, click the **Monitor** button (**1**) in the **Face recognition and search** interface window.



The following information is displayed in the information field of each captured face (**2**):

Column name	Description	Face Recognition module used
Captured face	Captured face image *Note 1. As you increase the width and height of this column, the image size also increases. The specified column size does not change even if the* ***Columns auto width*** *checkbox is set (see* Configuring the permissions and additional settings*).* *Note 2. The captured face image is not duplicated in the list of captured faces, but it is updated in the same cell while the tracker sees it. To change the mechanism of displaying faces, it is necessary to change the value of the* ***Face.RecognizeFacesSeparately*** *parameter to* ***1*** *(for details, see* Registry keys reference guide*).* *Note 3. If the* ***Face recognition server*** *works with a thermal camera (see* Configuring operation of the Face recognition server with thermal camera*), the image will also display the face temperature in degrees Celsius.* 	All recognition modules
Original from DB	The image from the reference face DB, if the face was recognized	All recognition modules
Full name	Full name, if the face was recognized	All recognition modules
Name of face characteristic	Selected additional face characteristics (see Configuring the additional face characteristics).	Only *VA*, *VideoIntellect 1.1* and *VisionLabs*
Camera	The camera which is a captured face source	All recognition modules

Column name	Description	Face Recognition module used
Date/Time	The date and time of the face capture by the camera	All recognition modules

The color of the information field of the recognized face may indicate the following:

- the level of similarity of captured face with the most corresponding face from the face recognition database. The conditional thresholds of similarity levels are set when configuring the *Face recognition and search* interface module (see Configuring the color highlighting by face similarity);
- the face belongs to a department for which an arbitrary color is set (see Setting color highlighting of faces that belong to selected departments).

If the **Follow new faces** checkbox is set, the list of faces is scrolled up to the top when a new face is captured even if some face is selected in it. To disable automatic list scrolling, clear the **Follow new faces** checkbox. You can also double-click the captured face to clear this checkbox. In this case, the list is not scrolled up when new faces are captured.

Note

In order for the **Follow new faces** checkbox to be set automatically after a certain time, it is necessary to set the corresponding time in seconds in the **AutoFollowTimeSeconds** parameter of the face_client.run.config configuration file (for details, see XML-file parameters reference guide).

If the captured face was recognized, then in the upper right part of the captured faces monitoring panel (**3**), an alarm window is displayed with the following information:

- the title of the alarm window;

Note

The alarm window color and title can be changed (see Alarm window title setting).

- full name of a recognized person;
- the image with the captured face and the corresponding image from the face recognition database;

Note

If the **Face recognition server** works with a thermal camera (see Configuring operation of the Face recognition server with thermal camera), the image will also display the face temperature in degrees Celsius.

- the similarity level as a percentage.

The lower right part of the captured faces monitoring panel (**4**) displays the following information:

- the **Face DB** section displays the information on the recognized face and contains the following information:

Column name	**Description**
Image	The recognized face image *Note. As you increase the width and height of this column, the image size also increases. The specified column size does not change even if the **Columns auto width** checkbox is set (see Configuring the permissions and additional settings)*
Full name	The full name of a recognized person
Similarity level	The similarity level between the recognized face and the face image
Comment	The comment
Date / Time	The date and time of the search

- the **Cameras** section displays the 10 recently captured faces that are similar to the selected face filtered by the specified filtering conditions (see Filtering the recognized and unrecognized faces). The field contains the following information:

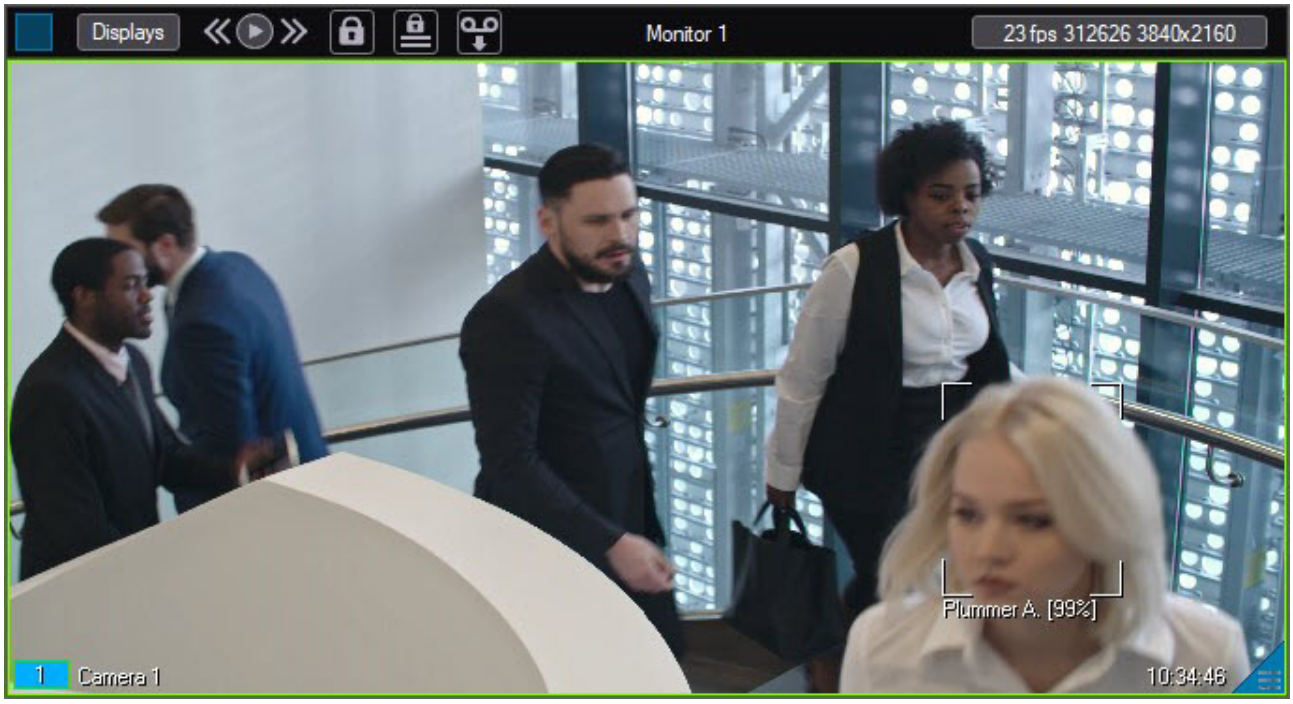
Column name	Description
Image	The captured face image *Note 1. If the **Face recognition server** works with a thermal camera (see Configuring operation of the Face recognition server with thermal camera), the image will also display the face temperature in degrees Celsius.* 
Similarity level	The similarity level between the captured face and the selected face
Camera	The camera that captured the face
Date / Time	The date and time of the search

The **View** button (**5**) allows you to change the location of information panels 1-3 on the monitoring screen according to the preset.

Note

You can hide the **View** button. To do this, in the **face_client.run.config** configuration file, set the value of the **HideViewButton** parameter to **True** (for details, see XML-file parameters reference guide).

If the video from camera (used for face recognition) is transmitted to the **Monitor** interface object, then the full name is displayed below the face capture area (see Configuring video display on Video Surveillance Monitor).



Note

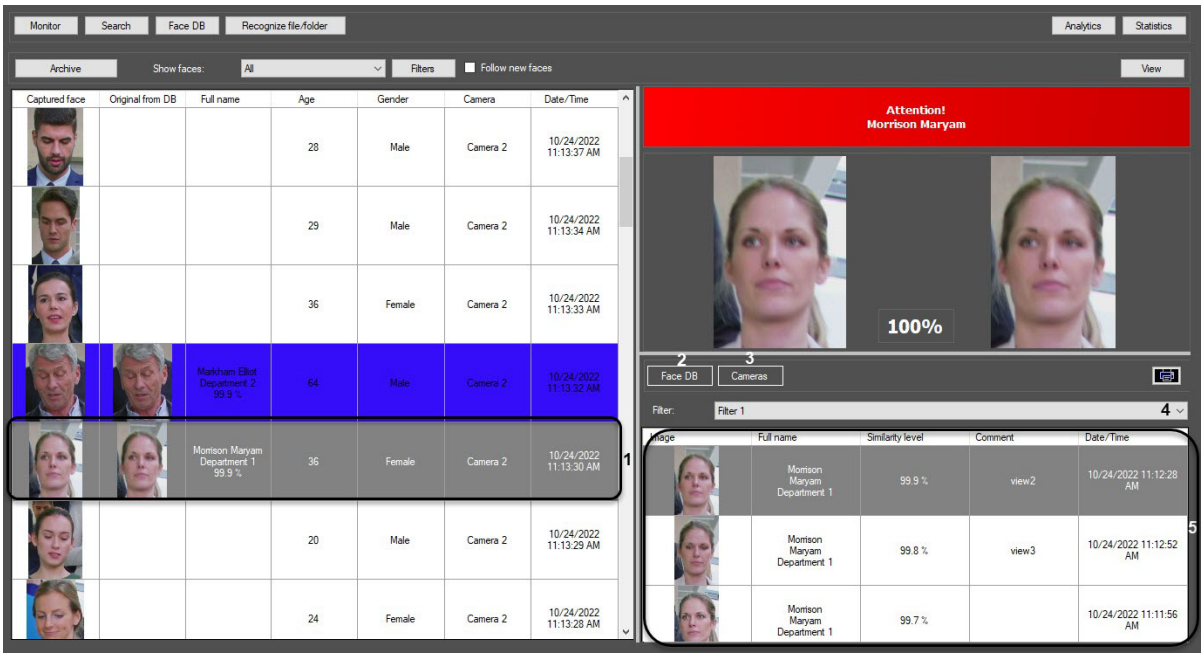
If the **Face recognition server** works in conjunction with a thermal camera, also see Thermal camera operation.

4.2.1.1 Viewing information on recognized and unrecognized faces

You can view the information on recognized and unrecognized faces on the captured faces monitoring panel as follows:

1. Double left-click the captured face, the information on which you need to view (**1**).
2. Select the required section by clicking the appropriate button:
   - **Face DB** (**2**);
   - **Cameras** (**3**).
3. If the **Face DB** section (**2**) was selected, then the information on the recognized face received from the reference face database will be displayed in the lower right part of the captured faces monitoring panel (**4**).

> **Note**
>
> If you double left-click the face which was not recognized, the **Face DB** section will be empty.



4. If the **Cameras** section (**3**) was selected, then 10 recently recognized faces that are similar to the selected person and filtered by the search filter specified in the **Filter** drop-down list (**4**) (see Starting the face search process) will be displayed in the lower right part of the captured faces monitoring panel (**5**).

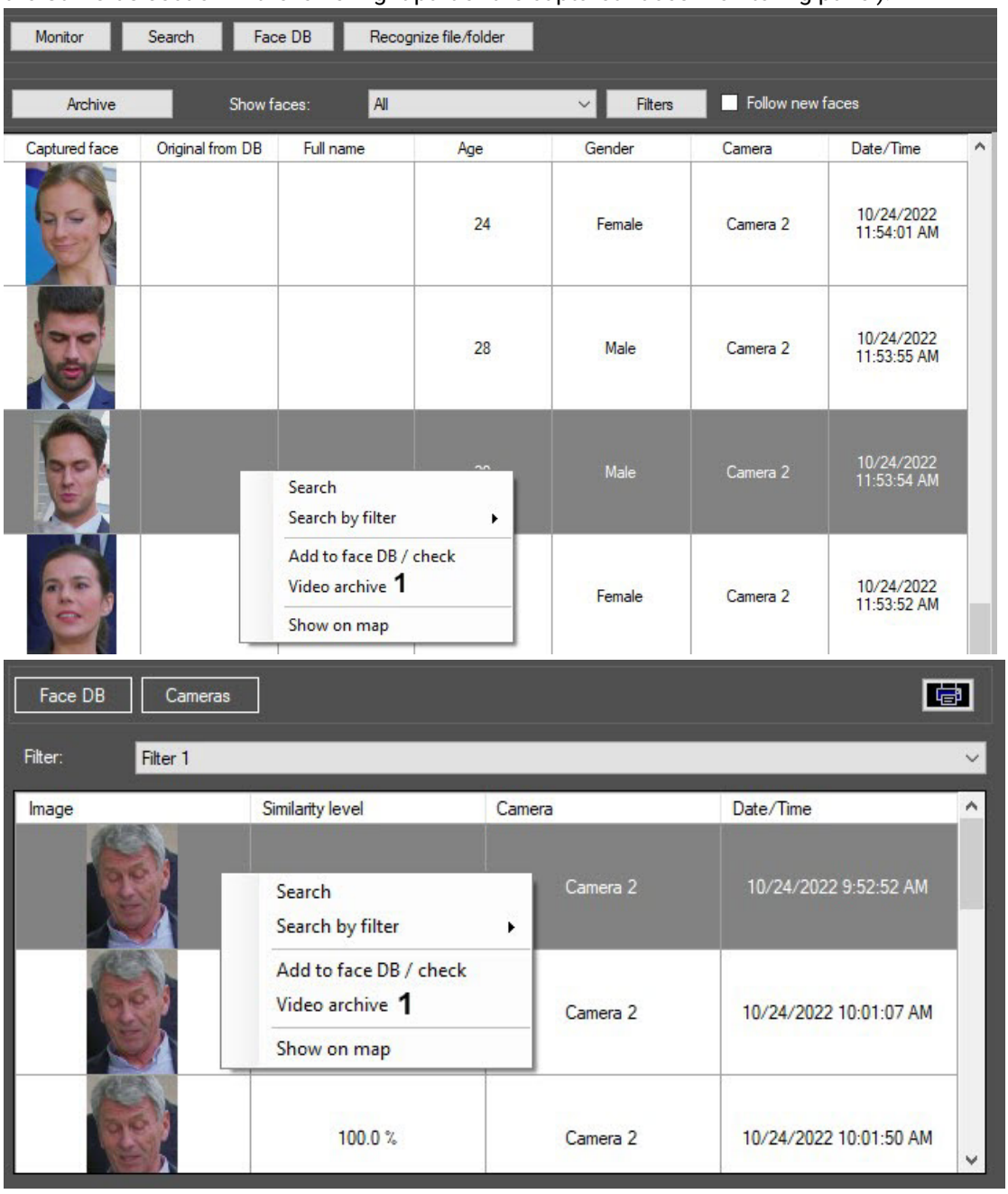
> **Note**
>
> When the filter is changed, the information is automatically updated according to the selected filter.

5. To view the video at the time when the selected person appears, use one fo the following ways:
   - double left-click the captured face (also applicable in the **Cameras** section in the lower right part of the captured faces monitoring panel);

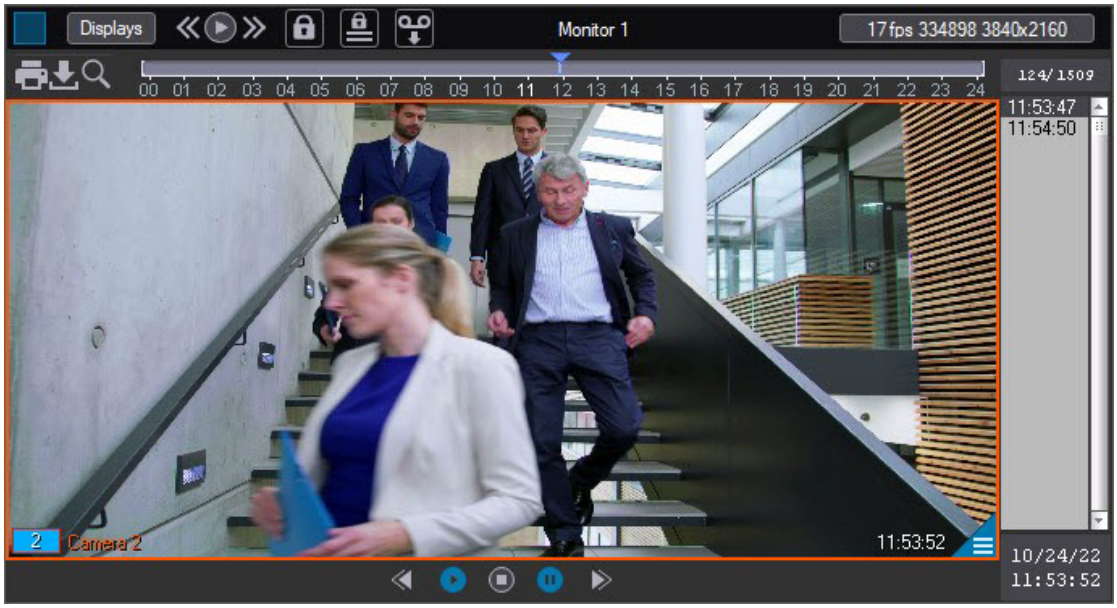
> **Note**

As a result, the moment you select a captured face (see step 1), you are automatically transfered to the video archive.

- right-click the captured face and select the **Video archive** menu item (**1**) (also applicable in the **Cameras** section in the lower right part of the captured faces monitoring panel).



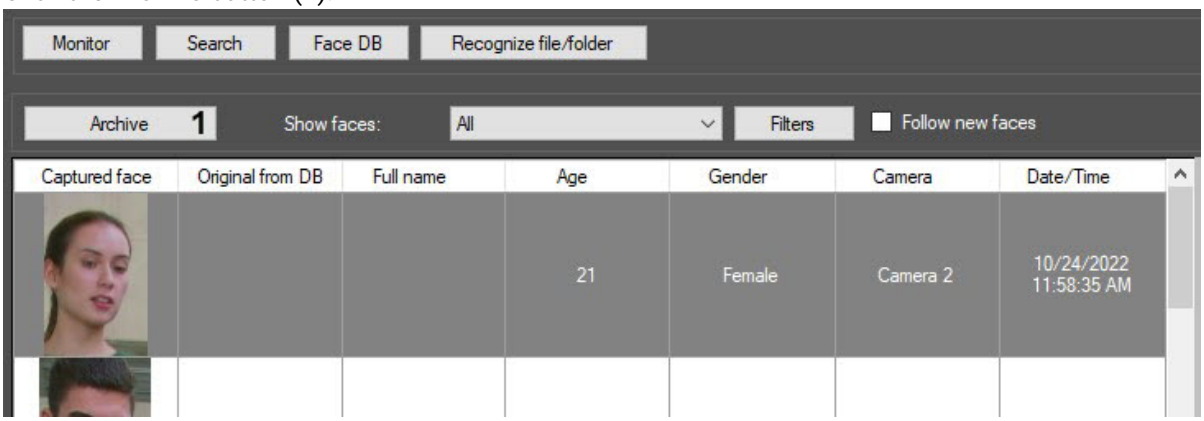
As a result, the video archive is displayed in the video archive playback monitor (see Configuring the permissions and additional settings) with a paused moment of the selected person appearing on the video (for more information about working with the video archive, see Working with the archives).



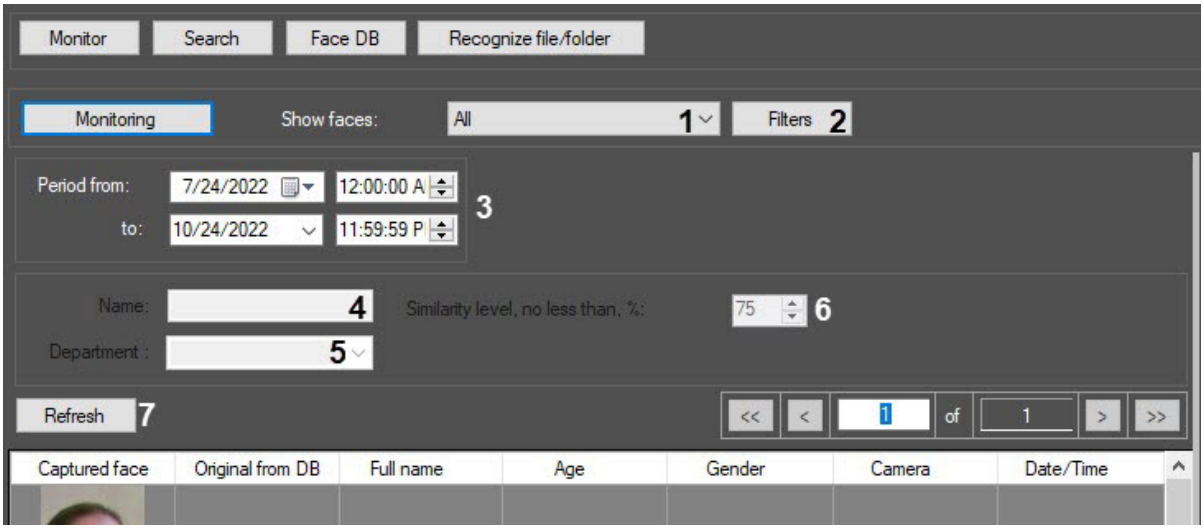
4.2.1.2 Filtering the recognized and unrecognized faces

It is possible to filter the recognized and unrecognized faces. To do this:

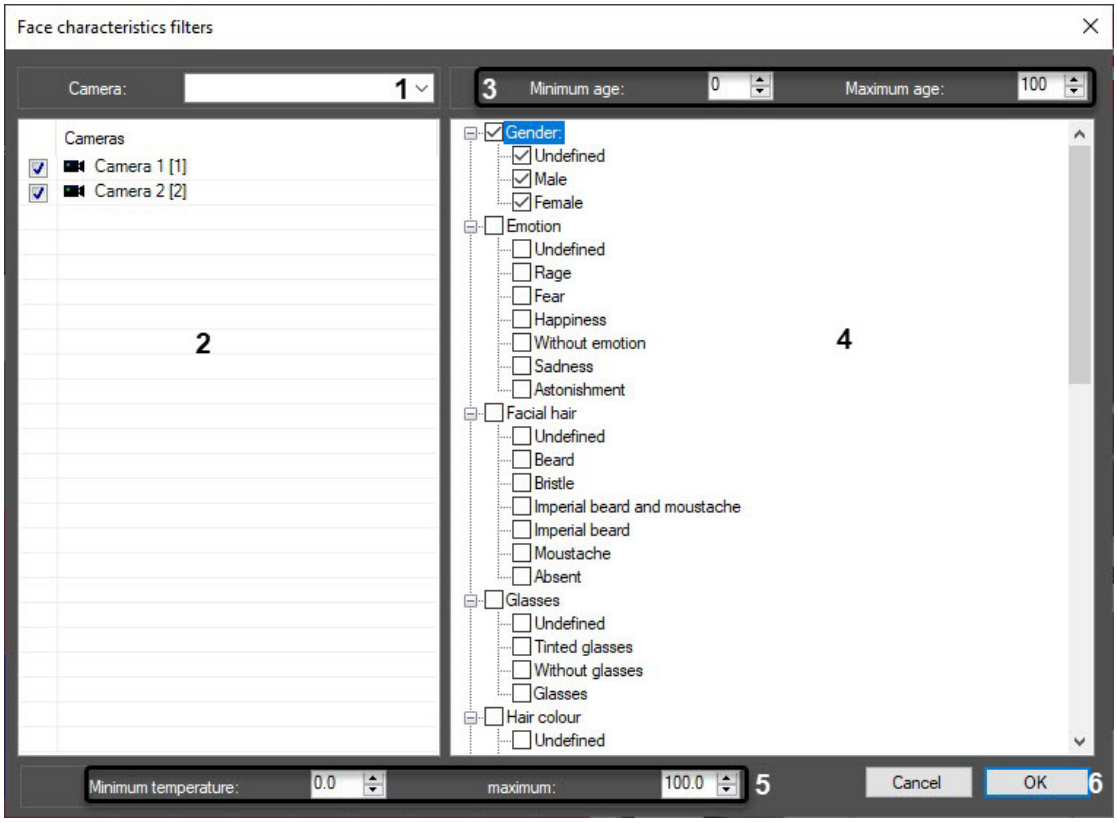
1. Click the **Archive** button (**1**).



2. In the **Show faces** drop-down list (**1**) select the required value:
   - **All**;
   - **Only recognized**;
   - **Only unrecognized**.



3. Click the **Filters** button (**2**) to specify the face characteristics filters:
   a. In the **Camera** drop-down list (**1**), specify the substring to filter out the cameras in the field (**2**).



   b. In the **Minimum age** and **Maximum age** fields (**3**) specify the minimum and maximum age of persons to be displayed in the search results, respectively.
   c. In the area (**4**), set the check boxes next to the corresponding face characteristics.

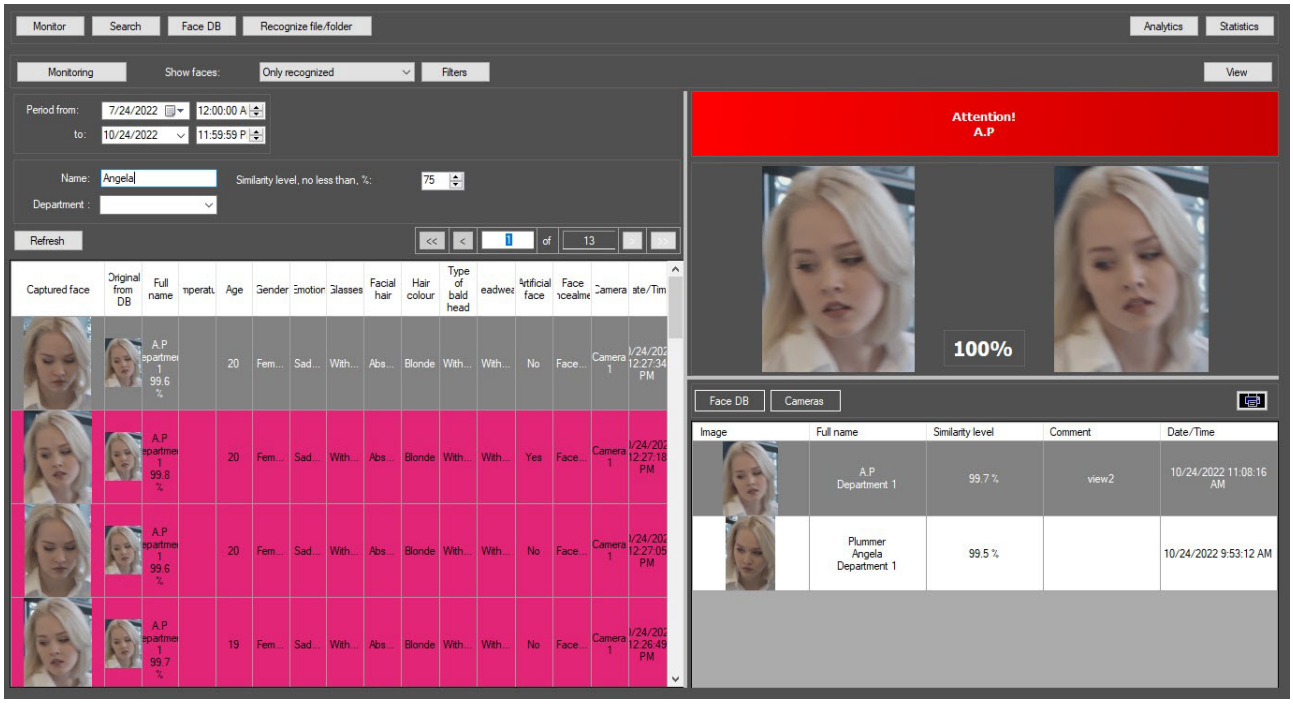
> **Note**
>
> Face characteristics (**4**) may not be displayed (see Configuring the additional face characteristics).

d. In the **Minimum temperature** and **maximum** fields, specify the minimum and maximum face temperature, respectively (**5**).
e. Click **OK** (**6**) to save the changes and return to the **Face recognition and search** window.

4. Enter the start and end of search period in the **Period from** and **to** fields correspondingly (**3**).
5. In the **Name** field, enter the name by which the search is to be performed (**4**).
6. In the **Department** drop-down list select the department by which the search is to be performed (**5**).
7. In the **Similarity level, no less than, %** field set the minimal similarity level between the reference face image and the captured face (**6**).
8. Click the **Refresh** button (**7**).

> **Note**
>
> The **Name**, **Department** and **Similarity level, no less than, %** fields are available only if the **Only recognized** value is selected in the **Show faces** drop-down list.

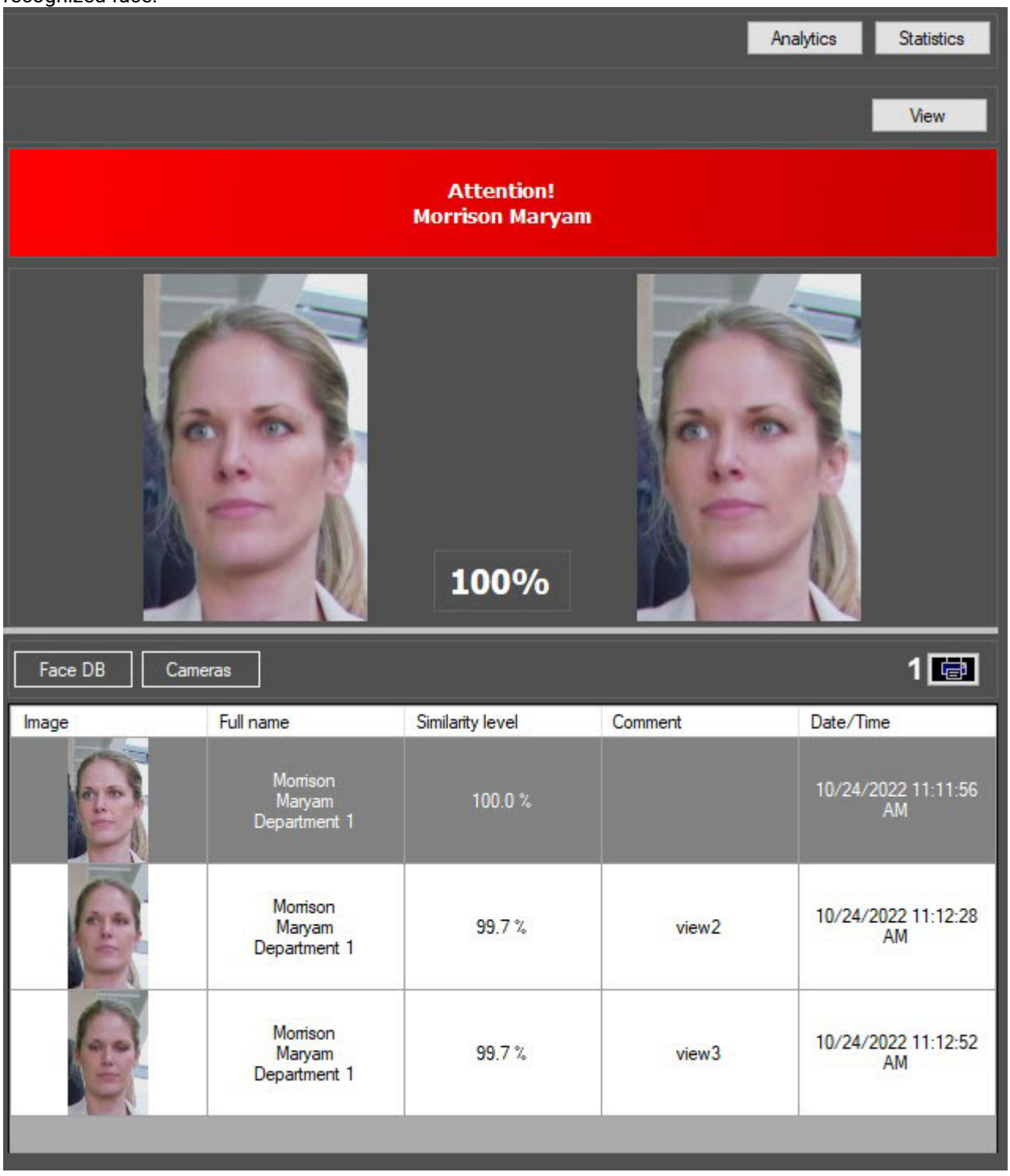
As a result, the faces with the specified filtering conditions will be displayed.



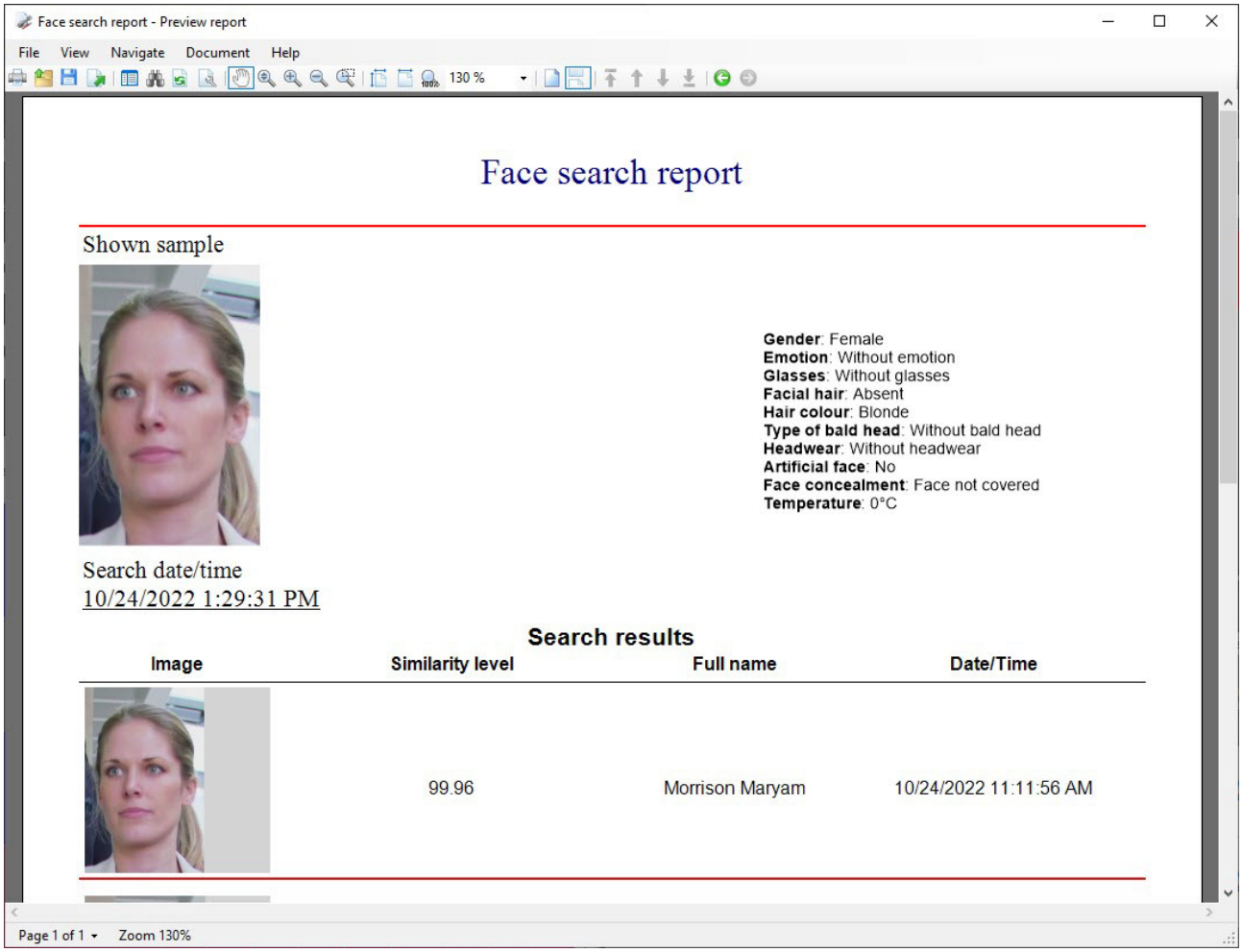
4.2.1.3 Exporting the results of the recognized face search to report file

If the recognized faces filtering was performed (see Filtering the recognized and unrecognized faces), then the filter results can be exported to a file. To do this, click the  button on the informational panel of the

recognized face.



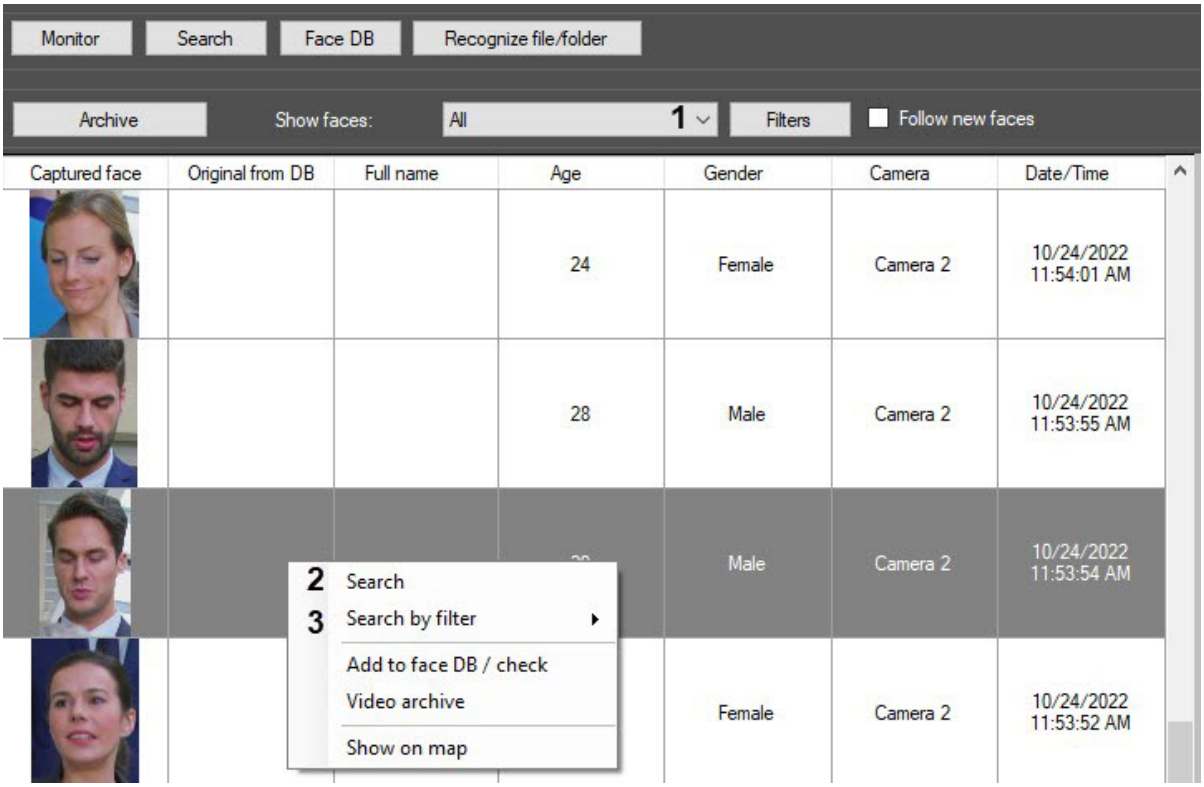
As a result, a report will be generated, which can then be saved to a file, or printed.



4.2.1.4 Go to face search

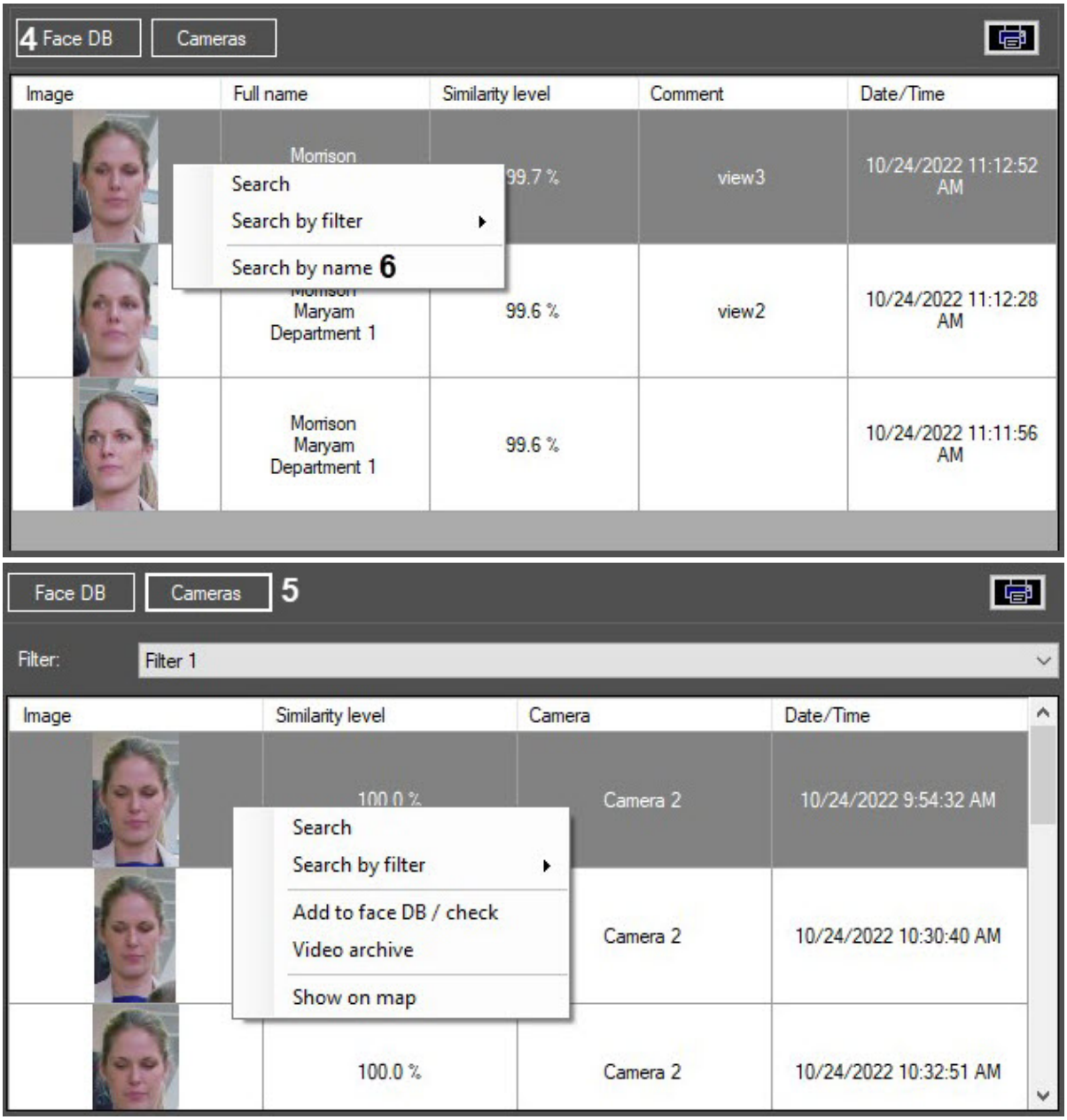
It's possible to go to face search from the monitoring panel of the detected faces. To do this:

1. From the **Show faces** drop-down list (**1**) select the required value:
    a. **All**;
    b. **Only recognized**;
    c. **Only unrecognized**.



2. From the list of detected faces select the image by which search will be performed.
3. Right-click the corresponding line in the list and select the **Search** from the menu (**2**) to search only by the image.
4. Right-click the corresponding line in the list and select the **Search by filter** from the menu (**3**) → "Filter name" to search the image using the specified filter.

> **Note**
>
> You can also go to the face search by right-clicking on the image in the **Face DB** (**4**) or **Cameras** (**5**) sections (see Viewing information on recognized and unrecognized faces) and selecting the corresponding item.
>
> If the recognized face was selected, the **Search by name** (**6**) will be available after clicking on the **Face DB** button (**4**). When you search a recognized person by name, the **Name** field is automatically filled in according to the data from the Reference face database.



As a result, the face search window will be opened (see Face search), and the search for the selected face will be automatically performed. The captured face image will be loaded as the image for search.

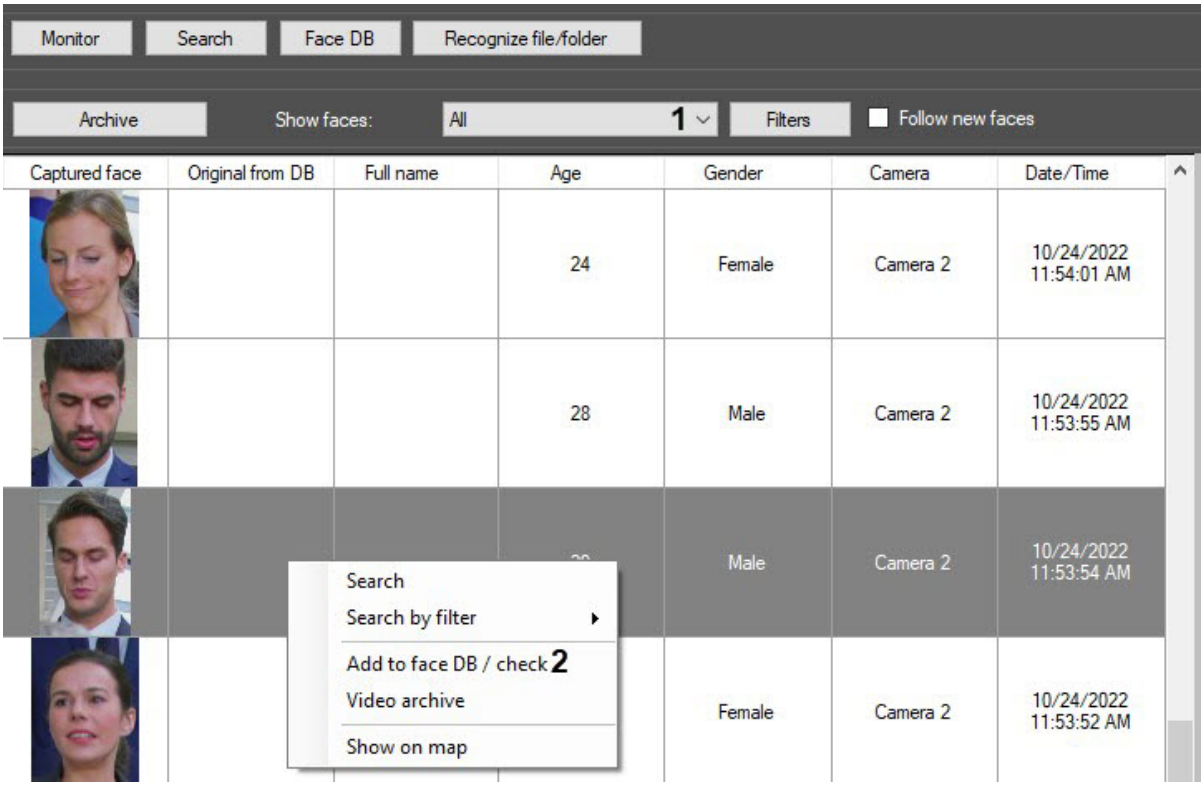
Note

If there are more than one captured faces on the image, the automatic face search will not be performed.

4.2.1.5 Add captured faces to the reference face database

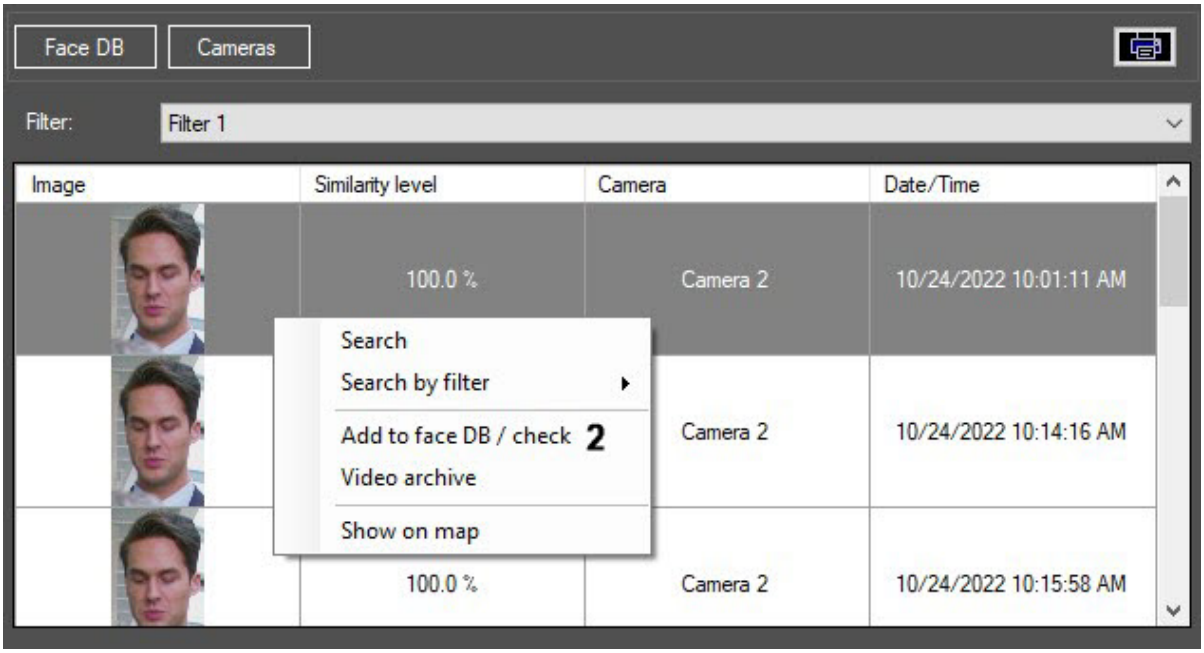
It's possible to add a captured face from the monitoring panel to the reference face database. To do this:

1. From the **Show faces** drop-down list (**1**), select the required value.



2. From the list of detected faces, select the image which should be added to the reference face database. Right-click it and select the **Add to face DB/check** item (**2**) from the menu.

> **Note**
>
> You can also add the face to the reference face database by right-clicking the image in the **Cameras** section in the lower right part of the captured faces monitoring panel and selecting the corresponding menu item.



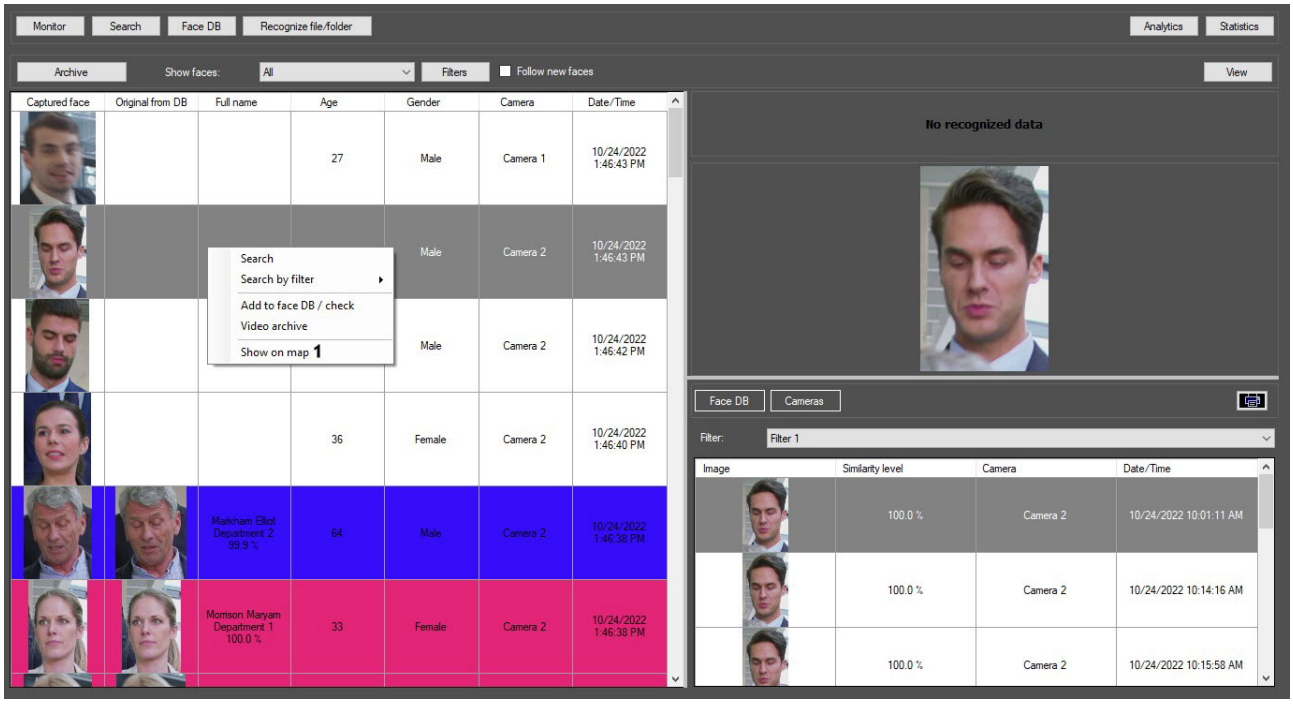
As a result, the window for adding the detected face to the face database will be displayed. The process of adding the detected faces to the face database is described in Working with the reference face database.

4.2.1.6 Displaying the camera that captured the face on the map

To display the camera that captured the face on the map, right-click the captured image and select **Show on map** from the menu (**1**).

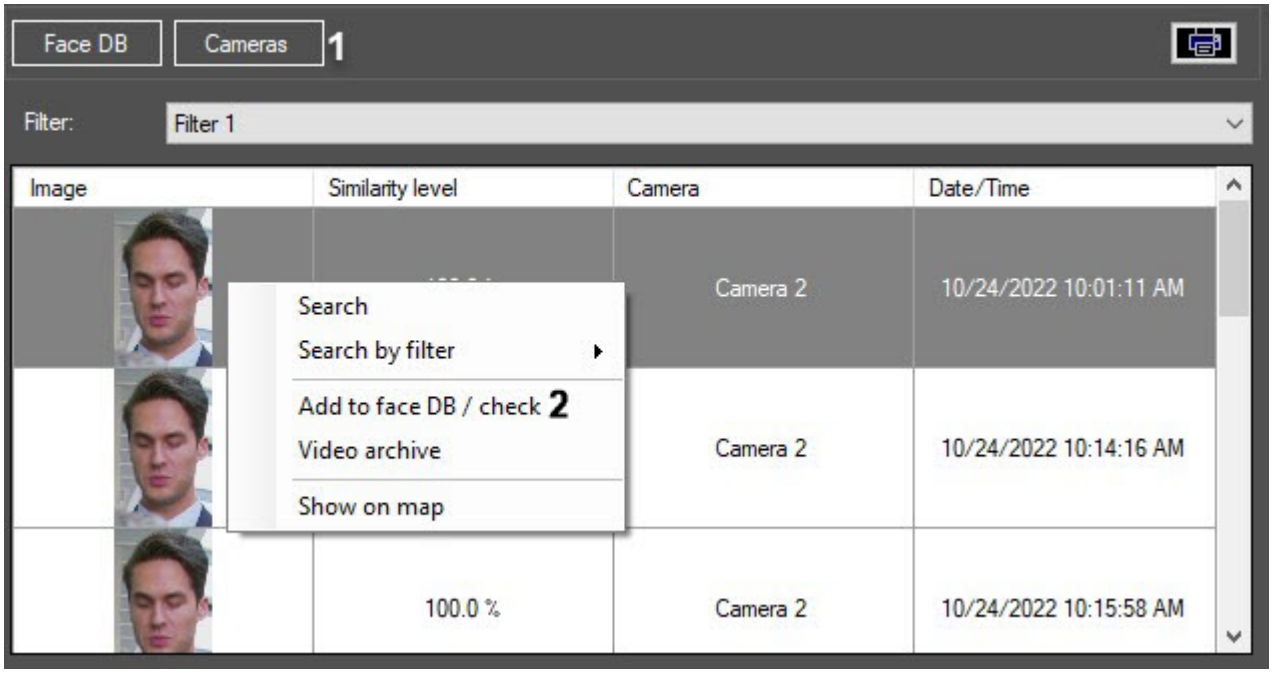
Note

To enable the **Show on map** item (**1**) display in the menu, it is necessary to specify a control map in the **Face recognition and search** interface object settings (see Map settings).



Note

You can also display the camera that captured the face on the map by right-clicking the image in the **Cameras** section (**1**) in the lower right part of the captured faces monitoring panel and selecting the corresponding menu item (**2**).



As a result, the camera that captured the selected face will be displayed in the **Map** interface window.

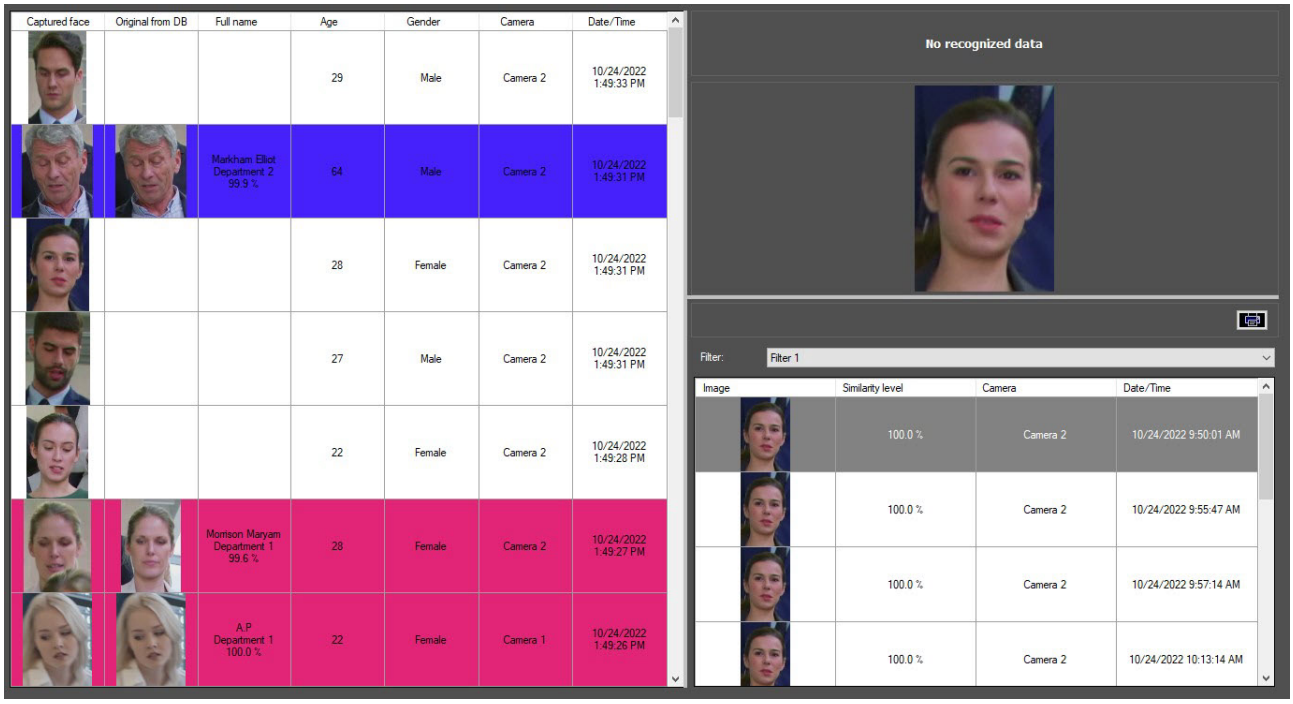
4.2.1.7 Enabling the Simple mode of captured and recognized faces monitoring

The Simple mode of monitoring is used to view the captured and recognized faces in real time without the possibility of switching to another mode and changing the appearance of the interface window.

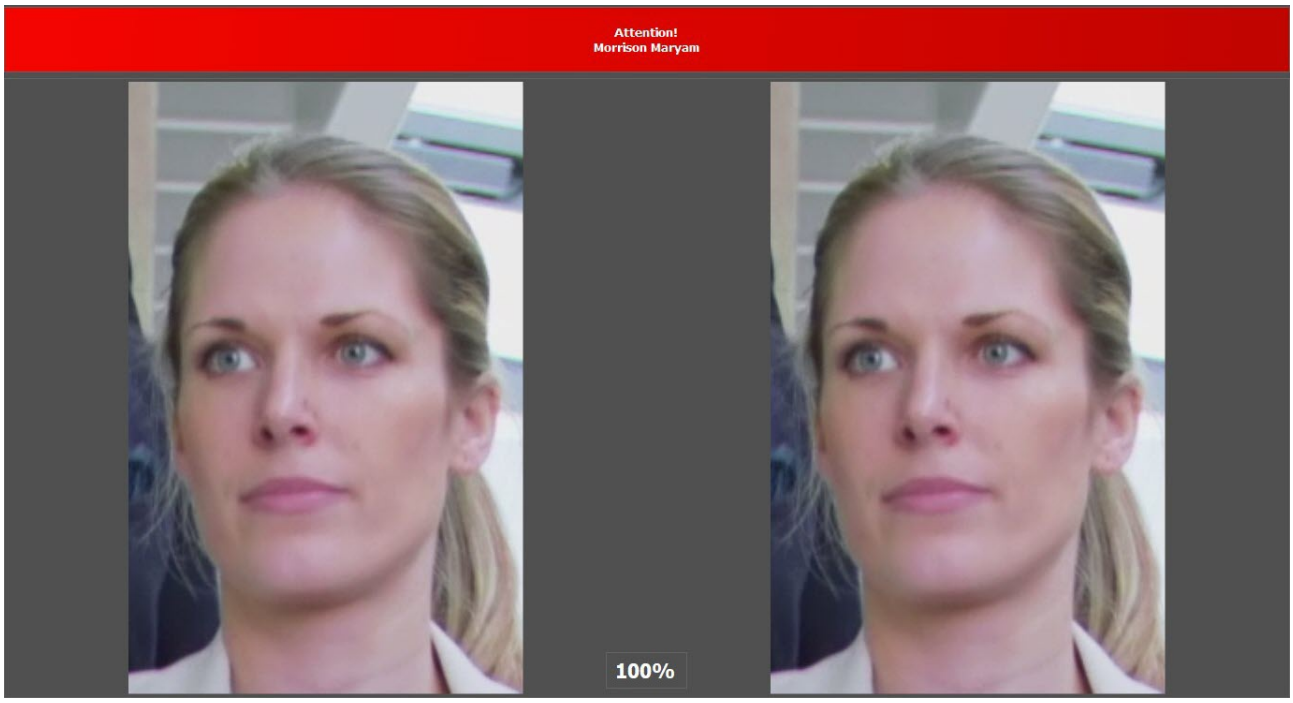
When the Simple mode is enabled, the upper part of the interface window is hidden, and such operations as working with the reference face database, face searching in the video archive, and other operations with buttons at the top become unavailable. The sizes of all elements, including the column size, remain the same as before the Simple mode was enabled.

Note

Since the upper part of the interface window is hidden in the Simple mode, it is recommended to enable the automatic setting of the **Follow new faces** checkbox (see Monitoring of captured and recognized faces).

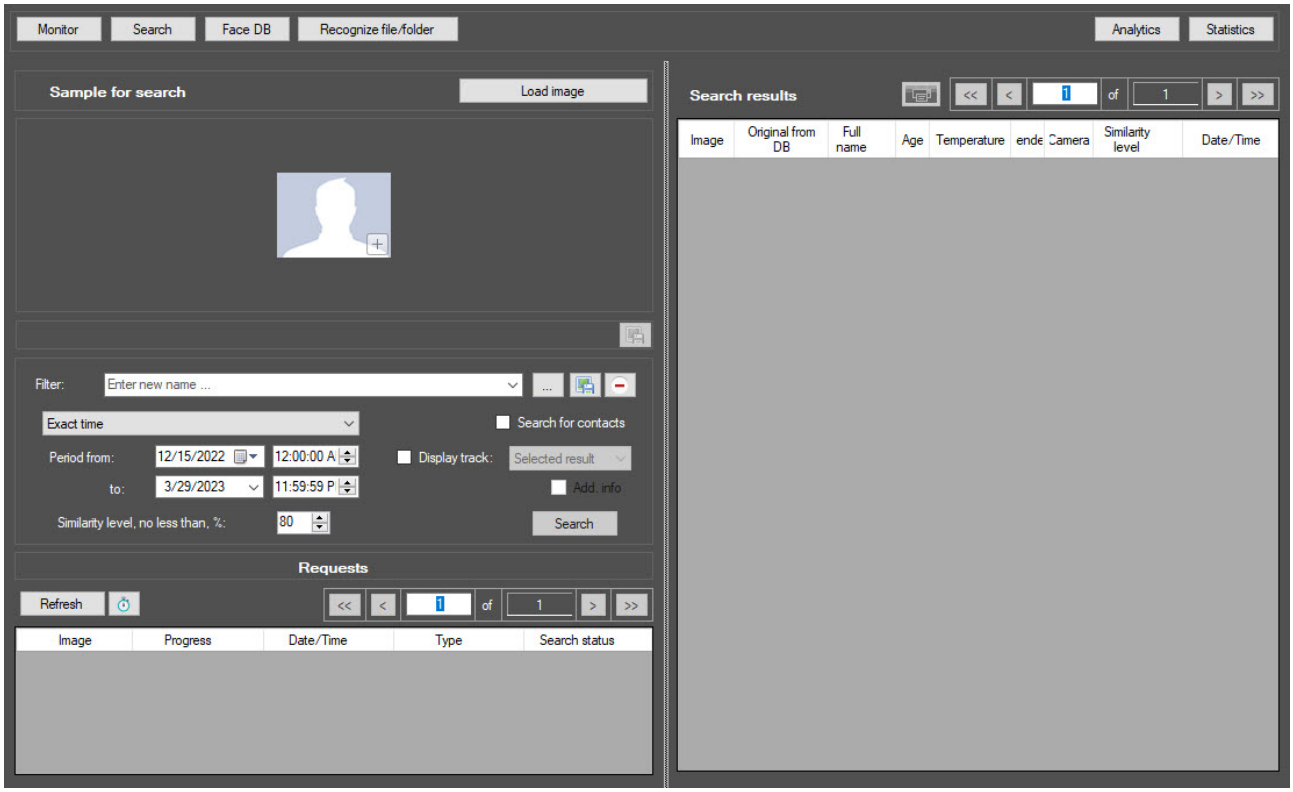


Double-click the recognized face area to expand and minimize it.



4.2.2 Face search

To go to the face search, click the **Search** button in the **Face recognition and search** interface window. As a result, the window for face search in the video archive by photo will open.



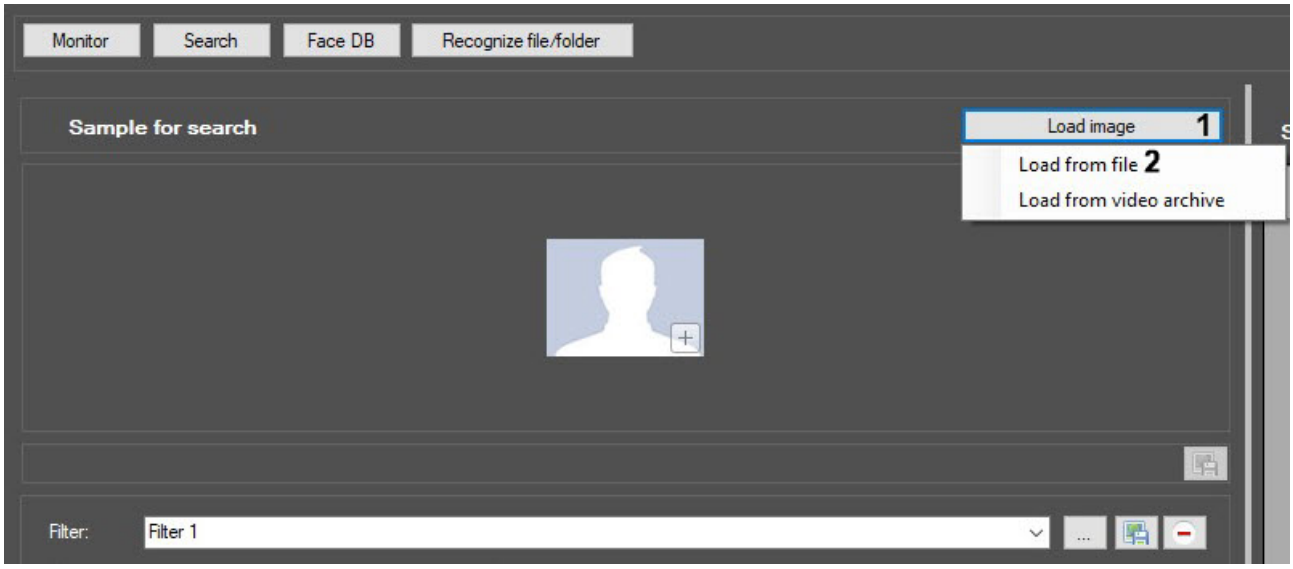
4.2.2.1 Loading an image for search

The image for search can be selected in two ways:

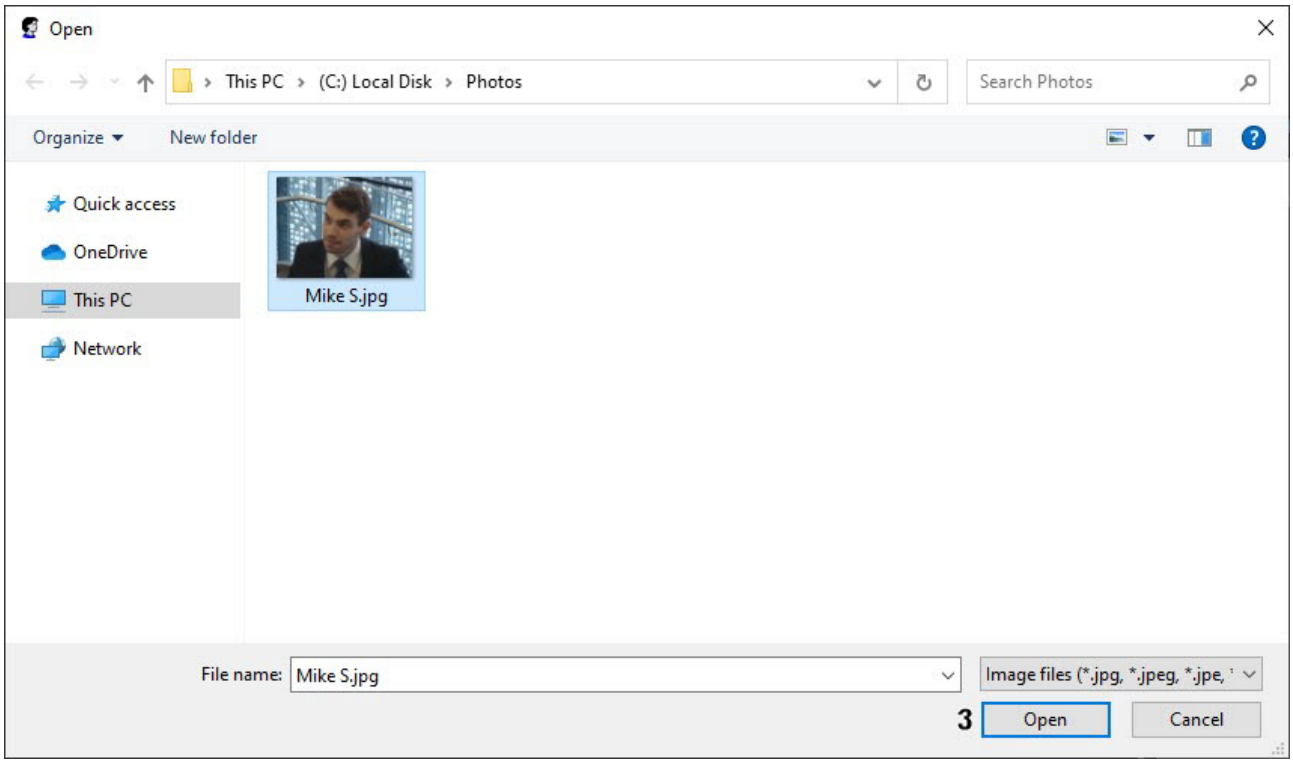
1. By uploading a file with the image.
2. By capturing the image from a video archive.

4.2.2.1.1 Uploading image from a file

To upload an image from a file, click the **Load image** button (**1**) and select the **Load from file** value (**2**) from the list.



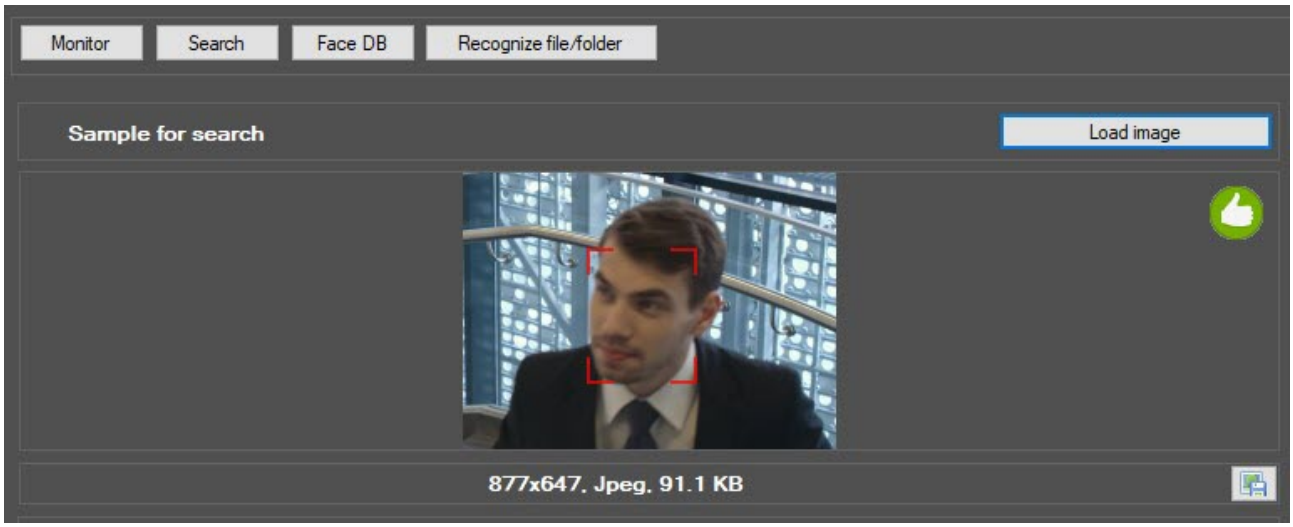
Standard window of files selection will open. Select the required file with image and click the **Open** button (**3**).



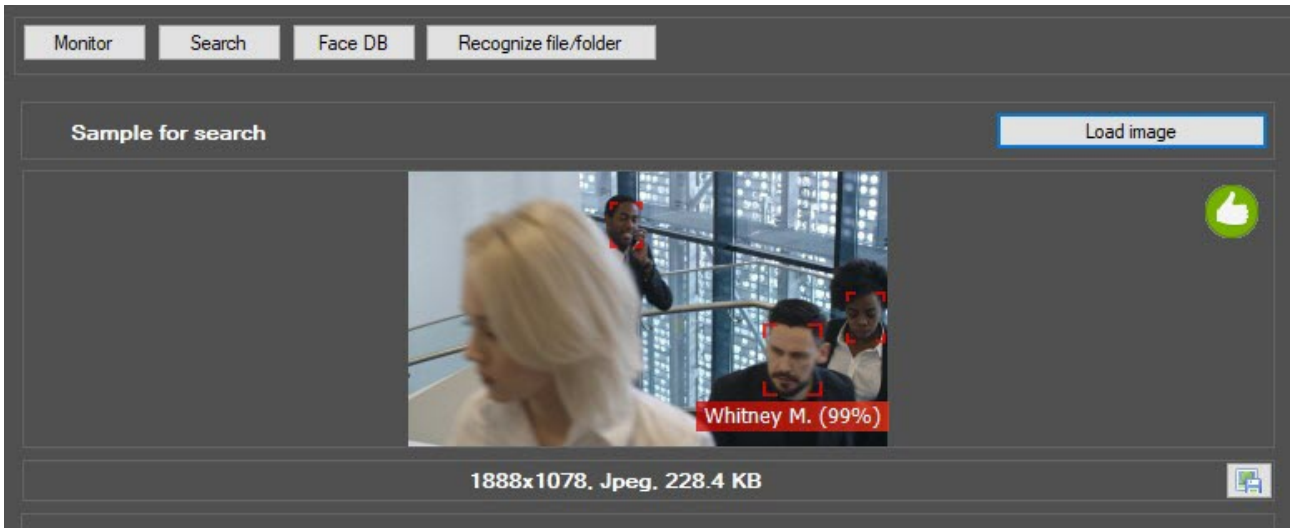
Note

The following image formats are supported for loading: JPG, JPEG, JPE, JFIF, PNG, GIF, BMP.

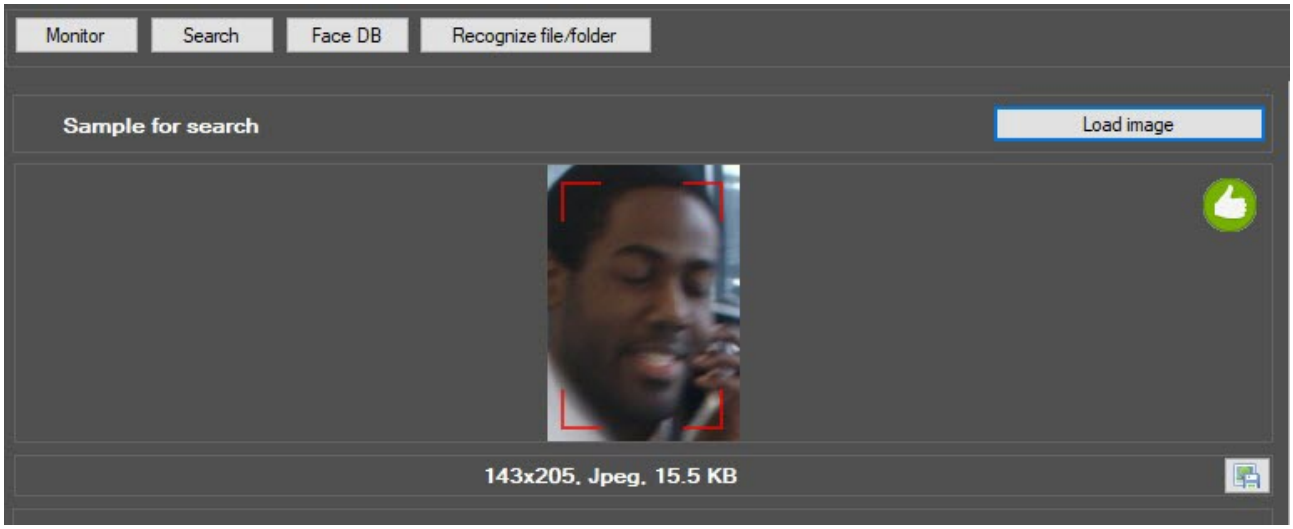
As a result an image from the selected file will display in the **Sample for search** field on the panel of specifying search conditions.



Several faces can be captured on the sample for search.

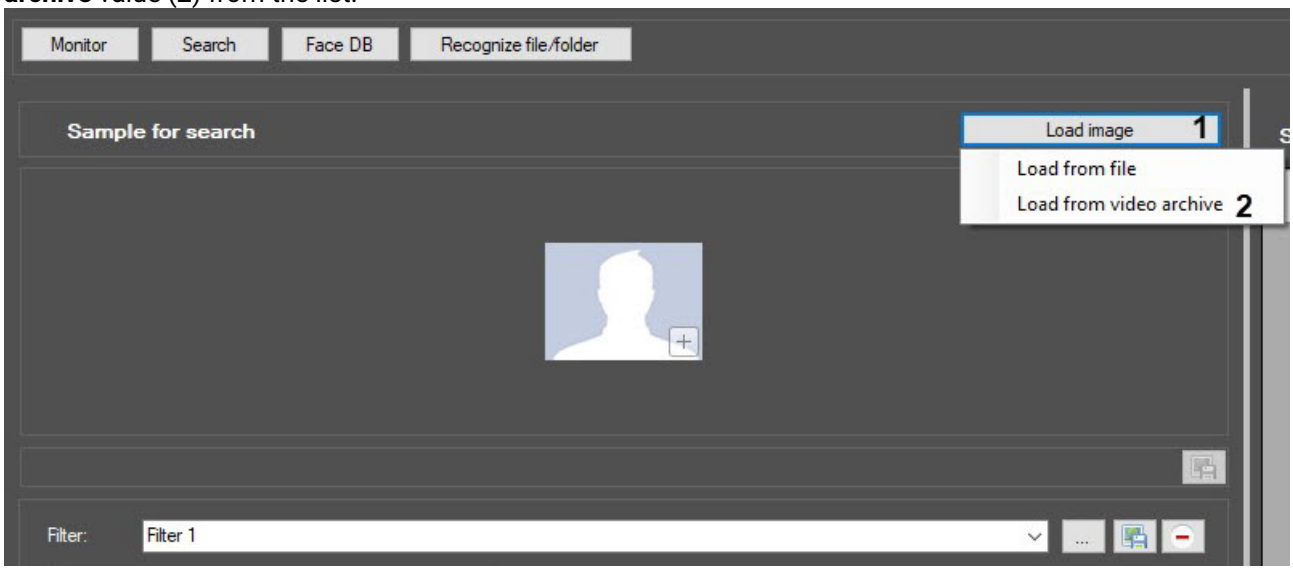


In this case, left-click on the face which is required for the search.



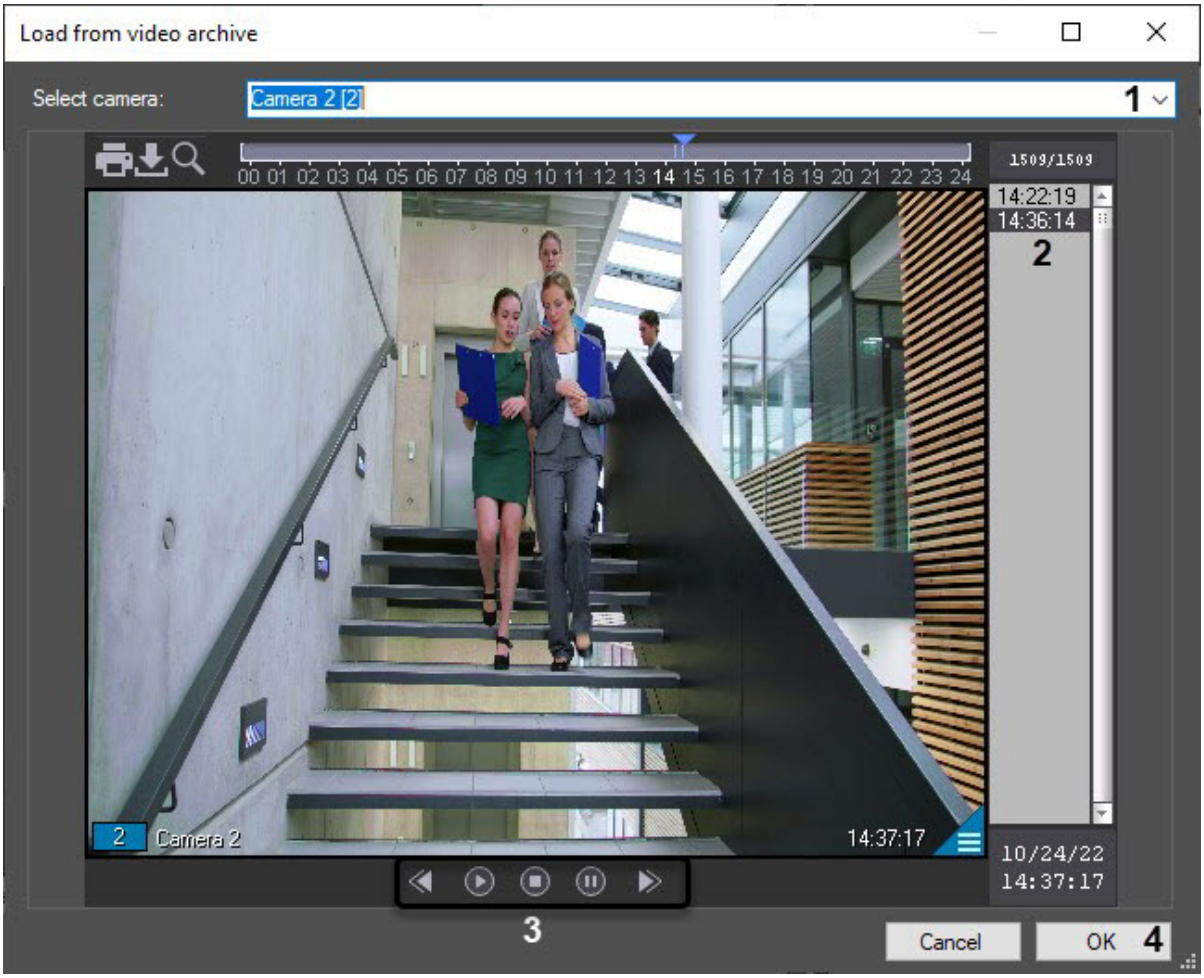
4.2.2.1.2 Uploading image from video archive

To upload an image from the video archive, click the **Load image** button (**1**) and select the **Load from video archive** value (**2**) from the list.



Window of capturing the image from the video archive will open.

1. Select video camera from video archive in which it's necessary to capture the image (**1**).

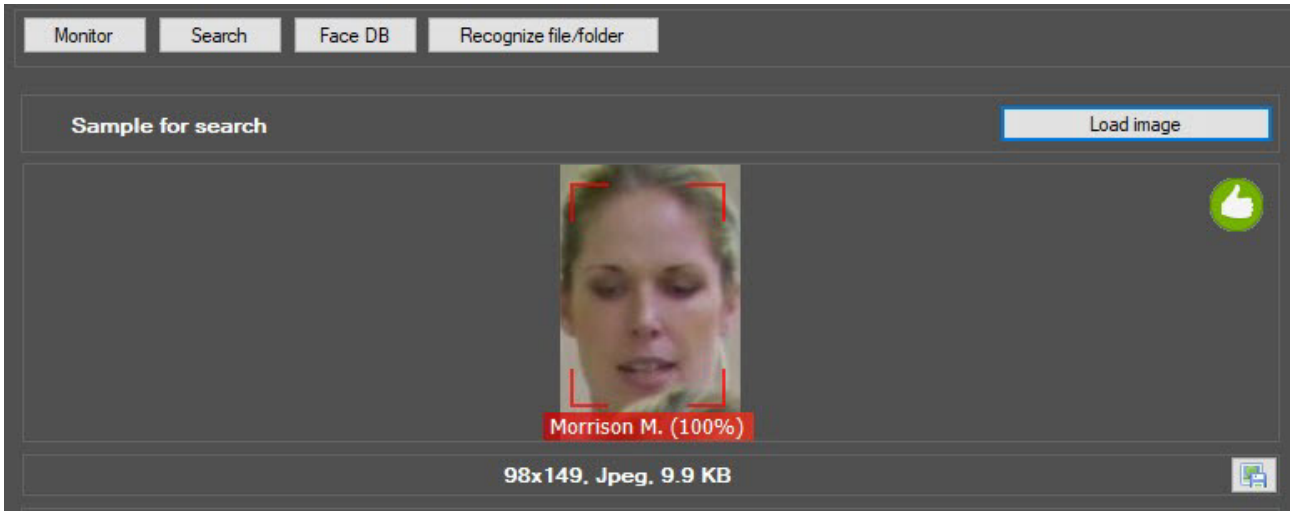


2. Select required video. To go to video records click left mouse button on the corresponding time marker (**2**).
3. Select required video frame. Use playback control board for video frame selection (**3**).

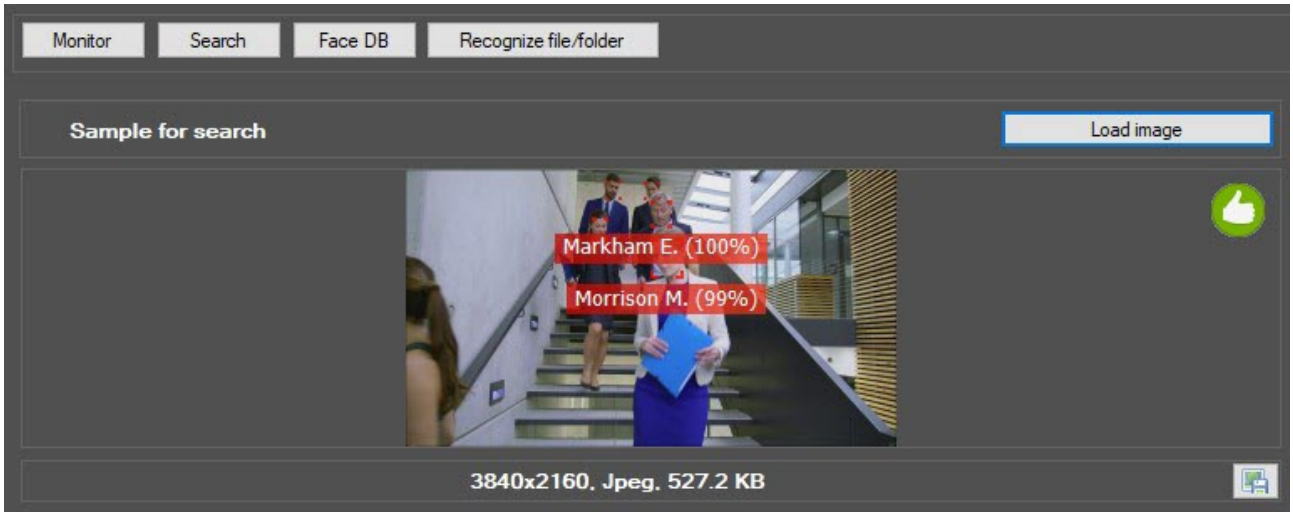
> **Note.**
>
> button is for starting playback of selected video recording, button stops playback. and buttons are used for going to video recording back and forth in playback mode and also for paging frames in pause mode. To go to pause mode button is used, button is used for restarting playback.

4. Click the **OK** button (**4**).

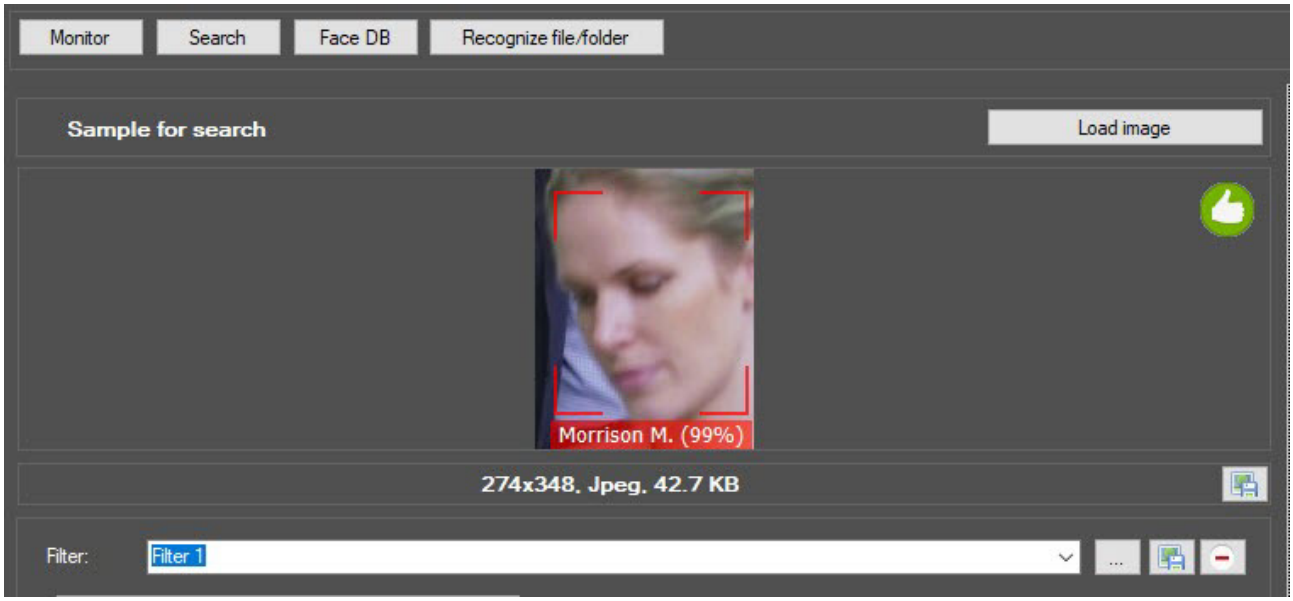
As a result the selected area is displayed in the **Sample for search** field on setting search conditions panel.



Several faces can be captured on the sample for search.



In this case, left-click the face which is required for the search.



Uploading image from the video archive is complete.

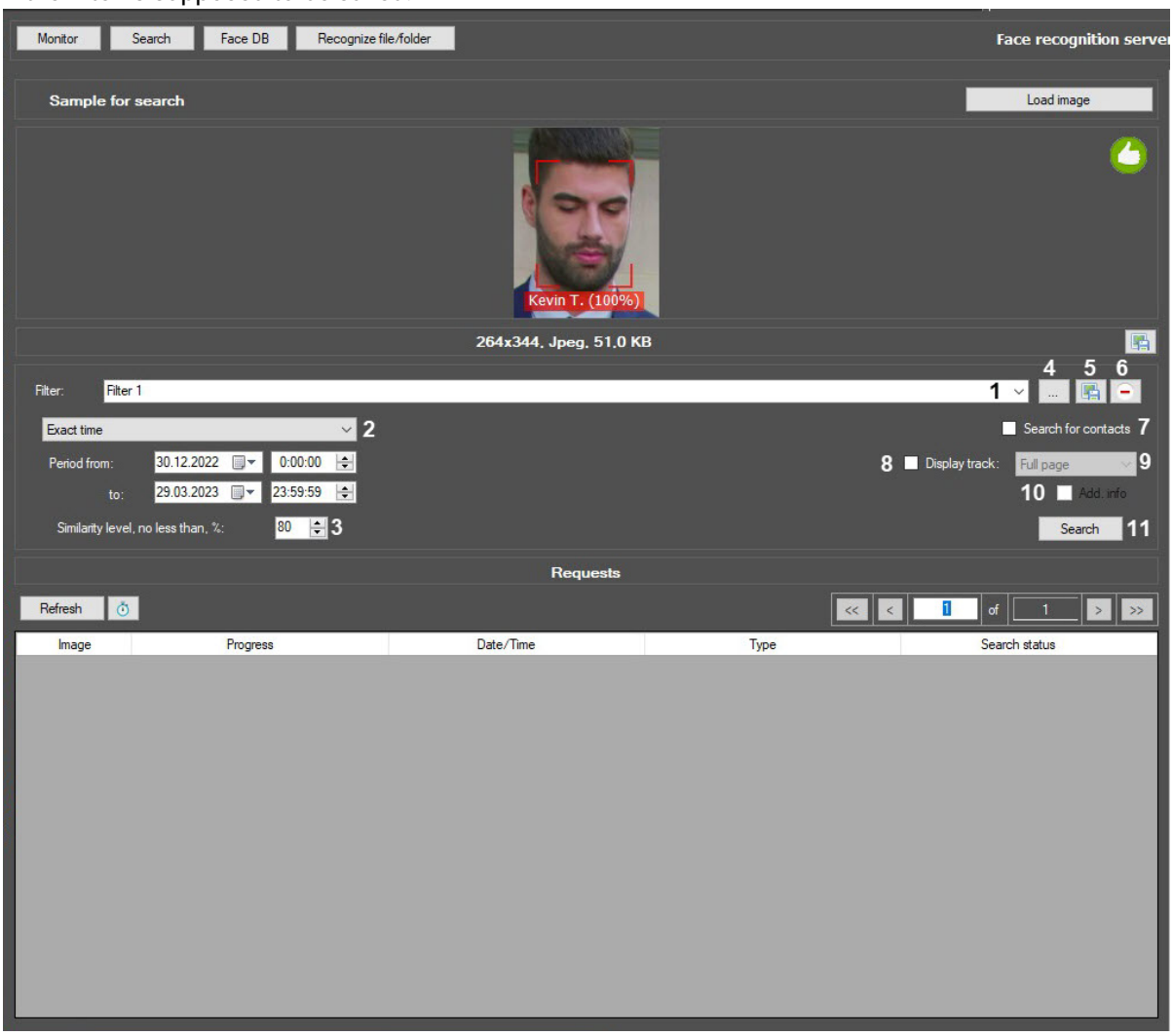
4.2.2.2 Starting the face search process

To search faces in the video archive, do the following:

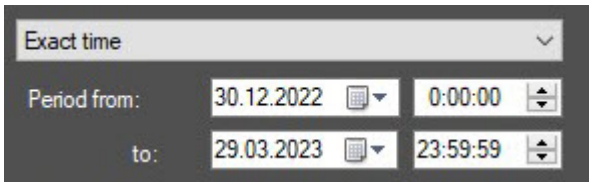
1. Upload an image for search (see Loading an image for search).

> **Note**
>
> The uploaded image is automatically verified with all faces in the reference face database and, if there is a match, then the name of the corresponding person and its similarity degree in percent are displayed on top of the uploaded image.

2. From the **Filter** drop-down list (**1**), select the existing face search filter or enter an arbitrary filter name if the filter is supposed to be saved.

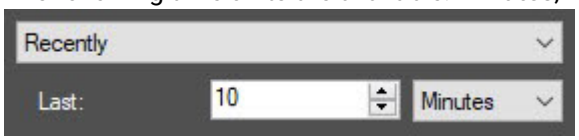


3. From the drop-down list (**2**), select the required type of search interval:
   - **Exact time**—in the **Period from** and **to** fields, specify the beginning and end of the search interval in the DD.MM.YY HH:MM:SS format.



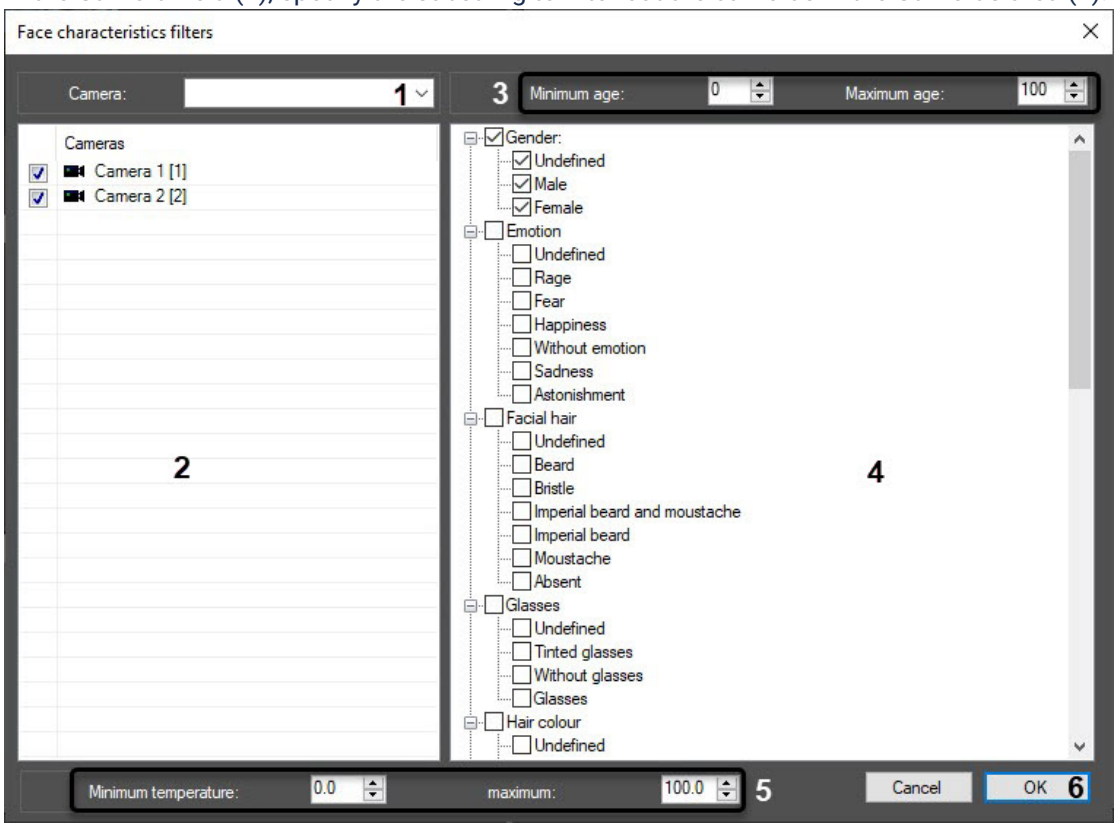
> **Note**
>
> The specified time period is not saved when the filter is saved.

- **Recently**—in the **Last** field, specify the time period from the current time to the specified time. The following time units are available: **Minutes**, **Hours**, **Days**, **Weeks**, **Months**.



4. In the **Similarity level, no less than, %** field (**3**), set the minimal similarity level between the reference face image and the captured face.

5. Click the ... button (**4**) to specify the face characteristics:
   a. In the **Camera** field (**1**), specify the substring to filter out the cameras in the **Cameras** area (**2**).



   b. In the **Minimum age** and **Maximum age** fields (**3**), specify the minimum and maximum age of persons, respectively.
   c. In the area (**4**), set the checkboxes next to the corresponding face characteristics.

> **Note**
>
> Face characteristics (**4**) may not be displayed (see Configuring the additional face characteristics).

   d. In the **Minimum temperature** and **maximum** fields (**5**), specify the minimum and maximum face temperature, respectively.

e. Click the **OK** button (**6**) to save the changes and return to the face search window.

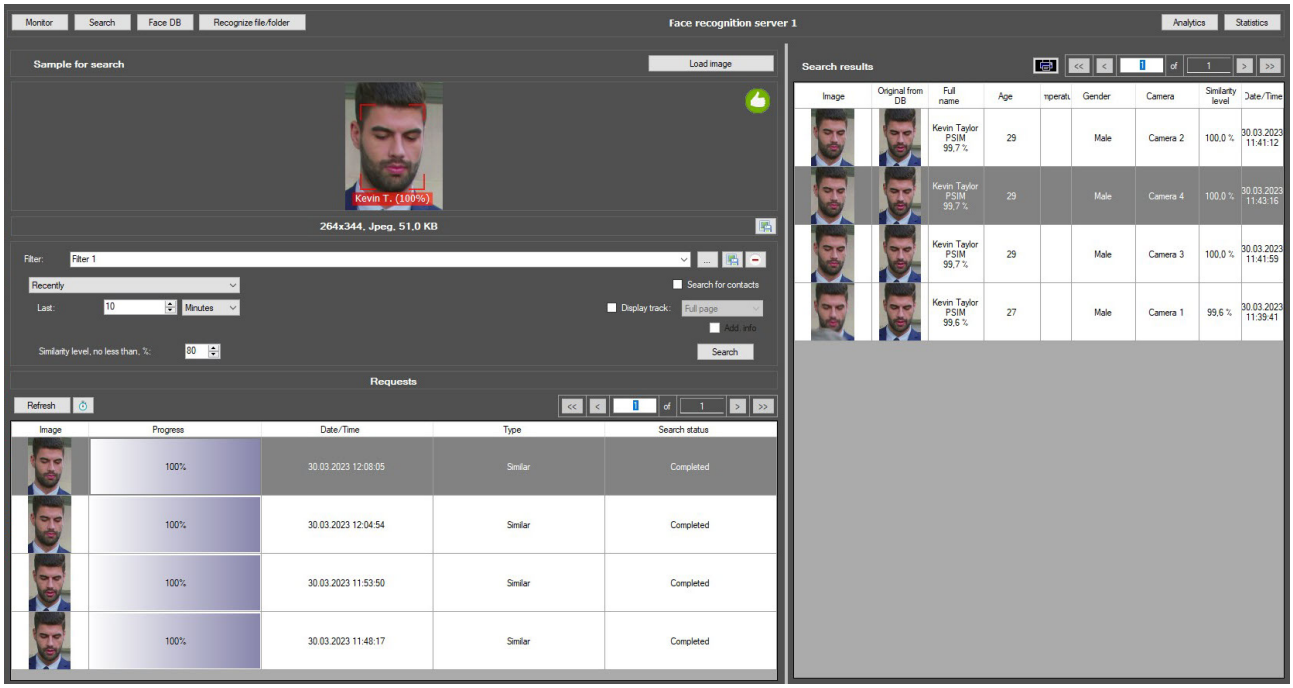
6. Click the  button (**5**) to save this filter for the future use.

> **Note**
>
> To remove a filter, select it from the **Filter** drop-down list (**1**) and click the  button (**6**).

7. Set the **Search for contacts** checkbox (**7**) if it is necessary to find people who have been in contact with this person. The time, within which it is necessary to search for contacts, is set on the settings panel of the **Face recognition server** object (see Configuring the contact time with persons).
8. Set the **Display track** checkbox (**8**) so that the movement (track) of a person is displayed as arrows on the **Map** interface object.
9. From the drop-down list (**9**), select the method of the track display:
   a. **Selected result**—the map will display only the movement of a person corresponding to the selected line from the search result, i.e., the movement of a person from the object from which they came and to the object to which they went;
   b. **Full page**—the map will display the movement of a person within the specified page of the search results.
10. Set the **Add. info** checkbox (**10**) so that the additional information (name, department, similarity, start time and end time) is also displayed near each arrow that shows the movement of a person on the map. The information that should be displayed is configured on the **Map settings** tab on the settings panel of the **Face recognition and search** interface object (see Map settings).
11. Click the **Search** button (**11**).

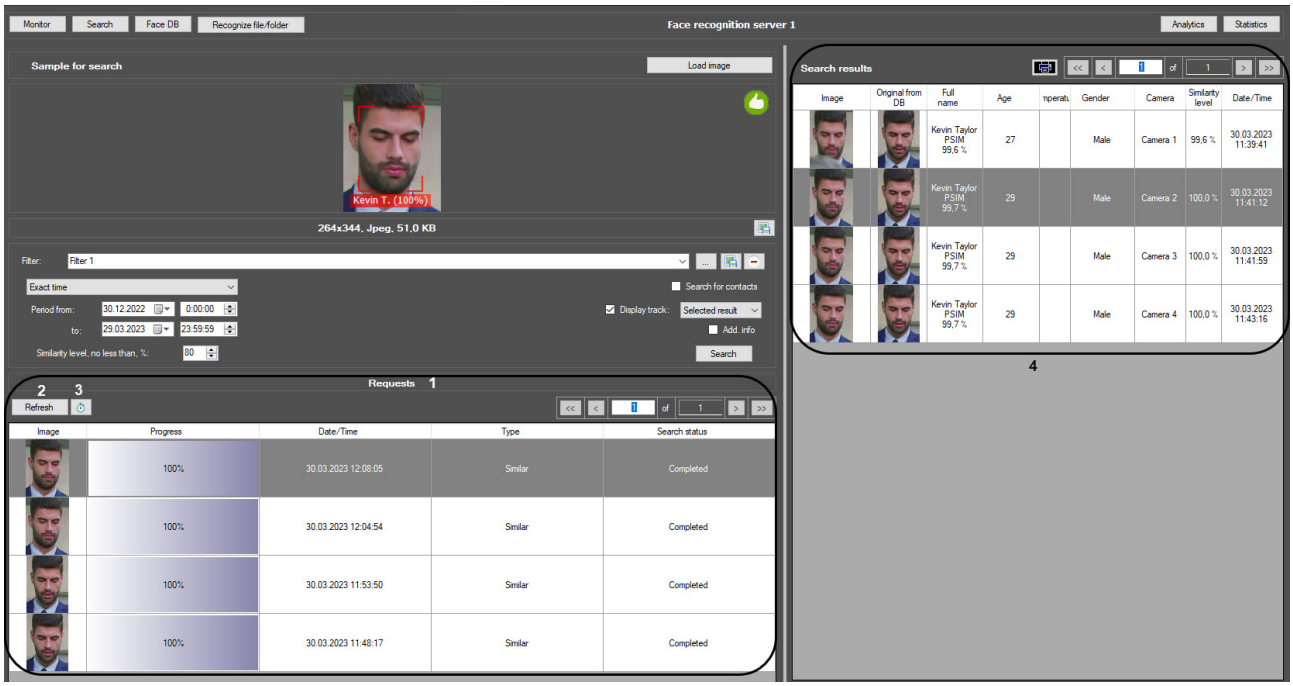
> **Note**
>
> By default, one CPU core is used for face search. Using the **CpuCoreCountSearch** registry key, you can change the number of cores used (see Registry keys reference guide), which will increase search speed.

As a result, the selected face will be searched.



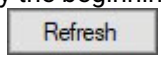
4.2.2.3 Viewing face search results

Search results are displayed in the **Face search** interface window after the search is performed (see Starting the face search process).

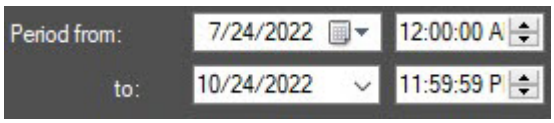


The list of all search requests is displayed in the **Requests** section (**1**). The following information is displayed for each record:

Column name	Description	Face Recognition module used
Image	The image for search *Note. As you increase the width and height of this column, the image size also increases. The specified column size does not change even if the **Columns auto width** checkbox is set (see Configuring the permissions and additional settings)*	All recognition modules
Progress	The progress of the search completion	All recognition modules
Date/Time	The date and time of the search request completion	All recognition modules
Type	The type of the face search request: search for a similar face, search for contacts with a face, search for all recognized faces	All recognition modules
Search status	The status of the search request	All recognition modules

In order to view the search requests and their results for a certain period of time, click the  button (**3**) and on the panel that opens specify the beginning and end of the time interval in the **Period from** and **to** fields, respectively, and click the 

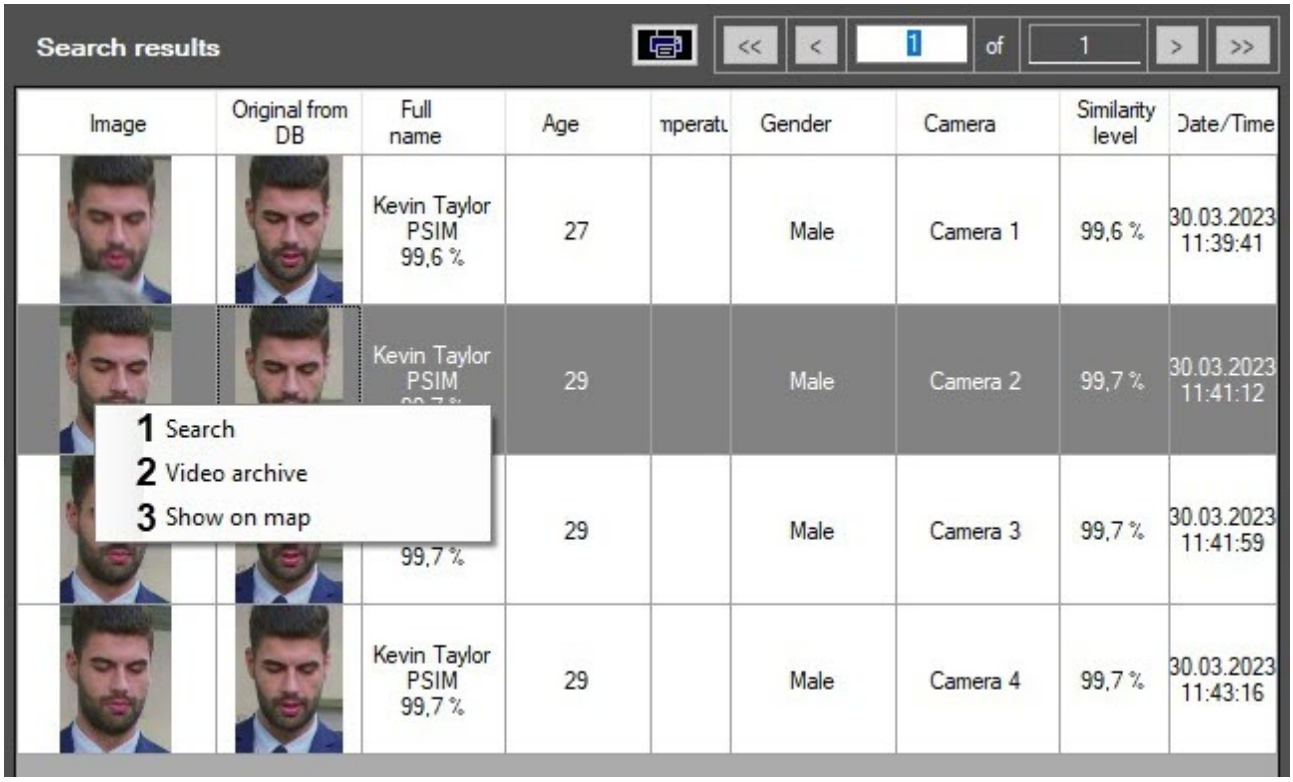
button (**2**).



The search results of the selected request are displayed in the **Search results** section (**4**). The following information is displayed for each record:

Column name	Description	Face Recognition module used
Image	The face image from the video record *Note. As you increase the width and height of this column, the image size also increases. The specified column size does not change even if the* ***Columns auto width*** *checkbox is set (see* Configuring the permissions and additional settings*)* *Note 2. In case of an emergency shutdown of the Face PSIM server, some images of faces may be damaged and displayed as*  *. To hide such results, it is necessary to change the value of the* ***HideResultsWithoutImages*** *parameter to* ***True*** *(see* XML-file parameters reference guide*)*	All recognition modules
Name of face characteristic	Selected face characteristics (see Configuring the additional face characteristics)	Only *VA*, *VideoIntellect 1.1* and *VisionLabs*
Camera	The camera which is a video record source	All recognition modules
Similarity level	The similarity level between the reference face image and the captured face from the video record	All recognition modules
Date/Time	The date and time of the search	All recognition modules

To place a face image from the **Search results** section in the **Sample for search** window, double left-click the required search result.



To search using the image from the **Search results** section, right-click the required image and select **Search** from the menu (**1**).

To view the video record from moment when the captured face appears, use one of the following ways:

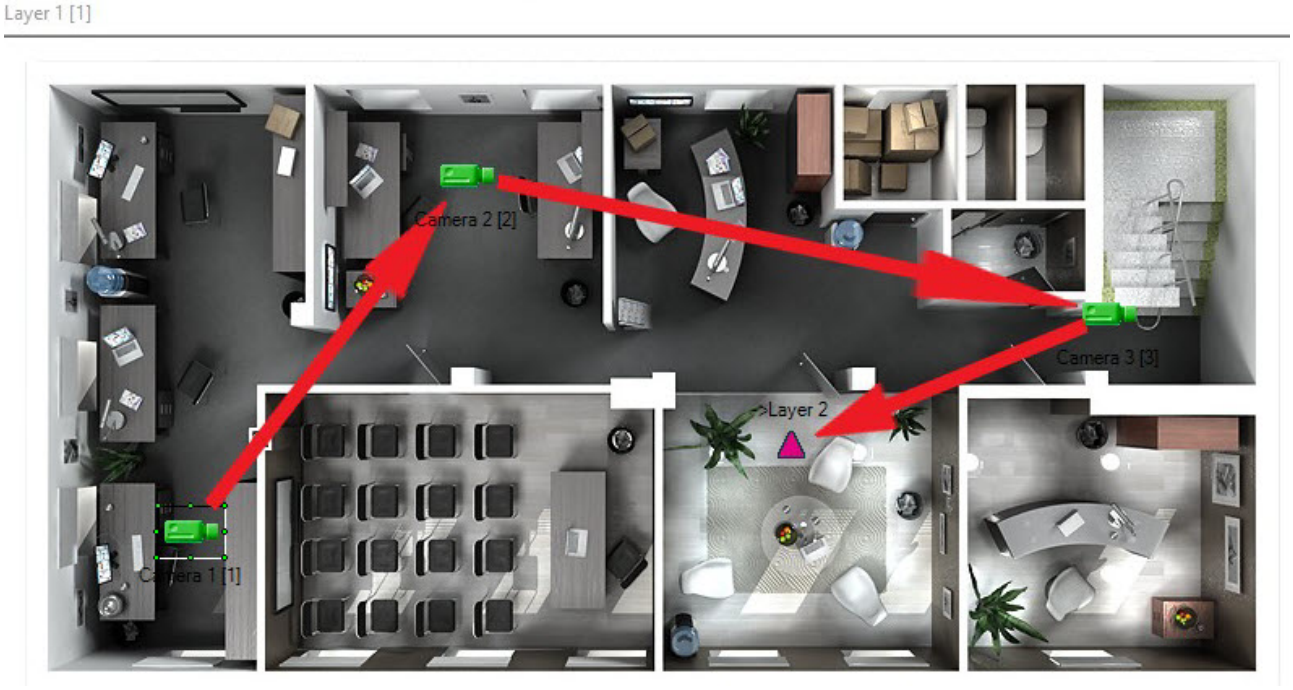
- double left-click the required face search result;
- right-click the required face search result and select **Video archive** from the menu (**2**). After this, the video archive window will open (for details, see Working with the archives).

To view the camera that captured the face on the map, right-click the required image and select **Show on map** from the menu (**3**). As a result, the camera that triggered will be marked with a circle in the map window.

If the **Display track** checkbox is set, the movement of a person will be marked with arrows on the map, if the checkbox is clear, the arrows will disappear. Depending on the variant of the track display (**Selected result** or **Full page**) and the set **Add. info** checkbox (see Starting the face search process), the window will have a different appearance.

Example of a map with the **Selected result** display variant: the arrows show where the person came from and where they went, the camera, relative to which the movement was noticed, is marked with a circle on the map.

Example of a map with the **Full page** display variant: the arrows show the entire path of a person within the specified search results page, the first camera that captured the face is marked with a circle on the map.



Example of a map with the **Add. info** checkbox set and the name, similarity percentage, start time and end time selected for display (see Map settings).

If filtering for events where the same person appears several times in a row in the FOV of the same camera was enabled in the settings of the **Map** interface object, then this camera will be shown on the map with a red down arrow and with no additional information  (see Map settings).

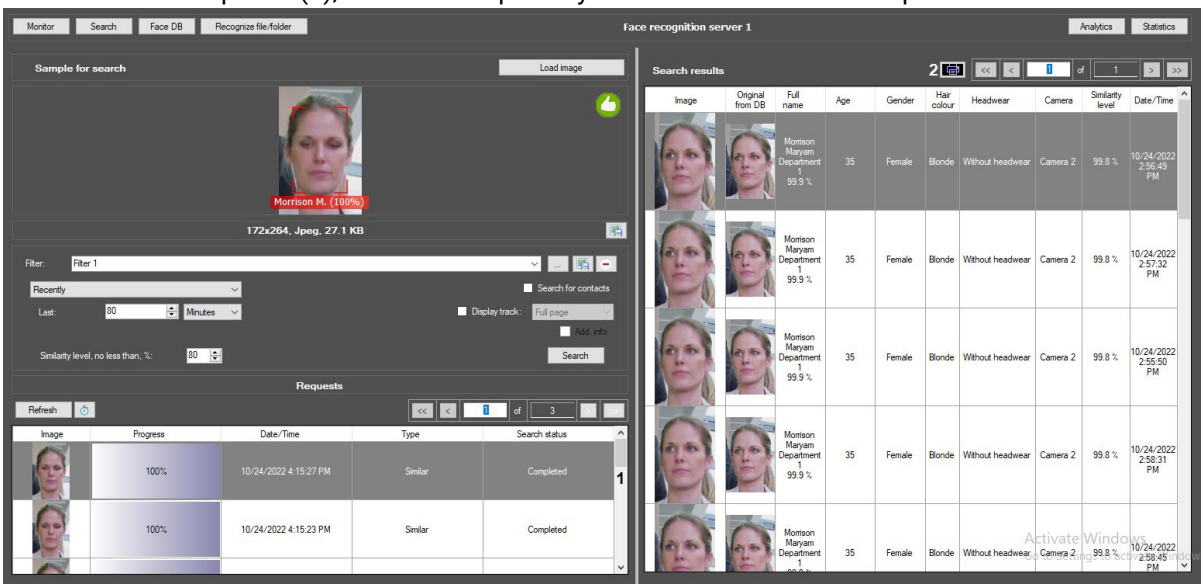
Note

- To go to the previous and next page of the search results, use the < and > buttons, respectively. To go to the first page of search results, click the << button. To go to the last page of the search results, click the >> button.
- The arrows aren't displayed between the search results received from one camera.
- Circle mark (animation) around a camera disappears from the map after a few seconds.
- To mark the camera that captured the face,  is used if there is no next camera on the map, i.e., the track cannot be continued. To mark the camera that captured the face,  is used if there is no previous camera on the map, i.e., there is no beginning of the track. Example. There are three cameras, the first trigger was on Camera 1, the second trigger was on Camera 2, and the last trigger was on Camera 3. If there is no mediate Camera 2 on the map, the result will look like this:

4.2.2.4 Exporting face search results to a report file

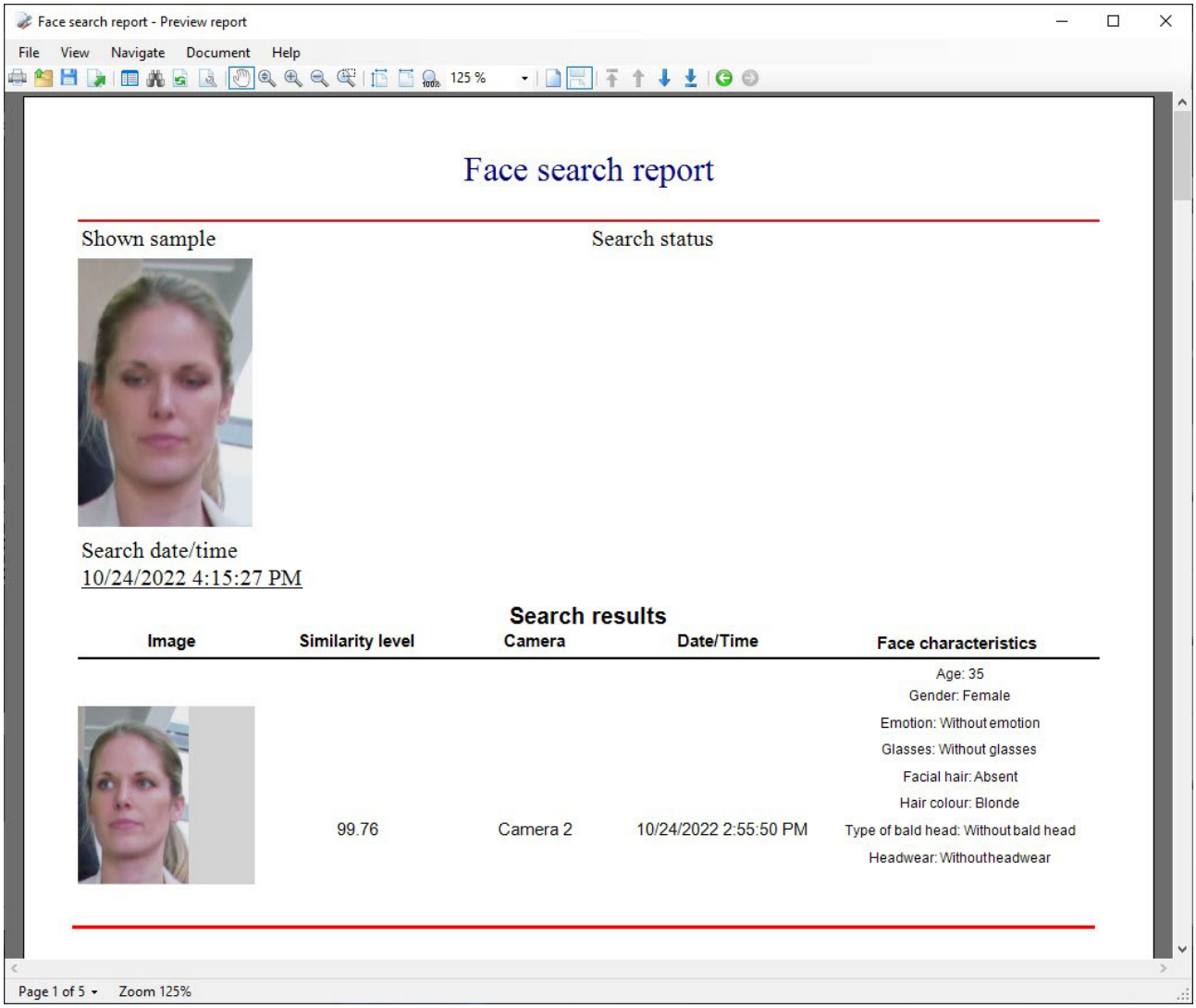
To export search results to a report file in PDF format, do the following:

1. From the list of requests (**1**), select the request by the results of which the report should be created.



2. Click the  button (**2**).

As a result, the report by the results of the selected search request will be generated.



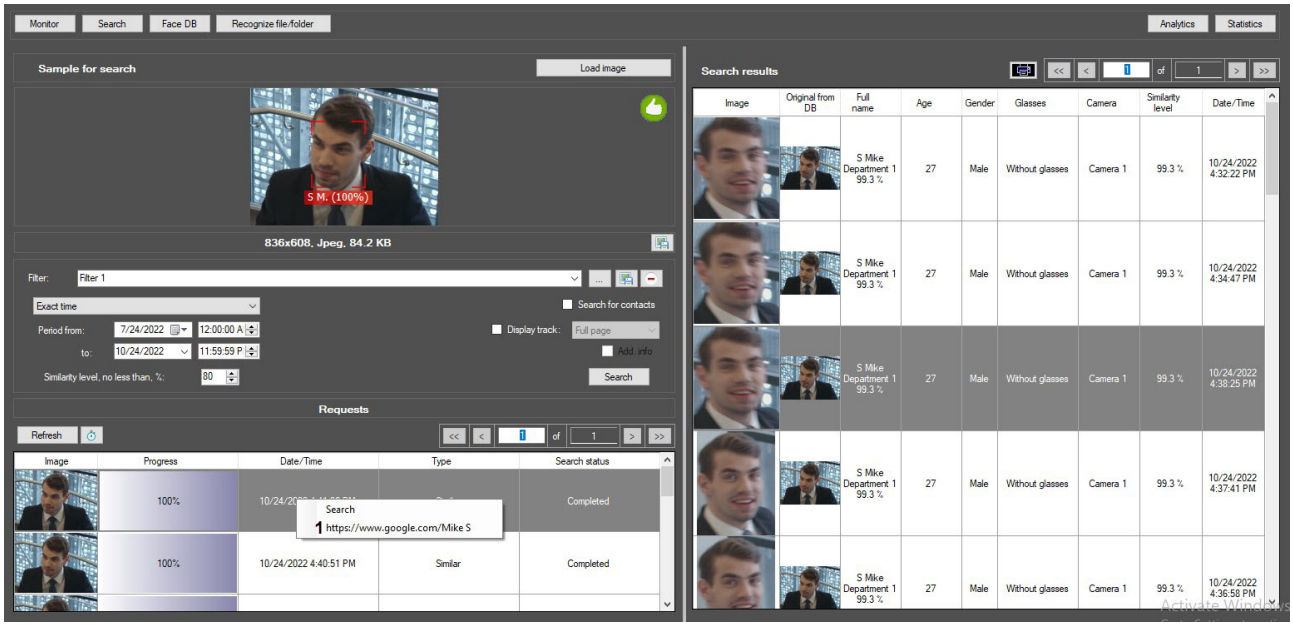
Exporting search results to a report file is completed.

4.2.2.5 Web page opening upon a face search request

It is possible to open a web page upon a face search request. To do this, right-click the corresponding search request and select the link to go to the web page (**1**).

Note

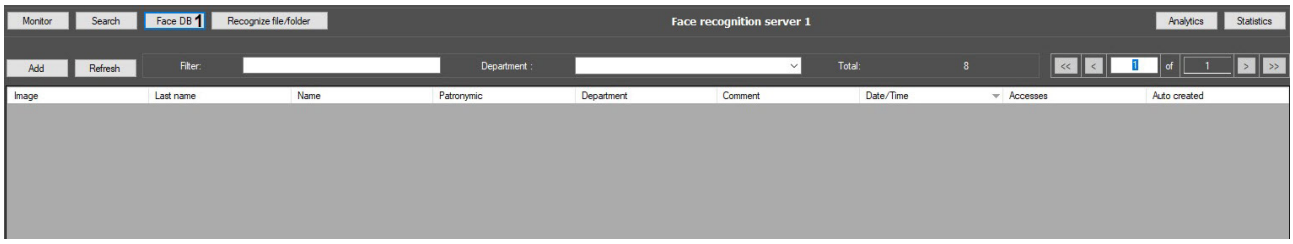
Opening a web page upon a face search request is possible only for the search by an image loaded from a file. Also, a web page that opens should be specified on the settings panel of the **Face recognition and search** interface object (see Configuring the permissions and additional settings).



As a result, the specified link will be opened in the browser.

4.2.3 Working with the reference face database

To go to the reference face database, click the **Face DB** button (**1**) in the **Face recognition and search** interface window.



The information on faces in the reference face database is displayed in the columns:

Column name	Description
Image	Reference face image
Last name	The last name of the person on the image
Name	The first name of the person on the image
Patronymic	The patronymic name of the person on the image

Column name	Description
Department	The department of the person on the image
Comment	The comment
Date/Time	Date and time of adding a face to the reference face DB

Working with the reference face database is also possible with the help of the *Access Manager* module which is a part of *ACFA PSIM* (see Guide for configuring and working with the Access Manager module). *Face PSIM* interacts with the *Access Manager* module by means of the *Face synchronization* module (see Appendix 5. Face synchronization module).

The *Face synchronization* module allows to do the following:

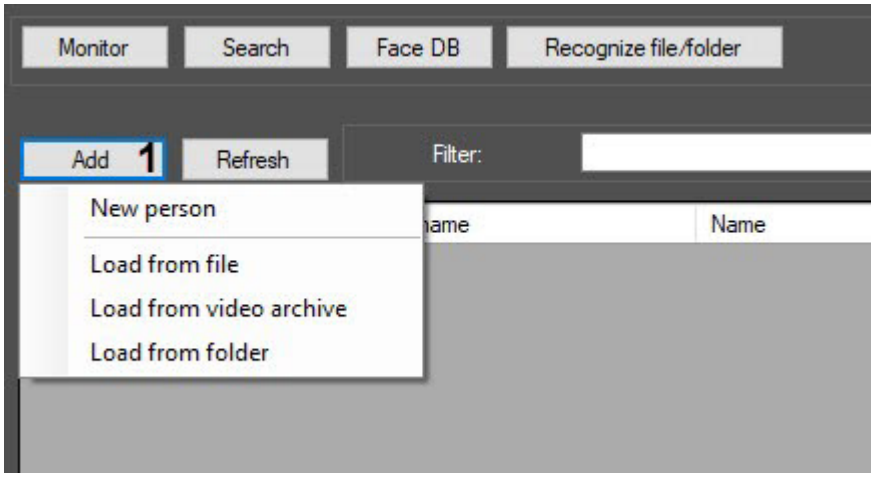
1. Create a face in the reference face database automatically, when a photo is assigned to a user in the *Access Manager* module.
2. Change the image of the face in the reference face database automatically, when a user's photo is changed in the *Access Manager* module.
3. Delete a face from the reference face database automatically, when a user's photo is deleted from the *Access Manager* module.

Attention!

When creating a user in *Axxon PSIM* through **Face recognition and search** interface object (see Adding images to the reference face database), the correct synchronization of faces is not guaranteed.

4.2.3.1 Selecting a way to upload an image to the reference face database

To upload an image to the reference face database, click the **Add** button (**1**) and select one of the ways of uploading an image.



There are following ways to upload the images:

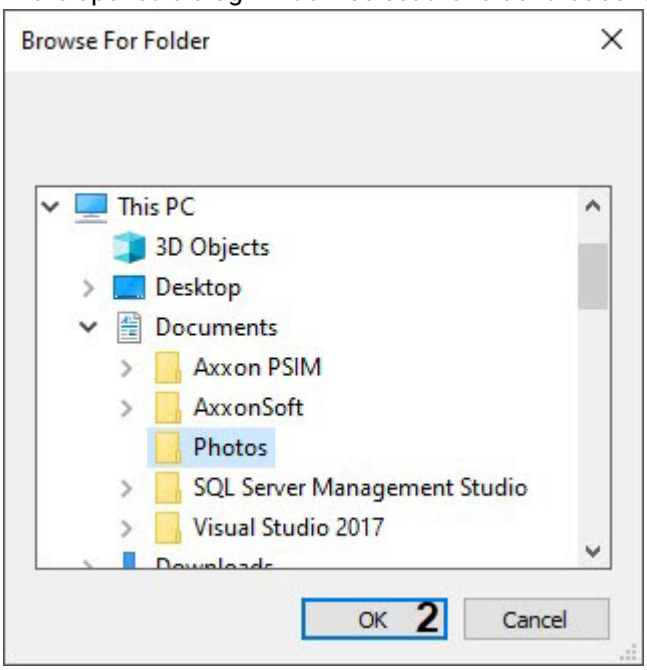
1. **New person**.

   In the empty form that opens:
   a. Specify the person's info in the fields **Last name**, **First name**, **Middle name**, **Department** and **Comment**.
   b. Click the **Edit photo** button.
   c. Select one of two ways to add a photo:
      i. **Load from file** (see Uploading image from a file).
      ii. **Load from video archive** (see Uploading image from video archive).

2. **Load from file**.
   The process of uploading an image from the file to the reference face database is similar to uploading an image from the file for search (see Uploading image from a file).

3. **Load from video archive**.
   The process of uploading an image from the video archive to the reference face database is similar to uploading an image from the video archive for search (see Uploading image from video archive).

4. **Load from folder**.
   In the opened dialog window select the folder that contains the required images and click **OK** (**2**).



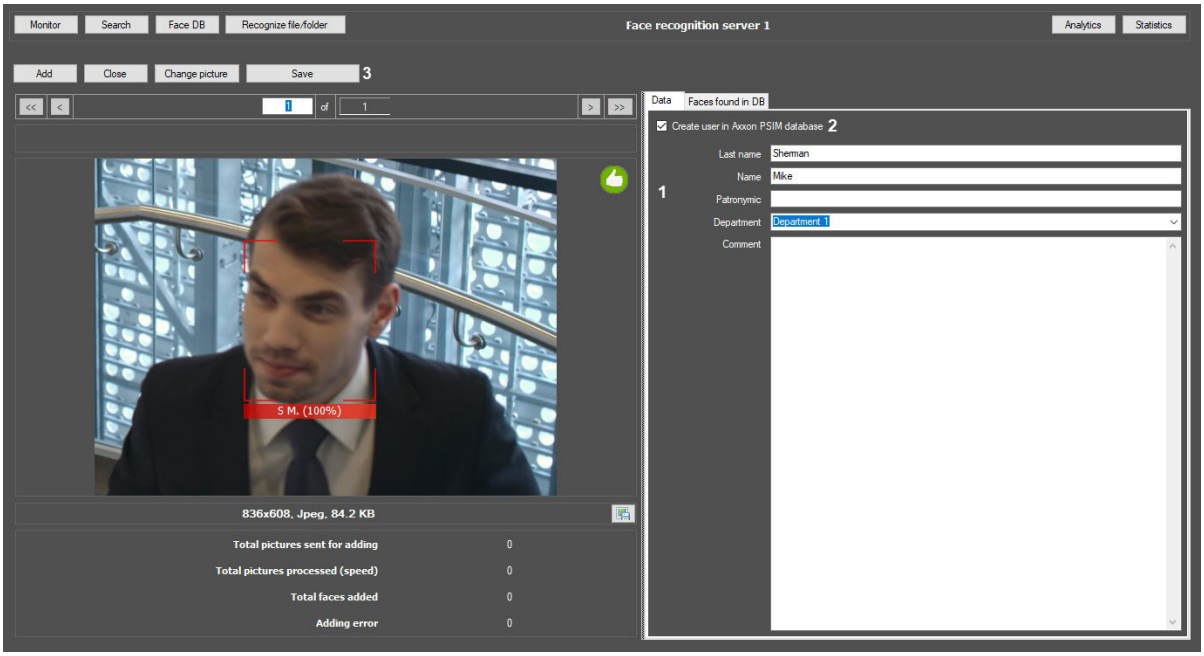
Selecting a way to upload an image is complete.

4.2.3.2 Adding images to the reference face database

> **Important!**
>
> Images uploaded to the reference face database should meet some requirements (see Requirements for images uploaded to the reference face database).

To add an image to the reference face database, do the following:

1. Upload an image in the preferred way (see Selecting a way to upload an image to the reference face database) or add the captured face image (see Add captured faces to the reference face database).



To the right of the image, the  or  icons are displayed.

The  icon means that the captured face can be added to the DB.

When the  icon is displayed, the **Save** button (**3**) is disabled and the captured face cannot be added to the DB. This may be caused by one of the following reasons:

- The reference face database editing is not enabled (see Configuring the permissions and additional settings).
- The recognition module is not activated (see Activation of the recognition modules in Face PSIM).
- There is no connection to the Face recognition server.

2. Specify the required data about the face in the **Last name**, **Name**, **Patronymic**, **Department** and **Comment** fields (**1**).

> **Note**
>
> If the image was added to the reference face database using the **Load from file** or **Load from folder** way, the data about the person is generated automatically: the values of the **Last name**, **Name**, **Patronymic** and **Department** fields are taken from the name of the uploaded file. The following characters can be used as a separator: a period, a comma, a space symbol, a low line.
>
> The format of the file name should be in on of the following formats:

- last name.name.patronymic.department.any following text will be ignored.image format;
- last name,name,patronymic,department,any following text will be ignored.image format;
- last name name patronymic department any following text will be ignored.image format;
- last name_name_patronymic_department_any following text will be ignored.image format.

Supported file formats: JPG, JPEG, JPE, JFIF, PNG, GIF and BMP.

Attention!

In case the **Load from folder** method was selected, the **Allow creating departments** checkbox is not set (see Configuring the permissions and additional settings), and a non-existent department is specified in the file names, then the faces will be added to the currently selected department.

3. To create the user in the *Axxon PSIM* database, check the corresponding box (**2**). The visibility of the **Create user in Axxon PSIM database** checkbox depends on the settings of the **Face recognition and search** object — see Configuring the permissions and additional settings.

Note

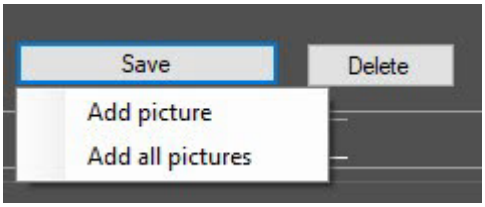
By default, if the checkbox is not set, then the **Person_ID = 0** parameter value is assigned to all faces when adding them to the reference face database. This may result in incorrect operation of scripts which use this database field. In order to hide the **Create user in Axxon PSIM database** checkbox and assign a unique **Person_ID** to each face when adding it to the reference face database, it is necessary to set the **True** value for the **HideCheckBoxPSIMPerson** parameter (see XML-file parameters reference guide).

4. Click the **Save** button (**3**) to accept the addition of the image to the reference face database.

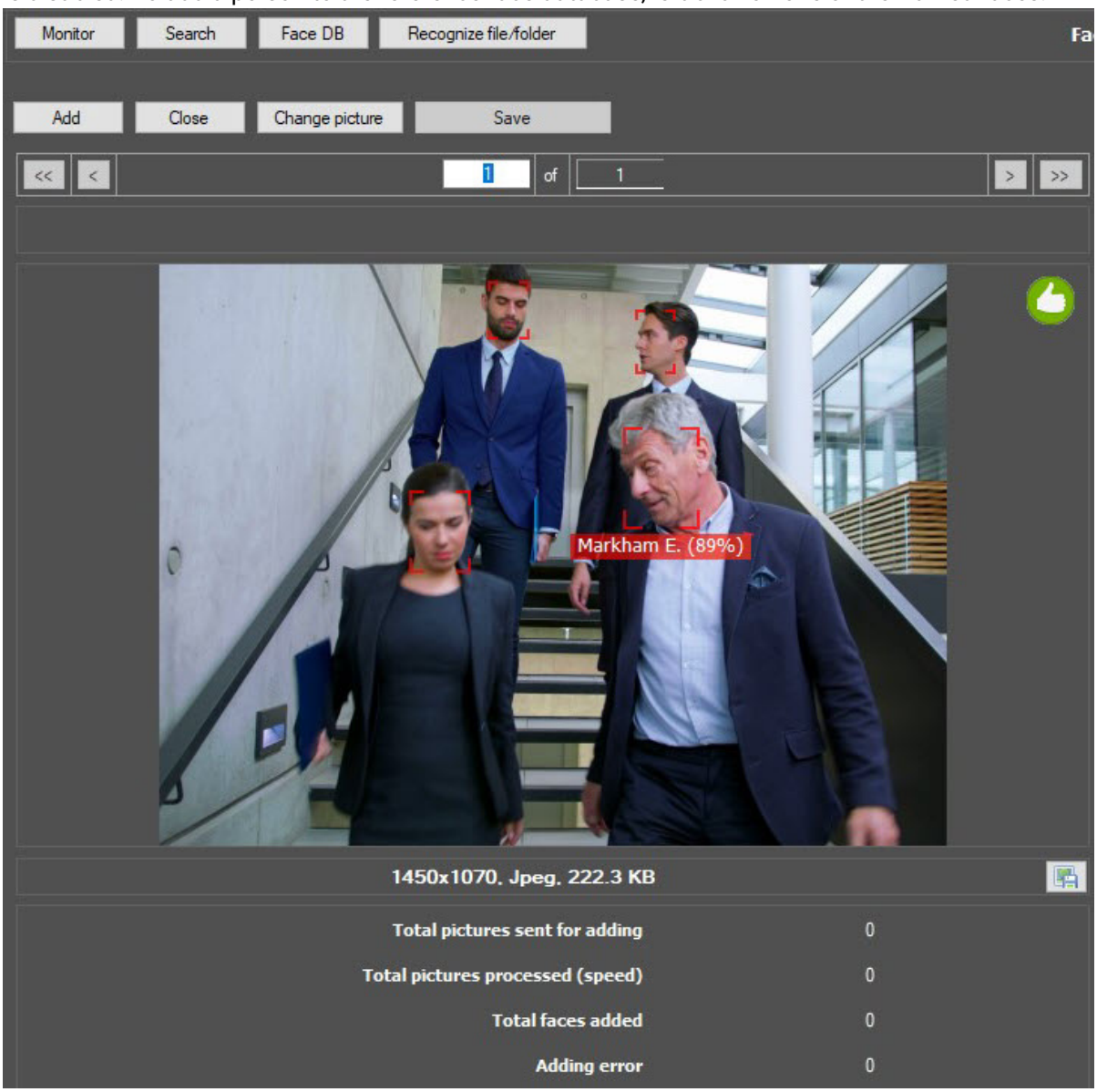
Note

If the image was added to the reference face database using the **Load from folder** way, then after clicking the **Save** button, the menu will be displayed. In this menu, select one of the following:

- **Add picture** — to add only the current image;
- **Add all pictures** — to automatically add all images in the folder.



If there are several faces on the added image, they are framed with a red frame and the **Save** button is disabled. To add a person to the reference face database, left-click on one of the framed faces.

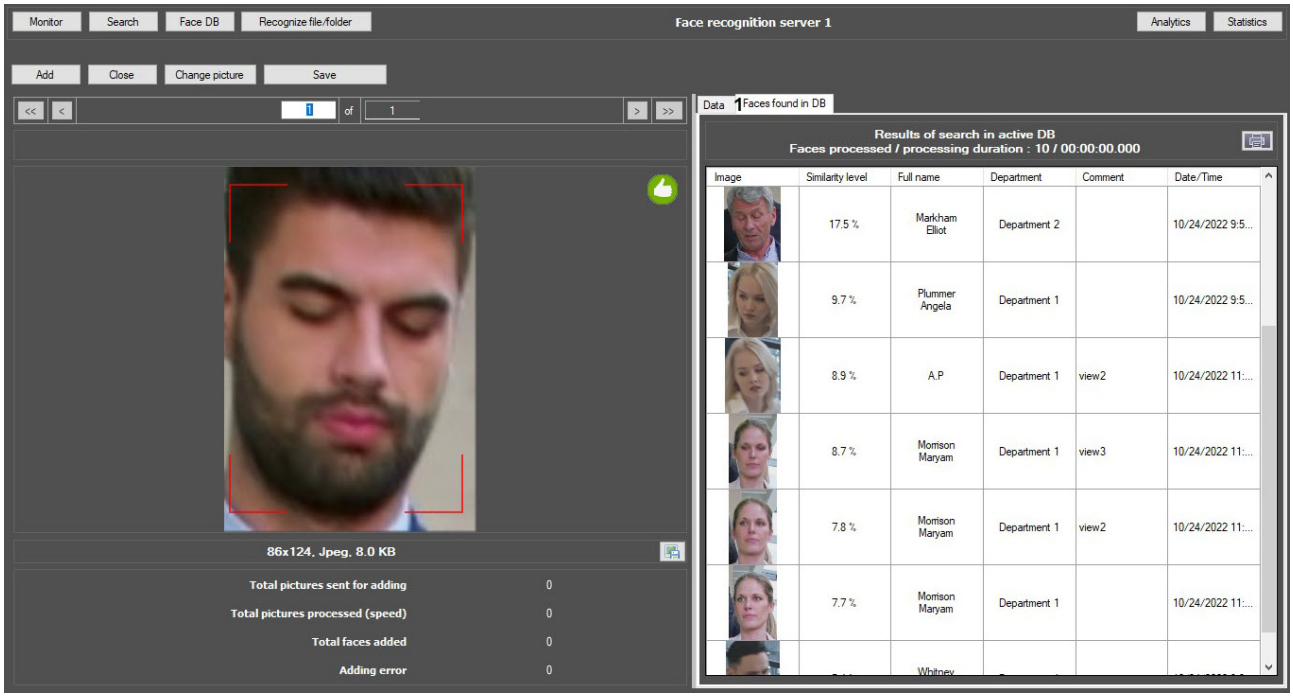


Important!

If you automatically add face images from the folder, it is necessary that every image contains only one face. If there are 2 or more faces in the image, or the face was not recognized due to the poor image quality, it will be skipped. It is possible to automatically move skipped images to a specific folder. To do this, specify the path to this folder in the *face_client.run.config* configuration file in the **ProblemImages** parameter (see XML-file parameters reference guide).

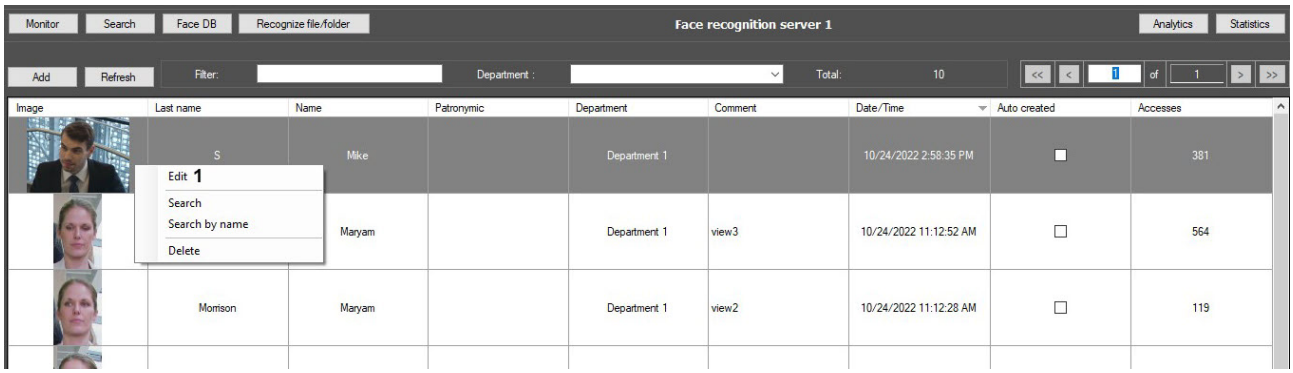
Column name	Description	Recognition module used
Image	Recognized face image	All recognition modules
Similarity level	The similarity level of the added image in comparison to the one existing in the reference face database. *Note. If the value of similarity level for image is more than the **Minimum similarity for identification** parameter value, then the percentage of similarity and the name of the corresponding person from the database will be displayed next to the image.*	All recognition modules
Full name	First, last and middle name	All recognition modules
Department	Department to which the face is related	All recognition modules
Comment	Comments and notes	All recognition modules
Date/ time	Date and time of face addition to the reference face database	All recognition modules

All images added to the reference face database are also listed on the **Faces found in DB** tab (**1**), which contains the following information:

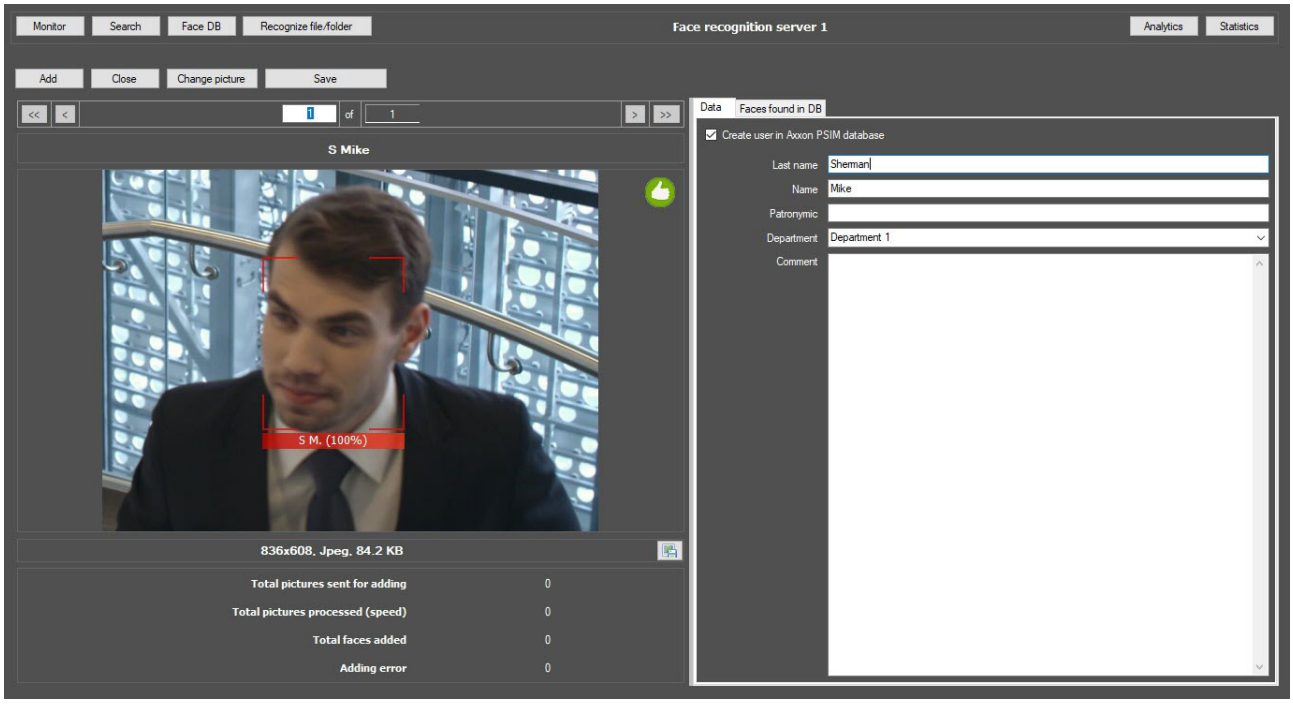


4.2.3.3 User editing

To edit the users added to the face database, right-click the selected user in the list and select the **Edit** value (**1**).



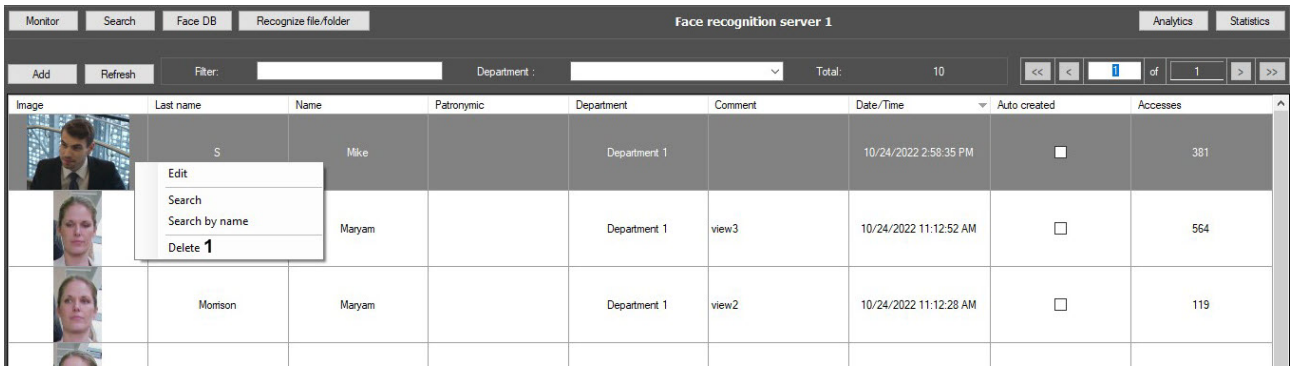
As a result, the user editor will open.



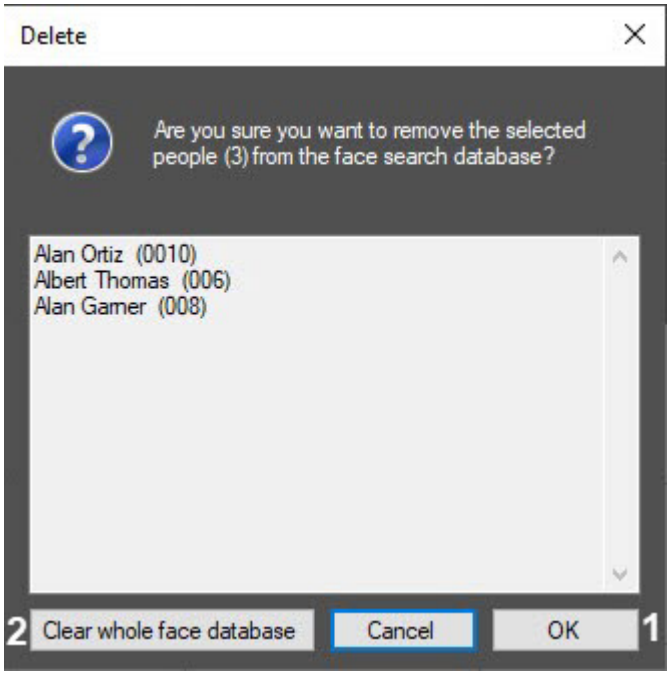
4.2.3.4 Deleting the faces and clearing the database

To delete the faces from the reference face database, right-click the selected image from the list and select **Delete** (**1**) from the menu.

> **Note**
>
> Several faces can be selected and deleted at once.



In the **Delete** dialog window, click **OK** (**1**) to confirm the selected face deletion.



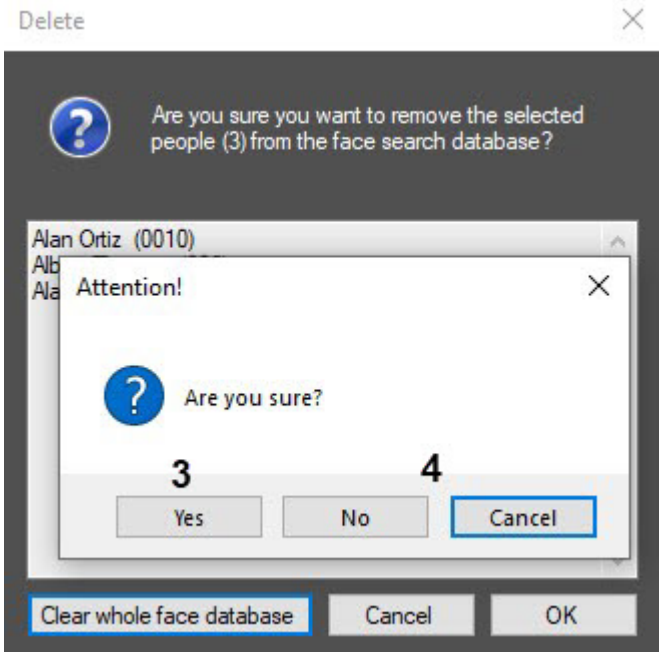
To delete all faces from the reference face database, click the **Clear whole face database** button (**2**).

> **Note**
>
> The **Clear whole face database** button (**2**) is displayed only if there are several pages of faces in the database.

When you click the **Clear whole face database** button (**2**), the new **Attention!** dialog window will open.

To confirm the deletion of all faces from the reference face database, click **Yes** (**3**).

To discard the deletion of all faces from the reference face database, click **No** or **Cancel** (**4**).

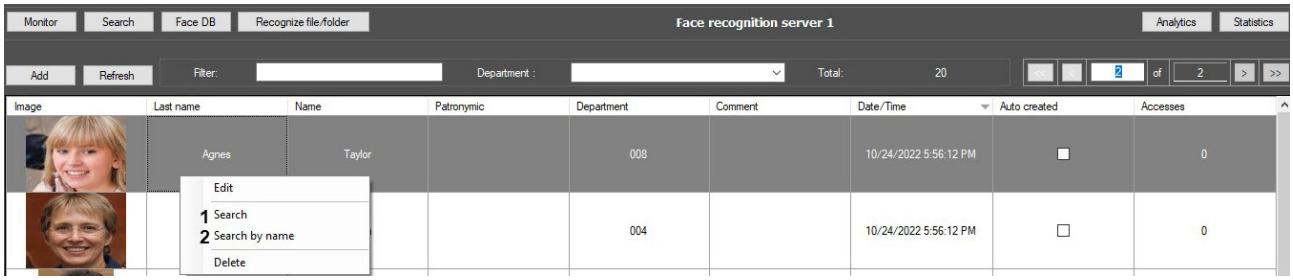


Attention!

If a user was created when a face was added to the reference face database (see Configuring the permissions and additional settings), then the user will be also deleted when the face is deleted from the reference face database. The department to which the user was added, will not be deleted.

4.2.3.5 Running the face search

To search for captured faces in the database, right-click the selected user in the list and select **Search** (**1**).



As a result, the face search window will be opened (see Face search), and the search for the selected face will be automatically performed. The captured face image will be loaded as the image for search.

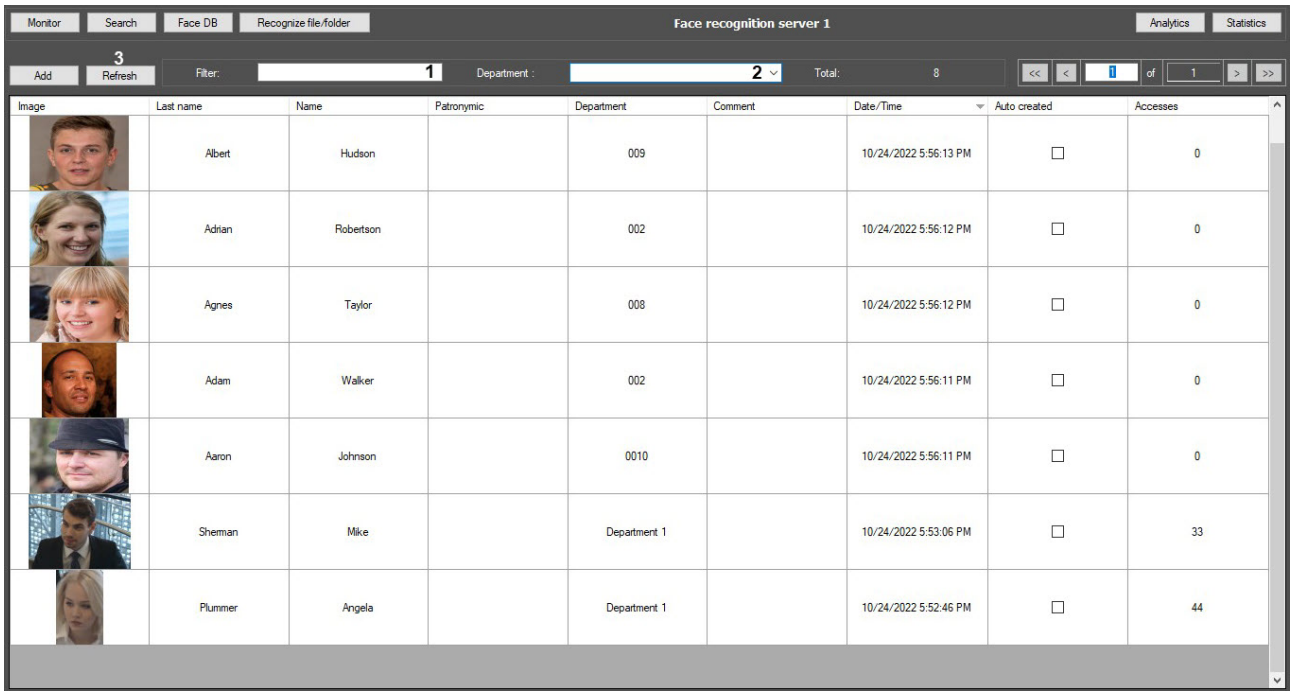
Note

If there are 2 or more captured faces on the image, the automatic face search will not be performed.

To search by the name of user, right-click the selected user and select **Search by name** (**2**). This process is described in the Filtering the recognized and unrecognized faces section.

4.2.3.6 Filtering of the reference face images displayed on the screen

You can filter the reference faces displayed on the screen by name, comments and departments.

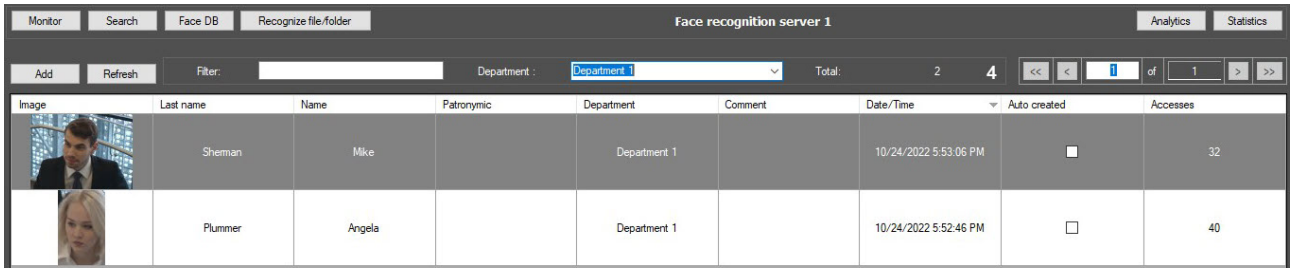


- To filter the faces by full name and comments, enter the appropriate substring in the **Filter** field (**1**).
- To filter the faces by department, enter the appropriate substring in the **Department** field (**2**) (or select the department from the drop-down list).

To apply the filter, click the **Refresh** button (**3**).

Note

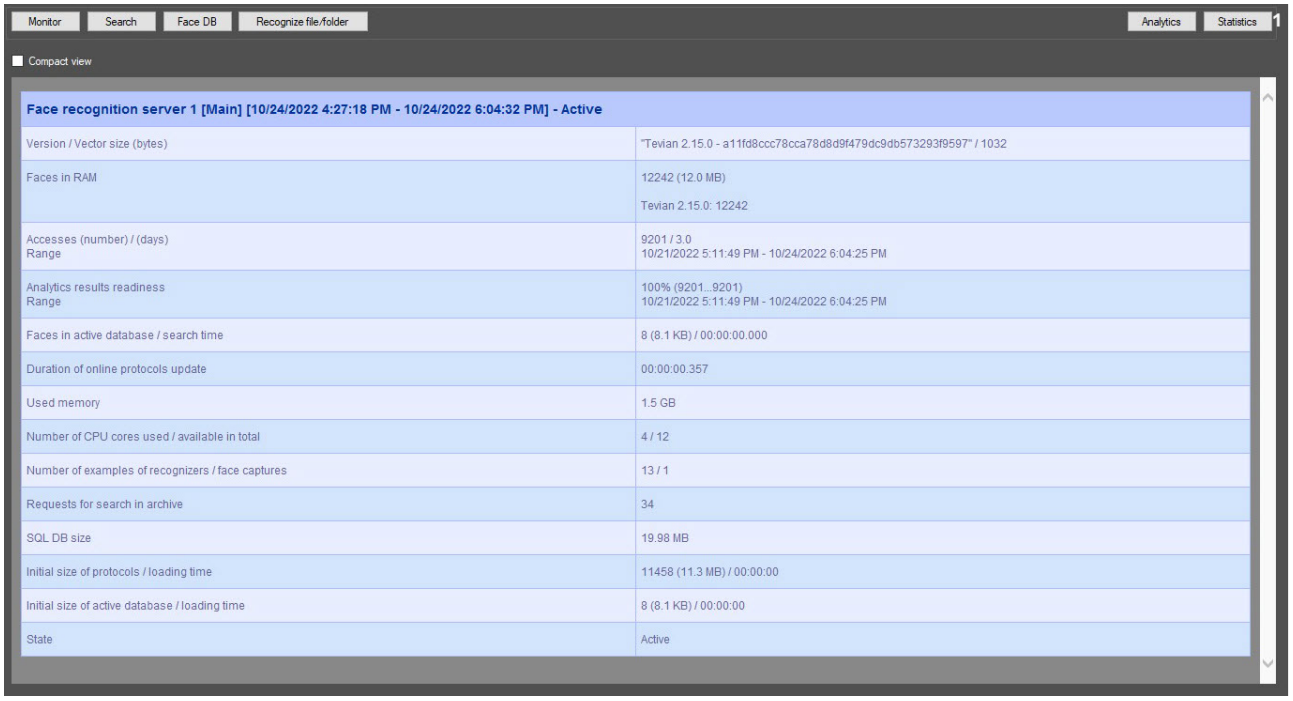
In the **Total** field (**4**), the total number of reference face images that satisfy the specified filters is displayed.



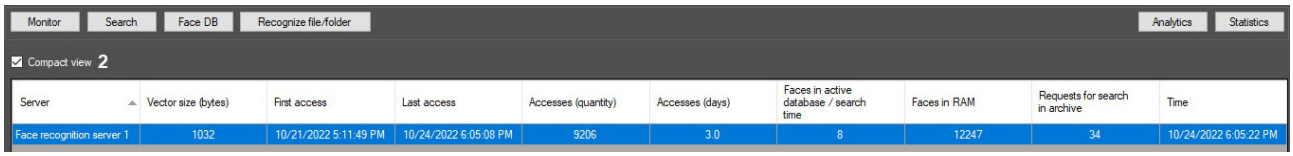
4.2.4 Displaying the statistics

In the **Face recognition and search** interface window it is possible to view the statistics for each face recognition server. Click the **Statistics** button (**1**) to display the statistics data.

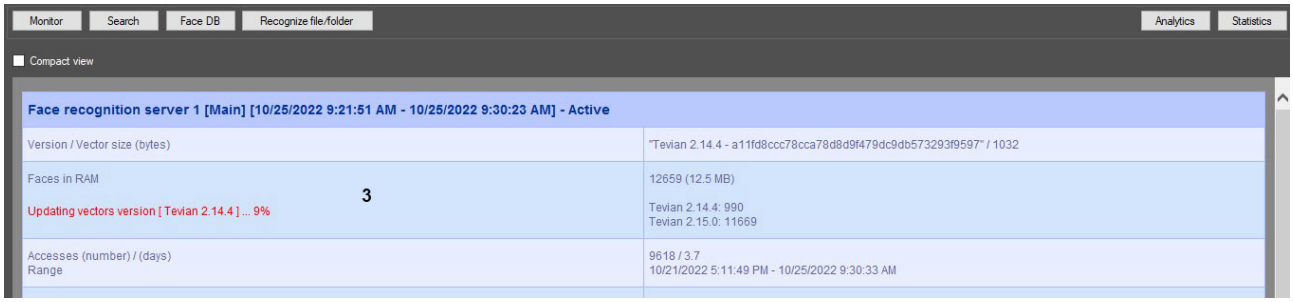
The following statistics for each face recognition server will be displayed: the name and the version of the recognition module, the vector size in bytes, the number of faces in the RAM, the first and last access time, the total number of accesses, etc.



To view the statistics in compact view, set the **Compact view** checkbox (**2**).



If the re-generation of biometric vectors is started (see Switching between the face recognition modules or SDK versions), then the current process will be displayed in the **Faces in RAM** field (**3**).



4.2.5 Viewing the analytics

To view the analytical data of the **Face recognition and search** interface module, click the **Analytics** button (**1**).

Note

Analytical data are generated by the Visitor counting channel. If this channel was not activated during system configuration, the **Analytics** button is inactive (see Activation of the recognition modules in Face PSIM).

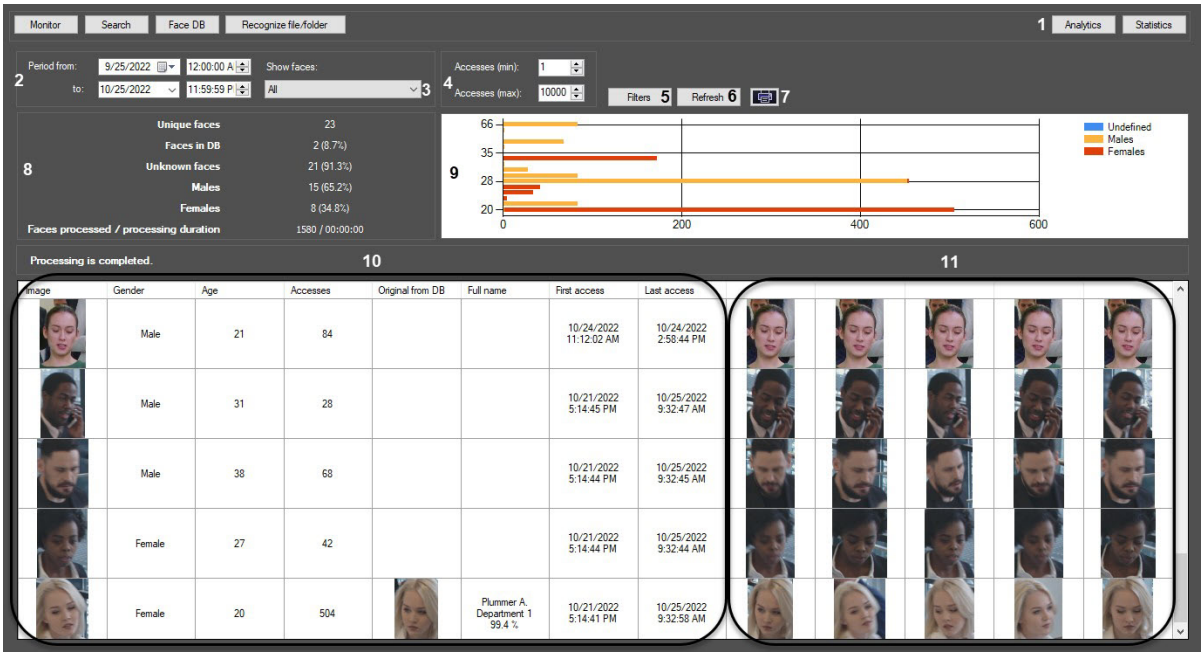
Grouping of similar faces is automatically enabled after you create Visitor counting channel. During operation of the face recognition server, each new captured face is compared with a previously captured face that has the maximum level of similarity, but no less than the level specified in the settings (see Configuring the recognition parameters of captured faces). If the detected face isn't similar to any previous face, then this face becomes a parent for all subsequent faces similar to it. If the parent face is excluded from the selection, for example, when cleaning the archive on a loop or narrowing the data request period, the place of the common parent is taken by the face which first referred to the common parent in an accessible time period.

To configure the display of analytical data, do the following:

1. In the **Period from** and **to** fields (**2**), specify the time period for which the analytical data must be displayed.

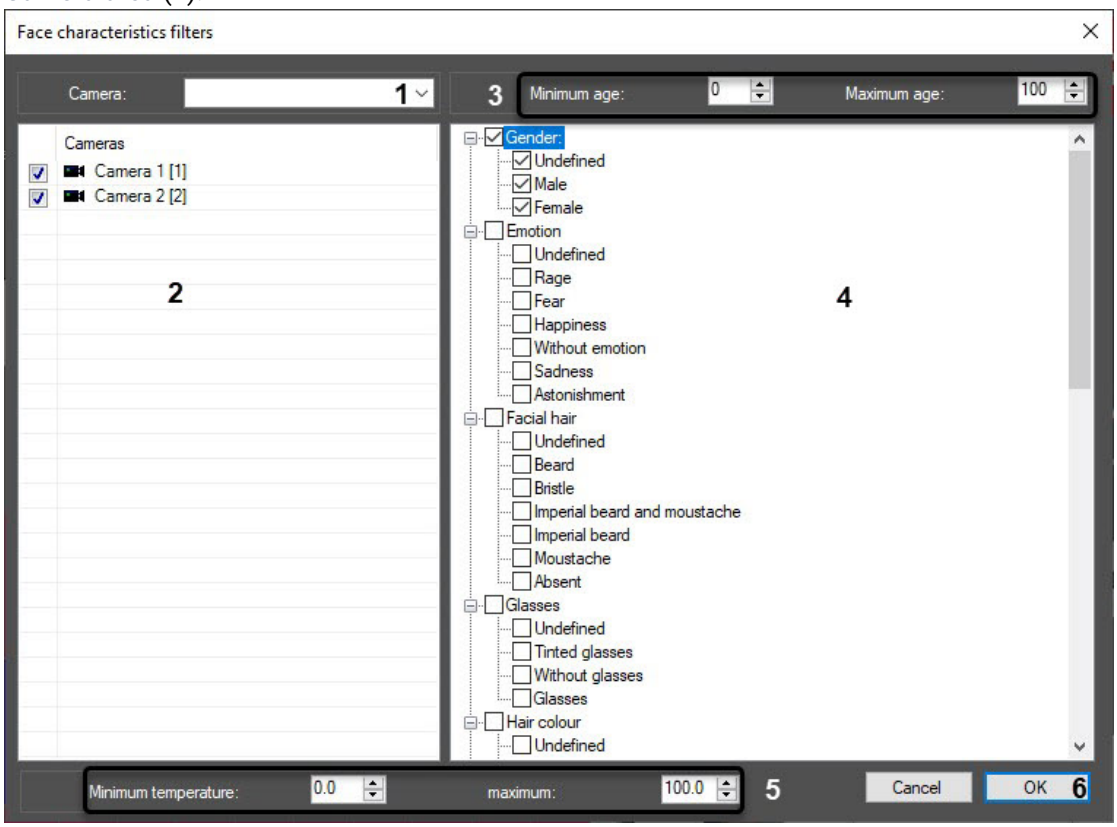
Attention!

We don't recommend specifying a period of more than seven days, as this can cause an error in the analytics generation.



2. From the **Show faces** drop-down list (**3**), select faces which must be displayed in the list: recognized, unrecognized or all.
3. In the **Accesses (min)** and **Accesses (max)** fields (**4**), specify the values corresponding to minimum and maximum number of person accesses.
4. Click the **Filters** button (**5**) to specify the face characteristics filters:

a. In the **Camera** field (**1**), specify the substring to filter out the cameras to be displayed in the **Camera** area (**2**).



b. In the **Minimum age** and **Maximum age** fields (**3**), specify the minimum and maximum age of faces, respectively.

c. In the area (**4**), set the checkboxes next to the corresponding face characteristics.

> **Note**
>
> Face characteristics (**4**) may not be displayed (see Configuring the additional face characteristics).

d. In the **Minimum temperature** and **maximum** fields (**5**), specify the minimum and maximum face temperature, respectively.

e. Click the **OK** button (**6**) to save the filters.

5. Click the **Refresh** button (**6**) to refresh the analytics.

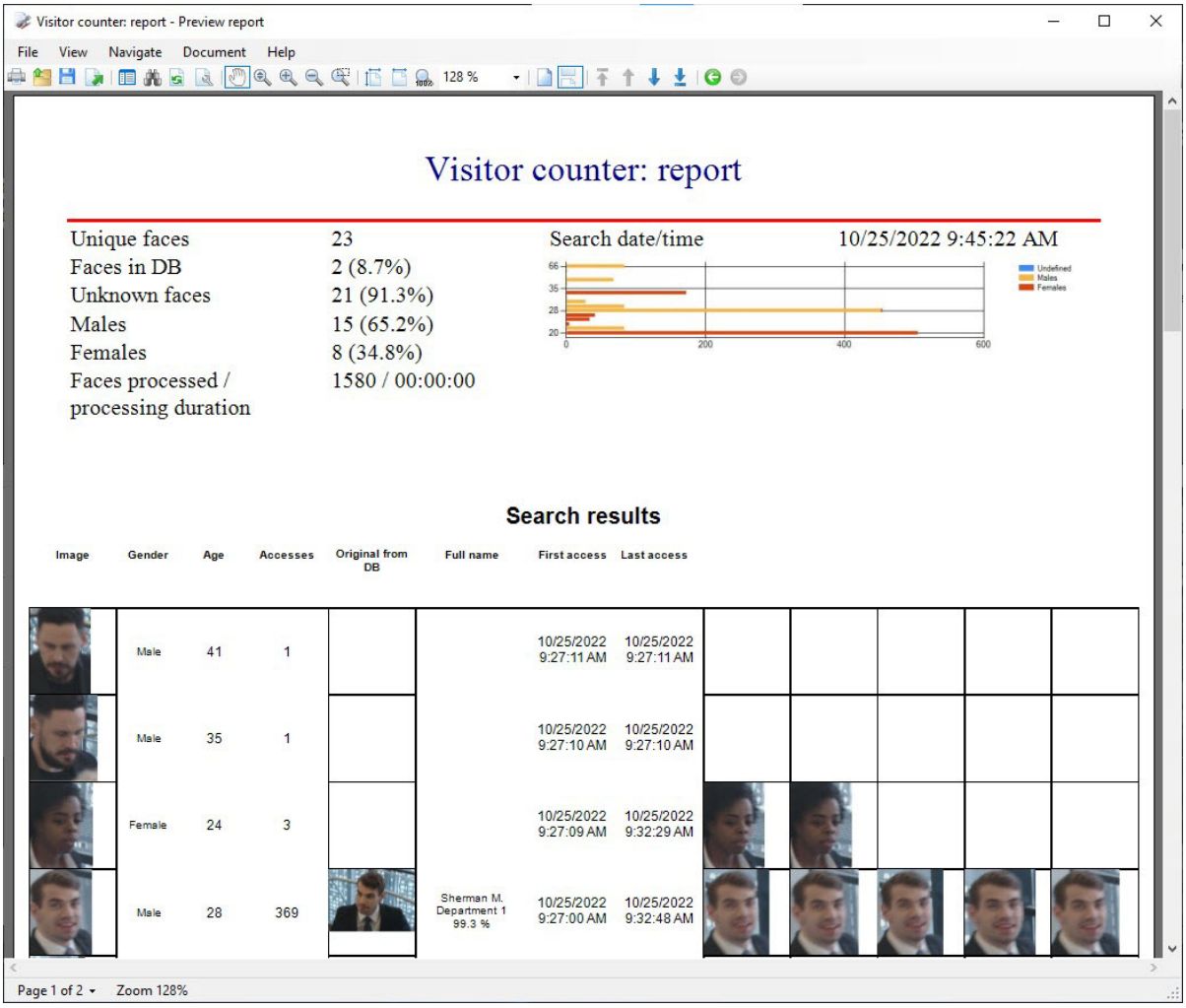
> **Note**

If a large number of unique faces is stored in the database, then refreshing the analytics can take a long time. If the **Operation has timed out** error occurs while the analytics is being refreshed, then it is necessary to increase the value of the **AnalitycTimeout** parameter in the **face_client.run.config** configuration file (for details, see the XML-file parameters reference guide).

6. Click the  button (**7**) to generate a report on the displayed analytical data. Report can be printed, saved to an RSD or XML file, or exported to PDF.
Configuring the display of analytical data is complete.

Note

You can also generate a report on gender analytics in the *WEB Report System PSIM* (see Gender analytics report).

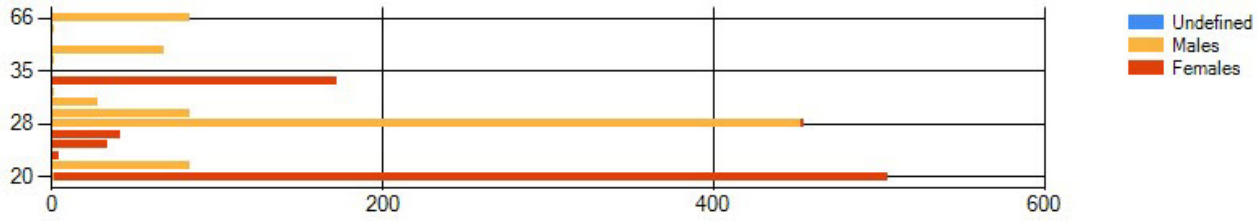


Note

To limit the number of rows (unique faces) in the generated report, it is necessary to change the value of the **CounterRowCount** parameter in the **face_client.run.config** configuration file (for details, see XML-file parameters reference guide).

In the section (**8**), the general analytical data about the captured faces is displayed.

In the diagram (**9**), the horizontal axis shows the total number of accesses. The vertical axis shows the age of the captured faces.



Note

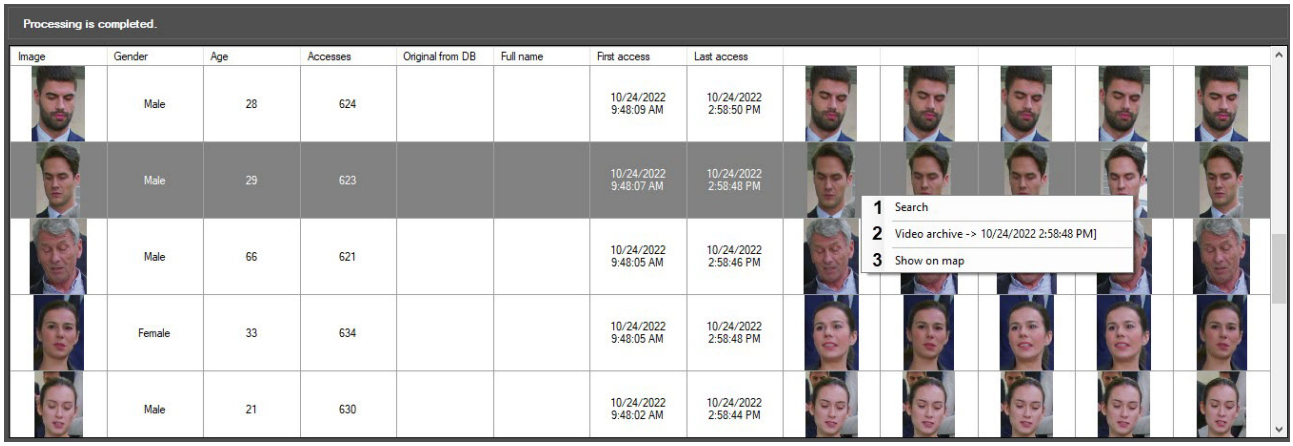
The **Undefined** gender is displayed in case the **Face characteristics recognition channel** was not activated by the time of the face capture (see Activation of the recognition modules in Face PSIM).

In the table (**10**) in the **Image** column, unique faces are displayed. Their quantity is equal to the **Unique faces** value shown in the section (**8**). The sum of the unique faces and the number of all their accesses equals to the **Faces processed** value shown in the section (**8**). In the area (**11**), the images of the last five accesses of faces similar to the unique faces from the table (**10**) are displayed.

To perform the search by the image, right-click the corresponding image and select **Search** from the menu (**1**). As a result, you will be redirected to the face search (see Face search), and the selected face will be automatically searched for, and the captured face will be loaded as the search image.

To view the moment when the found face appears on the video, right-click the corresponding image and select **Video archive** → **<Date and time>** (**2**). As a result, a video archive with a paused video will be displayed in the monitor for video archive playback (see Configuring the permissions and additional settings) (for details about working with video archives, see Working with the archives).

To display the camera that captured the face on the map, right-click the corresponding image and select **Show on map** from the menu (**3**).

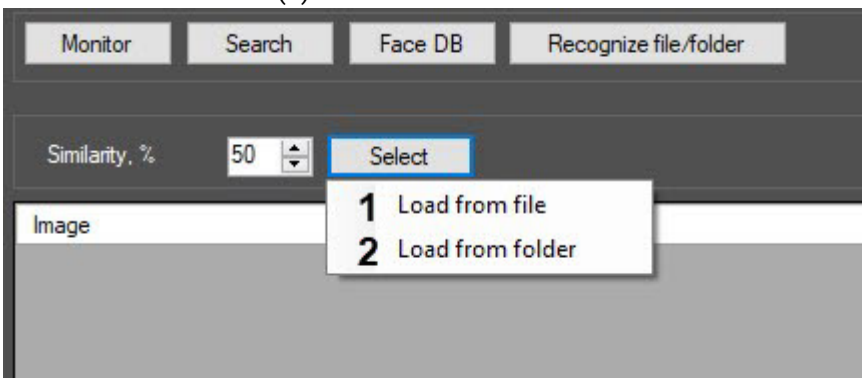


Viewing analytical data is complete.

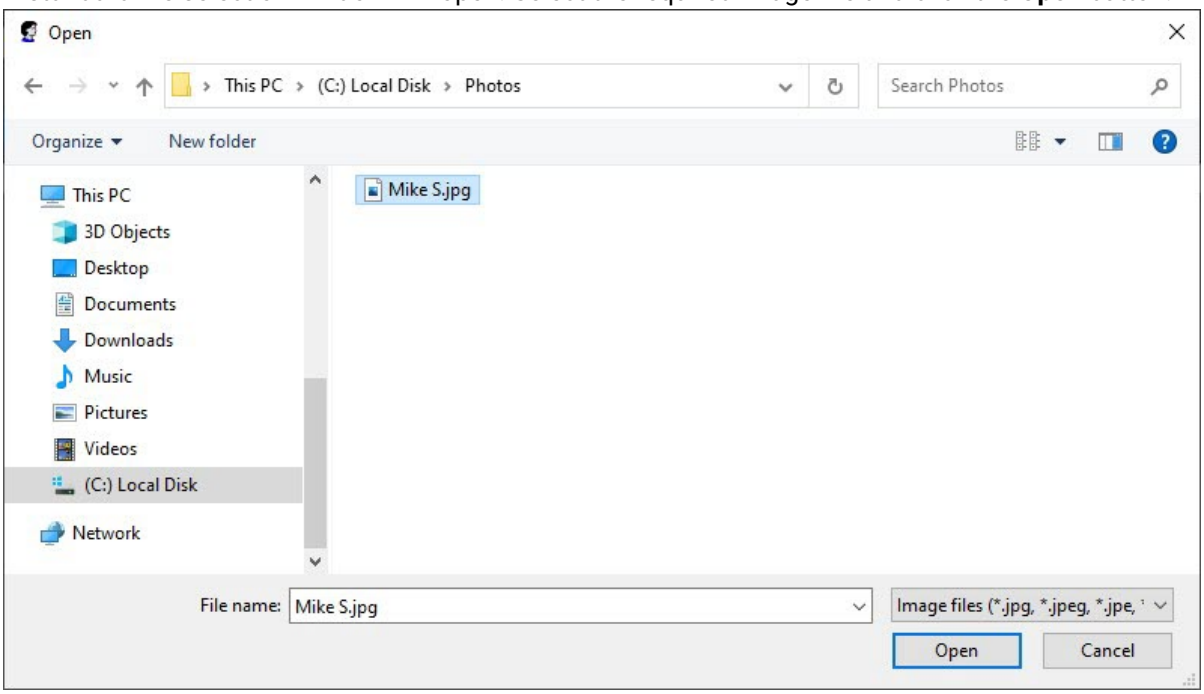
4.2.6 Searching by images in the reference face database

To search by images in the reference face database, click the **Recognize file/folder** button (**1**) in the **Face recognition and search** window and do the following:

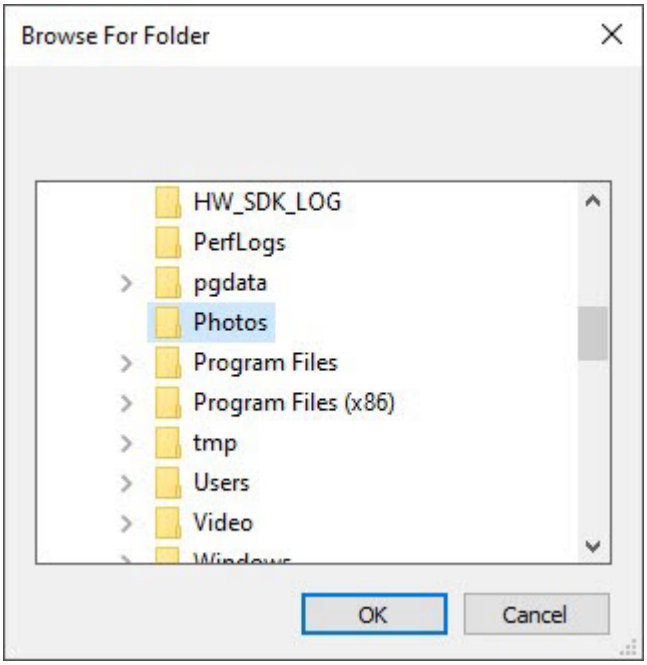
1. In the **Similarity, %** field (**2**), specify the similarity level between the recognized images and the faces from the reference database in percent.
2. Click the **Select** button (**3**).



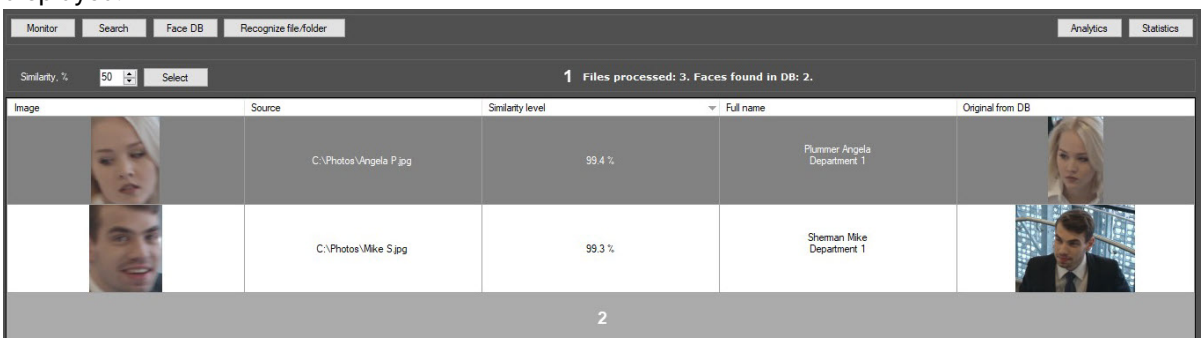
3. From the drop-down menu, select **Load from file** (**1**) to search by only one image.
   A standard file selection window will open. Select the required image file and click the **Open** button.



4. Select **Load from folder** (**2**) if you want to search by multiple images.
   The standard folder selection window will open. Select the required image folder and click the **OK** button.



5. In the field (**1**), the number of processed files and the number of faces found in the database is displayed.



6. The image search results in the reference face database is displayed in the columns of the field (**2**):

Column name	Description	Recognition module used
Image	The image loaded for search	All
Full name	The full name from the reference database	All
Original from DB	The photo from the reference database (see Working with the reference face database)	All

> **Note**
>
> If no images in the reference database match the image loaded for search, then no data is displayed in the field (**2**).

The search by images in the reference face database is completed.

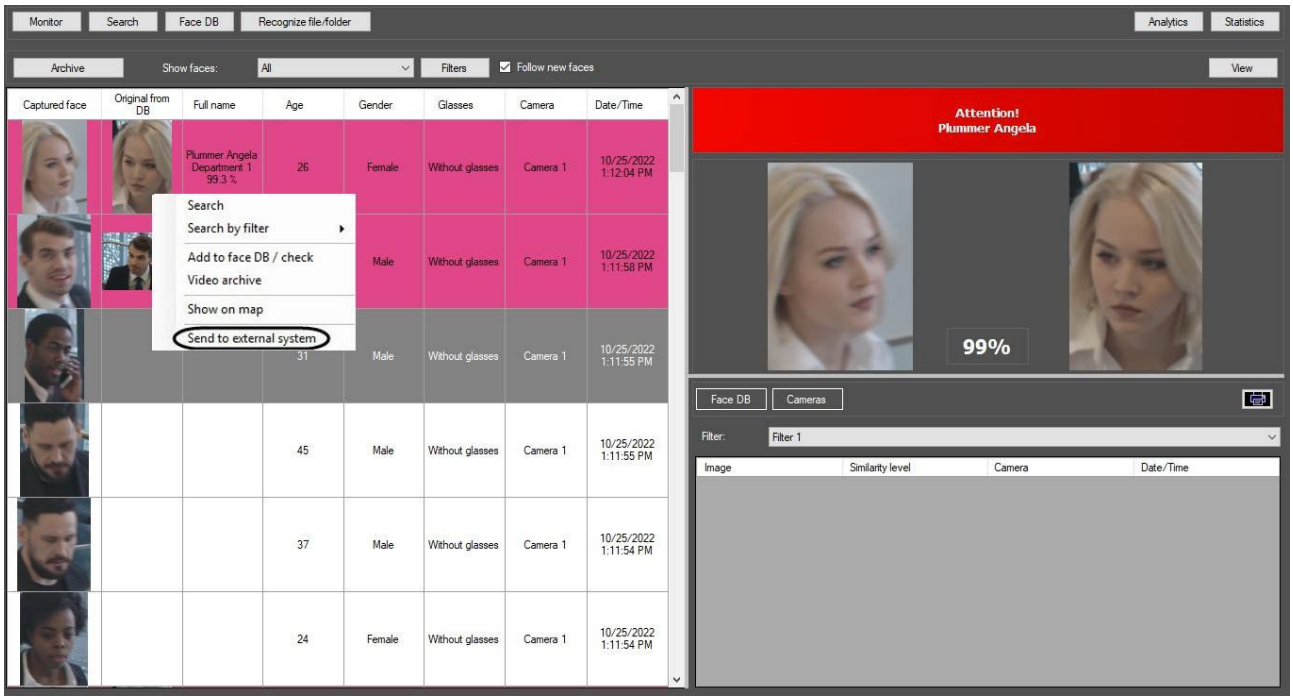
4.2.7 Transferring images to an external system

It is possible to transfer images to an external system by sending an HTTP POST request. To enable the images transfer to an external system, this feature should be pre-activated (see Configuring the images transfer to an external system).

To transfer images to an external system, on the **Monitor**, **Search**, or **Face DB** tab, right-click the required image and select the **Send to external system** option.

Note

In the HTTP POST request, the **imageBase64** json parameter which contains the specified image is automatically added as the parameter.



Note

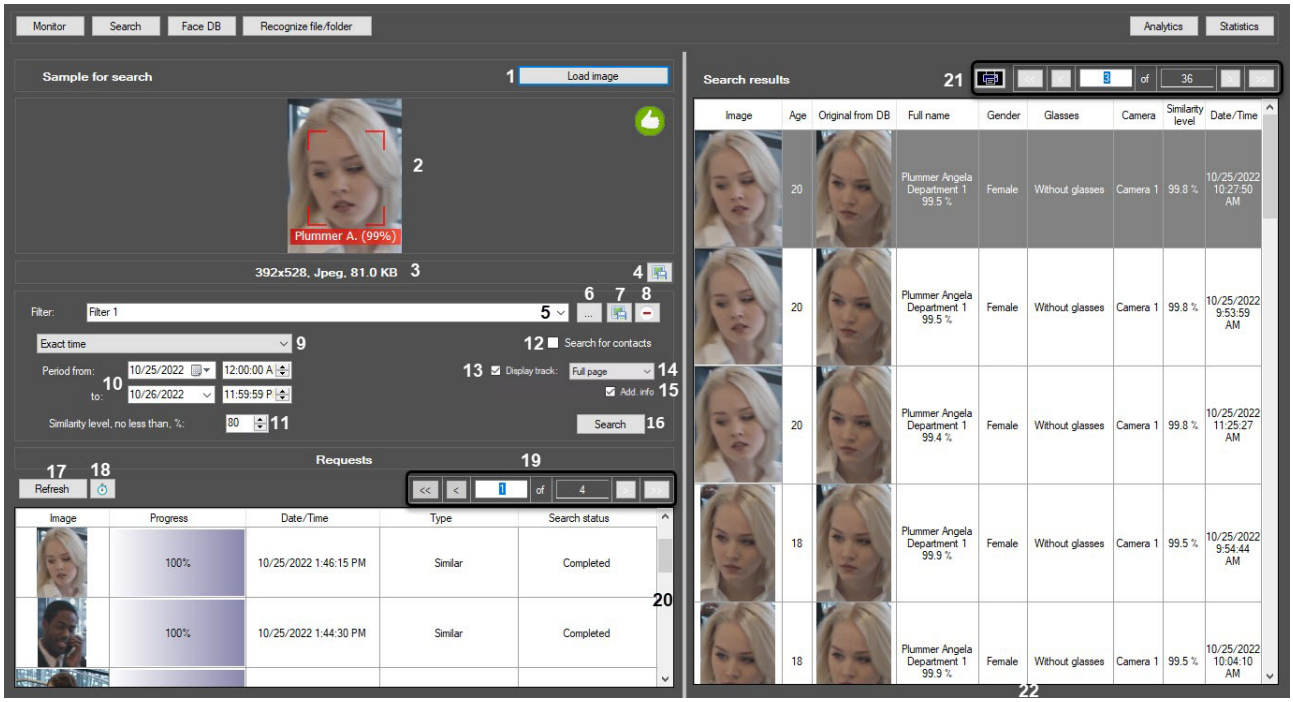
Image transfer is performed asynchronously and without visual confirmation.

5 Description of the Face PSIM user interface

5.1 The Face recognition and search window interface

5.1.1 The Face Search window

The following figure shows the **Face search** window interface:



The elements of the **Face search** window interface are described in the following table.

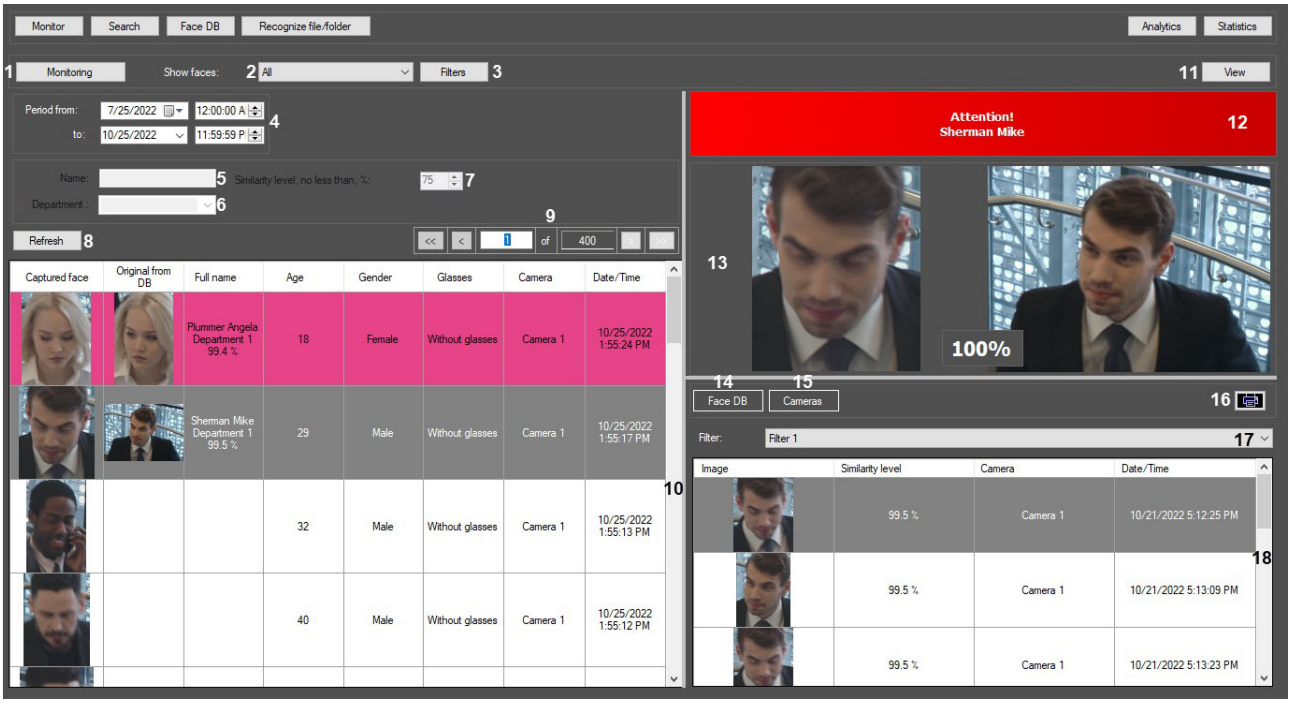
Element number	Comment
1	The **Load image** button (image loading for search)
2	The area for displaying the loaded image
3	The loaded image parameters
4	The button for saving the image

Element number	Comment
5	The field for entering a new filter name or selecting a previously saved filter
6	The field for specifying the filter
7	The button for saving the specified filter
8	The button for deleting the selected filter
9	The list for selecting the search period type
10	The elements for setting the time interval for face search. They depend on the selected search period type
11	The field for entering the minimum similarity level
12	The **Search for contacts** checkbox for searching people who have been in contact with the specified person within the specified time period
13	The **Display track** checkbox for displaying the movement (track) of a person on the map in the form of arrows
14	The list of methods to display a track of a person on the map
15	The **Add. info** checkbox for displaying additional information about a person near each arrow that shows the movement track of a person
16	The **Search** button for searching for the selected face
17	The **Refresh** button for refreshing the list of search requests
18	The button for setting the start date and end date and the time interval for search results displaying
19	The elements for navigating through the search requests

Element number	Comment
20	The area for displaying the search requests. The following columns are displayed: • Image; • Progress; • Date/Time; • Type; • Search status.
21	The elements for navigation through the search results
22	The area for displaying the search results. The following columns are displayed: • Image; • Original from DB; • Full name; • Names of the face characteristics (see Configuring the additional face characteristics); • Camera; • Similarity level; • Date/Time.

5.1.2 The Monitoring of captured and recognized faces window

The following figure shows the **Monitoring of captured and recognized faces** window interface:



The components of the **Monitoring of captured and recognized faces** interface are described in the following table.

Number of component	Comments
1	The **Monitoring** button
2	**Show faces** drop-down list to select the captured persons display option: **All**, **Only recognized**, **Only unrecognized**
3	The **Filters** button for filtering by cameras and additional face characteristics
4	Elements for setting the start and end date and time of the time interval for face search
5	The **Name** field for entering the name of a recognized person *Note. The field is editable if the **Only recognized** option is selected in the **Show faces** drop-down list.*
6	The **Department** field for selecting the department of a recognized person *Note. The field is editable if the **Only recognized** option is selected in the **Show faces** drop-down list.*

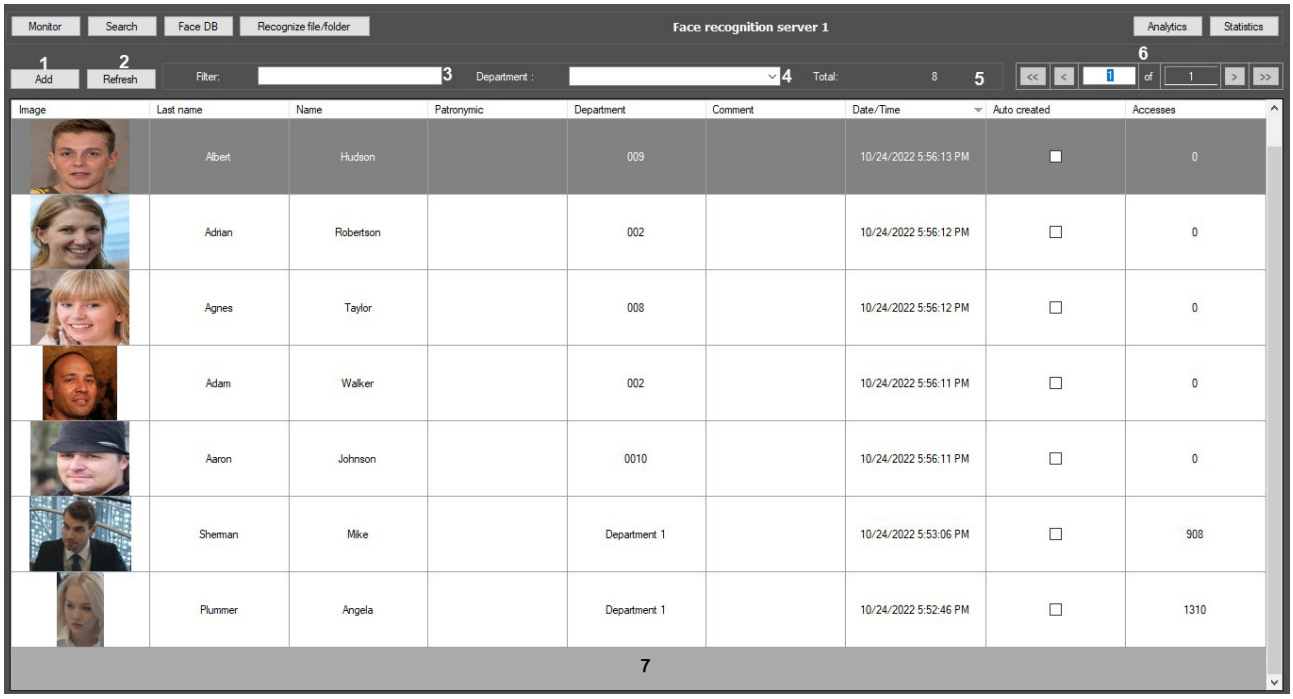
Number of component	Comments
7	The **Similarity level, no less than, %** field for setting the minimal similarity level *Note. The field is editable if the **Only recognized** option is selected in the **Show faces** drop-down list.*
8	The **Refresh** button for updating the displayed data
9	Elements for navigation through captured faces
10	Filtered list of captured faces The following columns are displayed: • Captured face; • Original from DB; • Full name; • Names of the face characteristics (see Configuring the additional face characteristics); • Camera; • Date/Time.
11	The **View** button for configuring the view of the monitoring window
12	The field for displaying the full name of the recognized person
13	Photos of the captured face and the reference image, the information on which is stored in the face database
14	The **Face DB** button for displaying in the area (19) the information on the selected recognized face
15	The **Cameras** button for displaying in the area (19) the ten last captured faces according to the selected search filter (18)
16	The Print button * for exporting the filtered data to a report file
17	A drop-down list for selecting the search filter (see The Face Search window)

Number of component	Comments
18	The area for displaying search results with the specified filtering conditions. When the Face DB section is selected using the **Face DB** button (**14**), the following columns are displayed: • Image; • Full name; • Similarity level; • Comment; • Date/Time. When the Cameras section is selected using the **Cameras** button (**15**), the following columns are displayed: • Image; • Similarity level; • Camera; • Date/Time.

* The element's name is not displayed in the settings panel.

5.1.3 The Face database window

The following figure shows the **Face database** window interface:

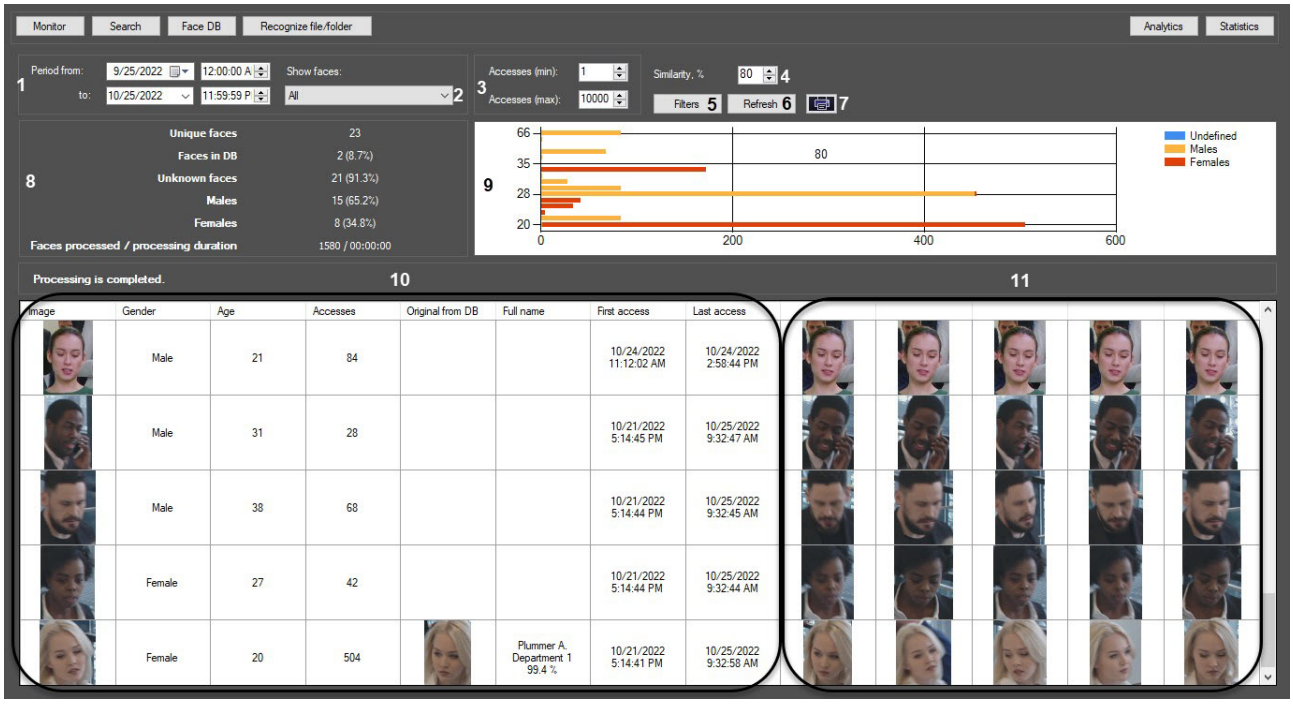


The components of the **Face database** interface are described in the following table.

Element number	Description
1	The **Add** button for adding the images to the reference face images database.
2	The **Refresh** button for refreshing the list of added reference images.
3	The **Filter** field for adding the text to filter by name and comments.
4	The **Department** field for adding the text to filter by the department.
5	The **Total** field for displaying the total number of reference images that satisfy the specified filters.
6	Navigation elements.
7	The list of reference images that satisfy the specified filters. The following columns are displayed: • Image; • Last name; • First name; • Patronymic; • Department; • Comment; • Date/Time.

5.1.4 The Analytics window

The following figure shows the **Analytics** window interface:



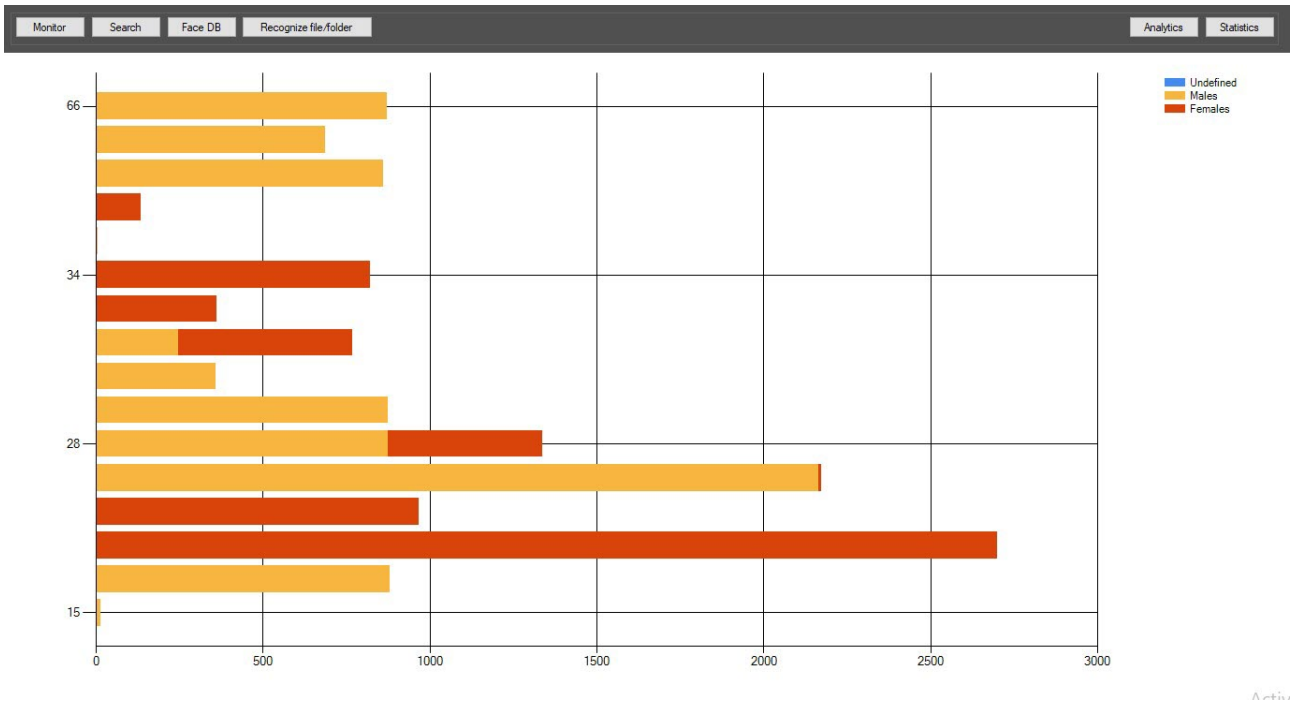
The components of the **Analytics** interface are described in the following table.

Component number	Comments
1	The elements for specifying the time period of the analysis.
2	**Show faces** drop-down list to select the captured persons display option: **All**, **Only recognized**, **Only unrecognized**.
3	The **Accesses (min) and Accesses (max)** fields for specifying the minimum and maximum number of passes of a person.
4	A **Similarity, %** field for specifying the similarity level between the captured face and the reference face in percent. If the specified value is exceeded, the person is considered as recognized.
5	A **Filters** button for specifying the filter.
6	A **Refresh** button for updating the displayed data.
7	A button for exporting the displayed analytical data to the report file.

Component number	Comments
8	The information panel for displaying the general data on all faces.
9	The diagram: the horizontal axis shows the total number of passes; the vertical axis shows the age of the detected faces.
10	The **Image** column displays the unique faces. Their quantity corresponds to the **Unique faces** parameter displayed in the section (**8**).
11	The area displayed the duplicates of the unique faces.

Note

Double left-click the diagram (**9**) to zoom it in, and double right-click it to zoom it out.



5.1.5 The Recognize file/folder window

The following figure shows the **Recognize file/folder** window interface:

The components of the **Recognize file/folder** interface are described in the following table.

Component number	Comments
1	The **Similarity, %** field for specifying the similarity level between the captured face and the reference image in percent.
2	The **Select** button for loading the image file or image folder for the search.
3	The field for displaying the number of the processed files and the number of faces found in the reference database.
4	The field for displaying the image search results in the reference face database. The following columns are displayed: • Image • Full name • Original from DB